

Tools - Applications, Benefits and Linkages for Ecosystems (TABLES)

UK National Ecosystem Assessment Follow-on Phase

Key Messages

- **The Ecosystem Approach provides an important but often overlooked strategic framework within which an Ecosystem Services Framework can be used to enhance policy and decision-making processes.** The 12 principles of the Ecosystem Approach¹ are currently applied in policy and decision-making in a piecemeal fashion hindering the effective assessment of trade-offs in complex resource management interventions. Our results indicate selective use of principles in a range of case studies with some principles consistently overlooked; subsidiarity (Principle 2), limits and thresholds (Principle 6) and long termism (Principle 8) at the expense of the primacy towards Ecosystem Services (Principle 5). By designing operational guidance, adapting all 12 principles of the Ecosystem Approach, within each stage of a policy cycle model (IDEAS-SURVEY-ASSESS-PLAN-ACT-EVALUATE) linking desired actions with possible tool responses, we can improve significantly the quality of planning and decision-making processes. In particular, we identify the opportunity for decision makers, at the outset of any policy, plan, project or programme (PPPP) process, to develop their own indicators that address each principle of the Ecosystem Approach.
- **Not only is there a confusing array of tools available to support decision-making and desired behaviour changes, but policymakers and practitioners often fail to understand WHAT tool is best suited to a given situation, HOW it should be used, WHEN it should be used, and in COMBINATION with what other tools?** Making sense of the diversity and complexity of tools poses a significant challenge for us all. A functional tool typology serves as a starting point from which to identify a suite of tools judged both to have high impact in policy and decision-making processes and potential for incorporation within an Ecosystem Services Framework. Our chosen tools are (**regulatory** (Strategic Environmental Assessment (SEA); Environmental Impact Assessment), **incentives** (Payments for Ecosystem Services*), **valuation** (Corporate Ecosystem Valuation*; Cost Benefit Analysis; **futures** including Visioning, Backcasting and Scenarios) and those that specifically focus on **ecosystem services**² (Natural Capital Asset Check; Ecosystem Assessment; Ecosystem Mapping including SCCAN)). Optimal outcomes are achieved when this suite of tools is used in combination; in particular, working across the different types within our tool typology such as regulatory and incentives. Furthermore, some tools like SEA and EIA necessarily involve the use of multiple tools for successful implementation.

¹ 1 The objectives of management of land, water and living resources are a matter of societal choices; 2 Management should be decentralized to the lowest appropriate level; 3 Ecosystem managers should consider the effects (actual or potential) of their activities on adjacent and other ecosystems; 4 There is usually a need to understand and manage the ecosystem in an economic context; 5 Conservation of ecosystem structure and functioning, in order to maintain ecosystem services, should be a priority target of the ecosystem approach; 6 Ecosystem must be managed within the limits of their functioning; 7 The ecosystem approach should be undertaken at the appropriate spatial and temporal scales; 8 Recognizing the varying temporal scales and lag-effects that characterize ecosystem processes, objectives for ecosystem management should be set for the long term; 9 Management must recognize the change is inevitable. 10 The ecosystem approach should seek the appropriate balance between, and integration of, conservation and use of biological diversity; 11 The ecosystem approach should consider all forms of relevant information, including scientific and indigenous and local knowledge, innovations and practices; 12 The ecosystem approach should involve all relevant sectors of society and scientific disciplines.

² *represent tools that also fall into the ecosystem services categories.

- **Different stakeholders have different needs and different understandings of ecosystem science lexicon which necessitates different approaches for engagement.** We found an uncritical use of terms associated with ecosystem science, such as the Ecosystem Approach, Ecosystems Assessment and Ecosystem Services Framework. These terms are alien at worst, and simply confusing at best, to many potential user groups. Engagement needs to be focussed on ways to improve definitional and functional clarity and needs to start in the territory, terms and language that stakeholders commonly experience and use. Our starting point was the familiar policy cycle which we adapted to include IDEAS-SURVEY-ASSESS-PLAN-ACT-EVALUATE stages. In the professional policy and decision-making contexts we reviewed, it was possible to identify both generic and distinctive, user-specific ‘hooks’ to engage those involved in business, community development and in the built and natural environment
- **Generic hooks arise from an increasingly positive focus on nature as producing multiple benefits to society may provide a subtle yet transformative shift from the environment as a constraint to one of opportunity.** There are important regulatory hooks under the EU Directives (e.g. Water Framework, Strategic Environment Assessment; Environmental Impact Assessment, Habitats and Birds) and within national (English) legislation such as the Natural Environment White Paper with its cross-governmental sign-up; the Localism Act 2011; the Public Services (Social Values) Act 2012 and the National Planning Policy Framework. For Scotland the principal hooks are through the Land Use Strategy (2011) and the emerging National Planning Framework 3 (*Ambition Opportunity Place*: Scottish Government, 2013), whilst in Wales the hooks are through their unique statutory duty towards sustainable development and the White Paper consultation ‘*Towards the Sustainable Management of Wales’ Natural Resources*’ as part of the Living Wales Programme (Welsh Government, 2013). Significantly, the use of ecosystem services provides a much more positive framework within which such regulation can be implemented. Incentives can encourage behaviour change responses within these more positive views of the environment as an asset particularly within new market instruments such as payments for ecosystem services and biodiversity offsetting.
- **Specific hooks arise from different sectors in which the Ecosystem Approach and Ecosystem Services Framework ought to matter.** For business interests, the hooks revolve around their pressure to identify risks and to focus on multiple benefits, often set within environmental management systems and corporate social responsibility. For the built environment sector, EU Directives (Impact Assessments and Water Framework) together with the National Planning Policy Framework, provide key starting points. For local authorities, the Duty to Co-operate under the Localism Act 2011 provides a hook for wider engagement in local plan-making where ecosystem services in one administrative area frequently supply consumers, or provide benefits, in another area. For local communities the Localism Act and the Public Services (Social Value) Act 2012 provide important hooks, set within asset transfer, community ownership and management goals. And the wider green agenda points up the need for more equitable and transparent approaches to climate change mitigation and greenspace management. In the natural environment there are the existing statutory hooks such as EU Directives and national legislation; of particular current significance are Biodiversity 2020 and the Natural Environment White Paper.
- **Mainstreaming efforts are considerably enhanced when an Ecosystem Services Framework is used at the outset of policy and decision making processes.** In particular, the IDEAS and SURVEY stages of the policy cycle provide a baseline from which evidence is then assessed and used in subsequent PPPs, allowing different trade-offs to be identified and assessed. For this to be done properly in any PPP, it is important to identify alternative approaches in the IDEAS stage which are then carried through to ASSESSMENT resulting in a preferred

option. Our experience is that this is rarely done except where it is mandatory as for example in Strategic Environmental Assessment processes.

- **Case studies of good practice mainstream the Ecosystem Approach in different ways.** This project recognised four distinctive approaches to the way mainstreaming efforts are being applied in our case study and tool examples: Retrofit, Incremental, Ecosystem Services-led, and Ecosystem Approach-led. These reflect increasing strength of mainstreaming processes but do not carry a value judgement of what is the best approach in any specific circumstance. **Retrofit** enables the Ecosystem Services Framework to be retrospectively applied to existing PPPPs, enabling the concept to be incorporated through a review procedure for instance. The **incremental** approach incorporates such thinking as a pragmatic bolt-on within existing PPPP processes, with often minor but incremental changes occurring over time. The **ecosystem services-led** model embeds ecosystem services science into the IDEAS and SURVEY stages, normally as part of an ecosystem assessment process and ideally goes beyond selective cherry picking of ecosystem services. Finally, the **Ecosystem Approach-led** model embeds all 12 principles into the initial stages of PPPP process but is rarely followed. Natural Resources Wales provides an illuminating case study within the UK context.
- **The added value resulting from applying the Ecosystem Approach, observed in case studies and tool examples, provides important lessons for mainstreaming.**
 - The process of using the Ecosystem Approach has encouraged communities and business providers to begin to realise that, the environment represents an opportunity space for providing multiple benefits supporting growth, development and quality of life.
 - The Ecosystem Approach can provide a clear set of common principles for the sustainable management of land and water, but only if translated and adapted to the setting in which it is located, together with the meaning and value of market and non-market goods for consumers.
 - Many ecosystems services are generated across administrative boundaries, thus consideration of service flows can facilitate genuine landscape-scale approaches. For example, the consideration of benefits and opportunities implicit when applying ecosystem services can help to create better maps of linkages and dependencies (e.g. flood mitigation by investment in upstream land management).
 - Creating markets for undervalued ecosystem services can help to support conservation projects, through strong partnerships based on supplier and vendor relationships within new flows of private investment (e.g. Payments for Ecosystem Services).
 - New partnerships can emerge when the Ecosystem Approach highlights the need for innovation to manage trade-offs (such as between food production through intensive agriculture and water quality/biodiversity).
 - The Ecosystem Approach provides evidence-enhancing communication about the importance of the natural world to sectors, services and functions which are usually not involved (and sometimes not interested) in environmental issues.