

CORAL REEF ECOSYSTEM MANAGEMENT FOR SUSTAINABLE TOURISM IN MU KOH CHANG, THAILAND

Thamasak Yeemin*, Nipat Somkleeb and Makamas Sutthacheep

*Marine Biodiversity Research Group, Department of Biology, Faculty of Science,
Ramkhamhaeng University, Huamark, Bangkok 10240 THAILAND
Tel/Fax: +66-2310-8415, E-mail:thamasakyeemin@yahoo.com,
<http://www.thaicoralreef.in.th>

Mu Koh Chang is located in the eastern part of the Gulf of Thailand, near the borderline between Thailand and Cambodia. There are about 60 islands in the area which harbor approximately 16 km² of coral reefs. The Thai Government declared Mu Koh Chang as a special administrative zone for sustainable tourism development in 2002. An estimated 30% of the coral reef areas are within the jurisdiction of Mu Koh Chang National Park which was established in 1982. Mu Koh Chang was selected as one of the demonstration sites for coral reef subcomponent under the UNEP/GEF Project on Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand. The degradation of coral reefs in Mu Koh Chang has been recognized. Major threats of coral reefs were sedimentation from infrastructure development, impacts from expansion of tourism business, unskilled divers, illegal fishing, coral reef bleaching and storms. The causal chain analysis of Mu Koh Chang revealed that root causes of coral reef degradation were lack of awareness, greed, lack of ecological knowledge, failure of coordination among institutions, inappropriate tourism management, inadequate numbers of government staff, researcher and site manager for coral reef management, inefficient law enforcement, poverty and degradation from natural disturbances. Several activities have been implemented for sustainable tourism management; i) study on carrying capacity for tourists; ii) establishing diving trails at particular sites; iii) establishing local guide center and encouraging local guide activities; iv) installing additional mooring buoys; v) academic supports for local communities and private sector to encourage public participation for coral reef management and conservation for ecotourism; vi) encouraging local people and tourism organizations to clean up coral reefs; vii) study on determination criteria of tourist fees for coral reef management purposes.

The study on carrying capacity for tourists revealed that the psychological and facility carrying capacities were good indicators for regulating number of tourist. However ecological carrying capacity required a long-term monitoring program to detect coral community changes. Management of diving behavior is also very important. The establishing diving trails at particular sites seemed to be an effective tool to reduce diving impacts on coral reefs and to control numbers of diver. Active participation of all stakeholders for site selection to establish, use and maintain diving trails is a key of success. The established local guide center and encouraging local guide activities played a major role for raising public awareness and reduce impacts from tourists. Moreover the local fishermen who become local guides have more incomes and realize the importance of coral reef ecosystem. There were several problems concerning mooring buoys, such as inadequate mooring buoys for diving boats during high season, unclear instruction for using mooring buoys, long-

term maintenance of mooring buoys, etc. In order to manage mooring buoys properly, a mooring buoy committee should be established from representatives of relevant stakeholders. The mooring buoy installation can be a significant tool for systematization of diving activities. Academic supports for local communities and private sector to encourage public participation for coral reef management and conservation for ecotourism through seminars, workshops, training programs, study visits and exchange programs are continuously needed. Local student activities should be supported in a long term. The encouraging local people and tourism organizations to clean up coral reefs was successfully carried out for cleaning the reefs and raising public awareness on coral conservation. Mu Koh Chang National Park has faced some difficulties for collection and management of tourist fees. The national park office at site level should have much more authority to spend the collected fees for coral reef conservation. The amount of entrance fee must be reasonable. Several coral reef restoration projects have been conducted however the high cost and limited scale of restoration puts the onus on government and communities to prevent damage to coral reefs in the first place. Wastewater, garbage and sedimentation from infrastructure development caused coral reef deterioration. The local administrative organization, the Designated Area Sustainable Tourism Administration (Public Organization): Designated Area-1, Mu Koh Chang & Related Area (DASTA), the provincial governor, the government policy and the resort owners have to play major roles to control land-based pollution and implement pollution monitoring programs. The ecological and socio-economic monitoring programs should be appropriately planned and implemented. Encouraging coordination among government agencies, private sector, NGOs, and local communities during planning, operation and evaluation phases to strengthen co-management of all activities in the area and to reduce any obstacles of the project implementation are very crucial.

The relevant organizations can support projects for reducing the impact of tourism through regular meetings of local communities hosted by the district administration office and participation of the DASTA's project activities. Moreover the provincial governor (chief executive officer) can establish a special committee for coral reef conservation. Its members include representatives from government institutions, environmental management experts, private companies, NGOs and local communities. The Mu Koh Chang Demonstration Site for coral reef subcomponent under the UNEP/GEF Project on Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand provides a good opportunity for information exchanges and transferring lessons learned to other sites in the Asian region and around the world.