

# Empowering fisher women through ICT in reef conservation and management – a case study from Tuticorin coast of the Gulf of Mannar, Southeastern India

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**Abstract.** To reduce pressure on coral reef resources and economic vulnerability of coastal communities, local fisher women Self Help Groups (SHGs) were empowered through provision of Information and Communication Technologies (ICT) and adult education in 5 coastal villages in Tuticorin district of the Gulf of Mannar (GoM) in South-eastern India. Improved literacy levels, environmental education, as well as the provision of computer training and equipment, enhanced villagers ability to take up alternative livelihoods and improve their living conditions. The support to SHGs demonstrated their potential as a non-threatening mechanism for mobilizing resources, providing affordable finance and social benefits to poorer fisher women, besides promoting self-reliance, awareness creation, capacity development, social solidarity and the empowerment. Village coordinators from five targeted villages were trained and each village was provided with computer, printer, mobile phone, and internet. In addition, the SHG members in the targeted villages were also trained in other alternative livelihood activities such as vermi-compositing and hygienic fish drying methods. The creation of awareness about the environment along with the adult education, computer training and other livelihood options helped the fisher women to earn additional income for their families, the key factor in to reducing the destructive fishing practices and enhancing living conditions in the coastal areas of GoM.

**Key words:** Reef management, adult education, alternative livelihood, computer education

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## Introduction

Information and Communication Technology (ICT) is developing fast in India. Government has elevated the livelihood of village folk through a system called Self Help Groups (SHGs) in their respective villages. The SHGs play a major role in the generation, saving and wise use of financial resources. The majority of the SHGs are formed by women and Government encourages SHGs to create confidence particularly among the women. The support to SHGs with ICT can empower them in environmental education (literacy), livelihood options (for socio-economic development), marketing strategies, information on natural disasters and concern about conservation and management of natural resources. Suganthi Devadason Marine Research Institute (SDMRI) in collaboration with Coastal Ocean Research and Development in the Indian Ocean (CORDIO) in East Africa, and Nyköpings Folkhögskola in Sweden initiated the ICT based activities among fisherwomen Self Help Groups in India. The adult education concept has also been tried in other parts of the world as a contributor to national development in Southern Africa (Oduaran and Okukpon 2005); for healthy participative democracy in Scotland (Hammond 2006); and in adult Education and Training in Ireland (Morrissey and McNamara 2004). The aim of introducing the present adult education along with the provision of Information and Communication Technologies in the 5 coastal villages in Tuticorin district of the Gulf of Mannar in the Southeastern India was: 1) to empower local fisherwomen Self Help Groups (SHGs) 2) enhance literacy and livelihood 3) reducing pressure on coral reef resources through greater awareness and education about marine environment and resources 4) minimise overall economic vulnerability of coastal communities.

## Methods

Five villages namely, Siluvaipatti, Rajapalayam, Arockiyapuram, Thirespuram and Inigo Nagar were selected in Tuticorin coast of the Gulf of Mannar, Southeastern India. Two coordinators (SHG members) from each village were selected. The coordinators were given training in adult and environmental education and computer applications. After the training, each village was provided with ICT components (including computer, printer, mobile phone, and internet). The coordinators then trained their respective villagers in adult and environmental education; and computer training. The villagers were also given training in alternative/additional livelihood schemes such as vermi-composting and a hygienic seafood drying method. Baseline information on literacy,

occupation, awareness about corals, coral status, destructive fishing practices etc was collected before the start of the activities.

## **Results**

During Oct 2007-Feb 2008, 149 fisherwomen and 6 -men in five villages participated in adult and environmental education was, 34 women and 48 school children in computer education; and 5 women were trained in vermi-composting and 37 in hygienic fish drying.

Participants learned to write their names instead of signing by thumb print; started to read Tamil (local language) and English words; those who already knew to write their names in Tamil learned to write it in English; learned to read bus boards and started to travel alone; learned simple mathematical calculations during adult education classes; women participants are helping their children in their studies; and after witnessing the improvement, more coastal women are willing to take part in the adult education.

The participants of the adult education were taught about cleanliness in their environment and the importance of conservation of natural resources, particularly corals. Increased level of awareness were tested through quizzes and tests. Participants were also made aware of the importance of corals and a clean coastal environment as well as the need for their conservation by way of demonstrating eco-friendly fishing practices, by avoiding disposal of untreated sewage, industrial waste and dumping of solid waste on the coasts. Also information about global warming and its effects on corals was given through video clips and charts.

The programme included group discussion and entertainments (songs, folk dances, drama). The coordinators also participated in the awareness campaign through the National Broadcasting Corporation. Also, women and children received computer classes that met with much success.

Women were taught hygienic ways of sun drying of fishes using indigenous fish drying racks to enhance the quality and price of the dried product. The women in four villages now exclusively use the fish drying racks and the fish, free of dust and sand particles, fetch a better price. In addition, less drying time is required when of drying on the floor.

Village coordinators were trained in vermi-composting and quickly started earning by selling the product in their villages.

The awareness campaign in the five villages bordering Gulf of Mannar had resounding success and resulted in considerably reduced damage on reefs. Shore seine operations, mining and anchoring near the reefs declined. New coral recruits were observed and the live coral cover area is increasing in the once heavily degraded reef areas.

## **Conclusion**

The coral reefs in the Gulf of Mannar are facing various anthropogenic and natural threats but in Tuticorin, several village communities are solely dependent on fish resources obtained from these coral reefs (Shanthini et al. 2002). Crowded fishing grounds, increasing demand for fisheries products, and declining catches often cause fishermen to adopt destructive fishing methods (Samuel et al. 2002) for better results. To counter this trend, the ongoing community based initiative helped to increase literacy level, technical capability in ICT and alternate livelihood practices and knowledge of resource conservation especially eco-friendly fishing, particularly in the reef areas. Fisher folk responded positively to the training initiative and enforcing reef protection has also become easier due to the greater awareness about corals and conservation and environmental education among the villagers.

The creation of environmental awareness along with the adult and environment education, training in computer applications and other livelihood options helped the fisher women to earn additional income for their families, which is key to reduce the destructive fishing practices and enhance living conditions in the coastal areas of the Gulf of Mannar. This pilot effort helped the fisher folk to change attitudes resulting in considerable reduction in disturbance to reefs and surrounding habitats as evidenced by new coral recruits and increased live coral cover.

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