

Science for Environment Policy

New guidelines to help implement ecosystem-based adaptation on islands

Climate change is a particular threat to island nations and effective adaptation is vital. A new analysis examines current adaptation measures in tropical Oceania and identifies guidelines for implementing resilient, ecosystem-based adaptation (EbA). Among its recommendations, local communities should be fully involved in planning adaptation measures.

EbA, the protection and restoration of ecosystems for provision of key ecosystem services, will be especially valuable in helping island populations face the challenges of [climate change](#). Small islands are particularly at risk as sea level rise may flood coastal communities and ecosystems damaged by flooding can deplete local resources and affect livelihoods. The majority of the world's small island nations are found in tropical Oceania, which includes Melanesia, Polynesia and Micronesia. Rural poverty is high across the region and many people are dependent on coastal ecosystems for their livelihoods and food security.

This research demonstrates that many of the current responses to climate change could be improved by moving towards EbA. For example, droughts have already led to [water](#) shortages in some areas. Current measures to cope with such situations include water rationing and bathing in streams, which may result in poor hygiene and lead to health problems. A sustainable alternative would be to restore and protect vegetation surrounding water catchments to prevent evaporation and loss of water.

Another example is the flooding of coastal settlements following storm surges, which has resulted in new buildings being constructed inland. This is an unsustainable solution because there is a shortage of resources and available land. An ecosystem-based approach to this problem may include restoring mangrove wetlands which help protect against coastal erosion and sea level rise.

Having identified some changes that could help island nations adapt to climate change, the researchers developed guidelines for their implementation. They strongly recommend that the local community must be fully involved for any adaptation measures to be effective. Initial steps should include raising community awareness and ensuring stakeholder participation. A successful example of this is workshops to build three dimensional models of the local region, which has been used in Fiji, Papua New Guinea and the Solomon Islands. The local community build the models themselves, overlaying them with maps of [resources](#) or human pressures. This process has been found to facilitate group discussion and help provide a sense of 'ownership' of adaptation measures.

Involving the local people in this way also aids community-based management, another important aspect to effective adaptation. For example, across Oceania and particularly within the Locally Managed Marine Area Network, local communities have formed natural resource management committees to design and implement management strategies that best fit their local context. As global climate change affects local ecosystems and resources, the committees are able to quickly respond by adapting management practices to maintain important ecosystem services.

The researchers conclude that ecosystem-based approaches are an important tool in adapting to climate change and will require careful integration of national policy and planning, local communities, and the conservation and natural resource management sectors.



19 March 2013
Thematic Issue
37: Ecosystem-based Adaptation

Subscribe to free weekly News Alert

Source: Grantham, H. S., Mcleod, E., Brooks, A., Jupiter, S. D. *et al.* (2011). Ecosystem based adaptation in marine ecosystems of tropical Oceania in response to climate change. *Pacific Conservation Biology*. 17(3): 241–258.

Contact:
sjupiter@wcs.org

Read more about:
[Climate change and energy](#),
[Environmental information services](#),
[Natural hazards](#)

The contents and views included in Science for Environment Policy are based on independent, peer-reviewed research and do not necessarily reflect the position of the European Commission.

To cite this article/service: "[Science for Environment Policy](#)": European Commission DG Environment News Alert Service, edited by SCU, The University of the West of England, Bristol.