COASTAL RESOURCE MANAGEMENT AND SUSTAINABILITY OF TOURISM: A COMPARATIVE STUDY OF HIKKADUWA, SRI LANKA AND GOA, INDIA

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Abstract: As worldwide tourist arrivals increase, a significant share seek the pleasure of tropical beach holidaying particularly in the Asia/Pacific Region. This leads to pressure on coastal environmental resources resulting from the attempts to accommodate increased arrivals. Various studies carried out recently have noted that unplanned and uncoordinated mass tourism in the Asia/Pacific Region have caused degradation of coastal environmental resources which in turn threaten the sustainability of tourism in the long run. Further expansion of tourism will inevitably lead to further degradation and downturn of the benefits generated through tourism activities in these sites. Therefore, the need for management of coastal environmental resources to obtain the maximum benefits in the long run with minimum harmful effects has become a key issue to be addressed by planners, policy makers, professionals, businessmen as well as academics. This paper examines the implications of tourism in relation to Hikkaduwa in Sri Lanka and Calangute in the Goa State of India which are known to be two of the most popular coastal tourism sites in Asia. These two sites also are the victims of unplanned and ad hoc development of coastal tourism. The paper aims at identifying key management issues and proposes a strategy for the development of coastal areas which are subject to adverse ecological, environmental, physical, economic and socio-cultural implications of tourism.

Keywords: Tourism Carrying Capacity, Sustainable Coastal Tourism, Coastal Resource Management, Special Area Management

Introduction

The Asian region is endowed with extensive coastal resources such as sandy beaches, clear waters, exotic landscapes, coral reefs, coral fish, and other wildlife which attract tourists particularly interested in beach holidays (Smith, 1994). The governments recognize this potential and are continuing with their attempts to promote tourism as a means of generating foreign exchange and employment opportunities, and for expanding economic activities. This outward looking policy will certainly attract more tourists, out of which a significant part will seek beach holidays. However, most of the sites that they have to offer are already faced with problems resulting from ad hoc tourism development and improper management of resources. Further pressure without paying attention to the proper management of resources, will only aggravate the existing problems and the result will be further degradation of natural environmental resources. If the peacefulness and natural beauty is lost, tourism in such sites will not be sustainable and these countries will no longer be able to promote their coastal sites for beach holidays. This calls for more attention to be paid to the conservation aspects of the attractive sites while making attempts to promote more tourist arrivals.

The present paper is an attempt to investigate the problems existing particularly in Asian coastal tourism sites and identify issues relating to the proper management of such sites to ensure sustainable tourism. The degree and the permissible limits of tourism development have been examined using the “carrying capacity” concept. The paper focuses on two coastal tourism sites as case studies - Hikkaduwa, Sri Lanka and Calangute, Goa, India. Hikkaduwa is the most popular coastal tourism site in Sri Lanka.
and Calangute is popularly known as the “Queen of Beaches”. These two sites have undergone similar paces of tourism development and become victims of mass-tourism and ad hoc tourism development. The peaceful environment and natural beauty have already been affected and coastal resources are under threat by over development of tourism infrastructure. The resident population looks at tourism with suspicion as it has brought more disadvantages than advantages to the local community. The two sites also have historical and cultural links. The Western coastal belt of Sri Lanka where Hikkaduwa is located had been under rule by the Portuguese in the 16th Century. The state of Goa in which Calangute is located had been a Portuguese colony until the 1960s. While making a detailed analysis of problems of resource management in relation to the two sites, a comparative assessment is carried out to arrive at more appropriate development strategies in relation to other similar coastal tourism sites in the region.

The data for the study were collected from primary sources as well as from secondary sources. Primary data collection was based on field investigations, personal interviews and questionnaire surveys. Four separate questionnaires were adopted to survey: (i) Foreign Tourists (ii) Domestic Tourists, (iii) Business community, and (vi) Local residents. In order to make the comparative analysis possible, attempts have been made to adopt the same questionnaires in both sites.

Tourism in Hikkaduwa

Hikkaduwa is situated approximately 100 km from Colombo - the capital of Sri Lanka and about 150 km from the Katunayaka International Airport. The total length of the beach is about four km. The Marine Sanctuary which is endowed with beautiful coral reefs and marine life is the focal point of the tourist attraction of Hikkaduwa (CRMP, 1994). As revealed by questionnaire surveys, there are a variety of other attractions to supplement the Marine Sanctuary. These are: warm sunny climate, clear blue sea, sandy beaches, shopping local handicrafts, opportunities for diving, surfing and snorkeling, interaction with friendly and helpful people, indigenous cultural performances etc.

Hikkaduwa is visited by both foreign and domestic tourists. German nationals are the most prominent foreign tourist category in Hikkaduwa. Foreign tourists usually come for long beach holidays and the length of stay is approximately 20 days which is greater than the national average which is approximately 10 days. The season starts for foreign tourists in November and ends in March which coincides with the winter season of the Western countries. Domestic tourists are mainly day visitors to the Marine Sanctuary. Because their stay in Hikkaduwa is limited to a few hours, their economic impact is not as significant as in the case of foreign tourists. The tourism business is comprised of accommodation, restaurants, recreation facilities and tourist shops. However, there are two types of establishments: formal establishments and informal establishments (Tantrigama, 1994). The formal establishments are properly registered with the tourism and local authorities and mainly comprise hotels which are located at the south end of Hikkaduwa Beach. The north part of the coast is comprised of a large number of guest houses, restaurants and shops which in most cases are run without proper licenses and are therefore classified as informal establishments. Scale-wise also, informal establishments are small when compared with formal establishments. However, these informal establishments play a major role by providing meals and accommodation facilities, and other amenities such as shopping, sports, recreation etc. at significantly lower prices than the formal establishments. For this reason, these informal establishments have been able to satisfy the needs of foreign tourists who seek longer stays at a relatively lower cost (Tantrigama and White, 1994).
Implications of tourism in Hikkaduwa

The adverse implications caused by tourism in Hikkaduwa are summarized below:

1. Degradation of the coral reef.
This is caused by a number factors. The main contributory factor is the use of glass bottom boats to view the corals and coral fish by tourists. The over loaded boats touch and damage the top of the coral. In addition, to have a closer look at the corals some tourists are inclined to jump out of the boats thus causing damage to the coral reef. There are fishing boats anchored within the Sanctuary which cross the coral reef every day. They usually clean the boat and throw gasoline and oil discharges in the sea which cause harmful effects on the coral and marine life in the Sanctuary. The demand created by tourists and other parties for corals and beautiful fish found in the Sanctuary has resulted in the breaking of corals and catching coral fish for illegal trade.

2. Solid waste and sewerage disposal.
Due to the ad hoc development that took place in tourism business establishments there is no proper systems of solid waste and sewerage disposal. These tourism establishments use their limited premises or the beach attached to them to discharge the solid waste and sewerage. As these tourism establishments are located very near to the coastal water, such discharges to the ground through septic tanks and pits contaminate the groundwater, thereby causing sea water pollution. Some establishments discharge the sewerage through pipes extended to the sea by which the sea water is directly polluted with effluents.

3. Traffic congestion, noise and speeding vehicles.
The highway between Colombo and Matara (capital of the Southern Province) goes through the tourism area of Hikkaduwa. This road is narrow and usually used by all types of vehicles and also pedestrians. The tourists have voiced negative feelings about traffic congestion and noise which disturbs the quiet environment and the peacefulness of the area. There are incidents of traffic accidents every year where in some cases tourists have been knocked-down by speeding vehicles.

4. Conflicts among different user groups.
The recent survey does not support the hypothesis of the existence of a conflict situation between tourists and other groups such as the business sector and residents. However, conflicts among businessmen themselves and between residents and businessmen is evident. This is due to a number of reasons. Residents find tourism to be a "white elephant" of little or no benefit to the local inhabitants. It has affected the social fabric and traditional lifestyle of the local population. Although the people who are employed in tourism and related activities appreciate the benefits of tourism, ordinary citizens have no positive opinion about the way tourism is operated in their area. Conflicts among tourism businesses are mainly a result of competition among them for business. There is no cooperation at all among them on pricing and other business promotion policies.

5. Garbage dispersal and environmental pollution.
Garbage dispersal and pollution of the environment are done by all parties concerned in varied proportions. The tourists - both foreign and domestic, the establishments, the general public, are all responsible for littering items such as plastic bottles, paper bags and other wastes on the road and beaches. In addition, the garbage collection system of the local authority is not efficient enough to keep the roads and beaches free from garbage.

Analysis of Tourism Carrying Capacity in Hikkaduwa

The concept of “carrying capacity” is used in a variety of subjects to assess the permis-
sible limits of development. In the context of tourism it refers to the level of visitor use an area can accommodate with high levels of satisfaction for visitors and least impacts on resources (WTO, 1992). The present analysis focuses on three aspects, namely: (i) ecological, (ii) physical and (iii) environmental carrying capacities (Tantrigama, 1998). In the context of ecological carrying capacity of Hikkaduwa, what has been taken into consideration is mainly the impact of tourism on the coral reef and marine life. Physical carrying capacity refers to the availability of infrastructure and space for development. In assessing the environmental carrying capacity the use of the beach by tourists and its implications were taken into consideration.

**Ecological Carrying Capacity**

The assessment of ecological carrying capacity revealed that the maximum number of tourists allowed in glass bottom boats on the basis of 4 boats at a time with 9 adults or 12 school children is approximately 38 adults or 48 children. The maximum number of tourists to engage in snorkeling on the basis of allowing one third of the area for snorkeling is 86 persons at a time. Similarly the maximum number of tourists to engage in sea bathing without damaging the coral or marine life is expected to be 104 persons at a time.

**Physical Carrying Capacity**

A detailed analysis of physical carrying capacity is not required to assess the level of development as it is obvious that there are no adequate infrastructure or additional space left to support further physical development of the tourism facilities in the area.

**Environmental Carrying Capacity**

With regard to environmental carrying capacity, it is estimated that the maximum number of tourists allowable on the beach is expected to be 1,500 at any point of time.

The carrying capacity analysis revealed that there is a potential for accommodating 30,000 foreign tourists per peak season in Hikkaduwa while the present number of arrivals is estimated to be approximately 15,000 (1996). Therefore, there is a capacity to further increase the number of arrivals to Hikkaduwa.

**Tourism in Calangute**

Calangute is located approximately 16 km North of Panaji - capital of the state of Goa, India. It is the most popular beach in India and known to be one of the top ten bathing beaches in the world. It is visited by both foreign and Indian (domestic) tourists. Unlike at Hikkaduwa, length of stay of domestic tourists may not necessarily be limited to a few hours. There are Indians originating from other states of India who come to spend their holidays in Goan beaches where a significant number select Calangute for their stay. British nationals are the most prominent among foreign tourists arriving in Calangute. The season falls between 1st October and 16th June while 20th December to 5th January is considered to be high season (peak season). The off season is between 16th June to 1st October. The tourism facilities are spread in the countryside as well as along the coast. There is no further space found in coastal area for providing accommodation and other facilities.

**Implications of Tourism in Calangute**

Calangute is adversely affected by a series of implications resulting from mass tourism and unplanned tourism development. The most visible implications are summarized below: (Wilson, 1997)

1. **Illegal constructions along the coast.**
   There is a regulation to leave a minimum of 200 meters from the high tide sea level without any constructions. This regulation is usually violated. Sand dunes, which act as a natural protection against sea erosion are removed for development of tourism facilities such as hotels, resorts etc. This has al-
ready affected the natural coast as well as the scenic beauty of the area. As the hotels/guest houses and other facilities are constructed very close to the sea, they discharge sewerage and other effluents to pits and septic tanks by which the underground water is contaminated. This again pollutes the seawater as it leaks out to the coast. Over-development of tourism establishments along the coast has also limited the access to the beach by the resident population. Attempts by property developers to buy up the remaining coastal strip have caused intimidation of villagers out of their homes.

2. **Danger of exhausting the underground water through over-use.**

The present public water supply is inadequate to meet the demand created by the large number of tourism establishments in the area. They have wells constructed on their premises and underground water is used and discharged back to the ground. Re-use of contaminated water creates a lot of health hazards and other implications to the tourists and to the residents of the area.

3. **Pollution by garbage and sewerage disposal.**

Tourism establishments are located in close proximity with the houses of villagers. There is no concern by tourism businessmen regarding the proper disposal of garbage and sewerage. In most of the cases, sewerage is diverted to the adjoining canals which flow along the village, polluting the entire area. The problem of mosquitoes has now become a serious threat to the health of the resident population (D'Souza, 1997). This practice is not acceptable at all and is a severe injustice from the villagers’ point of view. There is no proper system of garbage disposal and items like plastic bottles and food discharges are found strewn everywhere.

4. **Inadequacy of public infrastructure due to overuse by tourism establishments.**

The infrastructure facilities such as water supply, electricity, and communication are not planned to cater to the large demand created by the increasing number of tourism establishments. The use of such basic amenities by residents has been severely affected by this. Unavailability of power supply during most of the peak hours is a common phenomenon in Calangute. Tourism businessmen manage to obtain such services by various means. Ordinary citizens are helpless in this regard.

5. **Road traffic and congestion.**

This is a result of the large number of vehicles found particularly during the peak season. This creates congestion along the roads and has affected the peace and quiet of the environment.

6. **Increasing prices of food-stuff and other basic items due to heavy demand created by the tourism establishment.**

This is a frequent complaint of residents. Not only items such as fish, vegetable and fruits, but land prices and rents have also increased excessively due to the excess demand created by tourists and tourism establishments. There is no compensatory revenue generation for the benefit of local residents to increase their affordability. This has caused the standard of living of local residents to go down as their cost of living is going up with the development of tourism.

7. **Socio-cultural effects.**

This is a very crucial issue to be addressed as it has multiple impacts on the traditional socio-cultural life style of the resident population. From the survey carried out among the resident population, a significant number of the youth population turns to drug trade with foreign counterparts as a result they themselves become addicted to drug use and other evil habits. The school-going child population is affected as tourism establishments, and liquor shops are situated near the schools. Partial nudism is prevalent in the area which also has adverse social implications in a country like India.
Analysis of Tourism Carrying Capacity in Calangute

An attempt has been made to apply the above three carrying capacity concepts i.e., ecological, physical and environmental, to tourism in Calangute too. But unlike in Hikkaduwa, there are no ecological resources such as coral or coral fish populations in Calangute. Therefore, the carrying capacity analysis is limited to physical and environmental aspects in the case of tourism in Calangute.

Physical Carrying Capacity

There are various occasions when the Goa tourism authorities have been subject to severe criticism for adopting a lenient policy in granting permission for new hotel and resort constructions in the Calangute area (Ecoforum, 1993). There is no proper assessment of the requirement for new developments which has led to overuse of the existing infrastructure which are meant to cater to a small population. There is no need of any quantitative analysis to confirm that the physical carrying capacity of Calangute is exceeded.

Environmental Carrying Capacity

With reasonable assumptions regarding beach space per tourist, it has been estimated that the maximum allowable number of tourists at any given point of time in Calangute beach is approximately 9,600 tourists.

This leads to the conclusion that the total number of foreign tourist arrivals to be 38,400 and domestic tourists arrivals to be 460,800 per year. As the estimated number of current foreign tourists is approximately 21,340 and domestic tourists is 240,000 (1996), there is still a potential for increasing the number of both foreign and domestic tourists arrivals to Calangute.

Issues in Coastal Resource Management

It is evident that both Hikkaduwa and Calangute have potential for further expanding tourism activities provided that care is taken to make sure that resources are properly managed to minimize harmful effects. Although there are differences between the tourism activities in Hikkaduwa and Calangute, the following management issues are common in both sites.

1. Adverse impacts caused by tourism.
   Because of the unplanned nature of tourism development, a series of adverse ecological, environmental, physical, economic and socio-cultural impacts are found in these sites. Physical carrying capacity limits have already been exceeded.

2. Conflicts among different user groups.
   These coastal tourism sites are characterized by multiple resources and user groups. These resources are interconnected and the use of one will have an impact on the other. This has inevitably led to conflicts among different user groups. For example, the beach used by traditional fishers is now encroached upon by hoteliers. This occasionally leads to conflicting situations. Tourism has to be considered as only one activity among a variety of activities existing at these sites.

3. Low level of revenue generation from villagers' point of view.
   The tourist business sector is owned by hotel groups and individuals originating from outside the area. A significant part of the inputs of tourism establishments are purchased from outside the area. A very minor percentage of employees are hired from the local community. Because of these reasons, the financial and other benefits emanating from among the tourism business to the local community are very low.
4. **Multiplicity of authorities and organizations.**

Because of the variety of overlapping functions and elements at these sites, there are numerous different organizations with responsibilities for managing and advising on these functions. For example, at Hikkaduwa, the marine habitat is under the purview of the Department of Wildlife Conservation while the adjoining beach is controlled by the Coast Conservation Department. Tourism establishments situated along the same beach are controlled by the Ceylon Tourist Board. It has been found to be difficult sometimes to reconcile different local, regional and national level organizations in an attempt to design and implement suitable management policies;

5. **Four types of stakeholders.**

There are four groups of stakeholders with important roles to play. Those are: (a) the local resident population, (b) Tourists, (c) Tourism business sector and (d) the government, non-governmental and community based organizations. In an attempt to design and implement strategies for proper management of resources one should not underestimate the important roles to played by each party.

As such, coastal resource management has become a complex issue particularly when resources are being used for tourism in addition to traditional economic activities existing in the coastal sites.

**Proper Management of Coastal Resources**

The key issue of proper management of coastal resources is to allow sustainable use of resources. Sustainable use is also referred to as “Sustainable Development” which has received much attention of development planners, policy makers, politicians, professionals, academics, and researchers in recent times. It provides a good conceptual framework for any kind of development activity. In the context of tourism, sustainable development involves management of all resources in such a way that economic, social and aesthetic needs are fulfilled while maintaining the cultural integrity, essential ecological processes, biological diversity and life support systems.

That coastal tourism should be based on the principle of sustainable development has recently been recognized in the Bagio Resolution on Coastal Resources Management (Wong, 1998). Efforts are being made world wide to apply the concept of “Integrated Coastal Management” (ICM) to achieve the sustainability of development activities undertaken in coastal zones. Although ICM can be defined in different perspectives, agreement exists among coastal management specialists that ICM efforts must fit within a comprehensive framework which integrates the range of activities and constitutes sustainable development in coastal areas (White et al., 1997).

The UN has prepared guidelines on environmentally sound development of coastal tourism for ESCAP countries (ESCAP, 1995). The report is based on case studies carried out in Fiji, Indonesia, Malaysia, Maldives, Philippines and Thailand. The guidelines are relating to EIA, technical guidelines for environmental management, managing social/cultural impact and policy recommendations. It gives general guidelines as well as specific actions to be undertaken with respect to certain aspects. But special care is necessary in the case of critical areas like Hikkaduwa and Calangute which have already been subject to various types of ecological, environmental, physical, economic and socio-cultural problems resulting from the existing nature of tourism development.

**A Strategy for Sustainable Coastal Tourism**

The lessons learned from the two case study sites selected from Sri Lanka and India leads us to think about the appropriate strategy for the development of tourism which takes
into consideration the specific nature of problems that different sites are faced with. Hikkaduwa was one of the sites for the implementation of Coastal Resources Management Projects (CRMP) of USAID. The concept of Special Area Management (SAM) approach was adopted and implemented as an integrative approach for coastal zone management. SAM approach provides a good conceptual framework for developing appropriate development strategies for specific geographical areas.

The basic premises for SAM process is that it is possible to organize local communities to manage their natural resources and they will continue to do so if they perceive that they derive tangible benefits from better management. The planner, the planning agency or the organization group play only a catalytic role in organizing the local community. They can provide technical and financial support for the management effort which is formulated and implemented as a local community and/or local government effort. (Wickramaratna and White, 1992). Community participation is incorporated in the planning stage of the SAM. This frequently is not possible in the case of macro level or broader area planning. However, the success of SAM is based on the extent to which implementation and monitoring becomes a local responsibility and gradual reduction of outside support in the long run. The basic steps of SAM approach are:

1. Agreement on need for SAM for a particular site and identify national and local level participants.
2. Compile Environmental Profile of the area and determine the priority management issues.
3. Enter the community with full-time professional facilitators and community organizers to liaise with community stakeholders, organize education programs and facilitate the planning process.
4. Conduct planning cum training workshops in the area.
5. Organize resource management core groups.
6. Draft management plan through community involvement, determine indicators for monitoring and conduct cost benefit analysis.
7. Implement pilot projects while planning continues.

The very specific nature of the SAM planning process is that it differs from the conventional planning process in which the order of planning, implementation, monitoring and feedback is important. Under SAM, the implementation does not necessarily follow a planning stage. The implementation can begin at the planning stage which allows planning to be continually revised.

The outcome of the SAM plan adopted in Hikkaduwa (CRMP, 1996) brought mixed results. This is a new planning concept applied in the Asian region. The success of the plan depends heavily on the active participation of all stakeholders who were involved in planning process at implementation stages. The Hikkaduwa SAM plan received much attention at the planning stages. Once the project was over and the coordinating office was removed, participation of relevant parties was lacking. Certain actions recommended in the plan such as construction of the fishing harbor are now under way. But the implementation of most of the recommended actions were not satisfactorily undertaken. The lesson to be learnt from the SAM project undertaken in Hikkaduwa is that planning as well as implementation should be institutionalized at the local authority level. Leaving it to be implemented voluntarily is not a good strategy to be adopted in a case of countries like Sri Lanka. The application of the SAM approach to Hikkaduwa tourism area provides indications for further refinement to be undertaken in the next stages.

There is no such micro level attempt to plan for tourism in Calangute. The Department of Town & Country Planning of Goa prepared a Master Plan for Tourism Development in 1987 covering the entire state of Goa (Deprtment of Town & Country Planning, Goa, 1987). That Plan was also not imple-
mented as it did not receive the required public support because of the reason that public opinion had not been adequately sought at the planning stage. In the beginning of 1999, the Goa Department of Tourism started preparing the second Tourism Master Plan. Once the report is prepared it will be another macro plan for tourism in the state of Goa. Calangute is an area which has not been given any special focus in any kind of planning. But it is clearly evident that Calangute requires special attention which cannot be given in regional/national level planning.

References


