

Biodiversity and ecosystem services: providing solutions for climate change adaptation and disaster risk reduction

Key messages from the technical workshop on ecosystem-based approaches to climate change adaptation and disaster risk reduction, held in Johannesburg, South Africa, from 28 September to 2 October 2015, and supported by the Governments of Sweden, Germany and South Africa, and the European Commission.

Ecosystem-based adaptation is the use of biodiversity and ecosystem services as part of an overall adaptation strategy to help people adapt to the adverse effects of climate change.

The ecosystem-based approach has been recognized as an important strategy for disaster-risk reduction and is defined as 'sustainable management, conservation and restoration of ecosystems to reduce disaster risk, with the aim to achieve sustainable and resilient development'.



Adam Cohn

Biodiversity and the ecosystem functions and services it underpins can increase people's resilience to climate change by providing safety nets in times of climate shocks and diversifying incomes and generating employment.

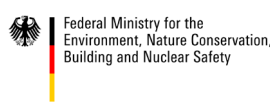
Ecosystem-based approaches to adaptation (EbA) and ecosystem-based approaches to disaster risk reduction (Eco-DRR) enable people to adapt to the impacts of climate change by using opportunities created by sustainably managing, conserving and restoring ecosystems to provide ecosystem goods and services. It aims to maintain and increase resilience and reduce the vulnerability of ecosystems and people to the adverse effects of climate change. EbA and Eco-DRR should be integrated into broader adaptation and development strategies.

Climate change is increasing the frequency

and intensity of extreme weather and climate events. Ecosystems can provide protection from these extremes by stabilizing the movement of water, earth, rocks and snow; serving as a buffer from climate impacts and hazards.

- Wetlands and floodplains buffer flashfloods
- Mangroves and coral reefs buffer tidal and storm surges
- Forest and other vegetation buffer landslides
- In cities, green spaces, walls and roofs buffer heat waves.

Healthy ecosystems can also reduce socio-economic vulnerability by providing essential goods and services to people, such as supporting income generation and protecting human health.



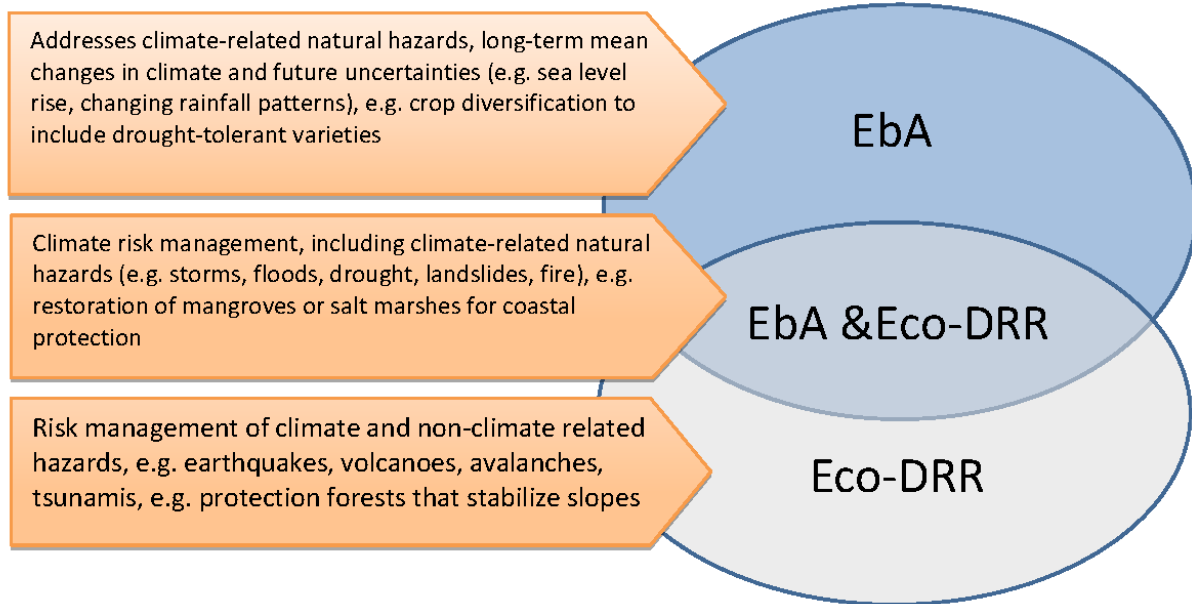


Figure 1: Linkages between ecosystem-based adaptation (EbA) and ecosystem-based disaster risk reduction (Eco-DRR) (adapted from a figure depicting climate change adaptation and disaster risk reduction overlaps in Mitchell and Van Aalst 2008).

Experts attending the technical workshop on EbA and Eco-DRR highlighted the following points:

Making the case for EbA and Eco-DRR

• EbA and Eco-DRR can provide a multitude of benefits such as:

- contribute to both climate change adaptation and mitigation.

- increase resilience and decrease vulnerability of both people and ecosystems.

- empower people and provide jobs and business opportunities.

- make economic sense, are ready for use and easily accessible, including for the rural and urban poor.

• Combining EbA and Eco-DRR with grey

The workshop was organized in response to decision XII/20 of the Conference of the Parties to the Convention on Biological Diversity, which requested the Executive Secretary to compile experiences with EbA and Eco-DRR.





engineered approaches can be effective in adaptation.

- Implementing EbA and Eco-DRR contribute to achieving the objectives of several multi-lateral environmental agreements.
- The protection and restoration of resilient ecosystems are among the most cost-effective means of limiting the scale and negative consequences of climate change for biodiversity, people and their livelihoods.
- Ecosystem-based approaches such as EbA and Eco-DRR address the crucial links between climate change, biodiversity and sustainable land management and, by preserving and restoring ecosystem functioning, enabling society to better mitigate and adapt to climate change.

Lessons learned, best practices, opportunities and challenges

- Social and ecological systems are fundamentally connected. We now need unifying frameworks and concepts that use systems thinking to reflect this interconnectedness.

- Vulnerability assessments of ecosystem services are an important element for us to comprehensively understand the impacts of climate change and the potential options for ecosystem-based adaptation actions.
- Scenario planning helps informed decision making.
- Concerned local communities, practitioners and researchers should be involved to make sure the best knowledge is used.
- Ground assessment and monitoring are necessary.
- Co-management, collaboration and flexibility are needed to build ownership and trust.
- Livelihood issues need to be embedded in any actions to achieve sustainability of the measure.
- Eco-DRR needs to be integrated into disaster rehabilitation plans from the beginning.
- Inter-sectoral co-ordination and adoption of an inter-sectoral landscape approach are essential to sustainable rehabilitation results.



SCBD/Lisa Janiszewski

Policy issues

- One of the benefits of cooperation between the communities of practitioners of ecosystems/ biodiversity, adaptation and disaster reduction is a greater ability to design interventions that deliver multiple dividends.
- Designing interventions for multiple benefits can either be supported or inhibited by the policy environment. It is important to create space and incentives for collaboration and dialogue about trade-offs. Political commitment to integrated approaches needs to be established. Roles and responsibilities of various institutions must be clarified. Financial support for integrated action should be encouraged through looking at the policies of donor partners.
- Addressing the effects of climate change via adaptation and disaster risk reduction measures and implementing mitigation measures is central to ensuring continued ecosystem functioning, human health and socio-economic security. Ecosystem-based approaches have emerged as a key instrument to confront these concerns across all sectors of society, offering multiple benefits in a potentially cost-effective manner.

- Traditional knowledge is an important part of ecosystem approaches and can complement science and bridge knowledge gaps.
- Gender mainstreaming should be a significant aspect of adaptation and disaster risk reduction planning and implementation process to ensure success and sustainability of policies, programmes and projects.
- It is important to consider potential trade-offs and thresholds/limitations of EbA and Eco-DRR, throughout the planning, implementation, monitoring and evaluation stages for EbA and Eco-DRR activities.

Related approaches

There are several other approaches which share the same rationale as EbA and Eco-DDR – working with nature for people - and which are used by different sectors. Those include: protected area management, community-based adaptation, sustainable forest/land/water management, integrated coastal zone management, green/ecological/natural infrastructure, nature-based solutions, agroforestry, working and building with nature.



more information:

www.cbd.int/climate
secretariat@cbd.int