

EbA Info Brief Series #2

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Strengthening Biodiversity to Enhance Ecosystem-based Adaptation

UPSCALING ECOSYSTEM-BASED ADAPTATION (EbA) TO CLIMATE CHANGE IN THE RAINFED REGIONS OF MAHARASHTRA, INDIA

Biodiversity—the diversity of life on Earth—is essential for sustainable development and human well-being. Photo credit: WOTR

Biodiversity conservation is crucial for ecosystem-based adaptation

The uniqueness and variety of living organisms and their interaction with non-living entities is at the heart of the functioning of ecosystems and the services they provide such as regulating water, soil health and provisioning food. Biodiversity rich ecosystems play a key role in reducing the impacts of climate change. For example, farmers who grow diverse crops aligned with the ecosystem, may be better equipped to deal with climatic shocks such as droughts, storms, and floods.

In this way, biodiversity is intrinsically linked with Ecosystem-based Adaptation (EbA): a human-centred and nature-based approach to help people adapt to climate change while preserving the natural resource base. Biodiversity conservation must therefore occupy a central place in EbA to build resilient ecosystems which follow the laws of nature and foster human well-being.

Challenges and gaps in biodiversity management in the rainfed regions of Maharashtra

Health of the ecosystems and biodiversity face various threats which have consequences on ecosystem services, some of these are:

- Rising sea levels, melting glaciers, rising temperatures and other extreme events like droughts and floods are consequences of climate change and already impact biodiversity across the globe. Moreover, human interventions in the landscape such as the conversion of forest into agricultural land threaten the survival of many animal and plant species. This dual threat erodes the ecological resilience of ecosystems.
- Globally, the extinction rate of species is up to 10,000 times higher than the natural and historical rate¹. By the time you have read this brief two more species may have become extinct.
- The situation in Maharashtra is similar. Between 2012 and 2016, nearly 20% of forests have been lost owing to encroachments for agriculture

and reallocation of land to other developmental activities.

- Striking a balance between income from agriculture and biodiversity conservation is a challenge. Newer, high-yielding crops with the associated increase in chemical inputs are preferred over indigenous, eco-friendly crop varieties. These changes cause soil degradation and a loss of pollinators which further erode biodiversity and ecosystem health.

What is Ecosystem based Adaptation (EbA)

The United Nations Convention on Biological Diversity (CBD) defines EbA as “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” (CBD, 2009).

- Biodiversity is often compromised when development programmes miss to adopt an ecosystem perspective. For example, local fish species are lost when they cannot breed upstream due to the construction of check dams and minor dams. This not only harms the ecosystem, but also reduces the income of fishing communities and impairs their nutritional well-being. Engaging with local communities on small modifications such as the construction of 'fish ladders' can address water storage and also protect their food security and the ecosystem.

Opportunities for biodiversity management in scaling EbA

Biodiversity conservation will play a key role in scaling EbA in Maharashtra given the interlinkages of the two. Some important proposals for advancing protection of biodiversity through diverse policies and programmes are:

- The Maharashtra State Biodiversity Strategy and Action Plan (MSBSAP) has advocated sectoral interventions which address several biodiversity concerns in the village development schemes. Similarly, The National Mission on Biodiversity and Human Well-Being promotes a greener, healthier and more sustainable way of life and has set up a collaborative to promote and highlight the importance of biodiversity and healthy ecosystems. These opportunities, both at the state and national level, provide clear entry points for mainstreaming biodiversity and EbA interventions.
- The 2002 Biological Diversity Act provides a mandate for the establishment of People's Biodiversity Registers and the formation of Biodiversity Management Committees in villages. This provides an entry point for introducing an EbA approach at the village level. Empowering and strengthening these institutions would help in building grassroot level support for biodiversity conservation.
- Given the importance of biodiversity and ecosystem services, it is imperative to integrate biodiversity into watershed development, agriculture, livestock and most importantly support biodiversity-based livelihood initiatives. This will not only highlight biodiversity as a source of livelihood, but also emphasise its conservation and sustainable use. Mainstreaming of biodiversity as a fundamental unit of development should be a strong component of policy advocacy.



Women selling local produce as part of the Biodiversity Festival in Shiswad, Akole which aims to promote local biodiversity and ecotourism. Photo credit: Watershed Organisation Trust (WOTR)

ABOUT THE PROJECT

As part of the [International Climate Initiative](#) by the German Federal Ministry for the Environment, Nature Conservation, and Nuclear Safety (BMU), the [Watershed Organisation Trust](#) (WOTR), based in Pune, India, and Berlin-based [Think Tank TMG Research](#), aim to develop a roadmap for upscaling of EbA in Maharashtra. This project entails a series of participatory multi-stakeholder dialogues at both the local and state levels, with the intention of identifying promising [EbA initiatives](#). An important aspect of these processes is to identify the enabling environment for EbA to be implemented and sustained at a broader scale. These stakeholder dialogues are expected to contribute to building the required political and societal support for EbA at the country level.

For more information about our project, visit our websites: www.wotr.org and www.tmg-thinktank.com/iki

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¹ The World Counts website, accessed on 13 January, 2021.