

PACIFIC ECOSYSTEM-BASED MANAGEMENT (EBM) AND ADAPTATION (EbA)



KEY POINTS

- EBM is an integrated, holistic approach to achieving environmental, social and economic goals combining land use and development planning with environmental protection and production needs.
- EBM takes a whole-of-ecosystem approach, typically covering a “ridge-to-reef” or “whole-of-island”¹ watershed area, including uplands, lowlands, and coast.
- EBM seeks to recognise the range of services provided by ecosystems and avoid environmental degradation, sustainably manage natural resources, and maintain ecosystem services to support sustainable livelihoods.
- EBM can help to support poverty reduction in the capacity-constrained Pacific island context.^{1,2}
- Reported benefits of EBM include increased climate resilience, healthier ecosystems, enhanced resource-management capacity within communities, increased social cohesion, and improved livelihoods.
- Ecosystem-based adaptation (EbA) is a subset of EBM. EbA offers natural solutions to build resilience to [climate change](#) by integrating the use of [biodiversity](#) and ecosystem services into adaptation strategies.³

HOW ISSUE LINKS TO/IMPACTS SDGs BEYOND **SDG14 LIFE BELOW WATER**

- SDG1.5: EBM builds the poor’s resilience to climate change and other shocks
- SDG 2.4: helps ensure sustainable food production and resilient agricultural practices
- SDG 6.5, 6.6: directly contributes to integrated water management and the protection and restoration of water-related ecosystems
- SDG 12.2: contributes to sustainable management and efficient use of natural resources
- SDG 13.1: strengthens resilience and adaptive capacity to climate-related hazards and disasters
- SDG 15: directly contributes to sustainably managing forests, combating desertification, halting and reversing land degradation, and halting biodiversity loss

BACKGROUND

1. **Ecosystems are fundamentally linked across boundaries** by physical, chemical, and biological forces and movements. These links are impossible to ignore on islands, where [land-use impacts](#) on coastal and marine environments, and vice versa, are both fast and highly visible. Ecosystem health and productivity support sustainable development. Integrated management can acknowledge multi-sector use, incorporating economic, social, cultural, and environmental values.
2. **EBM is particularly relevant in a Pacific island context** because such management operates in a participatory fashion, in cooperation with local stakeholders, empowering locals to manage their own resources in ways that are relevant to them; takes a holistic approach, achieving a range of economic, social, and environmental outcomes in a single project; addresses capacity constraints by employing adaptive management techniques and using [scientific knowledge](#) in combination with traditional and local knowledge; and promotes coordination across agencies and between national and local levels.
3. **Strategic environmental assessment (SEA) and environmental impact assessment (EIA) are tools that support EBM.** SEA can be used to evaluate alternative land/ocean uses and to identify sustainable development options for a defined ecosystem area, taking into account the full range of environmental, social and economic considerations. SEA can then inform EIA for individual projects, for example, by pinpointing preferred locations for developments, stipulating desired characteristics of developments, and identifying ecosystem features that need to be protected to support community resilience.

1 In the case of atoll islands



4. **Ecosystem services, often taken for granted, support surrounding life and development possibilities.** For example, steep slopes are stabilised by vegetation, and freshwater discharge percolates through [wetlands](#), which filter sediments out and remediate land-based pollution. These natural buffers stabilise shorelines, provide potable freshwater,⁴ and ensure that lagoons and [reefs](#) are healthy by reducing the impact of nutrients and sediment flows from erosion. As [rainfall is expected to be more intense](#) in the future, these ecosystems are increasingly valuable.
5. **Native ecosystems are key for sustainable management.** Using our slope erosion example, the introduction of [invasive species](#) destabilises forests and makes forests more susceptible to storm damage. Invasive trees are more likely to topple during storms, increasing infrastructure damage and increasing the cost of disaster recovery.⁵ Best-practice EBM is place-specific, relying on native species, habitats, and ecosystems.
6. **There are many different approaches to adaptation.** The most pragmatic and sustainable options are often based on EbA, using the benefits provided by healthy ecosystems to build resilience and reduce the vulnerability of communities over the long term. Incorporating EBM and EbA into disaster risk management and design of disaster responses should lead to more environmentally, socially and economically appropriate portfolios of adaptation options.

- 1 Rossing et al. 2015. Making the economic case for Ecosystem-Based Adaptation. UNDP. 8 p
- 2 United Nations Department of Economic and Social Affairs (UNDESA), Division for Sustainable Development 2014 "Ridge to Reef" SIDS Action Platform, Ref# 2373
- 3 Munroe et al. 2011. Research Highlights: Does EbA Work? A review of the evidence on the effectiveness of ecosystem-based approaches to adaptation. Cambridge Conservation Initiative, University of Cambridge, ELAN, UNEP, WCMC, BirdLife Int, iied. 4 p
- 4 UNEP & SPC 2012. Freshwater under Threat: Pacific Islands. United Nations Environment Programme, Bangkok. 66 p
- 5 SPREP 2016. Battling invasive species in the Pacific: outcomes of the Regional GEF-PAS IAS Project Prevention, control and management of invasive species in the Pacific islands. Secretariat of the Pacific Regional Environment Programme, Apia. 36 p