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Ecotourism as a Conservation Strategy of Biodiversity in Maharashtra, India

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Abstract

Biodiversity is essential to human development because of the goods and services it provides. Besides the direct benefits of biodiversity there are indirect benefits, in the form of environmental regulation, soil conservation, and pollution control. It also has what economists refer to as “non-use values”—for example, the simple enjoyment. Loss of biodiversity is a major environmental crisis the world is facing. It is caused by a number of factors, including uncontrolled land conversion, climate change, pollution, unsustainable harvesting of natural resources, and the introduction of invasive species. So great is the concern over the rate of decline, and its implications for human welfare, that biodiversity was identified as one of the five priority areas for the 2002 World Summit on Sustainable Development.

It is necessary to protect biodiversity for human development and welfare. There are various strategies through which the biodiversity of the place can be conserved. Promoting ecotourism can be one of the important strategies to conserve biodiversity at any place. It provides an alternative to damaging forms of development such as mining, industrialization, urbanization, transportation etc. Protection of nature is implicit in ecotourism development. It is based on an enjoyment of the natural and cultural environment and so is motivated to protect them.

The present paper makes an attempt to illustrate this fact. There are various efforts to promote biodiversity of the place through ecotourism and one among them is protected areas which are reserved for rare and endangered species of flora and fauna. Maharashtra has up to 15,732 sq km reserved forest which is about 5.02 per cent of the State's geographical area. Maharashtra is rich with varied biodiversity ranging from forests, wetland, and evergreen forest. Ecotourism is key to conserve the endangered species of flora and fauna. The paper brings out this relationship between ecotourism development and conservation of biodiversity. The present study on ecotourism is based on secondary data. The data has been obtained from the related articles, research papers, reports, policies and plan documents of Government of India and Maharashtra. Some data has been obtained from websites of Govt. of India and Govt. of Maharashtra, MTDC as well as Ministry of Environment. Visit to some site has been undertaken to know the environmental status.

Keywords: Biodiversity, Ecotourism, Biodiversity, Protected areas.

1. Introduction

Maharashtra, is one of the progressive states of India and it is situated along the west coast. The West coast is marked of by Sahyadri mountain range and is dotted with several hill stations which are rich with semi evergreen and deciduous forests. The Vidarbha region, northern part of Maharashtra, has dense forest. It is home to several wildlife sanctuaries and national parks. The state has enormous potential for the development of ecotourism the form of natural and cultural attractions ranging from unspoiled beaches, forest, wildlife, unique hill stations, ancient cave temples, forts, temples and rich tradition of fairs and festivals. The state has conferred tourism as a major thrust area for economic growth. As a result of its efforts for tourism development, the Maharashtra state has become one of fascinating tourist attractions for domestic as well as international tourists. Maharashtra ranks 5th in domestic tourist arrivals in year 2013 with 6.50% total tourist visits. It ranks first in foreign tourist visits with a share 24.70% (4815421) tourists in year 2013 and hence there is remarkable increase in budgetary allocation for promotion of tourism in the state. The scenic 720 km long coastline of the Konkan is being promoted for the development as tourist circuit. The main attractions for the international tourism are the capital city Mumbai, the hill stations and the beaches. It is one of the states that have largest forest cover in India. This provides ample scope for the development of ecotourism in the state. Ecotourism is sustainable nature

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based tourism that helps to conserve the biodiversity. The growing population exerts tremendous pressure on the biodiversity of Maharashtra. Eco-tourism focuses visiting natural areas featuring fragile, pristine and relatively undisturbed environment and the purpose of such visits mainly is to admire the beauty of nature and has educational motives behind it. It involves travel to the destination where flora, fauna and cultural heritage are prime attractions. It seeks to study linkages between man and environment and also aims to understand the impact of human beings on the environment and vice versa. This phenomenon is evident from various definitions of ecotourism.

The World Conservation Union (IUCN) defines ecotourism as “environmentally responsible travel and visitation to relatively undisturbed natural areas, in order to appreciate nature (any accompanying cultural features – both past and present) that promotes conservation, has low negative impact; and provides for beneficially active socio-economic involvement of local population” (IUCN, 1996). World Tourism Organization (UNWTO) [25], an apex body for development of tourism in the world, defines ecotourism as a tourism that involves travelling to relatively undisturbed natural areas with the specified objective of studying, admiring and enjoying the scenery and its wild plants and animals, as well as existing cultural aspects (both the past and the present) found in these areas. Thus Eco-tourism is an activity of sustainable tourism of local community, for the local community and by the local community. Eco-tourism is “purposeful travel to natural areas to understand the culture and natural history of the environment, taking care not to alter the integrity of the ecosystem, while producing economic opportunities that make the conservation of natural resources beneficial to local people. Eco-tourism is a way to travel to natural areas that takes responsibility to conserve the environment and sustain well-being of local communities. Eco-tourism came into prominence in the late 80’s as a strategy for reconciling conservation with development in ecologically rich areas. As per UNWTO, Ecotourism is considered as the fastest growing market. Overall tourism has been growing at an annual rate of 4%; nature travel is increasing at an annual rate between 10% and 30%. According to World Travel and Tourism Council approximately 7% of international tourism sales are spent on nature tourism (Richards & Hall 2000, Holden 2000) [25].

Review of Literature

The term eco-tourism was coined by Lascurian, to describe the preference of the tourists to travel to the relatively undisturbed or uncontaminated natural areas with the specific objectives of studying, admiring, and enjoying the scenery and its wild plants and animals and existing cultural manifestations. (Holden and Kealy) [15] defines Eco-tourism as, “Implicit in all the definitions is respect or friendliness for the physical and cultural environment i.e. developing a form of tourism that is non-damaging, non-degrading, subject to adequate and appropriate management controls and that offers financial contributions for the protection of indigenous cultures and environments.” (Goodwin) [12] Defines eco-tourism as “Low impact nature tourism which contributes to the maintenance of species and habitats either directly through a contribution to conservation and or indirectly by providing revenue to the local, and therefore protect their wildlife heritage area as source of income. (Ziffer) [27], defines eco-tourism as, “a form of tourism

inspired primarily by the natural history of an area, including its indigenous cultures. The eco-tourist visits relatively underdeveloped areas in the spirit of appreciation, participation and sensitivity. The eco-tourist practices a non-consumptive use of wildlife and natural resources and contributes to the visited area through financial means aimed at directly benefiting the conservation of the site and the economic well-being of the local residents. The visit strengthens the eco-tourism’s appreciation and dedication to conservation issues in general, and to the specific needs of the locale. Eco-tourism also implies a managed approach by the host country or region which 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.” The Additional Inspector General of Forest and Director wildlife Preservation, MOEF (India) defines Eco-tourism as, “Any tourism in which there is least conflict between man and nature, where both the tourists and the managers of tourism promote tourism on a sustainable basis.” According to this definition, eco-tourism is a means to promote sustainable development while at the same time creating an economic justification for the preservation of natural lands and wildlife. According to WTO Eco-tourism is “Travel to enjoy and appreciate nature.” In 1991 (TIES) defined Eco-tourism as “Responsible travel that conserves natural environment and sustains the well-being of local people.”

Eco-tourism is nature based tourism with a special emphasis on education and interpretation of natural and cultural environment. It is an instrument for natural protection and at the same time assures sustainable economic benefits for the local people. (Hall & Brown 2000) [13] Ecotourism explains the mutual relations established between tourists, environment and culture which brings important benefits to the local economy and ensures the condition for long term development and maximum recreation satisfaction for the tourists. (Hodur, Leistriz and Wolfe, 2005). [14] The main objective of ecotourism is to create high quality tourism while protecting the environment and stimulating the durable local development. The key aspects for ecotourism are involvement of local community, activation of financing resources and realizing the environment resources. The various aspects which need attention at operational level for sustainable management of ecotourism are assessment of carrying capacities, better transportation managements, conservation and adaptations, design and control of developments, marketing effects in tune with the sustainability concept, local community involvement while planning eco tourist destinations (Cater, 1993) [3]. If ecotourism projects are not planned and managed, it can inflict damage to natural environment. In addition, spread effects will be confined to the immediate community surrounding the tourist destination resulting in islands of affluence in a sea of poverty (Diaz, 1997) [6]. On the other hand, researchers on ecotourism have opined that participation of local people is to be ensured in the process of planning as they are assumed to have greater knowledge in the usage and effective management of the resources through application of traditional and customary practices.

Scope of Research

Tourism is rapidly growing in Maharashtra. It is attracting lots of domestic and foreign tourists. Though tourism is

considered as one of the most earning source, if it grows rapidly beyond limit, it will result in several environmental, social and cultural problems. Increased number of tourists beyond the carrying capacity may deteriorate the areas due to increase in accommodation units, shopping centers and other recreation facilities in ecosystem areas. It has every threat to wipe out the plant and wildlife species & further it may lead to replace the natural ecosystem by artificial landscape. It will exert tremendous pressure on tourism resources and it poses threat to the natural environments which is the basis for tourism development. In order to avoid these conflicts between tourism development and environment protection it is necessary to promote ecotourism instead of conventional type of mass scale tourism. Ecotourism is considered as an important means of the development of backward regions while conserving natural environments. Promoting ecotourism can serve both the purposes of regional development and conservation of natural environments and thereby biodiversity. It is an important tool to conserve nature and biodiversity of the place where it is developed. Thus the present paper aims to.

- Explore the biodiversity of Maharashtra and tourist attraction associated with it
- To find out the significance of eco-tourism in protection of biodiversity in Maharashtra.

2. Objectives

The specific objectives of the present research paper are-

1. To Study the Ecotourism as a Conservation Strategy of Biodiversity in Maharashtra.
2. To Study the relationship between ecotourism development and conservation of biodiversity.
3. To Highlight the Biodiversity in Maharashtra.

3. Database and Research Methodology

The present study is mainly based on information regarding biodiversity in Maharashtra, which is collected from various reports published by government of India. Maharashtra state is selected for the present study. An attempt has been made to analyze and interpret the information. The present study on ecotourism is based on secondary data. The data has been obtained from the related articles, research papers, reports, policies and plan documents of Government of India and Maharashtra. Some data has been obtained from websites of Govt. of India and Govt. of Maharashtra, MTDC as well as Ministry of Environment. Visit to some site has been undertaken to know the environmental status.

3.1. Study Region

The State of Maharashtra extends from 15° 45' North to 20° 6' North latitude and 70° 36' East to 80° 54' East longitude with geographical area of 3,07,713 sq. km. is undertaken for the pre-sent study of growth of population change in Maharashtra. It is bounded by Arabian Sea in the west, the State of Gujarat in the northwest. Madhya Pradesh in the north, Chhattisgarh in the east, Andhra Pradesh in the southwest, Karnataka in the south and Goa in the southwest. The present study the attempt is made to conservation strategies of biodiversity in Maharashtra state of India.

3.2. Importance of Biodiversity

Biodiversity or Biological diversity is a term that describes the variety of living beings on earth. In short, it is described

as degree of variation of life. Biological diversity encompasses microorganism, plants, animals and ecosystems such as coral reefs, forests, rainforests, deserts etc. Biodiversity also refers to the number, or abundance of different species living within a particular region. It represents the wealth of biological resources available to us. It's all about the sustaining the natural area made up of community of plants, animals, and other living things that is begin reduced at a steady rate as we plan human activities that is being reduced by habitat destruction. The United Nations designated 2011–2020 as the United Nations Decade on Biodiversity. In biodiversity, each species, no matter how big or small has an important role to play in ecosystem. Various plant and animal species depend on each other for what each offers and these diverse species ensures natural sustainability for all life forms.

A healthy and solid biodiversity can recover itself from variety of disasters. It has direct relation with geography, climate and patterns of vegetation and it is seen in ecosystem such as forest, grassland, lakes, rivers, wetlands, mountains and hills. Maharashtra has extremely rich diversity of aquatic and territorial flora and fauna. Coastal area of Maharashtra acts as a natural fish nursery. The mangrove forest reduces the fury of tidal cyclonic storm and prevents erosion due to tidal action. Millions of people depend on various forms of biodiversity for their livelihood such as fishing, collection of honey, fuel wood and timber and other forest product. The geographical location of Maharashtra makes it home to a wealth of ecosystem which needs to be protected. The ecosystems representing biodiversity have become the major resource for ecotourism.

3.3 Ecosystem and Biodiversity of Maharashtra

The State of Maharashtra, is rich in biodiversity. It has main four bio-geographic regions which have specific geographical, climatic and landscape settings. They include the Northern belt of teak forests and the Satpudas; the semiarid Deccan Plateau grasslands and Thorn Forests; the biologically rich and fragile evergreen and semi-evergreen forests of the Western Ghats; and the distinctive ecology of the coastal belt with its terrestrial and marine ecosystems. Its fresh water aquatic ecosystems are equally diverse. Great rivers and their impoundments are distributed across the length and breadth of this diverse land. In North Maharashtra Deciduous Teak Forests have been notified as important Protected Areas and Tiger Reserves which are located in the hilly tract. They include Melghat, Pench, Nagzera, Navegaon, and Tadoba. There are patches of forests such as the 'Glory of Allapally' in Gadchiroli which is Vidarbha region of Maharashtra.

The Deccan Plateau with its semi-arid grassland and scrub forests form a vast region traversed by great rivers. The Western Ghats have been included as one of the 12 important hotspots of biodiversity in the world. The Sahyadhris are the home of tigers, leopards, sambar and gaur in a continuous forest belt ranging from the Dangs of Gujarat through Maharashtra into Goa and south wards into Kerala. The hill forests have diverse moist deciduous, semi-evergreen and evergreen formations. A single hill slope can include over a hundred species of trees alone. Shrubs, climbers, leanas and ground flora of herbs, ferns, fungi, and bryophytes profusely cover the less disturbed fragments of vegetation. Many of these species are endemic to the Ghats. With the aim to protect and conserve the rich diversity of the region Wild Life Sanctuaries, National Parks and Project

tiger reserves have been created in Maharashtra. There are 6 National Parks, 35 Wild Life Sanctuaries and 4 tiger reserves. Following table offers insight into special features of biodiversity which give rise to unique tourist attractions.

3.4 Splendors of Biodiversity in Maharashtra

Biodiversity seen through these distinct ecosystems are the major spots which pull tourists both domestic and foreign. Environment in Maharashtra supports excellent and varied resources. Maharashtra houses a large number of animal species including the Tiger, Crocodile, Bison, Neelgai, Wild Deer, sambar and rare migratory birds. The State is a home for 27, 22 and 42 per cent of mammals, reptiles and birds respectively, found in India (GoM, 2003). The State has variety of flora and fauna consisting of about 3500 flowering plants, 85 mammals and 460 bird species. The beauty of the green forest at Matheran and Mahabaleshwar in morning and evening, the majestic movement of tigers in Tadoba, eye catching movement of migratory birds at Bhigwan are the major incentives for nature lovers to explore the specific destination. Each season gives different perspective of the biodiversity. In the rainy season the fresh green leaves appear full of youthful vigour and surrounds the cascading waterfall in Malshej Ghats of Western Ghats. Majestic white waves rolls in from the Arabian Sea offers leisure tourists visit coastal areas to discover sea world along with exploring water sports and Konkani cuisine. At the end of the rainy season Kaas plateau blooms with thousands of endemic species of flowers. Each winter, thousands of guest birds and colorful ducks transform the water bodies into bird sanctuary presenting bird lovers a chance to explore in bird paradise. The hot climate in summer push the residents to visit the hill stations located in Sahyadri mountain ranges. Adventures sports associated with all these are attributes of biodiversity.

3.5 Unique Ecosystem Found In Maharashtra

- **Gadchiroli:** located in east Maharashtra is a unique forest preservation site. It acts as benchmark of naturalness.
- **Kaas:** A unique site for ground flora. The flora of Kaas is of large number of endemic and threatened species. Kaas Plateau of Western Ghats in Maharashtra has been declared as World Heritage site by UNESCO.
- **Lonar:** Lonar is located in district Buldana of Vidarbha region. It is an important geological site featuring saltwater ecosystem. This lake is created by meteor impact during Pleistocene age.

3.5 Conservation Approaches

The threat to biodiversity is site specific in nature and related to the natural resources, their exploitation patterns and socioeconomic profile of the area. There is a need of proper conservation approaches for protecting the rich biodiversity of Maharashtra. Growing population is the greatest threat to the biodiversity as livelihood of the inhabitants depends on it. Activities like fishing, felling wood, hunting, destroy the natural resources. Ministry of Environment and Forest had designed guidelines for ecotourism in and around the protected areas to enable the optimum use of the biodiversity as a tourist attraction. To protect and conserve the biodiversity, central and state government along with Non-Government Organizations have adopted several approaches like protected areas in the

form of National Parks, Wild life sanctuaries and tiger reserves-

- Encouragement to alternative livelihood
- Development of ecotourism
- Afforestation
- Encouragement to eco-friendly accommodation and other facility
- Establishment of interpretation centers

These activities of eco-tourism development are carried out in coordination with forest department. In developing countries like India where large number of tourists travel to forests more vigorous conservation policies, strategies and laws are required.

3.6 Ecotourism Initiative

To Several schemes are launched by Maharashtra state for exploring full potential of eco-tourism. Some of them are listed as;

- MOU has been signed between MTDC and FDCM on 20th Oct 2010 to carry out ecotourism.

FDCM has started activities at following sites viz;

1. Kolaria and
2. Moharli (Near Tadoba Andhari Tiger Reserve)
3. Nagzira
4. Pitezari in Nagzira wildlife sanctuary
5. Bor (Near Bor wildlife sanctuary)
6. Chikhaldara
7. Semadoh
8. Kolkaz in Melghat.

- These ecotourism complexes established by Forest Department have been transferred to FDCM
- The forest Department of Maharashtra (FDCM) Ltd provides accommodation at Bor, Nagzira, Tadoba, Melghat and Maharashtra State Tourism Development Corporation (MTDC) co-ordinates the booking.
- FDCM will be appointing the India Society of Environment, art, culture and heritage to organize eco-tours in the vicinity of forest in Maharashtra. As state it offers excellent potential for eco-tourism, with the help of available infrastructure, FDCM plans to organize guided tours, nature tours and rural tours in forest areas, sanctuaries national parks.
- To study diversity of ecologically rich area predominantly forests and hills, environment awareness and nature interpretation centers are planned to setup. These are designed to cater to the needs of special interest group like students, nature lovers and environmentalists. For example nature interpretation centres at Vidarbha will provide information of biodiversity found in 27 wildlife sanctuaries, 4 national parks, nature trails and trekking routes through posters and audio visuals.
- Amboli, an ever green forest has been identified as a region for undertaking special eco-tourism initiatives. Other sites identified are Tadoba–Navegoan national park and regions of Sahyadri.
- The mountain range of Sahyadri offers plenty of opportunities for trekking, hiking and rock climbing. MTDC looks after the promotion of wildlife and adventure tourism. Tadoba and Melghat and Sahyadri have potential to attract more visitor and needs to be developed and marketed strongly.

- State government has released Rs. Five crores to boost eco-tourism in the protected areas for Kalsubai, Harishchandragad sanctuaries, Chikaldara, Melghat tiger reserve and others. Government of Maharashtra has formulated „Eco-tourism Policy“ in the year 2008. The policy highlights are -
- Employment generation.
- Increased involvement of local people.
- Protection of environment and culture.
- Promotion of sustainable tourism in the state.
- Provision of infrastructure.

M.T.D.C has been assigned as a key role player. It coordinates with the stake holders. MTDC is promoting tourism through highlighting wildlife in advertising. Various brochures are also published as part of promotional campaign. Ecotourism policy also defined the role of MTDC, private tour operators and government. It had provision of training programmes for the local people to develop alternative livelihood and income generation. MTDC launched village tourism plan with emphasis on women's enterprises, and a scheme to turn the Sawantwadi region into a specialist arts and crafts center. Mahabhraman –unique tourism experience scheme introduced by MTDC to explore biodiversity and highlights are Agrotourism, Ecomantra, Konkan tour, Nature trails, Nisarg Vihar, Tiger trails etc. Tour operators are appointed to develop and market the packages.

3.7 Ecotourism Initiative and Conservation Strategies at Various Places in Maharashtra

The State has four major tiger reserves, six national parks and 36 wildlife sanctuaries. It adds up to 15,732 sq km or about 5.02 per cent of the State's geographical area. For the long-term sustenance of forests across Maharashtra, the State government has decided to adopt the eco-tourism model that has been implemented in the Tadoba-Andhari tiger reserve near Nagpur. The area represents Southern Tropical Dry Deciduous Forests in the Tiger habitat. It has a viable population of 40+ Tigers with high frequency of Tiger sighting. It is a mega-biodiversity site with large surrounding forest area and thus has a long term conservation value. It is gene bank of wild relatives of the cultivated species for future use. Beside Tiger, it is abode to number of prominent wild denizens like Leopard, Wild dog, Sloth bear, Gaur, Sambar, Barking deer, Cheetal, Chausinga, Nilgai, Wild boar along with rare ones like Ratel, Flying squirrel, Pangolin and Rusty spotted cat. The continuity with forests of Chandrapur, Bramhapuri and Central Chanda Division enrich the conservation prospects of these species. Vast bird diversity is of great interest along with diverse vertebrate species. The tree clad forests, rolling grasslands habituated with spotted dears afford wonderful sights. All these values make Tadoba-Andhari Tiger Reserve a favourite area for Eco tourism, interpretation and conservation education.

The model is being replicated across the Nagzira and Bor wildlife sanctuaries in Gondia and Wardha districts respectively, the Melghat Tiger reserve in Amravati and the Bhimashankar wildlife sanctuary in Pune district. The model involves relocation of villages from the core areas of the forest, creating tourism dependent livelihoods and providing alternative source of fuel such as cooking gas for the villagers. At present, villagers use firewood sourced from the forests. In the last one year, the Forest Department of

Maharashtra has been working in the villages, which are in the buffer zones of these forest areas. Simultaneously, the department has taken steps to improve the tourist infrastructure in these areas. A buffer zone is an area contiguous to the forests but has human settlement. The Tadoba-Andhari, Nagzira, Bor and Melghat forest areas have a sizable tiger population, which attract a large number of tourists. The giant Malabar squirrel and golden jackal are found only in the Bhimashankar forest.

3.8 Proactive Steps

In order to promote ecotourism, along with creation of 'Tiger Force', an armed force is created for protecting the wildcats, and due to regular anti-poaching patrols the number of tigers in these areas has increased considerably. "In 2011, there were 160-170 tigers in these areas and the number rose to nearly 200. In order to reduce the man-animal conflict, villages in the core areas of the forest have been completely relocated, while cattle grazing have been banned inside the forest. About 39,000 families have also been provided with subsidized cooking gas, so that they do not enter the forest for firewood. The subsidy will be provided for next four years. The cost of about 75 per cent cost of the gas cylinders is borne by the government and the rest by the villagers. In the Tadoba-Andhari tiger reserve, only 117 vehicles are allowed from the main gate of the reserve. The rest of the vehicles are allowed inside the forest from the villages in the buffer zone. These vehicles are charged about Rs. 1,000 per safari. This income goes to local villagers. The forest guest houses, which were in a state of neglect for many years, are now being spruced up. Their management has been transferred to the Forest Development Corporation.

4. Result and Discussion

Ecotourism plays vital role in conservation of biodiversity. It is travel to destinations where flora, fauna and cultural heritage are primary attraction. It focuses on local culture, wilderness, adventure, and volunteering personal growth and to find out new ways to live without harming the natural resources. Sustainable tourism involves activities that minimize adverse effects of traditional tourism on natural environment to enhance the cultural integrity of local people. This responsible form of tourism encourages going back to natural areas making very little harm to nature and encouraging protection of wildlife and habitat. Considering the immense value of biodiversity in Maharashtra and subsequent loss of the same during last couple of years, enormous conservation efforts were made for restoring the biodiversity of various habitats. Eco-tourism activities like wildlife tourism, bird watching, trekking helps the government to improve the management of natural resources. The eco-tourist visit sites to observe the wildlife and as a result money is spent on that area. Local government and people can utilize these incentives to maintain areas in natural condition to ensure continued visit by the eco-tourist. If the carrying capacity exceeds because of increase in number of tourist visits to ecosystem will lead to destruction of rare and endangered species due to tramping, killing, disturbing the balance of breeding habit. Other important factors needs to be controlled are the development of transport routes, construction of accommodation unit which will put pressure on the ecosystem by the way of noise pollution, water pollution, vehicular emission and untreated sewage. Environment

impact assessment programs have to be implemented to study effect of growing tourism.

In developing and promoting eco-tourism, attention should be given on management of solid waste and waste water treatment. Increase in number of tourists at hill station like Mahabaleshwar and Matheran exerting negative impact on environment by deforestation for construction of hotels. In Kaas, pathway in eco-friendly manner will save endemic species which are getting destroyed by trampling. Ban on use of plastics should be strictly implemented to reduce plastic accumulation in Kaas. Public awareness is an effective tool for conservation, organization of various campaigns in the vicinity of ecological important site are urgently required to inculcate environment consciousness amongst people. To lessen the damage and destruction of ecosystem alternative ways of income should be encouraged and promoted to maintain the balance between natural resources. Promotion of eco-tourism in Maharashtra with an aim to protect the biodiversity and generate income for the communities whose livelihood depends on nature, additional conservation approaches for creating sustainable eco-tourism awareness are;

- Educational programmes to generate mass education about threatened biodiversity at various levels highlighting needs for Wild life protection
- Introduction of Environment as a subject helps in creating awareness in the minds of youngsters, the future of the country.
- Statistical data analysis and documentation to record the present status of biodiversity.
- Regular survey and analysis of eco-tourism parameters by government and NGO.
- Strict adherence to the measures suggested by forest department to reduce man-animal conflict.

5. Conclusion and Suggestions

An eco-tourism provides opportunities to visitors to experience powerful manifestations of nature and culture. It focuses on the significance of conservation of biodiversity and local culture. At the same time it generates income for conservation and economic benefits for the communities living in rural and remote areas. The relationship between tourism and conservation is symbiotic one. While the tourists enjoying nature through nature and wildlife tour, the local people provide services like tour guide, translator, story teller, food and beverage and even facilitate tourists by providing accommodation. Income generated from these activities is used in the development of infrastructure and it is also directed to environment protection. Active participation of local communities in eco-tourism will convince that their resources are more valuable when intact than extracted from ecosystem. Entry fees are the key element in biodiversity protection. Use of indigenous guide and local products along with environmental education at various level and minimal travel comforts protect local flora and fauna. It also provides local people with an economic incentive to safeguard their environment.

Currently, the involvement of local community in tourism is limited. Their involvement should be considered from policy formulation phase to gain thrust and active participation. There is need for long term research on issues and investigation of other sites experiencing tourist pressure. Research is also needed to determine what level and rate the tourist traffic triggers negative impact on wildlife. This will enable the forest department to set level that will minimize

the impact on the biodiversity. Tourism development in Maharashtra needs to be sustainable. The restrictions on number of tourist visits should be followed strictly. Future ecotourism plans must be based on carrying capacity of the ecosystem. The tourism promotional strategies designed should match environment quality, social equality, community empowerment, cultural integrity and economic efficiency through training and awareness programmes for all stakeholders. Enormous potential of biodiversity in Maharashtra will benefit the society and environment and lead to economic development of the region and conserve endemic species. Despite having tremendous ecotourism potential, initiatives towards its development are yet in infancy and sporadic in nature. Ecotourism promotion is not carried out in scientific and organized manner and lacks broader perspective of sustainable development of the region as a whole. Following are the recommendations to Government to promote ecotourism in more systematic and scientific manner.

6. Recommendations to Government

It is necessary to use multistate holder participatory planning process to develop national and local tourism strategies, policies. It is necessary to devise master plans that reflect concerns about biodiversity conservation and poverty reduction which will include sustainable development strategies and processes, including trade-related policies, investment promotion, and economic incentives for the use of environmentally sound technologies, land-use planning, and taxation.

Support private sector's voluntary initiatives in conservation and provide opportunities for the private tourism sector to contribute to sustainable tourism management initiatives like community awareness and training, protected areas, etc. through direct donations, in-kind services, and the establishment and maintenance of private reserves. Develop or adopt certification schemes, reflecting national and local priorities that include biodiversity criteria, and provide appropriate incentives for their adoption. Earmark adequate sources of funding for the management of natural areas. These funds should cover activities including protection of vulnerable ecosystems, management of visitor numbers, and support for surrounding communities. Develop or adopt certification schemes, reflecting national and local priorities that include biodiversity criteria, and provide appropriate incentives for their adoption.

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