



## Policy Brief

# Potential for ecosystem-based adaptation in the coastal areas of Indonesia and the Philippines

Tropical coastal areas are highly vulnerable to climate change. Coastal ecosystems can support the adaptation of both human and natural systems but only if they are sustainably managed. The conservation, restoration or sustainable management of ecosystems to provide ecosystem services that help people adapt to climate change is known as 'ecosystem-based adaptation' (EbA).

The coastlines of Indonesia and the Philippines harbour unique biodiversity and are among the largest and most resource-rich in the world. They are also affected by a variety of hazards related to climate change. We assess the potential for implementing EbA in the coastal areas of these two countries through an analysis of existing adaptation and resource management practices and policies, and key informant interviews with decision-makers, practitioners and researchers.

### Adaptation planning

National adaptation planning has taken place in both countries. In the Philippines, a legal framework is in place to mainstream climate resilience into government mandates across sectors (Philippines Climate Change Act), including coastal areas. In Indonesia, legal frameworks governing coastal zones are mostly related to ecosystem management and use; the laws place a particular emphasis on preventing (and punishing) illegal extraction of resources, although enforcement is generally weak. Currently, Indonesia lacks effective incentive systems to reward good ecosystem management.

A number of vulnerability and climate change impact assessments have been conducted in the coastal areas of Indonesia. Assessments and subsequent adaptation planning are mostly based on global climate models. Local or regional observational climate data are used in the few instances where they are available, but without regional or downscaled modelling for elaborating projections.

The poor availability of good-quality and locally relevant climate data seems to be an issue in the Philippines as well. There is some experience with regional climate modelling, and PAGASA (Philippine Atmospheric, Geophysical and Astronomical Services Administration) hosts an extensive set of observational data, but there is little apart from that. In particular, there is a need to make climate information accessible at the local level in a user-friendly manner. This is especially important because adaptation planning responsibilities are being devolved to the local level, and local governments now have a mandate to integrate adaptation and mitigation into their sectoral plans, in addition to developing Local Climate Change Action Plans (LCCAPs). Local governments have expressed a need for more training, capacity-building and resources to be able to complete their tasks.

### Existing ecosystem interventions

Both countries emphasise mangrove restoration and conservation, fisheries management, and the establishment of protected areas. The integrated coastal management (ICM) approach seems to be more prominent in the Philippines. By contrast, in Indonesia, planning and implementation tend to focus more on single-sector and project-based interventions and on regulations, possibly because of institutional complexity, conflicts between jurisdictions, and poor coordination between levels on integrated coastal zone management.

Most interventions are not conceptualised or designed specifically as EbA in either country, although many activities have resulted, or could result, in EbA-related benefits. Policies and national frameworks in the Philippines approach EbA more directly. For example, the Philippines Strategy on Climate Change Adaptation 2010–2022 mandates interventions for reducing vulnerability and disaster risks through ecosystem-based management approaches and appropriate technologies.

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## Mainstreaming and implementing EbA

Although ecosystem management and the impacts of climate change on important resources are the main issues in many of the policies, projects and programmes, EbA implementation is not without challenges. Coordination across levels needs improvement and stakeholders need stronger capacity and participation. Data and knowledge gaps also need to be filled, especially concerning how climate change will affect ecosystems and biodiversity and their ability to provide services.

Stakeholders in Indonesia judge existing efforts, which tend to be localised, isolated and reactive, as inefficient for tackling the many climate challenges and persistent vulnerability in coastal areas. They attribute the degradation of coastal ecosystems in many areas to unsustainable development, gaps in knowledge (e.g., on ecosystem services and their benefits), project activities being either abandoned or replicated in unsuitable areas, and policies being developed and implemented in a non-collaborative, non-integrated manner.

Similar challenges arise with efforts to mainstream EbA. Respondents described difficulties with convincing stakeholders at the local level to undertake EbA as they tend to be accustomed to extractive ecosystem management practices. Furthermore, data on Indonesian coastal areas (e.g., maps) are either unavailable or very scarce, and funding and coordination constraints are significant. Stakeholders at all levels do not have a good understanding of climate change, adaptation and the intangible benefits that ecosystems provide. Stakeholders in the Philippines also noted the presence of gaps in biodiversity data and ecological knowledge.

A comparison of ecosystem-based strategies and infrastructural adaptation measures revealed that stakeholders in both countries associate EbA with lower implementation and maintenance costs, biodiversity benefits, lower risk of maladaptation (e.g., no danger of waves bouncing back), improvements in soil and water quality, habitat provision, carbon sequestration, and livelihood benefits for communities (e.g., silvofishery, harvesting of crustaceans, ecotourism).

However, EbA benefits take longer to manifest and are less straightforward. This is perceived as a disadvantage compared with infrastructure solutions, which have proven effectiveness and function immediately. Furthermore, the implementation of EbA extends beyond the political term

of local government leaders. More often than not, leaders change after each election, which tends to be followed by a shift in priorities.

In contrast to the views of experts interviewed in Indonesia, respondents in the Philippines believe that their country has good frameworks and suitable conditions for the implementation of EbA. For example, integrated coastal zone management, disaster risk reduction and sound environmental management are emphasised. Local networks in marine and coastal protected areas strive to integrate human uses of the ecosystems in sustainable ways so as to avoid excluding people from livelihood opportunities. Coastal strategies are also aligned with local legal, political and institutional requirements. However, respondents mentioned similar challenges to those in Indonesia with regard to awareness about EbA benefits, capacity-building and cooperation across levels, especially between local government units, when managing and monitoring shared ecosystems and protected area networks.

Suggestions for improving policy frameworks and cooperation between institutions include raising awareness at all levels on the multiple benefits of EbA, developing common guidelines for coastal vulnerability assessments and ecosystem management under climate change, and fostering cross-sectoral cooperation between government agencies, starting at the national level. Other steps for fostering wider future implementation of EbA include setting up effective monitoring and evaluation networks and communicating results to all stakeholders. Continuing with impact and vulnerability assessments in coastal areas and building ecosystem and resource inventories will help address the data and information gaps.

Download the full study report "[Climate Change Impact Chains in Coastal Areas \(ICCA\)](#)" and the [Annex](#).

For more information please contact us.



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