



# Ecosystem-based Approaches to Adaptation

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## **The value of biodiversity in ameliorating the negative impacts of some extreme events has been demonstrated.**

- ▶ The value of mangroves for coastal protection has been estimated in some areas to be as much as US\$ 300,000 per km of coast based on the cost of installing artificial coastal protection.
- ▶ A study of the overall value of wetlands for flood protection provided an estimated benefit of \$464 per hectare.

# Describing EBA

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- ▶ **Ecosystem-based adaptation (EBA) is the use of ecosystem management activities to support societal adaptation.**
- ▶ Identifies and implements a range of strategies for the management, conservation, and restoration of ecosystems to provide services that enable people to adapt to the impacts of climate change
- ▶ Increase the resilience and reduce the vulnerability of ecosystems and people in the face of climate change



# Rationale for EBA

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- ▶ EBA can, when integrated into an overall adaptation strategy, deliver a cost effective contribution to climate change adaptation and generate societal benefits
  - ▶ EBA options are often more accessible to the rural poor than actions based on infrastructure and engineering
  - ▶ EBA can contribute to climate change mitigation, by conserving carbon stocks, reducing emissions from ecosystem degradation and loss, and enhancing carbon sequestration
  - ▶ EBA, if designed and implemented appropriately, can also contribute to biodiversity conservation
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# Examples of EBA

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- ▶ sustainable water management where river basins, aquifers, coasts and their associated vegetation provide water storage, flood regulation and coastal defences
- ▶ sustainable agriculture where using indigenous knowledge of specific crop and livestock varieties, and conserving mosaic agricultural landscapes secures food provision in changing local climatic conditions
- ▶ the establishment and effective management of protected area systems that ensure both the representation and persistence of biodiversity to increasing resilience to climate change, and ensuring the continued delivery of ecosystem services



# Steps in EBA

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- ▶ Establish objectives and define expected outcomes for adaptation activities
- ▶ Monitor, measure and evaluate the effectiveness of adaptation activities
- ▶ Inform decision making by integrating traditional knowledge, scientific information and evidence about climate change impacts and the effectiveness of adaptation activities
- ▶ Build and strengthen management and technical capacity for biodiversity protection and sustainable use of natural resource by involving local and indigenous communities



# Key considerations

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- ▶ Like all adaptation activities EBA is not without complexity, uncertainty, and risk
- ▶ EBA may require giving priority to particular ecosystem services at the expense of other services
- ▶ In order to ensure EBA measures deliver significant additional benefits, it is important that these co-benefits be specifically considered in the planning, design, implementation, monitoring and evaluation of these measures
- ▶ Systems to monitor and evaluate co-benefits from EBA measures should be established to ensure the equitable distribution of benefits among stakeholders

