

Conservation and Sustainable Utilisation of Nature Resources is Best Possible with Ecotourism Initiatives: Case study on Mangrove Tourism

P. Upali Ratnayake

Sri Lanka Tourism Development Authority, Colombo, Sri Lanka

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Introduction

Mangrove plant communities are a comprehensive economic and non economic contributor of mankind. Being important nursery and breeding sites for birds, fish, crustaceans, shellfish, reptiles and mammals (Alongi, 2002 & Melana, 2000), they are a valuable ecological and economic resource. They also are a renewable source of wood, and act as accumulation sites for sediments, contaminants, carbon and nutrients. They offer protection for coastal communities and resist against coastal erosion (Liyanage, 2010).

Natural hazards such as storms, cyclones and most recently the Indian Ocean Tsunami have repeatedly shown the value of mangroves and the repercussions of unregulated destruction and extraction by man (Melana, 2000). Among the major reasons for the destruction of mangroves are the urban development, aquaculture, mining and the over exploitation of mangroves for timber, fish, crustaceans and shellfish. Over the next 30 years, unrestricted clear felling, further development of aquaculture and continuing overexploitation of fisheries will be the greatest threats to mangroves, while alteration of hydrology, pollution and global warming also would contribute as threats. Loss of mangrove biodiversity is, and will continue to be, a severe problem as even pristine mangroves are species-poor compared with other tropical ecosystems (Alongi, 2002).

Table 1: Mangrove Species of Sri Lanka

Very common species	4
Common species	10
Rare species	3
Very rare species	3
Total Mangrove species	20

Four major genesis (*Avicennia, Rhizophora, Bruguiera, and Sonneratia*)

Source: Department of Forest Conservation, Sri Lanka

Mangrove conservation and restoration are often viewed with suspicion in terms of long-term sustainability, due to lack of awareness, knowledge and the absence of systemic tangible benefits at the community level. Given the extent of the challenges in terms of the scarcity of land for human needs, which continues to give rise to pressure on mangrove and wetlands, there is an ever more pressing need to develop alternative conservation approaches, which link mangrove conservation and restoration with other forms of coastal industry development, in particular tourism, as a non extractive means of use ensures mangroves' future sustainability. If no action is taken and mangrove forests continue to be exploited at the current rate without addressing the need to manage these valuable resources on a sustainable basis, the best hope of mangroves by about 2030 would be a reduction in human population growth (Alongi, 2002).

Objectives

This study focuses on mangroves as a sensitive and important flora group to assess its wide economic, non-economic and non-extractive benefits with tourism and review on present conservation and sustainable utilisation methods with alternatives, as well as to identify what kinds of tourism (tourist, their facilities and activities) and the development of nature research/education are necessary and acceptable to support livelihood development systems in areas where mangroves are most at risk.

Methodology

The study ascertained the economic and non-economic benefits of mangrove and the direct and indirect benefits generated by mangroves for mankind, using secondary data sources. The study also reviewed the mangrove restoration areas, their geographical distribution and the local and locational values of the present mangrove ecosystem and social systems.

Table 2: Extend of Mangrove in Coastal Districts in Sri Lanka (Hectares)

Puttalam	3210	Gampaha	313
Jaffna	2276	Galle	238
Trincomalee	2043	Ampara	100
Batticaloa	1303	Colombo	39
Kilinochchi	770	Kalutara	12
Hambantota	576	Matara	7
Mullaitive	428	Total in Coastal area	12189*

Source: Department of Forest Conservation, Sri Lanka

* Total may not be the sum

The study paid specific attention to the present day knowledge of the community (*i.e.*, both general and scientific) about the surrounding mangrove communities and their associated ecosystem and biodiversity. Also investigated are the direct benefits that are likely to promote positive responses and support from the neighbouring coastal community by the successful conclusion of the restoration and conservation initiatives. Restoration and conservation initiatives which would be sustainable for the next generation of the society by 2030, also are examined.

Results

The results show that about half of the community gains tourism based income (51.8%) and other 28.5% has tourism related secondary income. This means that these communities are dependent on tourism. On the other only less than 20% had knowledge on mangrove environmental value, while almost 75% use mangroves as firewood. This indicates the threat mangroves are facing today. The tourism based activities the communities are engaged in are mostly ad-hoc in nature, and they principally cater to domestic tourists. But they use coastal resources for economic gain with no care for or knowledge of such resources. It was found that only 11.7% of the population do not harm this valuable ecosystem.

With regard to income of the household, the communities were inquired as to whether there were significant contribution coming from tourism. It was found that around 38.7% did not get any income from tourism industry. About 23% confessed that tourism partly contributed to their income while around 12% of households were found earning about half of their income through tourism. Around 27 percent admitted that their total income was generated from the tourism industry. Community knowledge on mangrove was low, reflected by approximately 62% having no knowledge about it, and another 19.7% having only a little knowledge. Only 12.4% of the community admitted that they were aware of it. However, Most of them (77.4%) consented to learn about mangrove ecosystem for tourism and ecotourism initiatives, and this willingness to learn and their readiness to co-operate, become important factors for future strategic development.

Community was not happy about present tourism practices which were ad-hoc operation with visitor activities, but were willing to work in tourism. Majority (62%) thought positive on tourism and ecotourism as good concepts and a prospective industry. The comments reflect their trust in the prospects of tourism, that it would develop and maintain sustainably in their area.

Tourism is one of the fastest growing industries in the globe as well as in Sri Lanka (UNDP, 2008 & SLTDA, 2011). Within the tourism industry there is a growing demand for nature friendly facilities (7%) and associated activities (20%). In this context mangrove environments have a very high potential of attracting positive attentions of

the tourism sector, particularly due to mangroves' natural biodiversity and their richness in associated ecosystem.

Conclusion and Policy recommendations

Mangrove plant diversity and their geographical distribution (Table 2) offers considerable potential for the development of research centres, eco-friendly accommodations, nature trails and interpretation services by village people. Nature-based activities could include replanting mangroves with visitors and joint research projects by visitors with local youth, which could generate a variety of forms of income avenues for communities neighbouring mangroves. Initial inputs and support are required to train local personnel and technological inputs are needed to create awareness among local people to explore possibilities to introduce ecotourism initiatives. Once non-extractive direct benefits are established and communities begin to generate alternative income using mangrove as a resource base for tourism, they will start protecting mangrove to secure income and respect for mangrove as a resource. Establishment of management systems and network marketing, both nationally and internationally, will ensure sustainability of the tourism market while paving the way for conservation of mangroves in the long run in parallel with ecotourism and nature tourism.

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