



## POLICY BRIEF

# Exploring the potential of ecosystem-based approaches – Ecosystem-based Adaptation and Ecosystem-based Disaster Risk Reduction

Tânia Salvaterra<sup>a</sup>, Karin Allenbach<sup>b</sup>, Peter Hobson<sup>c</sup>, Pierre L. Ibisch<sup>d</sup>, Horst Korn<sup>e</sup>, Jaroslav Mysiak<sup>f</sup>, Fabrice Renaud<sup>g</sup>, Mário Pulquério<sup>a</sup>

<sup>a</sup> University of Lisbon; <sup>b</sup> University of Geneva, <sup>c</sup> Writtle College; <sup>d</sup> Centre for Econs and Ecosystem Management, Eberswalde University for Sustainable Development; <sup>e</sup> German Federal Agency for Nature Conservation; <sup>f</sup> Centro Euro-Mediterraneo sui Cambiamenti Climatici; <sup>g</sup> United Nations University Institute for Environment and Human Security

## Introduction

Climate Change Adaptation (CCA) and Disaster Risk Reduction (DRR) share similar goals but originate from different conceptual frameworks. They differ in other ways, namely, in the terminology used, tools and methods, and the audience targeted to carry out the planning and implementation of practices. In its current form, the independent development and activities of CCA and DRR appear to ignore the complementary strategies of both communities, which may lead to sub-optimal responses to climate hazards<sup>1</sup>. There is an urgent need to integrate the activities of both practices under a unifying concept and set of “principles-to-practice” strategies. The use of ecosystem-based approaches<sup>2</sup> in dealing with the complex problems of climate change offers opportunities for developing novel strategies to adapt to rapid change and to reduce risk (Figure 1). In the ‘everyday’ world of dealing with crises and unexpected risks, it is almost impossible to predict and plan for cause-effect events. In most cases, conventional and linear science-based models of practice are replaced by more pragmatic approaches. From this practical perspective, and considering climate hazards, the divisions between Ecosystem-based Adaptation (EbA)<sup>3</sup> and Ecosystem-based DRR (Eco-DRR)<sup>4</sup> can be counterproductive. As, per definition, both approaches fully embrace the sustainable ecosystem management approach, it would make common sense to dissolve the divisions between them.

This policy brief is directed towards a broad range of stakeholders, including research funders and managers, policy makers, researchers, local authorities, and environmental and conservation agencies. It highlights the complex nature of environmental challenges and provides recommendations for the integration of ecosystem-based approaches within CCA and DRR science, policy and practice. This brief is based on the presentations and discussions held during a session organized in the context of the PLACARD project during the 4th Adaptation Futures Conference in Rotterdam (10-13 May, 2016).

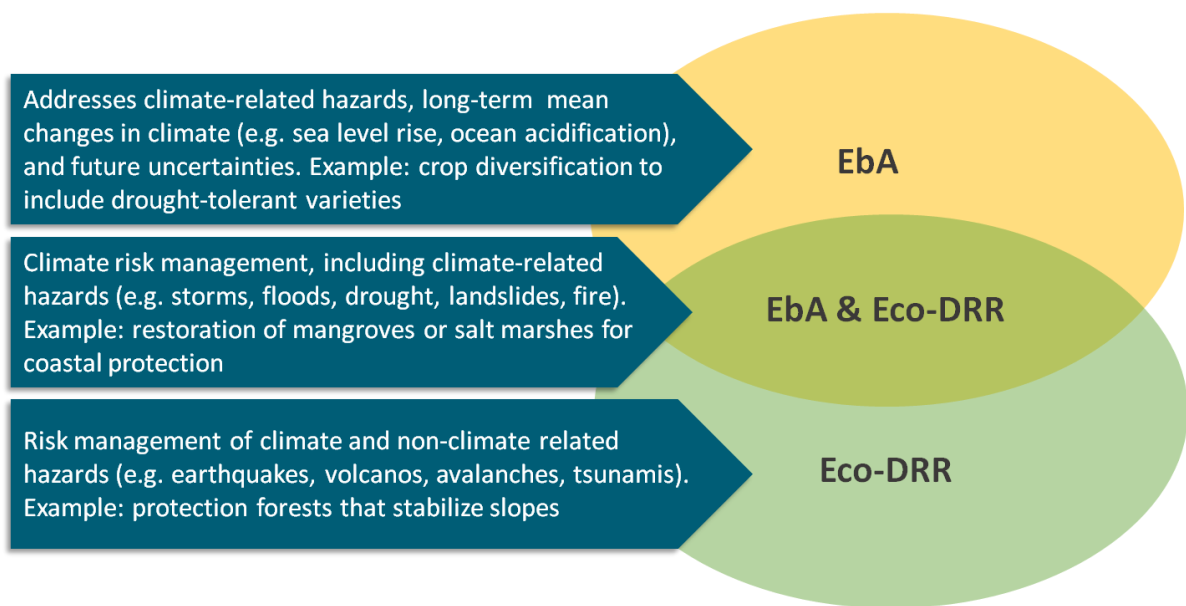


Figure 1. Linkages between EbA and Eco-DRR (Doswald & Estrella, 2015<sup>5</sup>; CBD, 2016<sup>6</sup>)

<sup>1</sup> *Climate hazards*: Potentially damaging physical manifestations of climatic variability or change, such as droughts floods, storms, or episodes of heavy rainfall (Brooks, 2003)

<sup>2</sup> *Ecosystem-based approaches*: Strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way (CBD, 2000)

<sup>3</sup> *Ecosystem-based adaptation (EbA)*: Use of biodiversity and ecosystem services in an overall adaptation strategy. It includes the sustainable management, conservation and restoration of ecosystems to provide services that help people adapt to the adverse effects of climate change (CBD, 2009)

<sup>4</sup> *Ecosystem-based disaster risk reduction (Eco-DRR)*: Sustainable management, conservation and restoration of ecosystems to reduce disaster risk, with the aim to achieve sustainable and resilient development (Estrella & Saalismaa, 2013)

<sup>5</sup> Doswald, N. & Estrella, M. (2015) Promoting Ecosystems for Disaster Risk Reduction and Climate Change Adaptation: opportunities for integration. Discussion paper, UNEP, Geneva. Available from [http://www.unep.org/disastersandconflicts/portals/155/publications/EcoDRR\\_Discussion\\_paper\\_web.pdf](http://www.unep.org/disastersandconflicts/portals/155/publications/EcoDRR_Discussion_paper_web.pdf) (accessed August 2016)

<sup>6</sup> CBD (2016) Synthesis report on experiences with ecosystem-based approaches to climate change adaptation and disaster risk reduction. Report UNEP/CBD/SBSTTA/20/INF/2 prepared for the SBSTTA twentieth meeting 25-30 April 2016, Montreal, Canada. Available from <https://www.cbd.int/doc/meetings/sbstta/sbstta-20/information/sbstta-20-inf-02-en.pdf> (accessed August 2016)

## Acknowledged gaps of ecosystem-based approaches

- ❖ Ecosystem-based approaches provide great co-benefits and represent a no-regret option. This needs to be demonstrated more explicitly to decision makers, stakeholders and the public in order to obtain wider acceptance of the approaches.
- ❖ Knowledge and data on ecosystem-based approaches are available, but there is a deficit in translating scientific expertise into practice.
- ❖ There is a need for more systematic learning, generated and processed in the course of adaptive management; namely on the expected impacts and effectiveness of ecosystem-based approaches. This can help determine whether the benefits of EbA/ Eco-DRR can be long lasting and keep up with changing socio-ecological landscapes, and help give validity and reliability to their implementation.
- ❖ Integration between CCA and DRR needs to be accelerated. CCA/DRR policies are often already in place (e.g. National Adaptation Plans; National Disaster Risk Management Plans), but integration between both policies and its implementation on the ground is not always enforced.
- ❖ Ecosystems take time to regenerate and the socio-economic landscapes are constantly changing. Political agreement and long-term support, as well as long-term monitoring and funding are needed to implement and sustain ecosystem-based approaches.
- ❖ People are part of ecosystems. Healthy ecosystems not only contribute to human wellbeing but also provide better community resilience to hazards and more adaptation ability to climate change. Ecosystem-based solutions have to be rooted in local action; local perceptions and knowledge are of crucial importance in every stage of the process.

## Recommendations for closing the gaps

**Making the case for ecosystem-based approaches.** Science may demonstrate the benefits of adopting a more pluralistic, interdisciplinary approach to tackling climate change and climate hazards by using ecosystem-based principles and practices; and can make a strong case for prioritizing them over or combining them with grey solutions.

**Using pluralistic knowledge to support decision making.** Knowledge from all available sources, especially local knowledge, should be used and fully integrated into vulnerability assessments and strategy formulation. New mechanisms of science-policy interfaces are also needed in order to remove the divide between science, policy formulation and actions.

**An opportunity for accelerating implementation.** The use of ecosystem-based approaches makes a strong case for the integration of DRR and CCA goals. Clearly integrating ecosystem-based approaches into development and land-use planning can provide an opportunity for quicker implementation on the ground.

**Investing in legacies.** Political decision-makers often work at short time-scales. Ecosystem-based approaches allow for investing in legacies and working closely with nature, by responding adaptively to immediate changes, and sustaining the system in the long term by building buffer, capacity and resilience.

**Working across sectors and institutions.** Ecosystem-based approaches can be mainstreamed and effectively applied by working across sectors (e.g. public, private and local community actors) and institutions (e.g. water, disaster management, climate change, land-use, urban planning authorities).

**Overcoming challenges associated to collaboration between multiple agencies and stakeholders.** Countries often already have processes in place (e.g. community-based actions designed to empower the local communities), but these need to be effectively informed and supported.

**Long term financial support.** Funding is often attributed to a certain agency to carry out a specific project and cross-sector funding is often difficult to obtain. Incentives such as microfinance can help support the long term sustainable management of ecosystem-based projects.

**Long term monitoring.** Adaptive governance of ecosystem-based approaches can support the long-term monitoring needed to permanently improve the design and governance of ecosystem-based approaches. Monitoring guidelines can help provide evidence-based results from different initiatives.

**Ecosystem-based approaches must be community-based.** Local communities must be empowered to share their knowledge into decision-making. As various communities can be part of the same landscape, the larger spatial dimensions need to also be considered to avoid unintended consequences that benefit one community but compromise the other.

**Citation:** Salvaterra, T., Allenbach, K., Hobson, P., Ibisch, P. L., Korn, H., Mysiak, J., Renaud, F., Pulquério, M. (2016) Exploring the potential of ecosystem-based approaches – Ecosystem-based Adaptation and Ecosystem-based Disaster Risk Reduction. Policy brief with proceedings from a PLACARD session convened as part of the 4<sup>th</sup> Adaptation Futures Conference, 10-13 May, Rotterdam, The Netherlands.

For further information, please contact Mário Pulquério: [mjpulquerio@fc.ul.pt](mailto:mjpulquerio@fc.ul.pt)

