



Changing Community Perspective on Sustainable Fishery and Conservation in Palk Bay – A long-term, Grass root Conservation Approach

V.Balaji, V.Sekar, and G.Murugesan

Organization for Marine Conservation Awareness and Research (OMCAR),
OMCAR Palk Bay Centre, Velivayal – 614701, Pattukkottai, Thanjavur District
Tamil Nadu, India.

ABSTRACT

Palk Bay fishery resources have been depleting mainly due to threats from manmade activities. Increasing population, boats and advanced fishing gears are the main reason for the depletion of fishery resources in Palk Bay. Both non-governmental and governmental organizations have been working together to provide sustainable, alternative and long-term solutions through ecosystem restoration, artificial reefs and aquaculture of seaweeds, crabs and shrimps. OMCAR established Palk Bay Centre for Conservation, Awareness and Sustainable Fishery Education in 2011, which serve as an open platform for participatory mangrove restoration, seagrass rehabilitation, development of fish aggregating devices, sustainable livelihood models, community trainings, inline department meetings, marine education with National Green Corps of schools and joint projects with the support of national and international organizations. A total number of 4477 students visited to Palk Bay Centre since 2011, More than 30 number of livelihood trainings were organized that benefitted 1027 numbers of fishermen and women. 5 acres of mangroves restored along the coast of Thanjavur district, 1000 number of mangrove seedlings raised at nursery and planted in local coast, 50 number of meetings organized in villages with Net Fish and 5000 number of awareness booklets, 3500 number of awareness leaflets were distributed to schools and 50 number of school level marine conservation and sustainable fishery awareness events were organized in the last seven years. This grassroots level insitu conservation approach slowly improved both community perspective on sustainable use of marine resources in northern Palk Bay Coast, and health of nearshore seagrass and mangrove ecosystems in northern Palk Bay.

Keywords: *Seagrass, Fishery, Palk Bay, Livelihood, Marine conservation and education*

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INTRODUCTION

World Ocean covers about 70 % of the surface area of our planet. India has a vast coastline of about 8000 km length spanning 13 maritime mainland states and four union territories, with diverse coastal and marine ecosystems, supporting nationally and globally significant biodiversity [5]. Around 58 million populace worldwide who depend directly on fishing activities for their livelihood, altogether it is estimated approximately 10 to 12 % of the global population are involved in fisheries activities (sector) directly or indirectly. India is one among the top ten fish producing countries in the world contributing over 5% (7.5 million ton) of the world fish production. The marine fisheries sector contributes nearly 50% of the total fish production and the total explore of seafood and other marine living resources [4]. In the South Asian region, the richest fishing grounds are Bay of Bengal and Arabian Sea and India is one of the world's largest marine product exporting nations [7]. The Palk Bay is a long stretch of the coastline comprising shallow sea grass meadows, corals, fringing mangrove patches, creeks and lagoon. The Gulf of Mannar at its southern portion and the habitat is contiguous with the Great Vedaranyam Swamp, in the north. The habitat includes fascinating species such as Dugong, sea horses, pipe fishes and greater than 50 other species of mollusc, 20 hard corals species, 4 species of mangrove, 16 species of coastal vegetation, including halophytes and 7 species of sea grass [5]. In recent decades 90 % of the global fish stocks are considered to become overfished or exploited more than the capture limits of sustainability through illegal fishing like banned fishing nets, banned fishing season, and etc. Conservation of marine biological

resources is one form of management of marine resources ecosystem from damage caused by human activities. Uncontrolled use of natural resources in coastal areas can cause harm to the natural resources [1, 4] and habitat protection is also essential to safeguard the sustainability of our fisheries resources. Marine conservation focuses on limiting human-caused damage to marine ecosystems and on restoring it. Marine conservation also focuses on preserving vulnerable marine species. OMCAR Palk Bay conservation Centre joined with local government to establish mangrove restoration, seagrass rehabilitation projects with local non-governmental organizations, which is directly a benefit to the fishing community by increasing the ecosystem services and overall fishery productivity along near shore region. Wild Life Institute of India is carrying out dugong conservation project with inline departments and NGOs that significantly contributed to the awareness among fisher youths by providing scholarships, at the same time creating awareness and sustainable fishery education organized from 2011, which serve as an open platform for participatory mangrove restoration, seagrass rehabilitation, development of fish aggregating devices, sustainable livelihood models, community trainings, inline department meetings, marine education with National Green Corps of schools and joint projects with the support of national and international organizations. The outcome of the marine conservation more than 70% successfully implemented in Palk Bay coastal areas Pudukottai and Thanjavur district.

MATERIALS AND METHODS

PALK BAY Conservation and Education Centre

Palkbay is situated in north of the Gulf of Mannar. Shoreline is spared over five districts such as Nagapattinamm, Tiruvarur, Thanjavur, Pudukkottai and Ramanthapuram. OMCAR Palk Bay Centre was established with special focus to conserve Palk Bay ecosystems and endangered species and sustainable fishery by involving local community. The centre is located in a fishing village named Velivayal in Thanjavur District on the East Coast Road(Figure.1.).

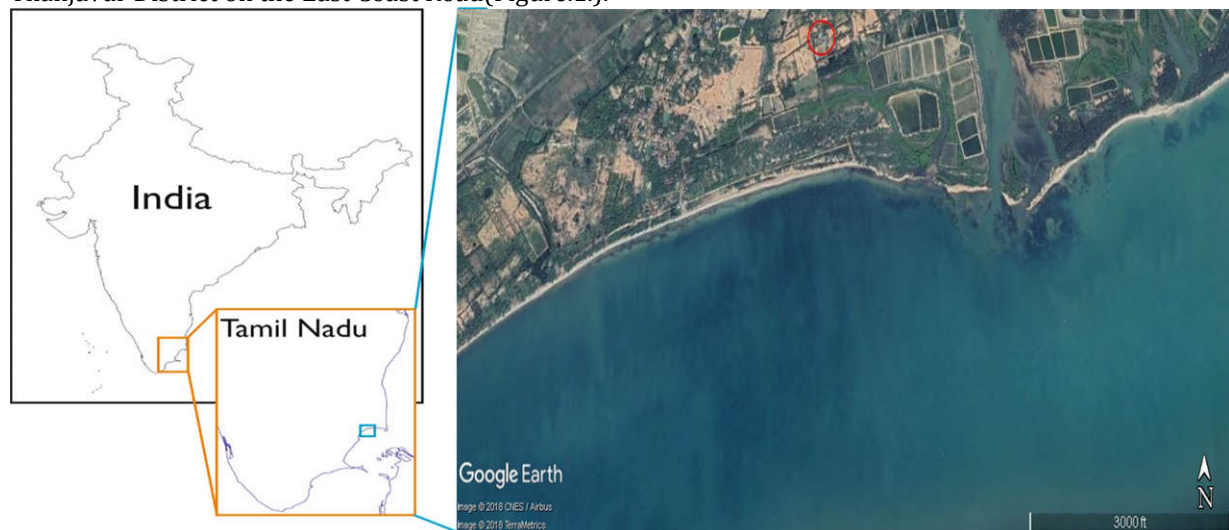


Figure 1. Showing the satellite view of OMCAR Palk Bay centre

Marine Conservation roles

The present study aims to examine the sustainable fishing techniques in Palk Bay area's in Thanjavur and Pudukkottai district, Tamil Nadu. With a view to investigate the following nonprofit services theme of marine conservation were made by OMCAR(Figure 4 and 5).

- Conduct marine conservation awareness program in government school children
- Marine conservation education field trips and trainings for fisher fishing communities.
- Dugong habitat Survey, Monitoring and Rehabilitation with Tamil Nadu Forest Department and Department of Science and Technology.
- Alternative livelihood support for fishers
- Facilitation of stakeholder conservation meetings
- Developing marine education tools for community awareness
- Restoration of mangroves and seagrass in degraded sites
- Establishment of Community based Marine Protected Zones in Palk Bay.
- Dissemination of community based coastal ecosystem restoration techniques

RESULTS AND DISCUSSION

The findings from the overall report analysis as follows: A total number of 7237 people are directly benefitted by OMCAR foundation (Figure 2), overall percentage composition of visitors 4477 students, 398 teachers, 285 government officials and researcher, 2077 people was directly benefited (Figure 3). Among this professional development, empower training by central and state government certificate program also conducted; generally the schools and other participant were selected from adjacent coastal villages to maximize the number of students and contestant from fisher communities. From the visit we explain about the marine conservation Powerpoint presentation with excellent color full photo graphs and visual vedios, demonstration of various instruments like Refract meters, wind meters, sechi disc, habitat mapping echo sounders for seagrass research, acoustic recorders for dugong research, and different types of underwater equipment and cameras were exhibited and interactively explained to the students by the OMCAR team.

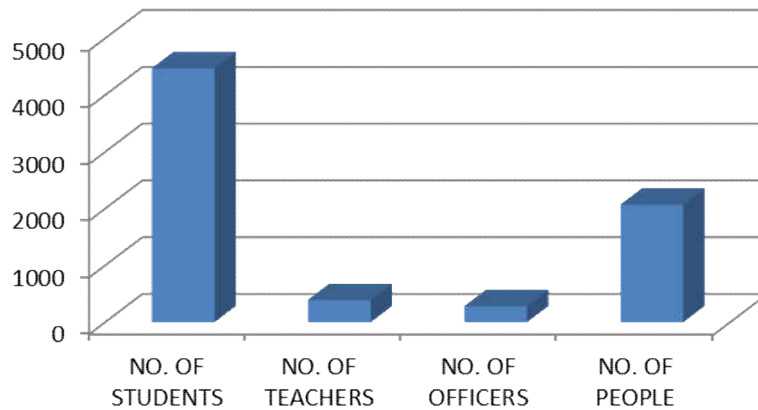


Figure 2. shows the graphical representation of total visitors

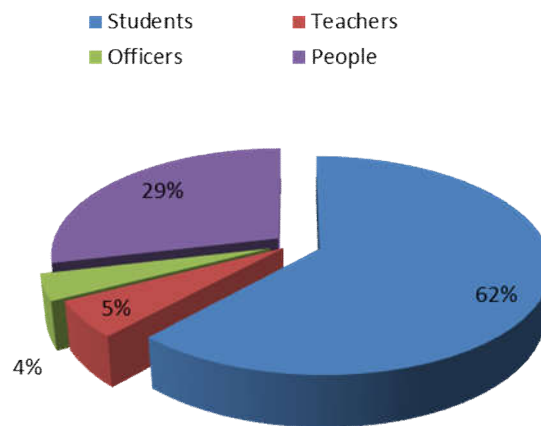


Figure 3. shows the percentage of visitor's details from 2011 – 2018 February

Annual performance 2013 was more followed by 2015 and 2011, recent days the activities was spread quickly by social networks and media people, more than 126 program was conducted from 2011 to till date, In program wise school conservation and awareness program was more (Figure.4). The sustainable livelihoods approach can provide a new perspective approach by the easily assessable methods. Sustainable livelihoods have a core focus on the community though in this approach the "marine conservation awareness [2].

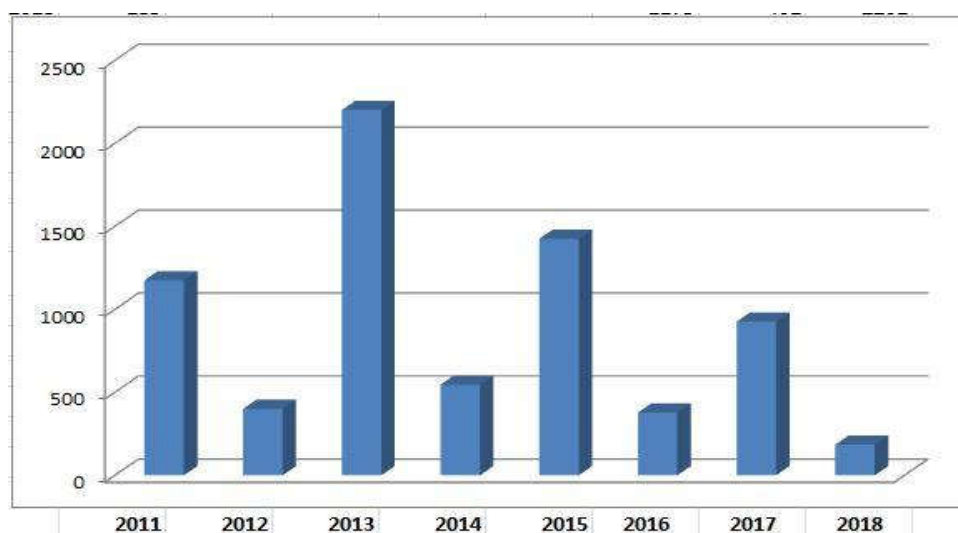


Figure 4. Showing the annual visitors details for OMCAR foundation

Hence the present analyses support the fisher fold and educate the children about marine conservation. The entire role of OMCAR is fully based on marine conservation through environmental education and ecologically and socially responsible activities. In order to avoid the common conflicts between conservation initiatives and sustainable fishery resource users, from 2011 onwards OMCAR implement more activities with support of local communities through village meetings. Sustainable fishery is one of the non disturbed fishing activities, it balanced the marine biodiversity and yield more income [6], through this artisanal fishery many of the lively hood enrolled for more fishing activities, in recent days fishing activities and other supporting activities are decline due to over fishing, Many fishermen have been trained over the decades and many of them sustain by the way of undisturbed fishing activities [3]. Hence OMCAR have a strong connection to fisher folk by training and enhancing more alternate lively hood supports.



Figure 5. SCUBA Diving and solar cokkerdemo for school students



Figure 6. mangroves conservation awareness and museum visits of school childrens

CONCLUSION

The existence of fisherman groups should be considered to supervise and maintain the local conservation, this is done to reduce negative activities that over fishing and damage our resources. Implement of marine conservation management that is not only sustainable ecological conservation but also has a purpose to increase income and prosperity of to the surrounding community. So protecting and maintaining biodiversity is necessary for the wellbeing of our environment and for the development of human life. Hence OMCAR palk Bay centre planned initiate more activities to educate the marine ecosystem conserve the marine resources.

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