

Science for Environment Policy

Call for integration of ecosystem-based adaptation into policy

A new review of ecosystem-based approaches to climate change adaptation has described the multi-functional benefits of integrating such measures into policy. It concludes that there is good evidence for the effectiveness and cost-efficiency of ecosystem-based adaptation (EbA), and that its adoption by policymakers and stakeholders should be encouraged.

Adaptation is needed to deal with rising sea levels, droughts and floods brought by [climate change](#). However, there have been increasing calls to move away from adaptation measures based on manmade infrastructure, such as sea walls, to approaches that involve more natural solutions.

Preserving ecosystems can help meet adaptation needs, such as disaster risk reduction, food security, sustainable [water](#) management and livelihood diversification. This new analysis highlights examples including healthy mangrove forests and coastal marshes that can reduce the impacts of storm surges, and connecting grasslands and forests that can enable wildlife to move to new habitats under a changing climate. EbA can also generate other benefits, such as carbon sequestration and social benefits, improved access to green spaces or better [air quality](#).

The study also assesses the [economic](#) benefits of EbA. The Economics of Ecosystems and Biodiversity¹ studies indicate that an annual global investment of US\$45 billion (€33.8 billion) into ecosystem protection could deliver an estimated US\$5 trillion (€3.8 trillion) a year in benefits. At a more specific level, it is estimated that a US\$20 billion (€15 billion) investment in reducing deforestation could reduce greenhouse gas emissions by 10% while securing livelihoods and reducing poverty in tropical countries.

In the Maldives, where around 80% of the islands are only 1 metre above sea level, the use of marine protected areas to conserve reefs would help protect against the impact of tropical storms. It is estimated that this would cost US\$34 million (€25.6 million) initially and US\$47 million (€35.3 million) to maintain, but would generate US\$10 billion (€7.5 billion) per year in benefits from protecting the islands and their valuable tourism and fishery industries. This means the benefits outweigh the costs nearly 300 times.

For EbA to be fully effective, it must be integrated into decision-making. The United Nations Environment Programme (UNEP) addresses climate change, among other issues, through its EbA programme, which has three main components. Firstly, it supports countries to assess impact and vulnerability. This involves analysing ecosystem services for adaptation potential and economic value to allow decision-makers to design and implement EbA policies. Secondly, it provides support for implementing EbA through technological development and pilot projects, especially in developing countries.

Lastly, UNEP's programme helps integrate EbA into national adaptation plans that establish organisations to mobilise stakeholders. An example of such an organisation at the national level is the US Task Force for Climate Change Adaptation that supports locally-focused, participatory, ecosystem-based approaches to planning and decision-making.

However, despite the evidence in favour of EbA, and increasing references to it in policy documents, it has not been used to its full potential. The researchers recommend more co-ordinated integration of this powerful approach into policy at local, national and international levels.



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1. See: www.teebweb.org