

## **Nature conservation and sustainable ecotourism development with special references to Olive ridley sea turtle along Ganjam coast, Southern-Odisha**

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### **ABSTRACT**

Today nature and environmental concern is an integral part of human society which can be traced even in the practices of our older civilizations. In those civilizations it is deemed that the survival of mankind is inseparably linked with the grace of the surrounding environment. This study deals with an ecotourism site set in a coastal area in Ganjam coast, Odisha. The method involved using tourists who had travelled to Ganjam coastal area as respondents to a questionnaire survey. The data was analyzed using SWOT strategies, and a descriptive analysis was carried out as a suitable way to achieve the main goal of the research. The analysis of the results of each group surveyed includes a meaningful correlation between the effects of Olive ridley sea turtle, ecotourism and sustainable development strategy in Ganjam coast for protecting the coastal biodiversity and natural environment. The aim is to highlight those aspects which will increase the levels of tourist knowledge, biodiversity conservation, cultural exchange, public participation, investment, alternate livelihood, employment generation and others. It is also suggested that some solutions are identified in ecotourism which are key elements for environmental protection and sustainable development of the coastal area for long term.

**Keywords:** Olive ridley, biodiversity, livelihood, ecotourism, Ganjam coast

### **INTRODUCTION**

Now a day, ecotourism as a developing activity in the world, and its

economic role, are often an integral part of the income of many countries, and every development of the industry will have

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effect on society (Estelaji, and Nezhad, 2011). With 6.23% national GDP and 8.78% employment contribution, tourism is the largest service industry in India. Tourism industry is also known as an “Integrated” industry, as it has links with many allied sector which provide adequate service to the tourist. Indian tourism industry ranks 6th in terms of price competitiveness (Jennifer and Thea, 2007; Chakraborty 2012). In this regard, ecotourism, as one of the most significant types of tourism industry, has become involved with development. Now many countries of the world have found that their ability to achieve more income from the tourism industry is a simple way of creating job opportunities (Hashtjien, and Khoshnood, 2007).

Ecotourism is nature welcoming based responsible tourism, which must incorporate with the category of elements of nature based, ecologically, socially, culturally, economically sustainable, educational interpretative and locally participatory. Various promotional activities were conducted to encourage ecotourism in Ganjam coastal area of the twenty eight villages. It is entirely a new approach in tourism and a preserving travel to natural areas to appreciate the cultural and natural history of the environment, taking care not to disturb the integrity of the ecosystem, while creating economic opportunities that make conservation and protection of natural resources or biodiversity advantageous to the local people. In short, it can be

categorized as tourism programme of nature based, environment and ecologically sustainable, where education and interpretation is a major constituent and local people are benefited with livelihoods and employment generation. Eco-tourism or coastal tourism is a form of tourism that appeals to the biodiversity, livelihood and socially conscious people. It is the travel to places where flora, fauna, natural heritage etc. is the primary attraction. Ecotourism is an alternative form of tourism which will permit the sustainability of the ecosystem. Conscious ecotourism includes programs that lessens the unpleasant effects of traditional tourism on the natural environment, and enhance the cultural integrity of local people. The ambition of eco-tourism is not only for well human being but also to integrate the local culture, volunteers for the wilderness adventures of nature and learn the new way of living. (ICZM Project, 2009).

The endorsement of ecotourism should be compatible with the natural environment, because a successful tourism industry will only happen with environmental conservation of the highest order (Karimi and Makhdom, 2009). For waste arising from the unplanned development of tourism activities has destroyed environmental marine habitats surrounding coastal areas. These facts reveal that the balance between tourism and marine environment is quite susceptible, and to sustain balance between these two we must have develop program with a

adequate knowledge of marine environment that to avoid these circumstances it will be necessary to have suitable planning and sustainable tourism development in coastal areas (Porokhshvari, 2010). This relationship in the southern areas of Odisha, particularly in the coastal areas of Ganjam, was considered because of the great natural attractions, suitable climate, and the forest location. In this way tourists are attracted to Ganjam by the temple, lake and sea as it creates a unique environment which is valued by many tourists for entertainment, relaxation, swimming, and enjoyment of the beautiful view. One of the major reasons for this is the easy and accessible routes in the coastal areas. During recent years the local tourism has been a concern for organizational experts, local communities, NGOs and researchers. The aim of this study is to evaluate and validate the positive and negative impacts of ecotourism on the environment and the sustainable development in the area of Ganjam coast.

One important role in the coastal ecotourism is community-based ecotourism of (Kersten, 1997) which can be defined as a community based coastal ecotourism, containing significant biodiversity values, ecological services, and cultural values, voluntarily conserved by indigenous and local communities, through customary laws or other effective means. The emphasis of this strategy is community development through participation of the marginalized

sector (including indigenous groups) rather than on regional or national development. It also has the following aims:

1. Assessment of coastal conservation, sustainable ecotourism and to help preserve coastal ecology of the area.
2. Community based coastal ecotourism through a revival or preservation of natural environment, traditional practices and cultural techniques.
3. Recommendations for action to realize community based eco-tourism development at this area.

## MATERIAL AND METHODS

The district got its name from the word "*Ganj-i-am*" which means the Granary of the World. The district is named after the Old Township and European fort of Ganjam situated on the northern bank of river Rushikulya which was the head quarter of the district. Ganjam district has been blessed with beautiful and mineral rich coast extended over 60 km. It provides unique opportunity for fishing and port facility at Gopalpur for international trade. The rivers like Rushikulya, Dhanei, Bahuda, Ghoda Hada are the source of agriculture and power sectors of the district. The Chilika Lake which attracts international tourist known for its scenic beauty and a marvellous bird's sanctuary is situated in the eastern part of district. A mix of moist peninsular high and low level Sal forests, tropical moist and dry deciduous and tropical deciduous forest types provide

a wide range of forest products and unique lifestyle to wild lives. The district is characterised by an equable temperature all through the year, particularly in the coastal regions and by high humidities. The cold season from December to February is followed by hot season from March to May. The period from June to September marks the South West Monsoon and 70% of annual precipitation is received during this period. The normal rain fall of this district is 1444 mms. May is the hottest month. With the arrival of the monsoon by about the second week of June the day temperature decreases slightly while the night temperature continue as it was in the summer. Towards the end of September, after the withdrawal of south west monsoon, temperature decreases progressively. December is the coldest month. As of 2011 India census, Ganjam had a population of 3,520,151. Males constitute 50.49% of the population and females 49.51%. Ganjam has an average literacy rate of 71.88% male literacy is 81.85%, and female literacy is 61.84%. Total child population age between 0–6 years is 11.30% of the total Ganjam population. Sex ratio is 981 and density of population (persons per km<sup>2</sup>) is 429 (Annonymus, 2011).

To complete the objectives of the study, before the field visit questionnaire consisting of open and close ended questions. The primary and secondary data has been collected from different categories of fields, people and institutions involved in

promoting ecotourism industries. The primary data has been collected mainly inspection of the field, formal and semi-formal interviews with tourists and local community, use the statistically designed questionnaire to collect the opinions and information from the local residents, tourists and the staff of the department and SWOT analysis for defining the strategies. The secondary data has been collected during different stage of work. Interview questionnaires were translated in Odia/Telgu (local language) and after getting the answers from the villagers they were retranslated into English for further processing. The tourists were also given a separate questionnaire and they were interviewed (n=160) during our study period on April 2012 to October 2013. After collecting the questionnaire the data obtained were analyzed using the computer software.

## RESULTS AND DISCUSSIONS

Olive ridley sea turtle sensitization program:-

We were randomly selected those village i.e. New Bauxipalli, Markundi, Ramayapatna and Sunapur village to meeting and discussion with local people and fishery community for Olive ridley sea turtle conservation. The Awareness program was conducted from 21<sup>st</sup> December to 24<sup>th</sup> December 2012. We distributed some poster and show a movie “EARTH MATTERS” among the four villages, to talk delivered about how to

conserve this species in locality for long term. Sea turtles have become threatened due to human overexploitation, marine pollution and careless attitudes towards them. Human disturbances, both directly and indirectly are the primary reason for current decline in population of sea turtles worldwide. Therefore, conservation of sea turtle in whatever manner possible is crucial for future survival of their population. Among the various conservation and management strategies, community based conservation is considered to be the most effective approach which not only safeguard the sea turtle population but also provide livelihood options with turtles to the communities through various means of conservation. Children are more interest and involve for olive ridley sea turtle sensitization program. Before mass nesting beach cleaning program were started three villages namely Purnabandha, Gokharkuda and Podampeta. Near about 300 national and international students were participated for essay, quiz and painting competition in relation to marine biodiversity, environment and climate change. Among them 20-30% students were participated for beach cleaning and wildlife competition last year (Plate-1).

### **Sustainable Coastal Ecotourism Development**

Sustainable ecotourism development means developing the tourism industry and conservation on environmental ecosystem,

attracting tourists to an area using the existing resources so that economic, livelihood, cultural, and social rules are followed and the legal expectations of the community are met (Mojtaba *et al.*, 2010).

### **Coastal ecology**

The costal system has extremely important resources, which play a vital role in the economic and social life of nearby people.

Conservation and shrewd utilization of the costal wealth is important because they have becoming threatened by over exploitation, clearing of forest for industrialization, rapid urbanization, pisciculture, human settlements, etc. Hence, there is a need for detailed investigations that can help in of utilization can help improving the life of the local people while maintaining ecological balance of costal habitats. (Kar and Majnonian, 2004)..

### **Sustainable Coastal tourism through marine turtle protection:**

The costal system has extremely important resources, which play a vital role in the economic and social life of nearby people. Conservation and shrewd utilization of the costal wealth is important because they have becoming threatened by over exploitation, clearing of forest for industrialization, rapid urbanization, pisciculture, human settlements, etc. Hence, there is a need for detailed investigations that can help in of utilization can help improving the life of the local

**Table 1.** Using SWOT model to consider the protection of the balancing environment and the sustainable ecotourism development of coastal area Ganjam.

Strengths	Weakness	Opportunities	Threats
Important ecological coastal sites Prayagi light house, Bateswar temple, Rushikulya sea turtle mass nesting ground, Gopalpur beach, Markhundi temple & wide beach, Sunpur river mouth and coastal villages. Endemic, endangered flora and	Poor awareness, Lack of appropriate guide, lack of tourism in coastal markets, lack of sports facilities, efficient management of coastal and Traffic around the tourist areas.	Use of natural resources, research and Preserve endangered species, tourism market and special tours, cultural exchanges, Aqua culture development, massage centre, Yoga Kendra, spiritual huts and alternate livelihood.	Changes in land use, construction, indiscriminate cultural invasion, lack of appropriate investment in the tourism sector in sustainable tourism development and coastal ecotourism.



**Plate 1&2.** Beach cleaning for safe nesting



**Plate 3.** Training program of forest officials prior to mass nesting



**Plate 4.** Turtle based ecotourism during mass nesting 2013

people while maintaining ecological balance of costal habitats.

Recognizing, marine turtles plays a significant role to the ecology, culture, and economy of Ganjam coast; marine turtles

are severely depleted from their historical abundance. the large majority of marine sea turtles, population recovery will not be possible without greater attention to the conservation of essential nesting and

feeding habitats. So ecotourism is a management tool that will enable to identify and control the environmental impact of its activities, improve its environmental performance continually. Implementing a systematic approach to setting and achieving environmental objectives and targets in this coast can be achieved. In this way, the most significant of the impacts of environmental assessment in relation to sustainable tourism development include:

- encouraging a commitment/SSG for environmental responsibility among employees and guests;
  - Sighting of sea turtle protection as an opportunity for public in biodiversity issues;
  - Assess environmental impacts of all activities, planned and ongoing, as they relate to the conservation of sea turtles and their habitats;
  - Provide employees and contractors with information and instruction to enhance their awareness of relevant environmental issues, and to ensure effective management of environmental impacts, including impacts on sea turtles and their habitats;
  - Make continual improvements in operations and management oversight to increase the effectiveness and reliability of our sea turtle conservation program
  - Promote setbacks, maintain vegetated buffer zones between buildings and sandy beaches;
- Implement measures to minimize waste, including applying monitoring procedures to ensure that the nesting beach and nearshore waters remain free of debris and pollution;
  - Conduct regular (at least annual) lighting assessments to identify sources of light pollution, and strive to eliminate artificial light visible from the beach during nesting season;
  - Implement a system that removes potential obstacles to sea turtle nesting, including sun beds and recreational equipment, from the beach each night during the nesting season;  
Discourage vehicles on the nesting beach
  - Support sea turtle research, including offering financial or in-kind support, as practicable;
  - Report all incidents of sea turtle harassment or harm to the proper authorities.

### **Environmental and employment opportunity**

In the Southern Odisha, Ganjam coastline is extends from Praygi to Sunpur over 60 kilometres. These local areas dominated by mainly fishermen community and they are depend on part time or full time on fishing. It has been observed that, the naturalist, ecologist and conservationist have come to recognize the most vital role for rural and coastal communities to play in

conserving marine environment. All this interest in the environment and local cultures has created a dynamic economic engine that can spur healthy economic growth in under-developed areas, but also may result in unsustainable growth followed by rapid downturn to biodiversity. Past history has shown that the biodiversity was very rich and good return to the environment and for the local economy. Now a day the economic cycles are important and the developmental activities of building are healthy and sustainable economy are not much more profit of local people and biodiversity in the long term. Statistics and research confirm that an increasing number of travelers will be reaching remote ecotourism destinations with greater ease, at less cost and faster than ever before, indicating that some ecotourism destinations may become vulnerable. It needs proper management of tourism places and destinations that make no effort to conserve limit growth or benefit local people, and those that do. Consumer education and guidelines for the selection of ecotourism experiences will strengthen the legitimate ecotourism market place and diminish the effectiveness of false claims of environmental and social responsibility. So, ecotourism has proven itself to be an important tool for conservation, and in certain cases it has improved the quality of life of local people, who continue to demand it as a sustainable development option.

In the coastal area of Ganjam, the

sustainable developments of eco-tourism are of immense significant in generating the employment opportunities of many semi-skilled and unskilled people, particularly in remote and underdeveloped areas. A large number of women and young people are engaged in hotel, transport services, travel agencies, making and selling, hand crafts, cultural activities, tourist guide and other tourism-related tasks in the area. In this regard, using the SWOT method, the strengths and weaknesses, threats and opportunities were investigated, and strategies and suggestions are presented (Table1).

## CONCLUSION

Today, ecotourism (coastal tourism) is one of the most important types of extremely tourism for the environment, economy and is the most compatible with sustainable development in order to protect the region's ecosystems. In this regard, water ecosystems and land ecosystems are brought together in the coastal area in a destination for many people for business industry, leisure or other activities in the coastal and marine environment. In the southern areas of Odisha, there is a high potential for the utilization of the natural and human resources of the Ganjam coastal area, and this area has advantages for tourism over many other state, regions and countries. Because of other advantages such as access roads and the proximity of the capital city Bhubaneswar and silk city Berhampur, Odisha hosts the annual



holiday for large numbers of travellers. Based on surveys taken, Ganjam coast, with its approximate length of 60km along the north and south coasts of the Bay of Bengal and coastal tourism in the area, has many capabilities. We have studied how sustainable development of ecotourism in coastal areas of Ganjam can be achieved and how environmental protection has been affected, by looking at different coastal areas which are sites of seaside tourism in each area.

For the study we were used to assess the reliability of the questionnaire, and the findings were clear that the positive impact of ecotourism in the area includes:

- Increase awareness of eco-tourists of the coastal area
- Cultural exchanges between tourists and local people
- The employment generation and opportunity
- Alternate livelihood option
- Training of tourism guides for tourists in order to familiarize them with the resources of the coastal environment and the protection of the ecosystem of the Caspian region
- Providing encouraging and punitive policies on environmental issues that can reduce negative environmental effects, such as the creation of coastal nature, in accordance with the needs of each area
- Adequate information to guide tourists, in tourist brochures and advertisements in the mass media and

publications

- Travel companies to invest in and develop coastal tourism
- Prevent irregular construction and land use changes
- Health facilities services and improvements to old sites and to prevent waste

Most of the tourists are interested in travelling to the coastal cities of this area for tourism activities such as sun rise view beach walk, turtle watching, sand art, boating in sea for turtles and dolphins, using other facilities that are in place for their leisure. But the remarkable point is that the educational level is generally medium among the tourists. Considered to be of more significance to the issue of the preservation of coastal ecosystems are demands for further development in the coastal area in order to provide recreational and health amenities. From the field observations and surveys, changing land use in coastal areas is an essential factor in managing the destruction of coastal landscapes and marine ecosystems. So that more research is needed and also proper management strategy can be save both biodiversity and sustainable ecotourism of these regions.

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