



The Ecosystem Approach: Improving Resource Use & Sustaining Ecosystem Services

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ABSTRACT

Natural biological processes help deliver a wide range of ecosystem services. However, key drivers have led to declines in biodiversity and a perceived need to replace natural processes with external inputs and mechanisation. In some cases a cycle of increasing dependency on external inputs due to increasing negative impacts on natural systems has arisen, for example the negative feedback loop between the mechanisation of crop production and biodiversity and ecosystem function in crop systems.

However, increasing resource (i.e. fuel and agrochemical) costs, unintended consequences of short-term technical fixes, and concerns about food security, are driving a re-evaluation of the way in which we manage ecosystem services and the benefits we derive from them. There is growing realisation that reduced external inputs might be achieved through the conservation of biodiversity and greater appreciation of our dependency on natural processes.

Implementation of an ecosystem approach to land use decision making may be one way by which such changes in land management practice could reflect these ideas. An Ecosystem Approach (as defined by the CBD) implies a holistic and participatory approach to understanding systems. Here we outline research currently underway in Scottish ecosystems on the implementation of an ecosystem approach to land use decision making, and its consequences for ecosystem service delivery and long-term environmental sustainability. We discuss this issue by contrasting patterns and processes in upland and lowland environments in Scotland, and identify key research gaps for supporting implementation of an ecosystem approach.