

Environmental Education



Education is a powerful driver of development. Environmental education is seen as a key tool in the conservation of coral reefs because: a) it builds public awareness of the importance of coral reefs and aims to increase local appreciation of these ecosystems; and b) it supports the development of alternative livelihoods (e.g. culture of aquarium products, tourism) in attempt to reduce use of coral reef resources.

Current and potential strategies:

- Education-based conservation strategies use a variety of social marketing techniques such as posters, comic books, billboards, flipcharts, newsletters, and radio plugs to raise public awareness, change attitudes, and influence behaviour.
- Working with primary school children to provide curriculum support, teacher training, and educational equipment on coral reef conservation.
- Providing training and educational scholarships in marine conservation.
- Community based social media is an important emerging tool that may be more effective than traditional education tools.

Assumptions: Education and literacy are key components of peoples' ability to absorb and process information. With training and education come new skills, new knowledge, and new possibilities for individuals and their communities. By increasing technical knowledge and decreasing apathy, educated populations are more likely to be effective custodians of their natural resources. It is also assumed that educated populations are better able to adapt to change and engage in conservation strategies.

Ecological impacts

Positive

It has been documented that:

- Increased understanding of scientific information by communities will contribute to increased levels of trust between conservationists and communities, allowing reef protection strategies to be implemented more effectively.
- Increased understanding of the human mechanisms that affect coral reefs can lead to reduced harmful human behaviour.

Negative

It has been suggested that:

- If too broad in nature and inappropriate for local cultural contexts, education programmes may not deliver important context/location specific information that may result in behaviours that have adverse impacts on local ecosystems.

Implications for ecological resilience

- Education initiatives aimed at school children will create a generation of conservation-aware adults.
- Increased understanding of the importance of biodiversity among community members.
- Increased understanding of ocean life may support more sustainable coral reef use.

Social impacts

Positive

It has been documented that education strategies can:

- Be key to the success of other conservation strategies including alternative livelihoods, MPA designation, human health programmes.
- Increase social capital.
- Increase community empowerment that can lead to increased economic capital.

Negative

It has been documented that:

- Conflict can emerge between knowledge holders and non-knowledge holders where education has not been universal.
- This includes intergenerational conflict.

Implications for social resilience

- Empower communities to develop conservation practices at the local level.
- Communities with control over their natural resources may strengthen and diversify their economic base, potentially becoming more assertive in asking governments and other agencies to provide public facilities.

Spatial scale: Local.

Temporal scale: Medium to long-term.

Case study: Chumbe Island Coral Park (CHICOP)

Chumbe Island is a small coral island in East Africa just west of the island of Zanzibar, Tanzania. Chumbe Reef has been well recognized as one of the most diverse in all of Africa, and is believed to host 90% of East Africa's hard coral species. Recognizing the high level of biodiversity in both reef and forest habitats, and the dangers of overfishing and mass tourism, the Chumbe Island Coral Park (CHICOP) was established in 1992. The focus was to create a marine park where profits from tourism would help support conservation and environmental education. CHICOP now includes the fully protected, 30 hectare Chumbe Reef Sanctuary (including coral reef, pelagic, coastal shallows and intertidal habitats), a 22 hectare coral-forest reserve (Closed Forest Habitat), a visitor's centre, a small eco-lodge, nature trails, and historic ruins. Key to the success of CHICOP has been the role of education and nature conservation in establishing the MPA.

Has it been successful? To date, CHICOP has offered one-day school excursions to Chumbe Island to more than 5600 students, 980 teachers and 346 community members and government officials since the establishment of the Environmental Education (EE) Program in 2000. Monitoring suggests that environmental awareness has increased among students and that the total number of educational trips has increased annually since the programme began.

Challenges facing the project: Although commercially viable as an eco-tourism destination, initial funds for CHICOP were obtained from private investment. The education program requires the support of both local and regional government to ensure the continuation of the educational arm of the CHICOP.

Future application: CHICOP has been used as an example of good practice for others wishing to initiate environmental education programmes in the region.



Further reading

Chumbe Island Coral Park Conservation and Education. 2013. Status Report. <http://www.reefresilience.org/wp-content/uploads/Chumbe-Island-Coral-Park-Conservation-and-Education-Status-Report-2013.pdf>

Damerell, P., Howe, C. and Milner-Gulland, E.J. 2013. Child-orientated environmental education influences adult knowledge and household behaviour. *Environmental Research Letters* 8(1): p.015016.

Nordlund, L.M., Kloiber, U., Carter, E. and Riedmiller, S. 2013. Chumbe Island Coral Park—governance analysis. *Marine Policy* 41: 110–117.

van der Ploeg, J., Cauilan-Cureg, M., van Weerd, M. and De Groot, W.T. 2011. Assessing the effectiveness of environmental education: Mobilizing public support for Philippine crocodile conservation. *Conservation Letters* 4: 313–323.

World Wildlife Fund (WWF). Building coastal community knowledge and skills. *Ocean Coasts & People* 3: 4 pp. http://assets.panda.org/downloads/wwf_3_building.pdf

