



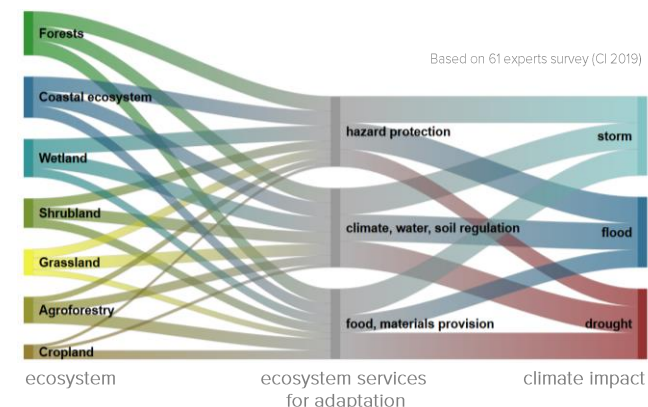
Ecosystem-based Adaptation  
[www.conservation.org/EbA](http://www.conservation.org/EbA)

# ECOSYSTEM-BASED ADAPTATION

**Ecosystem-based adaptation (EbA) or nature-based solutions for adaptation** are the use of ecosystem services and biodiversity as part of an overall strategy to help people adapt to the adverse effects of climate change.

Sustainably managing, conserving or restoring natural and semi-natural ecosystems enhance the delivery of ecosystem services that contribute to people's adaptation. For example, **forests** deliver multiple ecosystem services, such as hazard protection, water regulation and wild food provision that can reduce people's vulnerability to **storms, floods or droughts**. Similarly, **agroforestry** systems (i.e. the use of trees in farmlands) help buffer heavy rains and high temperatures and regulate micro-climate and soil fertility.

Several ecosystems provide a variety of benefits that can contribute to people's adaptation in different extents (see chart below and flows sizes). By building on these benefits and ensuring access rights, sustainable practices and equitable benefits sharing, EbA can help minimize climate change vulnerability.



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# MULTIPLE ECOSYSTEMS

We have been gathering evidence on the benefits provided by a variety of ecosystems to help people adapt.

We expanded EbA demonstration from mangroves to other ecosystems, such as grasslands, forests and agricultural land.

# INNOVATIVE EbA ACTIONS

We have been combining traditional EbA approaches of nature protection, management and restoration with innovative and transformative approaches to strengthen effectiveness and impact.

We implemented EbA actions that engage the private sector, strengthen governance and policies, involve indigenous and local communities and use technological solutions.

# ADAPTATION BENEFITS

We have been using rigorous scientific approaches to develop methodologies for the impact evaluation of EbA actions in providing adaptation benefits.

We designed and conducted household surveys, remote sensing analysis, economic valuations and ecological assessments.



Based on CI EbA portfolio (see more details in [Fedele et al. 2019](#))

## Adaptation benefits of EbA:

with possible indicators for monitoring & evaluation



### FOOD SECURITY

Prevalence of food insecure households (% HH, kcal intake/HH, food security index)



### ASSETS PROTECTION

Percentage of assets damaged or protected (% infrastructure, \$ value, ha of land)



### LIVELIHOOD MAINTENANCE

Average income from sustainable production (\$ gain, kg/ha yields, # jobs)



### HUMAN SAFETY & RESOURCE SECURITY

Percent of people with access to enough clean water (%  $m^3/s$ ), people injured due to extreme weather events (#, %), reduced conflicts (%)



### HEALTH PROVISION

Number of years lost or deaths from vector-borne diseases, heat strokes, respiratory distress (% affected, # year)

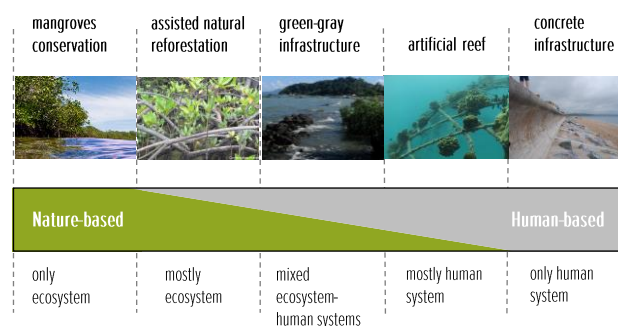
Based on a CI study (Donatti et al. 2020)

## What benefits can EbA provide?

- **Adaptation benefits** (see on the left):  
food security, assets protection, livelihood maintenance, human safety & resource security and health provision.
- **Environmental benefits:**  
increased species diversity, habitat preservation, carbon sequestration, and reduction of invasive species.
- **Economic benefits:**  
increased productivity, livelihoods diversification, improved natural capital, income from payments for ecosystem services and eco-tourism.
- **Socio-cultural benefits:**  
increased social cohesion, strengthened governance and institutions, and preserved scenic beauty and traditions.

## How can EbA be implemented?

EbA measures can be implemented using nature only (e.g. mangrove conservation) or in combination with technical solutions (e.g. green-gray infrastructure). EbA can also be implemented in combination with human-based solutions (e.g. early warning systems, land use plans, market access, climate change awareness).



for more information:  
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