

What is ecosystem based adaptation (EbA)?

Integrating the use of biodiversity and ecosystem services to help people adapt to the adverse impacts of climate change.

What are the benefits?

Having a healthy environment around us also secures our supply of freshwater, food and other natural resources. These are called 'ecosystem services' and are the added benefits that do not come when 'hard' engineered adaptation solutions, such as seawalls, are built.



In the Pacific, how can EbA help us adapt?

By protecting intact ecosystems, managing natural resources and restoring degraded ecosystems.

For example, steep slopes in our region are often stabilised by deep rooted vegetation. As rainfall is expected to be more intense in the future, this natural buffer protects communities from flooding and landslides and also ensures that reefs are healthy by reducing the impact of sediment flows from erosion.

Keeping forests intact, or replanting them, also provides a source of building materials, crops & firewood. Water catchments are also protected and in the sea, healthy reefs can then support greater fish populations.

Where can I get more information?

News about EbA projects and a range of publications are available at: www.sprep.org



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Our Vision: The Pacific environment, sustaining our livelihoods and natural heritage in harmony with our cultures

Ecosystem-based adaptation

Natural solutions for resilience to climate change



Photo: SPREP staff and community members assess the potential to replant mangroves in Vanuatu

But what is adaptation?

Adaptation is making changes in order to reduce the vulnerability of a community, society or system to the negative effects of climate change.

When is EbA the best adaptation option?

There are many different approaches to adaptation. The best option will reduce the vulnerability of a group of people in the most cost effective way over the long term. This could be through conventional adaptation, EbA or a combination of both.

The ability to compare EbA with conventional solutions will need to be built through effective monitoring and evaluation of current EbA projects and by building the capacity of local decision-makers to select the best adaptation options available.



Village without adaptation

- ✗ Most vulnerable to climate change impacts
- ✗ No management of ecosystem services

Village with hard engineering adaptation options

- ✓ Can reduce potential damage
- ✗ No management of ecosystem services

Village with ecosystem based adaptation (EbA)

- ✓ Natural buffers reduce climate change impacts
- ✓ With secondary benefits from ecosystem services



UPSLOPE **Deforestation:**
 - causes greater landslide risk & higher flood levels
 - results in biodiversity loss

RIVERSIDE **Removal of riverside vegetation:**
 - causes reduced freshwater quality
 - increases flooding risk

COASTAL **Removal of coastal vegetation & mangroves:**
 - causes erosion & coastal flooding
 - degrades fish & crustacean habitat

MARINE **Inappropriate watershed management:**
 - reduces water quality
 - degrades health of fisheries and reefs

Improved drainage:
 - reduces landslide risk & groundwater recharge
 - but can increase sediment flows to rivers and reefs

Artificial banks, dredging & river realignment:
 - reduces flooding risk
 - but can cause poor freshwater quality & loss of biodiversity

Seawalls:
 - reduce erosion in targeted areas
 - but can cause erosion nearby & reduce fish & crustacean habitat
 - heavy building material can be projected inland by tsunamis & storm surges

Increased aquaculture & access to fisheries technology:
 - supplements declining fisheries

Intact & replanted forests:
 - reduce landslide risk & less sediment flow to rivers & reefs
 - provide building material, crops & firewood & store carbon

Intact & replanted riverside vegetation:
 - reduces sediment flows & flooding risk
 - protects freshwater supply & biodiversity

Intact & replanted coastal vegetation & mangroves:
 - reduce coastal erosion & flooding
 - provide building material, crops, firewood & store carbon

Integrated ridge to reef management:
 - protects intact habitats & biodiversity
 - supports healthy fisheries & reefs