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EMERGING DIMENSION OF COASTAL ECO-TOURISM RESOURCES ALONG THE COAST OF WEST BENGAL, INDIA

Manojit Mandal*
Pijush Kanti Dandapath**
Dr. Jitendra Shukla***

Abstract: *Increasing development of natural resources and environmental sciences worldwide, creating a wide dimension in the realm of tourism industry. One of the striking features of the present century is the emergence of 'ecotourism' It is developing very fast particularly in a developing country. Eco-Tourism has stimulated the creation of local growth centers within a country, relatively, in the backward regions. Tourism as a scientific field of study has only a recent beginning in India as in other third world countries. Eco-tourism is an advanced thought on development of tourism in the natural surroundings of forest, wild life, coastal sconces informs and a different aquatic life local population preserving the science beauty of the area. The beauty of the concept is the active participation of the people inhabiting in an area for promoting tourism without degrading the natural surroundings. In this way many income generating activity and the local population have emerged and they have been benefitted economically and socially by mixing with the domestic and foreign visitors. Thus the 'Eco-tourism evolves travelling to relatively undisturbed natural areas with the specified objects of studying admiring and the scenario and its wild plant and animals as well as any existing cultural aspects found in these areas.*

Coastal tract of West Bengal area presents an extensive natural tract interfaced by land and water. The whole coastal area is ecologically undisturbed natural area full of scenario and contributes to the high degree of Bio-diversity. The West-Bengal having wide range of coastal areas with a length 350 Km. along the Bay of Bengal Comprising the District of East Midnapure, and South 24 Pargana. The Coastal strike of West Bengal presents source of beautiful option in sea beaches of Digha, Sankarpur, Mandarmoni, June put, Bakhali, Sagardwip, Kakdwip, etc.

The present paper is an attempt to understand and examine the nature based coastal tourism of West Bengal Coast which is an emerging industry and a wide scope of Eco-tourism resources along the coast of West Bengal.

Keywords: *Bio-diversity, Coastal tract, Eco-Tourism*

*Research scholar, Department of Geography, Ranchi University, Ranchi, Jharkhand, India.

**Research scholar of Ranchi University, Ranchi, Jharkhand, India and Assistant Professor of Geography, Bajkul Milani Mahavidyalaya, West Bengal, India.

***Associate Professor, Department of Geography, Ranchi University, Ranchi, Jharkhand, India.

I. INTRODUCTION:

Tourism over the years cropped up to be a revolutionizing phenomenon and it is emerging as a catalyst of the development process due to economic and employment generation as well as generates a number of socio-economic benefits, particularly in remote and backward area at the regional, national as well as global levels. So, tourism is now recognized as an emerging and fast developing industry everywhere in the world as well as India and West Bengal also. But indiscriminate expansion of the tourism industry has resulted in some ecological and cultural damages to the host country. For this reason, after 1980s the concept of the eco-tourism has been popularized rapidly by the HECTOR CEBALLOS LASCURAIN in 1983 initially the term used as eco-tourism.

The coastal stretch of West Bengal with a length of about 350km comprises the two districts- Purba Medinipur(East Midnapur) and Dakshin Chabbisparagana (South 24 Paraganas). This region (Like- Digha, sankarpur,Tajpur, Mandermony, Sagar Island, Bakkhali etc) is a transitional zone in-between sea and land where the Casuarinas and mangrove forest are whispering, sea are roaring, the flora and fauna are blooming and where visitors can rejuvenate yourself in the company of sand, sea and sun in the pristine open air which has kept her doors wide open to established the eco-tourism destination.

II. OBJECTIVES:

To assess the linkage in-betweens the developmental parameters of Tourism industry (like invariably leads to accelerated road transport, indiscriminate expansion of hotel industry (like Urban sprawl) and illegal encroachment by small traders and Other activities by Local People in the coastal West Bengal) and Environment and their impact in the costal West Bengal Tourist Destinations.

III. METHODOLOGY:

The present paper intended to be empirical study designed for a Micro Level investigation this involves gathering of information and collection of data at both case study and survey method. Degree of Tourism Industry will be analyzed from the data (which collect from the Statistical Hand Book East Medinipur and South 24 PGS and Digha SankarPur Development Authority Office) and its impact will be drawn through the intensive field survey.

IV. CONCEPT OF ECO-TOURISM :

From the recent past, world tourism has emerged as a very big industry. It provides employment to a large number of people and contributes to national economy as a big way while damaging the natural environment too. For this reason, after 1980s the concept of the eco-tourism has been popularized rapidly by the HECTOR CEBALLOS LASCURAIN (Mexican environmentalist) in 1983 initially the term (eco-tourism) used as–"Travelling to relatively undistributed and uncontaminated natural areas with the specific objective of studying, admiring and enjoying the scenery and its wild plants and animals, as well as any existing cultural manifestations (both past and present) found in these areas."

So eco-tourism is nature based tourism and it is an effective instrument for enhancing method of conservation of environment, many income generating activity (through earning revenue, foreign exchange, hotel business, commodity selling, hotel boy service, guide, making hand-crafts etc.) of the local population, economic benefits of the host communities of the state or country and rejuvenation of the culture and tradition there by facilitating overall development. It also give us that eco-tourism is a positive source of fascination for man and one of the causes of his psychological peace, mental solace and enjoyment and it rejuvenates man's sprit to explore nature again and again, revives his vitality and gives fillip to his energy after been churned out by the routine work of his monotonous life.

V. LOCATION OF STUDY AREA :

The states of West Bengal are comprised of 19 districts including Kolkata. It lays between21055' N lat. to 26050' N lat. & 86030' E long. to 89058' E long. respectively with an area about 88,752 sq km where the coastal stretch of West Bengal extends from the mouth of the river Subarnarekha on the West (bordering the state of Orissa) to the mouth of river Hanribhanga on the east (bordering Bangladesh) between longitude 87030`E and latitude 21° 37.012'N to 89030` E. and latitude 21°40.849'N respectively with a length about 350 km comprises the two districts-East Midnapore and South 24 Paraganas. The long coast line of

West Bengal along the Bay of Bengal is dominated by Ganga Delta which occupies around 60 0/0 of this coast line.

Physiographical, the entire coastline may be subdivided into three principal coastal zones, such as:-

a) From the mouth of Harinbhanga river to the mouth of Hugli river, known as the Sundarban Delta Zone" (Eastern sector);

b) Saline tidal regime of the Hugli river, stretching upto Kulpi Point and the Haldia Port (Central Sector);

c) Digha-Junput coastal plain along the sea (Western Sector).

But areas for intensive coastal tourism in West Bengal could be distinctly divided into two major zones, such as -

:i). Digha-Shankarpur zone in Purba Medinipur - District (Destination:-Digha / Shankarpur/ Tajpur /Mandarmoni/ Junput/Gopalpur), and

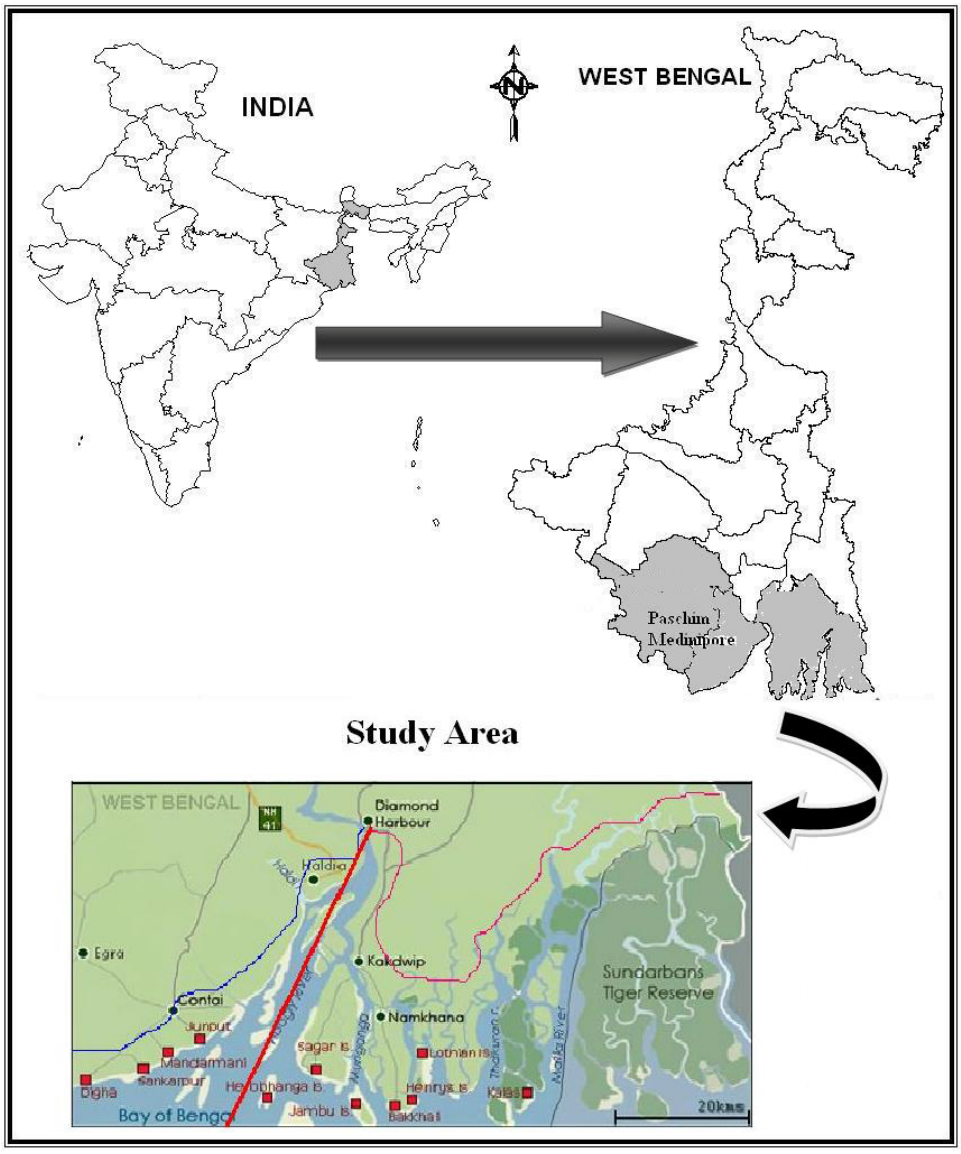
ii). Sundarban in South 24 Parganas District (Destination: - Sagar Island / Haribhanga Island / Bakkhali / Frazerganj / Henrys Island / Jambu Island / Kolas Island etc.

VI. BASIC FEATURES OF THE STUDY AREA:

West Bengal has golden opportunities for the establishment of eco-tourism due to characterized by the Royal Bengal Tiger, Mangrove Forest (Sundarban-world largest Zoogeographical region), wide and hard beaches (Bay of Bengal coastal tract in West Bengal like Digha, Sankarpur, Mandarmoni, Sagar Island, Bakkhali etc) where the sightseer play and enjoy romance with sun, sand and sea in the sea beaches and different types of aquatic life, flora- fauna, rolling seas, sand dunes, casuarinas forest, red crabs, eye catching beautiful scenario, which has kept her doors wide open to established the eco-tourist destination. This region is a transitional zone in-between sea and land where the mangrove forest are whispering, sea are roaring, the flora and fauna are blooming and where visitors can rejuvenate yourself in the company of sand, sea and sun in the pristine open air. Each part of the coastal region of West Bengal is nothing short of spectacular view wearing a green blanket the coastal area seems like an emerald of West Bengal. Among these rich flora and fauna are the major eco-tourism resources, which help to increase the glamour of the eco-tourism industry in West Bengal coastal region. In coastal region of West Bengal, there are varieties of trees, shrubs, climbers, herbs, and medicinal plants etc. which are creating a

colorful spectrum of bio-diversity. Except these, many endangered flora and faunas are also the chief source of tourist attraction, and, although, eco-tourism is the nature based tourism so it can be said that rich flora and fauna also make a way to ripen eco-tourism industry in West Bengal coastal region. But all the West Bengal coastal zone environments provide a unique combination of resources and constrains (like beaches, sand dunes, wetlands, barrier island, reefs etc. and storms/cyclone, sea level rise, more vulnerable erosion by fluvio-marine processes and anthropogenic activities etc) which may be considered to explore the opportunities for development of eco-tourism which is one of the assuring effective management of the coast.

Figure 1 Location Map of Study Area



VII. PROSPECTS OF ECO-TOURISM DEVELOPMENT IN THE WB COASTAL TRACT:-

In the two distinctive tourism zone of West Bengal environments provides:-

a) ***Presents romance with sun, sand and sea***.-

The coastal tracts (Specially sea-beach) of W.B. presents gorgeous source of scenic beauty where the sightseer play and enjoy romance with sun, sand and sea in the sea beaches (well-liked places are – Digha,Sankarpur, Tajpur,Mandarmoni,Juneput Sagar Island, Bakhkhali, Henry's island etc.). The mentioned places of coastal tracts of W.B. are offers their individuals characteristics as wide,hard and flat beaches where have presents rolling seas, sand dunes, casurinas forest, red crabs, eye catching beautiful scenario, remarkable variety of aquatic and forest life(different types of fishes, crocodile, varieties of birds, royal Bengal Tiger etc.) Which are ultimately attracts tourist in the coastal area of W.B.

Fig. 2 Scenic beauty at New Digha.

b) Maintained high degree of Bio-diversity: -

Coastal region of WB is a land of hope, a hope to care for the green and save nature. This region is a transitional zone in-between sea and land where the mangrove forest are whispering, sea are roaring, the flora and fauna are blooming and where visitors can rejuvenate yourself in the company of sand, sea and sun in the pristine open air. Eachpart of the coastal region of WB is nothing short of spectacular view wearing a green blanket the coastal area seams like an emerald of WB. Among these rich flora and fauna are the major eco-tourism resources, which help to increase the glamour of the eco-tourism industry in WB coastal region. In coastal region of WB, there are varieties of trees, shrubs, climbers, herbs , medicinal plants etc. Which are create a colorful spectrum of bio-diversity. Except these, many endangered flora and faunas are also the chief source of tourist attraction,

and, although, eco-tourism is the nature based tourism so it can be said that rich flora and fauna also make a way to ripen eco-tourism industry in West Bengal coastal region.

Fig 3 Bio-Diversity beauty

c) Employment opportunities :-

Sustainable development 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 and other tourism-related tasks.

Fig. 4 Fishing fire wood collection and local (Beach) transportation

According to 2001 census, there are so many poor family settled in WB coastal areas and the coastal districts of WB accounts for 11324066 people who are approximately 14.13 0/0 of the total population (80176197)of the state spread across 2139759 house holds in two coastal districts (South 24 Pgs and East Midnapore). The distribution of population across districts shows that, the total share of working population is 34.57 0/0 of the total population of which 89.440/0 are male workers and 10.56 0/0 are female workers. About 65.43 0/0 of total population are unemployed who are totally dependent on 34.57 0/0 of total workers (Marginal + Main workers).

d) Pleasant weather condition :-

Pleasant warm weather condition like tropical monsoon climate with an average annual rainfall of 1500 mm and maximum air temperature is around 35 0C and the minimum is 13 0C, which affected by land breeze and sea breeze, are attract the tourist round the year. (The beaches of Digha, Shankarpur, Bakkhali etc. attract a large number of tourists each year. Digha beach alone attracts 1.5 lakh tourists per year. The annual pilgrimage of Ganga Sagar brings more than one lakh pilgrims every year).

VIII. PROBLEMS FOR PROMOTING ECO-TOURISM :-

Many small sandy islands and mudflats mark the river channels and most the of tourist places in WB coastal area get completely inundated during high tide. Much of the western part of the coast is now inhabited and cultivated. Industry and tourism has established a strong presence in the area between the Subarnarekha river on the west and the Hugli in the east. The eastern sector is almost an unpopulated area except for Sagar, Mahisani, Namkhana, Frazergung areas, including the inter tidal reclaimed part of about 500 sq.km from the north of existing mangrove forests. Agriculture is a predominant activity in the western sector. In the eastern sector, the reclaimed lands are now supporting single-crop agriculture with low productivity.

The impacts of human activities come through (a) diesel driven fishing boats through release of hydrocarbon due to lack of maintenance), (b) fishing harbour activities, (c) aquaculture farms and (d) agriculture, none of which has been properly assessed. Other economic activities, besides fishing and agriculture, include honey collection, wood cutting, Salt pan activity in Dadanpatrabar area and Brickfields are also mushrooming along the river and backwater courses. Tourism is a major contribution to the economy of the coastal zone. Tourism activity invariably leads to accelerated road transport (diesel driven), hotel industry and illegal encroachment by small traders. Each of these components has a direct impact on environment quality of land, air and water. So, now days the coastal plain of west bengal suffers by many problematic issues which have created conflicts between various resource users and interest groups, between developers and ecologists/environmentalist, engineers and geoscientists and land owners and economists in west bengal.


Fig. 5 Coastal Erosion at sankar pur Tidal flood at Estuarine of Rasulpur River

The risk has been increased considerably in the interactive zone of human activities and coastal hazards. Only the burning issues are discussed below, which are resist the emerging dimension of -


Fig 6 Risk of transport

IX. BEACH RECREATION WEST BENGAL COASTAL ECO-TOURISM. :-

- Sea level rise
- coastal erosion
- Storm/cyclonic hazards
- Large scale urban encroachment
- coastal recreational exploitation
- brick fields on coastal flood plain area
- EIA/ Implementation of law and order
- CRZ acts/ Implementation of law and order
- Political Interference



Fig-7 urban encroachment Sewage water Pollution Brick Field

All Issues are creates the environmental degradation in and around the coastal tract of West Bengal

X. PROGRESS OF TOURISM IN THE TWO COASTAL DISTRICT (LIKE EAST MIDNAPORE AND SOUTH 24 PGS) OF WEST BENGAL :-

Tourism is a major contribution to the economy of the coastal zone. The beaches of Digha, Shankarpur, Bakkhali etc. attract a large number of tourists each year. Digha beach alone attracts 1.5 lakh tourists per year. The annual pilgrimage of Ganga Sagar brings more than one lakh pilgrims every year. The Lothian Island Sanctuary (Bhagatpur Crocodile farm) attracts 30,000 tourists while Sundarban Tiger Reserve gets about 50,000 tourists per year.

Tourism in the Sundarbans can also lead to a profitable activity for local population. Tourist statistics indicate that at present 1, 80,000 tourists annually visit Sundarban area. An opinion poll about tourism attraction indicate that most of the participants (100%) are interested in inter island boat trips, besides showing interest in bird watching (50%), turtle nesting (33%) and recreational fishing (17%). The tourism activity can further be augmented by interdicting underwater Plexiglas capsule for watching the marine life. As many as 83% of the tourists have shown interest in this regard. The local people could therefore be engaged in inter island boat trips, as guides for bird-watching, turtle nesting sites and recreational fishing. The employment of the local people in all other promotional activities should form an important component of management strategy. The coastal town of Digha has changed from a small village to a tourist resort over a period of four decades. Initially, lack of communication and transport had kept the influx of the tourists at a low order. During the last four decades road connections have improved and a fleet of transport operations led to significant influx of tourists, which in turn necessitated development of hotels, holiday houses, private lodges, etc.

XI. ENVIRONMENTAL IMPACT:

Such a development took place without appropriate land use planning. The Geological Survey of India in its report on the Digha coastal belt pointed out that the active processes of erosion and accretion have been accelerated by several man-made interventions including removal of sand dunes, leading to mushrooming of construction near the coastline. The exact impact of tourism on the coastal belt of Digha cannot be quantified but, the continuing dumping of solid waste and raw sewage in the coastal water bear testimony to an alarming situation which increases with every tourist season. The Digha-Junput coastal tract is being eroded by sea-water resulting in lowering of the beach and recession of the

bank. The rate of erosion has been found to be about 17 meters per year at some parts. Besides erosion, beach lowering (submergence) by about 15 to 20 cms per year appears to continue unabated (Bhattacharya S, 1992). Apart from coastal erosion caused by wave actions and storms, removal of sand for construction of roads and hotels, exploitation of Casuarinas trees on the dune-tops for fuel wood and building materials also cause destruction of sand dunes and erosion of beach. Artificial methods of beach protection at some places also accelerate coastal erosion elsewhere. Coastal accumulation is occurring at Shankarpur. Increasing pressure of human activities on the Hugli unstable coastal zone has been assessed by IIT, CSME and GSI during last 15 years, but no effective action plan for controlling the phenomenon is yet visible.

XII. GROWING COASTAL TOURISM AND ITS IMPACT ON ENVIRONMENT IN COASTAL WEST BENGAL

Destination		Period of Emergence	Site and Situation	Tourist Carrying Capacity at present	Impact
DIGHA	Old	Late 1950s	Water front	250 H , 21 HH & many no. of houses cum guest house are there.	Shore line water table change, sea beach Vanishing, Failure sea guard wall structure, flooding and inundation ,and anthropogenic pollution etc.
	New	Mid 1980s	Back shore	155H & 30 HH & Other houses cum guest house.	Built up Dune Surface but erode sand dunes by wind action due to remove casuarinas forest in large scale for converting the land into urban habitat.
Sankarpur		1990s and onward	Low land behind the Dune Barrier	8H	Reduced beach width and erode dune in massive scale. Geo-Tube concept failure so storm tide caused flood and salty and marshy land formed, damage agricultural field.
Tajpur-Mandermoni.		2003 and onward	Back shore	More than 13H	Built up Dune Surface but erode sand dunes by wind and Strom Wave action due to remove casuarinas forest in large scale for converting the land into urban habitat.
Fresergunge		Early 1950s	Beach-Dune Complex	0B and 3R (Under fishery Dept. of WB. Govt.).	Damaged by erosion and cyclone waves in different times.
Destination		Period of	Site and	Tourist	Impact

	Emergence	Situation	Carrying Capacity at present	
Bakkhali	Mid 1960s	Mangrove forest belt with sandy shore line.	25-30 H/L	Inundation beach erosion, loss of Mangrove and casuarinas forest.
Sagar Iland	Mid 1980s	Reclaimed sand bar areas in the mouth of Ganga and previously mangrove forest belt.	1H, 2YH, 7GH, 5A, 1P and temporary Tourist habitat at the time of famous fair.	Bank eroded, marshy land reduced, flooding and inundation.

Fig 8. Coastal Erosion Management Steps (Geo-Tube Concept) at Sankarpur

XIII. CONCLUSION:

So, now days the coastal plain of West Bengal suffers by many problematic issues which have created conflicts between various resource users and interest groups, between developers and ecologists/environmentalist, engineers and geoscientists and land owners and economists in West Bengal. The coastal zone management in West Bengal has been suggested under both regulatory and non regulatory system. Under regulatory system, it is recommended that critical ecosystem like mangrove forest in Sundarbans and sand dunes in Digha etc. should be protected from any changes. Aquaculture should also be regulated with a total ban on conversion of mangrove area, controlled abstraction of groundwater and appropriate treatment of effluents before being discharged into the surface water system. Similarly, regulatory measures should also be adopted to control dredging activities, discharge of burnt oil, leakage of oil due to bad maintenance of vessels, limiting setback lines for coastal construction etc. It is also emphasized that EIA study should be made

mandatory for any large coastal project. Under the non-regulatory measures, control of urban run-off, erection of flood protection barrier, formulating oil spill contingency plan, use of remote sensing for identifying potential fishing zone, appropriate storm forecasting, restoration of derelict wetland can be listed as major recommendation. Simultaneously steps are to be taken for technical training on coastal zone management increasing awareness in the community and ensuring a system of monitoring.

Inspire of the immense potentialities (which I mentioned before) of eco-tourism development in coastal region, the region has not been highlighted and developed as a eco-tourist destination. The principles of eco-tourism are not scientifically followed in the region, a number of local communities are still unemployed, and infrastructure does not follow the eco-tourism concept. But, at present time the new government of west Bengal try to develop the infrastructure for established the tourism industry in West Bengal from Pahar (North) to Samudra (South).

Yet we can say, all the west Bengal coastal zone environments provide a unique combination of resources and constrains (like beaches, sand dunes, wet land, barrier island, reefs etc. and storms / cyclone, sea level rise, more vulnerable erosion by fluvio-marine process and anthropogenic activities etc.) which may be considered to explore the opportunities for development of eco-tourism which is one of the assuring effective management of the coast.

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