

CHAPTER-1

1.0 INTRODUCTION

1.1 ECOTOURISM CONCEPT AND DEFINITIONS: Ecotourism has attracted increasing attention from last few decades in India. It has become popular not only as an alternative to recreational tourism, but also as a means of income generation and environmental conservation. Being a nature based tourism; it makes use of natural ecological attractions, to generate income for local people and education and pleasure for the tourists. Its main objective is to protect the environment by the local community who were used to be the prime destroyer of it.

The concept of ecotourism evolved in western society long ago. It was associated with the experience of wild nature. It started in 1872 in the United States with Yellowstone Park, in 1879 in Australia with Royal Park and in 1885 in Canada with Banff Park and Niagara Falls to set aside natural areas for protection and recreation in the form of national parks. There is a worldwide system of thousands of protected areas in all parts of the globe now. Since 1970, globally the number of protected areas has increased by 185%. The present area is 926,349,646 square kilometers, in parks, which is an increase of 51.5% since 1970 (Eagles, 1997)⁵⁸.

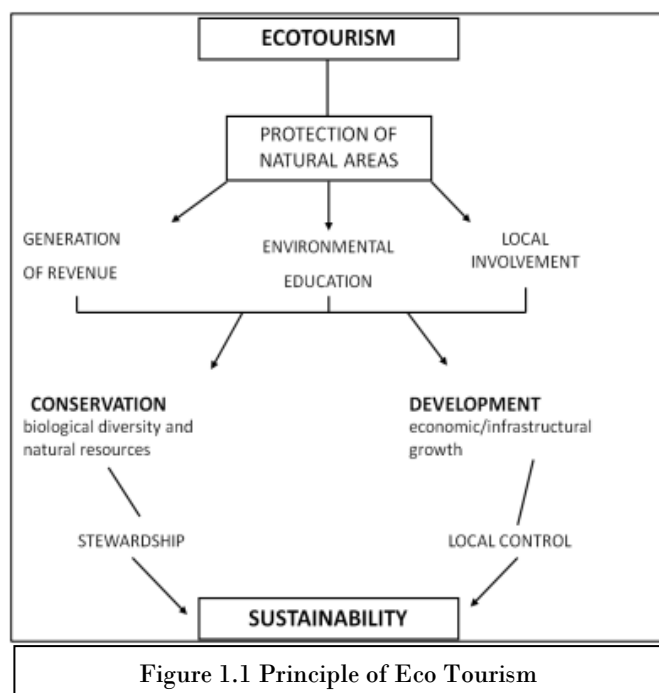
The term 'ecotourism' has been defined in many ways, and is generally used to describe tourism activities, which are conducted in harmony with nature, as opposed to more traditional mass tourism activities. Comprehensively, ecotourism has been defined by the Ecotourism Society as: Purposeful travel to natural areas to understand the cultural and natural history of the environment, taking care not to alter the integrity of the eco-system, while producing economic opportunities that make the conservation of natural resources financially beneficial to local citizens (Ecotourism Society, 1992). The role of the tourist is stressed by Hector Ceballos-Lacurain, who felt that the main point of ecotourism is that the person that practices ecotourism has the opportunity of immersing him or herself in what most people cannot enjoy in their routine, urban existences. This will eventually acquire a consciousness... that will convert him/her into some body keenly involved in conservation issues (Ceballos, 1987). The resource conservation role is emphasised by Karen Ziffer, who describes ecotourism as a managed approach by the host country, whereby it commits itself to "establishing and maintaining the sites with the participation of local: residents, marketing

them appropriately, enforcing regulations and using the proceeds of the enterprise to fund the area's land management as well as community development" (Ziffer, 1999)¹¹⁴.

From the above definitions it is clear that ecotourism involves minimum low impact activities, which can take place where there are enough natural beauties, cultural heritages and educational importance to attract tourist. The main cause of increasing popularity of ecotourism in India is the desire among rapidly growing and relatively affluent segments of the industrial city tourists to have nature-based experiences, and growing awareness that natural resources are finite and must be conserved for future generations. Ecotourism as a sector of the tourism industry is still in its infancy in India, but developing countries like India, with their abundant variety of physical attractions, have most of the natural qualities necessary to position ecotourism as a prime offering of their tourism industry.

1.2 PRINCIPLES OF ECO-TOURISM: The Eco-Tourism should be locally defined and implemented in terms of specific activities and structures, and potential environmental, cultural, and economic effects for the host area (Nelson 1994)⁹¹. Visitor guidelines are key in enhancing appropriate behavior of visitors to both cultural and natural areas. Eco-Tourism guidelines highlight expected behavior of visitors with respect to nature and to the host community and environmentally sensitive and low-impact activities (Mandziuk, 1995).

- Involves travel to natural destinations.
- Respects local culture.
- Minimize impact
- Build environmental and cultural awareness and respect.
- Provide positive experiences for both visitors and hosts.
- Provide direct financial benefits for conservation.
- Provide financial benefits and empowerment for local people.
- Supports human rights and demographic movements



- Raise sensitivity to host countries' political, environmental and social climate.

(Source: The International Ecotourism Society)³¹

1.3 WORLD TOURISM ORGANIZATION (WTO): For long, tourism development happened in isolation, with little regard for the ecological and social character of the area. But now things are changing. The close relationship between tourism and the environment, and the importance of environmental planning and sustainable tourism development planning are becoming increasingly recognized.

The Manila Declaration (1980) of the World Tourism Organization (WTO), the most comprehensive international statement adopted on the goals of modern tourism, emphasises the importance of both natural and cultural, resources in tourism and the need for the conservation of these resources for the benefit of both tourism and the residents of the tourism area. Following the Manila Declaration, the Joint Declaration of the WTO and the United Nations Environment Programme (UNEP), this formalized inter-agency coordination on tourism and the environment states:

"The protection, enhancement and improvement of the various components of man's environment are among the fundamental conditions for the harmonious development of tourism. Similarly, rational management of tourism may contribute to a large extent to protecting and developing the physical environment and the cultural heritage, as well as improving the quality of life..."

The importance of national and regional tourism planning as a conservation and sustainable development technique was expressed at a WTO/UNEP Environmental Workshop in 1983 as follows:

"Regional planning provides probably the best opportunity for achieving environmental protection goals through the use of zoning strategies. Thus, zoning strategies and regulations can be used to encourage the concentration in some areas and/or dispersion in other areas of tourist activity so that extreme environments can be given the most rigid protection measures".

Appropriate relationships between tourism and the natural and socio-cultural environments, which places responsibilities on both the tourist-receiving countries and the tourists themselves, were further specified by the WTO in 1985 during its Sixth General Assembly, through its adoption of the Tourism Bill of Rights and Tourist Code. This statement contained the following provisions:

- In the interest of present and future generations, (States should) protect the tourism

environment which being at once human, natural, social and cultural is the legacy of all mankind.

●To facilitate such understanding and respect, the dissemination of appropriate information should be encouraged on:

- a) The customs of host communities, their traditional and religious practices, local taboos and sacred sites and shrines, which must be respected
- b) Their artistic, archaeological and cultural treasures, which must be preserved; and
- c) Wildlife and other natural resources, which must be protected.

The Hague Declaration on Tourism, adopted at the Inter Parliamentary Conference on Tourism organized jointly by the Inter-Parliamentary Union and the WTO in 1999. They set forth several principles for the development of tourism, including emphasizing the importance of integrated planning of tourism. The declaration also pointed to the essential relationship of the environment and tourism as follows (WTO 1999)⁵: “An un-spoilt natural, cultural and human environment is a fundamental condition for the development of tourism. Moreover rational management of tourism may contribute significantly to the protection and development of the physical environment and the cultural heritage, as well as to improving the quality of life.”

1.4 PRESENT WORLD SCENARIO: Since the 1992 'Earth Summit, the concept of sustainable development has been placed firmly on the global agenda. It calls for a fundamental reorientation in the way we do business, in order to place the environment at the centre .of the decision making process for communities, for environmental groups and for business and industry. But in recent years, it is noticed that there has been little progress since the ambitious Rio Summit, which was considered the blueprint of sustainable development. The situation at present is alarming, more than 50,000 square miles of forests are being stripped of their green cover every day, green house gas emission is at an all time high, and the number of people living on less than a dollar per day has risen to above 1.1 billion. Forest fires have become more common; around 200,000 hectares of Mediterranean forests are destroyed each year by fire. Over 500 Mediterranean plant species are threatened with extinction.

1.4.1 Ecotourism Opportunities for Developing Countries: Ecotourism is one of the fastest growing trends in the tourism industry. The role of the tourist is stressed by Hector Ceballos-Lacurain, who felt that the main point of ecotourism is that the person that practices

ecotourism has the opportunity of immersing him or herself in what most people cannot enjoy in their routine, urban existences. This will eventually acquire a consciousness... that will convert him/her into some body keenly involved in conservation issues (Ceballos, 1987).

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There seems to be general agreement that ecotourism involves minimum low impact activities which can take place where there are natural sites of sufficient biological, cultural and geographical interest to attract tourism. The major factors contributing to the boom in ecotourism are international awareness of global ecological realities, the desire among rapidly growing and relatively affluent segments of the industrialized world's tourists to have nature-based experiences, and the developing world's conviction that natural resources are finite and must be conserved for future generations.

Ecotourism as a sector of the tourism industry is still in its infancy, but an analysis of the markets where it has made strong inroads indicates that developing countries, with their abundant variety of physical attractions, have most of the natural qualities necessary to position ecotourism as a prime offering of their tourism industry. (Niraj Tiwari and A.P. Tiwari).⁹³

1.4.2 Tourism and Socio-Economic Development: It has been acknowledged that tourism has a multiplier effect on the economy. The earnings from foreign exchange in our country now stand at Rs. 7,360 crores. Foreign exchange registered an increase of six per cent in rupee terms and 3.5 per cent in dollar terms in the year 2000. This is an important sector, which could transform the Indian economy. Employment generation, hotels, motels, travel agencies and guides are some of the segments that could effectively take care of our unemployment problem.

In Orissa, there has been a significant growth in the number of hotels. While there were 188 hotels in 1980 with 3,202 rooms and 6,205 beds, the number of hotels now stands at 733 with 14,939 hotel rooms and 28,223 beds.

It would not be out of place to discuss Orissa, which has been at the forefront of promoting socio-economic development and peace through tourism. It was here, that in the third century B.C. one of the greatest monarchs in history, Ashoka Priyadarshi gave up war

and opted for peace. He used travel and tourism as the principal means of; spreading his ideas, Ashoka did not just support the spread of Buddhism all over India and beyond, but created a vast infrastructure through an elaborate network of roads, buildings, free plantations, rock inscriptions, stupas and an effective law and order machinery. (A.N. Tiwari).

1.4.3 Tourism Benefits and Sustainability Requirement: According to World Tourism Organization sources, the total. International tourist arrivals in 2001 was 692.6 million that has contributed to 463.6 billion US \$ during this period. WTO's preliminary findings reveal that the tourism industry will continue to exhibit a strong growth of about 4% a year through the first decades of the 21st century and international travelers' arrivals will reach 1.6 billion by 2020, nearly 2.3 times the number of international travelers in 2001. There has been a phenomenal growth of tourism in some of the major countries in the world. A survey has revealed that more than 50% of the world tourist arrivals and revenue receipts has been recorded in a few highly developed economies taken together. The table (Table-1) states the figures in details.

From the above table, it is found that France has topped the list, receiving 76.5 million foreign tourists, i.e. 11% of the total tourists' arrivals of the world during 2001, and-ranked 3rd in revenue share from international tourism. However, the USA had the lion's share in terms of foreign exchange earnings from tourism i.e. 72.3 billion US \$, more than double earned by France during that period. The *WTO* report also predicts that tourism in East Asia and the Pacific will grow by an average of 6.7% annually till the year 2010, when the figure is expected to reach 229 million tourists a year. Since tourism has been recognize as a major factor in world trade and a prime mover of poverty alleviation, especially in the least developed countries.

In any productive process consisting of services, human resources remains the basic need. The volume of manpower engaged in activities complimentary to tourism industry is one of the highest in view of various sectors that are direct or indirect constituents of the industry, which has created a wide range of jobs of different categories.

1.5 INDIAN NATIONAL TOURISM POLICY (2002): The Indian Government presented its first tourism policy in 1982. The Department of Tourism, Govt. of India discussed the National Tourism Policy 2002, at a State Tourism Conference held in New Delhi. It proposed updated policy document the Tourism Policy 1997, with a new policy and

suggested a number of aspects related to sustainable tourism promotion.

According to the policy, any form of development including tourism, inflicts some amount of adverse impact on the natural environment and cultural heritage, which constitute the attraction.

Despoliation of the natural environment, archaeological monuments, beaches, mountains and places of natural beauty, disruption in the ecosystem of environmentally sensitive regions, destruction of traditions in the culturally sensitive areas, clandestine selling of antiques and vandalism are some of the negative aspects of tourism. A judicious balance, therefore, needs to be maintained between conservation and development. The policy, therefore, would be to maintain balance through planning restrictions and by educating the people in appreciating their rich heritage and by educating their cooperation in preserving and protecting it. Some points of the Tourism Policy Action Plan, which are related to sustainable tourism development, are as follows.

Bringing out periodical publications and organizing seminars, workshops and presentations on the economic and social benefits of tourism, to educate and create awareness amongst administrators, planners and the masses.

Establishing at least a few tourism resorts of excellence to present an ideal tourism product .of the country. Giving guidance and financial assistance to State! Union Territory Governments for preparing Tourism Master Plans identifying the tourism resources, prioritizing the development circuits and projects and specifying the most suitable forms of tourism.

Policy document ² seek to enhance employment potential within the tourisms sector as well as to foster economic integration through developing linkages with others sector broadly the policy paper attempts to -

- 1) Position tourisms as a major engine of economic growth.
- 2) Harness the direct and multiplier effects of tourism for employment generation economic development and providing impetus to rural tourism.
- 3) Focus on domestic tourisms as a major driver of tourisms growth.
- 4) Position India as global brand to take advantage of the burgeoning global travel trade and the vast untapped potential of India as a destination.
- 5) Acknowledge the critical role of private sector with governments working as a catalyst.
- 6) Crate and develop integrated tourisms circuits based on Indian civilization heritage and culture in partnership and states private sector and others agencies.

- 7) Ensure that the tourists to India get physically invigorated mentally spiritually elevated and “feel India from within”.

Imposing regulatory measures on developers, operators, tourists and the local communities under the existing laws and rules to ensure the social, cultural and the environmental sustainability of tourism projects (Adarsh Batra).

1.5.1 Indian Scenario: Indian tourism has also undergone a sea change. Tourism policy in India is being structured and given form by the creation of a separate tourism development fund, setting up of a tourism development authority, visa-on arrival, effective marketing, people's participation in the planning process and placing tourism in the concurrent list of the Indian constitution. The major steps taken in this direction are the creation of a special tourism task force, setting up of the National Tourism Advisory Council and direct air links with China. Reserve Bank of India data on the composition of service exports show that over a quarter of the local income now comes from software services. The second largest item is receipts from travel services. Table 1 below is indicative of its importance in the Indian economy in terms of receipts and employment generated by the sector.

International tourism-arrivals world wide	1135 (million)
International tourism arrivals in India	7.68 (million)
India's share of world tourist arrivals	0.68%
World tourism receipts	\$ 1245 (US billion)
India's foreign exchange receipts from tourism	1,23,320 (Rupees in crore)
India's share of world tourist receipts	1.58%
Domestic tourists in India	1282 million
Table 1.1: Indian Tourism Profile, 2014	
Source: UNWTO report 2014, India Tourism statistics, Department of Tourism, Government of India.	

The Government of India invited tenders for formulating a 20-year perspective plan for development of sustainable tourism in all states and union territories. India's outbound tourism has grown much more substantially compared to inbound tourism. The WTTC and Oxford Economic Forecasting conducted a survey in the year 2014 and found that more than 14 million Indian tourists are going abroad every year and the Indian traveler is consuming leisure and business products and services to the tune of INR 2,478.2 billion (2.2% of GDP). This reveals that the Indians are the fastest growing travel spenders in the world. Worldwide tourism industry creates one in 10 jobs. If by the year 2012, Indian travel and tourism were to generate the same level of employment as the world average, then, a further 40 million jobs would be created in this sector in India over the next decade. But travel receipts have

remained almost stagnant at around US \$ 3 billion for the last four years, as there has been a downward trend in foreign tourist arrival, which is due mainly to inadequate infrastructure facilities and security measures. India ranks 41 out of 160 countries under survey in terms of investment made in the tourism sector, which highlights the low priority, accorded to this sector in our country.

The economic impact of tourism is tremendous in terms of foreign exchange earnings, employment generation and solving the balance of payment problem. International tourism is already recognized as a leading export of some developing countries like the USA, France, Spain, Italy etc which are giving priority to tourism development, realizing the potential of this sector in solving critical economic situation. Moreover, the higher goals of socialism can best be achieved through tourism as it contributes to bringing in an economic equilibrium in society by making money flow from the rich man's pocket to the poor man's pouch. Governments are increasingly aware of the wide spectrum of effects created by tourism. The economic returns from tourism, however real and significant they may be, do not constitute the only reason why states encourage this activity. The satisfaction of business and social goals, the opportunity for the citizen to get to know his environment, the attraction of a deeper awareness of national identity and a sense of belonging to a culture and nation are all reasons for stimulating tourists' interest in travel. Tourism creates contact between individuals, between different cultures and religions. It gives insight into alien cultures and in the process creates interest and understanding among people. Nations coming into contact through the mass movement of people can never be incited against one another in the same way as nations whose human communication is limited by geographic, economic or political constraints. This security-building and peacekeeping function of travel and tourism warrants top priority to be attached to sustainable tourism development.

Realising the potential of the tourism sector for economic growth and harmonious relationship in the family of nations, governments are now giving priority to tourism development. But all development processes, entail the problems of environment and ecology, be it science or technology, tourism or agriculture. It is said that tourism can kill tourism. The interaction between tourism development and environmental degradation is so complex that it requires sensitive handling. Tourism development and the protection of the environment should go hand in hand as in the name of conservation, development processes can never be stopped. The recourse left is to make tourism sustainable. The concept of sustainable tourism embodies a challenge to develop world tourism capacity and the quality

of its products without adversely affecting the environment that maintains and nurtures them. Sustainable tourism development is positive socio-economic change that does not undermine the ecological and social system upon which communities and societies are dependent. Its successful implementation requires integrated policy planning and social learning processes. Its political viability depends on the full support of the people it affects through their social institutions and activities (Sitikantha Mishra, Adyasha Das, Tapan K Panda)⁹³.

1.6 **IMPACT OF TERRORISM ON TOURISM INDUSTRY:**

The impact of terrorism on the tourism industry can be enormous. It can lead to unemployment, homelessness, deflation and many other social and economic ills. The contribution of tourism for any country is so great that any downturn in the tourism industry is a cause of major concern for many governments. The repercussions are left in many other industries associated with tourism like transport, restaurants, hotels, and shops that cater to the tourists and allied services.

Terrorists can do everything to fulfill their demands. They have their own objectives for their results. They attack tourists, tourist center to media publicity and public attention. International tourists suffer more because international terrorists get media publicity. They not only use them for publicity but also for foreign currency transactions. Terrorists used different types of transnational support or transnational operations as for force multiply. As the world moves closer to the global economy, the terrorists found that striking in the global economy increases their effects on economy. Terrorism had made international tourism for their victim. International tourism can attract the international media. (J. White, 2015).

1.7 **BACKGROUND OF THE STUDY:**

Jungle Mahals of West Bengal is a treasure house of natural beauties. Forest covered plateau hills of Purulia, Bankura and Paschim Medinipur Districts of West Bengal are part of the '*Jungle Mahals*', i.e. tropical dry deciduous forest of Chotonagpur Region and mostly inhabited by tribal population. Hilly terrain and thick forest cover have made many parts of this region inaccessible by road and thus lacking in medical and educational facilities. Though the climate of this region is not very harsh [annual average rain fall is 1286 mm, with annual mean temperature 26°C] but high evaporation and infiltration losses caused agricultural drought, which accumulated over years and had weakened the economy of the area. In "Integrated Mission for Sustainable Development" (1993) Govt. of India Identified 152 districts of India as backward district, among them these three districts are identified from West Bengal. Taking advantage of these

physical and economic handicaps an organized group of social and political activists called Left-Wing Extremists (LWE) perpetrating violence and keeping the people of *Jungle Mahals* under threat. The plans of action of LWE include hostage takings, kidnapping, blasting on railway tracks, assassinations, arson, lootings and guerrilla warfare inside the forests. Their targets are mostly cadres and local level leaders of the ruling party of the State and security force personnel. They operate in a planned manner from remote and inaccessible tribal and rural areas. Left-wing extremism (LWE) was described by Chief Minister Sri Buddhadev Bhattacharjee in 2005 as "plagued by the collapse or absence of rural governance".

Non-cooperation of local population being the prime obstacle, government security forces with all its muscle power and intelligence network had not been utterly succeed to stop these extremist activities. To get the support and involvement of the local people in anti-terrorism operations, the government first should strive to alleviate poverty in the forest villages by arranging income-generating programs. Economic and social uplift will automatically bring the awareness, and villagers will spontaneously act against any kind of anarchism, which could be harmful to their earnings. The physical environment of this region is not suitable for intensive agriculture and unskilled tribal people will also not be preferred by the modern industry. Thus taking into account their skill level as well as the environmental regulations, implementation of ecotourism in forest villages may be the best income-generating activity in this region and it is also ecological. Jungle Mahals of Purulia, Bankura and Paschim Medinipur Districts is a blend of steep mountains, splendid waterfalls, dense forests with her wildlife beauties and huge water bodies (reservoirs). It is also appropriate for educational tours from various field of study e.g. geology, geography, botany, zoology, anthropology, sociology etc. In the year 2006 Ajodhya hills of Purulia has been declared as "*Conservation Reserve*" at state level by the State Wildlife Board (Ananda Bazar Patrika 10th Jun, 2006). There is a huge potentiality of development of ecotourism in this 'only hill station' of South Bengal but inadequate infrastructure for transportation and accommodation, and dominance of Left-Wing Extremists (LWE) have made this region lagging behind other tourist destination of West Bengal.

1.8 **OBJECTIVE OF THE STUDY:** Ecotourism development and poverty alleviation as the sole objective, the present study is undertaken with the following intents:

- Study the present land use - land cover scenario and socioeconomic condition of the local people.
- Study annual tourist flow and existing tourism infrastructure in Jungle Mahals.
- To identify the existing and potential tourist spots in Jungle Mahals and their classification based on spatial, non-spatial and attribute data in different classes.
- Creation of spatial database on extremist movements and terrorist attacks in last ten years to identify the spatial pattern, association and causes of vulnerability of the hot spots.
- Spatial decision making for allocation and relocation of police out posts, military camps and self-protection groups to impede extremist movements
- Assessing probable impact of terrorism on ecotourism in Jungle Mahals.
- To make an inventory of existing government security infrastructure in Jungle Mahals and to assess its positional accuracy and adequacy in combating terrorism.
- Planning for ecotourism development (Tourist cottages/rest houses, green hotels and restaurant, public convenience facilities, elephant watchtower, tourist information centre, conveyance facilities, tourist guide map, public convenience facilities, detail map of the ecotourism destination. tourist circuit map to show its link to other place of tourist interest, do and don't board, medical aid facilities, communication facilities etc.) and direct involvement of local people (as many as possible), in all hierarchy of this economic practice.
- Planning for sustainable land use practices to meet the needs of the ecotourism as well as the local population.
- With the help of local administration (e.g. gram panchayet) planning for creation of self-protection groups among the forest dwellers to protect the forest and help the law enforcement agencies to restore peace in Jungle Mahals, which in turn will bring more tourist and more nature based employment for them..

1.9 **SCOPE OF THE STUDY:** Restricted by the subjective and locational extent of this research, the scope of this study can be discussed through following points.

- Comparative analysis between the past and the present land use pattern as well as between the past and the present socio-economic condition of the study area.

- Identification of environmental problems of the region through the analysis of available data and public feedback.
- Developing a GIS database of cadastral level land use information, and optimum land use categories.
- Prediction about the environmental and socio-economic development of the region if the proposals are implemented.
- Scope of the work will be limited to environmental study and planning only.

1.10 **LIMITATIONS:** Every research work has their own limitations and it is not an exception.

- Among few of the limitations of this study, non-availability of high-resolution data of 2010, thus multi temporal analysis with images of different spatial resolution is significant one.
- As cadastral maps of all the mauzas are not available, action plan map is prepared for only 3 spot sites.
- The accuracy of socio-economic impact evaluation is faded somewhere because no reliable secondary data were available and the analysis is based on primary survey and reviews of other scholars.
- Cost benefit analysis is made at regional scale and on annual basis. The impacts of this project beyond the limit of study area are not taken into account.

1.11 **SIGNIFICANCE OF THE STUDY:** In spite of all these limitations, it is categorical that this research is equipped with highly scientific and contemporary methodologies with reliable satellite data products. Therefore this is an unique venture, first of its kind in this region, showing the way of sustainable development based on advanced technological know how and maintenance of equilibrium between the human needs and economic developments within the parameters of environmental conservation through efficient use of natural resources. 1.5 Poverty alleviation being the prime objective, this study will consult the tourism related theories of “Economics” and “Management Science”. Sociology will help to study the culture of this tribal society. To find out the route cause of political and administrative turmoil, we have to take the help of “Political Science”. But above all this research will be highly associated with spatial analysis of tourism and terrorism related information, thus Geography and Geographical Information System (GIS) will be the main discipline of study. In spite of many attempts taken by the central or state government for

social and economic reform of the region, no action plan has become totally successful because of lack of spatial information and finding of the proper solution. But this research will be equipped with highly scientific and contemporary methodologies with reliable satellite data products. Geographical Information System (GIS) has already proven to be a successful means in the field of 'Ecotourism Planning' due to essentially spatially distributed nature of tourism related data and need of various types of spatial and statistical analysis. GIS application also has relevance in spatial analysis of crime and terrorist movements, because one of the most invaluable tools available for effective crime fighting is information, using maps to display that information is an old tool and now huge database handling capacity of GIS increased the efficiency and speed of crime mapping and analysis. When the action plan will be materialized the downtrodden aborigines of the region will get the maximum benefit and security of the region both in terms financial and administrative means could be ensured. Thus this will be an unique venture, first of its kind in this region showing the way of economic and social transformation based on advanced technological knowhow. This model also can be applied in other less reproductive, rugged regions of the world where natural limitations are the base of economic social and political turmoil.