

Ecosystem-based Adaptation: What it Is and Where We Stand

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Ecosystem-based Approach to Adaptation and
Accessing Adaptation Finance

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Ecosystem-based Adaptation (EBA): “the use of biodiversity and ecosystem services as part of an overall adaptation strategy to help people adapt to the adverse effects of climate change¹”

- **the use of biodiversity and ecosystem services**
- **part of an overall adaptation strategy**
- **help people adapt to the adverse effects of climate change**



EBA and the UNFCCC²:

The UNFCCC has articulated a set of principles underlying ecosystem-based approaches for adaptation:

- Maintenance of ecosystem services can be achieved by conserving ecosystem structure and function;**
- Ecosystems are complex, have limits and are interconnected;**
- Ecosystems evolve and change over time and as a result are naturally resilient and adaptable to some rates of change;**
- Ensure participatory decision-making that is decentralized to the lowest accountable level, and is flexible and adaptive;**
- Manage ecosystems at the appropriate spatial and temporal scales;**
- Use information and knowledge from all sources (traditional, local and contemporary scientific sources) and recognize that such information needs to be gathered and validated.**

EBA: What Is and Isn't

The CBD (2009) has been interpreted to provide a set of criteria to identify, select and prioritize EBA activities:

Does the measure:

- Increase the resilience of ecosystems and promote biodiversity?
- Utilize biodiversity and ecosystems services in a sustainable manner?
- Reduce the vulnerability of people, communities and/or physical infrastructure to climate change?



Mangrove Conservation

Adaptation function:

Protection against storm surges, coastal erosion associated with sea-level rise and related risks

Co-benefits:

Social, cultural: Fisheries and prawn cultivation – local employment and food security

Economic: Income generated through mangrove products

Biodiversity: Conservation of Mangrove-dependent species

Mitigation: Conservation of carbon stocks (above and below ground)



Forest Conservation, Sustainable Forest Management

Adaptation function:

Maintenance of nutrient and water flow, prevention of landslides, regulation of floods

Co-benefits:

Social, cultural: Recreation, culture, shelter

Economic: Ecotourism, recreation, sustainable logging

Biodiversity: Conservation of habitat for forest-dependent species

Mitigation: Carbon storage



Restoration of Degraded Wetlands

Adaptation function:

Maintenance of nutrient and water flow, quality, storage and capacity; Protection from flood or storm inundation

Co-benefits:

Social, cultural: Sustained provision of livelihood, recreation, employment opportunities

Economic: Increased livelihood generation, revenue from recreational activities, sustainable use, sustainable logging

Biodiversity: Conservation of wetland flora, fauna breeding and feeding habitat, including stopover sites for migratory species

Mitigation: Reduced emissions from carbon mineralisation



Diverse Agroforestry on Agricultural Land

Adaptation function:

Diversification of agricultural production to cope with changed climate

Co-benefits:

Social, cultural: Contribution to food and fuel wood security

Economic: Generation of income from sale of timber, firewood, etc.

Biodiversity: Conservation of biodiversity in Agricultural landscape

Mitigation: Carbon storage (above and below ground biomass)



Conservation of Agro-Biodiversity

Adaptation function:

Provision of specific gene pools for crops and livestock adaptation to climate variability

Co-benefits:

Social, cultural: Enhance food security, diversification of food products, conservation of local, traditional knowledge and practices

Economic: Income generation in difficult environments;

Pollination of cultivated crops by bees

Biodiversity: Conservation of genetic diversity of crops and livestock



Conservation of Medicinal Plants

Adaptation function:

Availability of local medicines to deal with health problems resulting from climate change or habitat degradation



Co-benefits:

Social, cultural: Reliable local supply of medicines, conservation of local, traditional knowledge

Economic: Source of income for local people

Biodiversity: Enhanced medicinal plant conservation (genetic diversity)

Mitigation: Bee and insect pollination for cultivated crops

Sustainable Management of Grasslands

Adaptation function:

Protection against flood,
storage of nutrients,
maintains soil structure

Co-benefits:

Social, cultural: Recreation and tourism

Economic: Income for local communities, e.g., grass products

Biodiversity: Forage for grazing animals, diverse habitat for animals

Mitigation: Carbon storage



Where We Stand with EBA (1):

As a consequence of a growing number of local, national and international initiatives (e.g., UNEP EBA Flagship Program) we now have a growing list of well-documented EBA projects in implementation:

- UNFCCC/Nairobi Work Programme database of 45 EBA projects**
- CBD database with 54 case studies (many EBD)**
- Adaptation Learning Mechanism (many EBA)**
- Naumann et al. with 154 projects in EU, UK**
- Others**

What is now required is a synthesis of what has been learned through these projects; regarding both physical and economic performance of EBA

Where We Stand with EBA (2):

The themes and objectives of this workshop identify two of the primary challenges involved in expanding the practices of EBA as adaptation and sustainable livelihood strategies:

- **Constraints to securing adequate financial resources to design and implement EBA initiatives**
- **Lack of integration of EBA into national and sectoral adaptation and natural resources management policies, strategies and plans;**

A third challenge, which underlies the other two, is the current lack of the robust evidence base needed to build the case for EBA as sound adaptation strategy

Barriers to EBA Implementation at Project Level³

- Lack of financial sufficiency and predictability
- Lack of quantitative data on benefits
- Limits to technical expertise
- Organizational and institutional complexity arising out of the number and diversity of partners that must be engaged in projects
- Antecedent regulatory or legislative decisions that inhibit landscape-scale decision-making and the creative provision of funds, material and expertise
- Limited public awareness about the multiple benefits associated with ecosystem-based approaches



Barriers to EBA Integration into Policies and Strategies³



- **General lack of awareness of EBA/EBM**
- **Lack of understanding about multiple functions and services of ecosystems**
- **Lack of human capacity to pursue ecosystem-based approaches (and to manage involvement of all relevant stakeholders in planning)**
- **Lack of knowledge and information on costs and benefits**
- **Political and institutional problems**
- **Lack of knowledge on funding opportunities**
- **Lack of strong policy drivers behind EBA/EBM at national and regional scale results in low incentives to implement**

An Agenda for Promoting and Mainstreaming Ecosystem-based Adaptation

- **Build a robust scientific evidence base for EBA targeting priority ecosystems**
- **Build a robust economic evidence base for EBA as applied in a wide range of settings, both in stand-alone interventions and as complements to other adaptation pathways**
- **Explore new financing alternatives, particularly those involving local and municipal governments and the private sector (build the business case for EBA)**
- **Keep engaging policy-makers, presenting new evidence**
- **Promote regional, international collaboration**



Thanks for your attention, and questions welcome!
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