A Review on the Scopes of Ecotourism in Manipur: An Approach for Environmental Conservation

Wazir Alam*

Department of Forestry and Environmental Science, Manipur University, Canchipur, Imphal-795003 (India)
Email: wazir@manipuruniv.ac.in

ABSTRACT

The concept of ecotourism is gaining popularity among the professionals working in the field of environmental and conservation science, natural resource management and social science for achieving the goals of Ecologically Sustainable Development (ESD). Ecotourism is considered as nature based tourism which advocates for environmental conservation, protection and practical interpretation of natural environment which is socio-economically acceptable and ecologically sustainable. Manipur is an ecologically rich zone due to its distinctive Biogeographically realm, rich natural resources and climatic conditions. Ecologically, the state is an integral part of Indo-Burma biodiversity hotspots and is known for its rich repository of various endemic flora and fauna species, enchanting landscape and scenic beauty. The state is conglomeration of diverse and dynamic socio-cultural and ethnic groups with rich tradition. These diverse ethnic groups have their distinct cultural identity, languages, rituals and practices. Moreover, handloom, handicraft, fine arts, traditional practices and indigenous traditional knowledge (ITK) of each ethnic group contributes diverse dimensions to the culture of the state. But due to socioeconomic disparity and geopolitical unrest in the region, the fragility of its sensitive ecology and richness of environment is under the threat. In order to apprehend the present trend of nature and natural resources depletion in the state, an ecologically sensitive strategy is the need of the hour that can help in achieving goals of Ecologically Sustainable Development in the state. So, ecotourism can be an effective auxiliary and useful tool for achieving sustainable development goal, if properly planned and executed through a participatory approach.

KEYWORDS: Ecological, Ecotourism, Sustainable Development, Endemic

*Corresponding Author

Wazir Alam*

Assistant Professor,
Department of Forestry and Environmental Science,
Manipur University,
Canchipur, Imphal-795003 (India)
Email: wazir@manipuruniv.ac.in
INTRODUCTION

‘Ecotourism’ is an environmentally responsible travel to a relatively ecologically sensitive and undisturbed area in order to enjoy, appreciate nature and accompanying cultural features that promotes conservation through an active involvement of local populations for socio-economic benefit. Basic objective of ecotourism is to develop and manage sustainable tourism operations in natural area in order to maintain the ecological, environmental, socio-economical integrity and well-being in perpetuity. In general, the consensus on ecotourism was developed with an objective to contribute towards conservation of ecology, biodiversity, sustaining well-being of ethnic people, promoting interpretation and learning experiences of nature through responsible and participatory tourism actions. Accordingly, it further facilitates ownership of the ethnic and endogenous people so as to achieve lowest possible consumption of non-local resources. Thus, if ecotourism is properly planned, managed and executed through a participatory approach it can serve as an viable effective tool for both government and local communities for conservation of natural and cultural resources of a region. So, ecotourism equally focuses on environment, social, cultural and economical sustainability criteria in all subsequent operations to popularize, encourage and provide sustainable livelihood option to the people residing in the periphery of protected areas and ecologically sensitive zones through a participatory process for achieving symbiotic benefits.

1. BIOGEOGEOGRAPHIC IMPORTANCE

Manipur is biogeographically and ecologically rich zone because of its unique geographical location, landscape and climate. The state is located in Indo-Myanmar arc system between latitudes 23.80°N to 25.68°N and longitude 93.3°E to 94.78°E sharing national border with Assam, Mizoram, Nagaland and International border with Myanmar. The state experiences contrasting spatial and temporal meteorological condition with sub-humid and sub-tropical to temperate climate. The state receives average annual rainfall of 1436 mm and around 59% of total rainfall is contributed by SW and NE monsoons during June-September. The minimum and maximum annual average temperature of state ranges between 1°C to 36°C respectively with coldest temperature reaching up to -3°C during December and January. Physiographically, Manipur valley covers only 10% of total geographical area of the state with intermontane geomorphology surrounded by rugged-hills extending from NNE to SSW direction. Nearly about 2.85% of total geographical area (63,616 ha) are covered by 708 number of wetland (locally known as “pats”), of which 167 wetlands are of an area greater than 2.25 ha and 541 are of smaller than 2.25 ha. Presently, Directorates of Environment, Govt. of Manipur has identified and recognized 19 major wetlands for conservation. The state comprises of three major river basins viz. the Barak River basin (covering...
9042 sq. km.) draining the western part of the state, Manipur River basin (covering 6332 sq. km) and the Chindwin River basin (covering 6953 sq. km) draining the eastern half of the state. The major river system and its tributaries includes River Thoubal, Imphal, Nambul, Makru, Leimatak, Irang, Iril that flow through the Manipur valley.

2. PROSPECTS OF ECOTOURISM IN MANIPUR

Government of India is keen to develop Manipur as ‘Gateway to South-East Asia’ due to unique strategic geographical location and considering prospects for tourism and commercial activities with neighbouring countries. The state is already in priority list of “Look East and Act East Policies” and many important national and international projects such as ‘Trans-Asian Highways’ and ‘the Railways’ are underway. The national highways in Manipur which connect Imphal to other NE states through NH-53 (Imphal to Silchar), NH-150 (Imphal to Dimapur) and NH-39 (Imphal to Tumu in Myanmar) which further connect to Asian Highway 1 (AH-1). The international air services to neighbouring countries have already started and development of such initiatives, appropriate infrastructure and services will develop Manipur as popular tourist hotspot and destination for all forms of tourism in SE Asian countries. The prospect of ecotourism depends on coherence of socio-cultural, economical and ecological linkage and participation of communities in the fields of biodiversity conservation. The state is having a very high potential for developing it into a hub of ecotourism in the country due to various unique features and ecosystem services. Some important and major factors are elaborated here:

2.1. Ecological Uniqueness and Biodiversity
Ecologically Manipur belongs to Indo-Burma biodiversity hotspots regions of the world which is junction of Himalayan, Trans-Himalayan and Indo-Malayan biodiversity region and is known for conglomeration of various endemic floral and faunal species, enchanting landscape and picturesque beauty. The unique ‘bowl-shaped’ valley is surrounded by rugged hills and mountains systems that support wide range of micro-climatic zones, ecological zones and isolated ecosystems. The forest of Manipur is found in the North-South-Burmese-Java Arcs formed by parallel folded mountain ranges that extends up to South Manipur and Chin Hills\textsuperscript{15}. These zones comes under one of the four tropical/subtropical conifer forest eco-region in the Indo-pacific region that are biologically distinctive and known for supporting some of the world’s greatest variety of endemic, endangered floral and faunal species\textsuperscript{15}. Some of the biologically rich micro-climatic and microhabitat eco-zones includes Mizoram-Manipur Kakchin Rain Forest, Indo-Myanmar Pine Forest, hills of Koubru, Esso, Khongho, Godai, Sirui, Chingpi in Churachandpur, Dzuku, Maram in Senapati, Tengnopaul and northern inaccessible hill area of Tamenglong district\textsuperscript{16,17}. These regions are hub of rarest and endemic species with its captivating natural beauty. The state comprises of Tropical Semi Evergreen, Dry Temperate, Sub-Tropical Pine (Sub-Alpine) and Tropical Moist Deciduous forest that signify unique association of \textit{Pinus} with the \textit{Dipterocarpus}\textsuperscript{19,20}. The state is also a hub of more than 55 species of Bamboo, 500 species of orchids, 430 species of medicinal plants, 34 edible fungi, 40 endemic rice variety, 160 fish species, 21 species of migratory aquatic birds within its geographical boundaries. Due to confluence of two tectonic plates (Burmese and Indian), the region is centre of variety of angiospermic plants (more than 2500 species) which has characteristics of Southeast Asian and Indian Sub-continents\textsuperscript{21,22}.

\textbf{2.2. Environmental Protection Initiatives}

The present state of forest cover of the state is around 76.54\% (against 77.12 \% record of 2003). The majority forest cover is unclassified forest with only 8.4\% classified as protected forest area\textsuperscript{16,17}. The Forest Department, Government of Manipur have recommended conservation of the following area under forest at the Barak river basin covering Senapati, Tamenglong and Churachandpur district, Siroi hills in Ukhrul district, Khong-Tenepu, Dzoku valley in Senapati district, Kailam Range in Churachandpur district, Yangoupokpi Lochao Sanctuary and Dipterocarpus forest of Chandel district, Zeilad Lake in Tamenglong\textsuperscript{20}. Loktak lake in Bishnupur district (a Ramsar site) known for its naturally occurring ‘phumdis’ (mass of floating vegetation) and southern part is \textit{Keibul Lamjao} National Park with unique floating wild life reserve for endangered species of brown antlered deer (Sangai)\textsuperscript{18,19}. Already 19 mammals species are enlisted in Scheduled-I, II, III, IV; 23 reptiles enlisted in Scheduled-I, II, 158 migratory avifaunal species in
Scheduled-I, II and 40 species of orchids in IUCN list for conservation and also Protected Area Network programme through both in-situ and ex-situ conservation initiatives (Table 1) have been undertaken by State Forest Department, Govt. of Manipur\textsuperscript{21,22}. The present geographical area coverage under protected area is very low (total 3.79\% against national average of 4.88\%, where 0.63\% and 1.23\% area are under NP and WLS against national average of 3.17\% and 3.58\%, respectively\textsuperscript{21,22}. 
<table>
<thead>
<tr>
<th>Sl No</th>
<th>Protected Area (conservation)</th>
<th>District</th>
<th>Area (Sq. Km)</th>
<th>Important Faunal Species</th>
<th>Important Floral Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Keibul Lamjao NP <em>(In-situ)</em></td>
<td>Bishnupur</td>
<td>40.00</td>
<td>Sangai, Hogdeer, Wild boar, Common otter, Indian civet cat, Turtles, Viper, Krait, Cobra, Python, Ruddy shelduck; Coot, Shoveller, Gadwall; Wigeon; Pintailduck; Pochard; Lesser Whistling teal; Cormorants</td>
<td>Zizania latifolia; Saccharum munja; Eiranthus procerus; Dioschria bulbifera; Cynodon dactylon; Alpinia galanga; Hedychium coronarium; Phragmites karka</td>
</tr>
<tr>
<td>2</td>
<td>Yangoupokpi Lokchao WLS <em>(In-situ)</em></td>
<td>Chandel</td>
<td>184.80</td>
<td>42 species of mammals, 74 species of aves, 29 species of reptiles, 6 species of amphibians, 86 species of fishes. Green Peafowl - <em>Pavo muticus</em>, <em>Sphenocichla</em></td>
<td>Dipterocarpus turbinatus; D. tuberculatus; Tectona grandis; Melanorrhoea ausitata; Terminalia chebula; Emblica officinalis; Cedrela toona; Cedrela serrata; Quercus spp.; Bauhinia spp.; Dillenia spp.; varieties of bamboos.</td>
</tr>
<tr>
<td>3</td>
<td>Bunning WLS <em>(In-situ)</em></td>
<td>Tamenglong</td>
<td>115.80</td>
<td>Barkingdeer; Sambar; Leopard; Jackal; Pangolin; Wild boar; Tiger; Jungle cat; Martens; Clouded leopard; Golden cat; Slow Loris</td>
<td>*Michelia champaca; Toonaciliata; Schima waliichii; Gmelina arborea; Messua ferrea; Artocarpus hirsuta; Castanopsis hystrix; Bombax ceiba; Cinnamomum zeylanicum; Emblica officinalis; Duabanga spp.; Melia azedarach; Bauhinia variegata; Phoebe hainsiana; Eugenia praecox; Quercus spp.; Albizia procera; Alnus nepalensis; Juglans regia; Terminalia myriocarpa; Canes and bamboo (Melocanna baccifera)</td>
</tr>
<tr>
<td>4</td>
<td>Zeilad WLS <em>(In-situ)</em></td>
<td>Tamenglong</td>
<td>21.00</td>
<td>Tiger, Leopard, Leopard cat, small Indian civet, Common Langur, Hoolock gibbon, Great Indian Hornbill, Barking deer, Flying squirrel, Slow Loris, Golden cat, Yellow throated marten, large Indian civet cat, Hog badger, Bear, Serow, Sambar etc., varieties of migratory birds including falcon, snakes, Turtles</td>
<td>*Michelia champaca; Toonaciliata; Schima waliichii; Gmelina arborea; Messua ferrea; Artocarpus hirsuta; Mangifera indica; Castanopsis hystrix; Bombax ceiba; Cinnamomum zeylanicum; Emblica officinalis; Duabanga spp.; Melia azedarach; Bauhinia variegata; Phoebe hainsiana; Eugenia praecox; Quercus spp.; Albizia procera; Alnus nepalensis; Juglans regia; Terminalia myriocarpa; Canes and bamboo (Melocanna baccifera)</td>
</tr>
<tr>
<td>5</td>
<td>Kailam WLS <em>(In-situ)</em></td>
<td>Churachandpur</td>
<td>187.50</td>
<td>Clouded Leopard and Serow</td>
<td>extensive bamboo species, Melocanna baccifera, a monopodial bamboo</td>
</tr>
<tr>
<td>6</td>
<td>Jiri-Makru WLS <em>(In-situ)</em></td>
<td>Tamenglong</td>
<td>198.00</td>
<td>Hoolock gibbon; Caped Langur Stump Tailed Macaque; Barking deer; Sambar; Leopard; Jackal; Jungle cat; Clouded leopard; Golden cat; Serow; Pig tailed monkey; marble cat, Great Indian hornbill, Rufous necked hornbill, wrinkled hornbill, Indian and lesser pied and brown backed hornbill.</td>
<td>Melocanna baccifera, a monopodial bamboo, Phoebe hainsiana; Michelia champaca; Dilleniapentagyna; Duabanga neroetoides; Terminalia myriocarpa; Gmelina arborea; Bauhinia purpurea; Artocarpus hirsuta etc.</td>
</tr>
<tr>
<td>No.</td>
<td>Location</td>
<td>District</td>
<td>Area</td>
<td>Species/Species Information</td>
<td></td>
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<tr>
<td>7</td>
<td>Shiroi NP (In-situ)</td>
<td>Ukhrul</td>
<td>797</td>
<td>Hoolock gibbon; Himalayan Black bear; Barking deer; Sambar; Leopard; Jackal; Indian elephant; Pangolin; Wild boar; Jungle cat; Flying squirrel, Martens; Clouded leopard; Golden cat; Slow Loris; Hog badger; Serow; Stump tailed macaque; Bison; Otter; Jungle fowl; Parakeet; Mrs. Humes barred backed pheasant; Blyth’s tragopan; Horn bills, Tortoise; Viper; Krait; Cobra; Python; Land monitor lizard, Green snake; Rat snake; Varanus; Buff striped keelback, Salamander.</td>
<td>Lilium mackliniae (Shiroi Lily), Lilium chitrangadae; groundlily, 5 (five) Quercus sp. and 7 (seven) Rhododendron sp., Michelia manipurensis; Magnolia cambellii; Pinus kesiyaa; Castanopsis sp.; Phoebe hainesiana etc.</td>
</tr>
<tr>
<td>8</td>
<td>Manipur Zoological Garden (Ex-situ)</td>
<td>Imphal West (Iroishemba)</td>
<td>0.08</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>9</td>
<td>Second Home of Sangai (Ex-situ)</td>
<td>Imphal West (Iroishemba)</td>
<td>0.06</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>10</td>
<td>Orchid Preservation Centre (Ex-situ)</td>
<td>Imphal East (Khonghampat)</td>
<td>0.50</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

(Source: ENVIS, 2016)
2.3. Population and Cultural Diversity

The state is an amalgamation of multiple cultural groups, ethnic tribes confined to specific locations of the state. The hilly region is spreading over 80% of total geographical area contributing around 40% of the state population. Around 60% of population confined of valley districts mainly comprises of Meiteis and Pangal Meiteis (Muslim-Meiteis) along with considerable numbers Schedule tribes and non-Manipuri population. The Meiteis are divided into seven clans (salais) i.e. Manganz, Luwang, Khuman, Angom, Moirang, Chenglai (Sarang-Leishangthem) and Khaba-Nganba. The hills of the state have almost 29 sub-tribes mainly belonging to the Tibeto-Mongolooid group. The north, west and eastern hills mainly covering Senapati and Ukhrul districts of the state is dominated by Nagas include the Kabui, Kacha, Tangkhul, Mao, Maram, Maring and Toraotribes. The Southern hills of the state mainly occupied by the Kuki-Chin-Mizowho came during the pre-colonial period includes the Gangte, Hmar, Paite, Thadou, Vaiphei, Zou, Anmol, Chiru, Koieng, Kom, Aual, Chote, Lamgang, Koirao, Thangal, Moyon and Mousangtribes. This conglomeration of diverse and dynamic ethnic groups with their distinct socio-cultural identity, languages, dialects, rituals, traditional and cultural practices manifest promotion of ecotourism. There are twenty four (24) languages spoken in Manipur, which have evolved from Tibeto-Burman sub-family or Tibeto-Chinese family of languages, of which Manipuri is a considered as an official language of the state. The state is home to various ethnic groups with varied IndigenousTraditional Knowledge (ITK) that are harmonized by a high degree of environmental diversity. Spatial variability of environment and diverse socio-cultural practices are visible in the form of various art and culture, food culture and agricultural practices have increased the scope of cultural, food and ecological tourism in the state. Some isolated and inaccessible locations within the state have helped in protecting and preserving both social-cultural diversity and endemism in the state, may prove to be of high ecotourism scope if properly planned with regulated tourist activities.

2.4. Handicraft Handloom and Indigenous Fine arts

The vibrant culture and diverse ethnic groups of Manipur also manifest rich culture of handicrafts, handloom products and fine arts. The state handloom and handicrafts products includes products made of bamboo, cane, pottery and weaving products, crafts, implements etc. that are admired and is very common practices in rural Manipur. The products made of bamboo are most commonly used for agricultural implements, household furniture, fishing and fish preservation implements, constructional materials for house etc. The state is also rich in wooden handicraft products made of rare and exotic timber varieties. The other handloom and handicraft product such
as lifan, aquatic weed mat (Phak) and Phiruk which are very common in the rural Manipur. Mostly, people wear hand-weaved traditional dresses which are quite colourful, attractive and exquisite in designs peculiar to each communities. Pottery products from Andro, Thongjao and Nungbi include variety of earthen products.

2.5. Indigenous Dance, Sports and Music

The state represents a vibrant centre of culture which manifests various cultural practices in the form of exotic dance forms, indigenous music, indigenous sports and martial arts, performing arts, literature etc. that are admired worldwide due to its uniqueness and high cultural value. The majority of population of the state belongs the Vaishnavite Hindu believes with neo-Christian of tribal heritage that are rich in artistic expression. The state is famous for its dances and performing arts, native martial arts which are influenced by Mongoloid style. The various exotic dance forms includes RasLeela, Khampa-Thoibi, Dance, PungCholom, Maibi Dance, Nupi Pala, Lai Haraoba Dance and various tribal dances like the Kabui Dances, Kukithadou Dance forms, Bamboo Dance, and various Naga Dances, and various adapted dances. The Indigenous Music of the state includes KhullongEshei, Pena Eshei, KhubakEshei, Nat, etc. Some of the indigenous forms of martial arts and sports are: Chongba, Taa Khousarol (Spear dance), Thanghairol (Art of sword fight), Mukna(wrestling–Manipuri style), Thanghairol (Art of sword fight), SagolKangjei (Polo), Thang-Ta, SaritSarak, YubiLakpi, HiyangTanaba, Mukna, Kang Sanaba, Arambai etc.

2.6. Indigenous Festivals, Celebrations and Cuisine

There are number of festivals are celebrated in Manipur. Almost all months of the year is marked by some major festival connected to socio-cultural or religious aspiration of diverse ethnic groups of people. The various cultural and religious festivals and celebrations include Gang-Ngai, Lui-Ngai-Ni, Yaoshang (Doljatra), Lai-Haraoba, Cheiraoba, Ratha Jatra, Heikru Hitongba, Kut Festival, Rasa Lila, Ningol Chakhouba, Chumpha etc. Variety of ethnic groups manifests diversity of food culture that has great potential for attraction of people all over the country and world for food tourism. Most of the Manipuri cuisines are simple, healthy and of high nutritional value that includes typical boiled, smoked, spicy cuisines that uses lots medicinal plants and vegetables. Uses hot king chilli (Umorok) along with dry and fermented fish and bamboo shoots are very common. The peculiarity of preparation dishes or food is the uses of lots of ingredients with medicinal and nutritional values, use of fresh and fermented bamboo shoots, banana flowers and stems are also very popular among the people of Manipur and in its neighbouring states. The conventional Manipuri dishes includes rice, leafy vegetables, various fish items, salads made of green and leafy vegetables, medicinal plants, dry fish (Iromba), sweets made of black rice.
3. MAJOR CHALLENGES OF ECOTOURISM IN MANIPUR

3.1. Degradation of Forest cover and Wildlife

State Forest cover area has shrunk from 79.11% to 76.54% during 1987 to 2015 which is going to be a major threat to state future water, ecological and environmental security posing an great threat to state socio-economic status. The practices of traditional jhumming and shifting agricultural in the hill districts and in hilly slopes causing a major threat to ecological diversity of the state due to forest degradation, reducing carrying capacity of water bodies, streams, channels and wetlands due to siltation and sedimentation. This is causing a threat to socio-economic and agricultural sector influencing conservation of biodiversity and other natural resources of the region. The Forest Department, Government of Manipur, have started community based initiatives including protected Area Network in order to protect and conserve the wildlife and other floral species of the state where 19 mammals species enlisted in Scheduled-I, II, III, IV; 23 reptiles enlisted in Scheduled-I, II and 158 migratory avifaunal species in Scheduled-I, II and 40 species of orchids in IUCN list.

3.2. Degradation Water Resources

Wetland in Manipur plays a very crucial role in socio-economic and cultural aspects of the population of the state. But due to various natural and anthropogenic activities have threatened the sustainable management of these wetlands. The siltation has reduced the carrying capacity of water bodies due to soil erosion, sedimentation, landslides of fragile landscape. The surface water bodies contributes major source of water for household water supply, agriculture and hydroelectric power generation are now under vulnerable situations due to both quantitative and qualitative aspects. Presently, the Government of Manipur is planning nearly 20 mega dams under Manipur Hydroelectric Power Policy (2012). It is projected that due to construction dam of Tipaimukh hydroelectric power project will result in submergence of 27,000 hectares of forest land including felling of more than eight (08) million trees causing a severe imbalance in ecohydrological regime of the region. All these factors accompanied by phenomenon of climate change will mostly affect the biodiversity of the region and can pose a challenge for various socio-economic security and livelihood of people.

3.3. Changing Climatic Dynamics

Climate change is an alarming threat to the alteration of ecological balance and biodiversity of the region. It poses direct impacts on the temporal and spatial distribution and depletion water
resources, natural resources, agriculture pattern, causing a socio-economic disparity between communities and their sustainable livelihood\textsuperscript{24,25}. In addition, the variability of climatic factors can cause other ecological and environmental hazards such as drought, flood, extreme weather events, crop failures, pest attacks, increase in vector borne diseases and their susceptibility\textsuperscript{26}. Subsequently, more impacts will be visible in climate-sensitive sectors like ecology, biodiversity, agriculture, forestry, horticulture, animal husbandry, pisciculture and all forms of tourism sector. Health and sanitation of the state is not adequate and requires a serious attention as the region is an easy prey to water-borne diseases due to the humid sub-tropical climate and heavy monsoon rainfall\textsuperscript{27}. The cases of water-borne and vector-borne diseases are very common in the state and reported every year\textsuperscript{12}. Most visible impacts will be observed among poor and vulnerable groups residing in eco-sensitive or ecological zones.

3.4. Demographical Change and Urbanisation

Rapid urbanisation is observed in the region from last few decades as a result of migration of people from rural area to urban area of the state (Table 2)\textsuperscript{11}. The major factors responsible for this type of migration is due to better employment oppurtunities, education facilities, healthcare etc. Apart from that due to changes in various other factors such as socio-economic condition, environmental hazards and disasters related hydrometeorological factors, law and order and social securities etc.\textsuperscript{29} All these factors have combine effects directly or indirectly for forced migration people from rural to urban areas in search of living and basic needs\textsuperscript{30}. This migration within and from outside the state may create a serious socio-economic and cultural security for the region. The trend (Table 2) shows a negative indication of rural socio-economic life and its pressure on natural and forest resources as well\textsuperscript{31}. So, promotion of ecotourism and rural tourism can be an one of the alternative for sustainable development among rural communities and to meet the requirements for biodiversity conservation.

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Urban area</th>
<th>Total Population</th>
<th>Population Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>State Urban Rural</td>
<td>Urban Rural</td>
</tr>
<tr>
<td>1961</td>
<td>1</td>
<td>7,80,037 67,717 7,12,320</td>
<td>8.68 91.32</td>
</tr>
<tr>
<td>1971</td>
<td>8</td>
<td>10,72,753 1,41,492 9,31,261</td>
<td>13.19 86.81</td>
</tr>
<tr>
<td>1981</td>
<td>32</td>
<td>14,20,953 3,75,460 10,45,493</td>
<td>26.42 73.58</td>
</tr>
<tr>
<td>1991</td>
<td>31</td>
<td>18,37,149 5,05,645 13,31,504</td>
<td>27.52 72.48</td>
</tr>
<tr>
<td>2001</td>
<td>33</td>
<td>23,88,634 5,70,410 18,18,224</td>
<td>23.88 76.12</td>
</tr>
<tr>
<td>2011</td>
<td>33</td>
<td>27,21,756 8,22,132 18,99,624</td>
<td>30.21 69.79</td>
</tr>
</tbody>
</table>

(Source: Census of India, 2011)

3.5. Challenges of Public Services and Communication Facilities
The state of Manipur have sufficient potential for developing as a hub of various forms of ecotourism destination in South East Asian countries due to its strategic location and accessibility. In order to execute this objective there is huge requirements for the development basic public services such as transport and communication, hospitality services, health services, information centre and other infrastructural facilities that act as a lifeline of any form of development. These facilities can be upgraded through a private-public partnership investment and technological intervention. In order to popularize the objectives of ecotourism it requires participation and involvement of community based, voluntary and youth organisations. Connectivity and Communications is prior and immediate necessity for any development of the region including tourism sector. The state is still waiting to be connected to the railways map of India, which itself will be a good potential for tourism. Though state is connected through air services to the other states but more air connectivity is required for both domestic and international visitors, which can be developed by upgrading the Imphal Airport to a full-fledged International Airport with sufficient flight services.

3.6. Vulnerability of Agriculture, Livelihood and Employment Sector

Manipur is basically is an agrariens society with around 70% of population involved in where two types of agricultural practices, i.e. settled and organised agricultural practices in valley districts, foothills, terraceslopes and shiftingcultivation (Jhum or slash and burn) practices in hills and hillslopes. The livelihood option for most of the population in Manipur living in rural area are agriculture, fishery and naturalresourcesincluding forestresources and wetlands, which is otherwiseconsidered to be secondarysector, contributes state’s major GDP (73.82%)13. Wetland and aquaculture are major source of livelihood in rural people and plays a very crucial role in the social, economical and cultural life of the people of Manipur. The state is major consumer of fish and has huge potential of pisciculture (35,000 MT of fish per year) which can boast up the rural livelihood, employment opportunities, rural and ecotourism sector. As per present situation, lack of rural employment and livelihoodopportunities, huge influx of people are taking place to urban areas in search of jobs and alternative livelihood which are triggering other human security and conflicts related issues22,30.

3.7. Challenges from geopolitical issues and Law and order

Present geopolitical issues related to the state and national boundaries within and with Manipur influences all forms of development of the state leading to emerging problems of ethnic clashes, blockades of national highways, economics blockades, public agitation, insurgencies, protest and bandhs, insufficient supply and distribution of basic commodities and price hike etc.
These problems of the state are crippling whole economy and developmental sectors of the state. These further impacts all forms of tourism (including endogenous or ecotourism) to a great extent. A congenial and secured environment will attract both national and international tourist/visitors to the state which can further generate more livelihood opportunities and rural employment in the state leading to bridging the socio-economic gap and disparity among the people of the region. This can be achieved through a process of community participation for creating ambient environment for flourishing tourism sector. So, it requires proper government mechanism and planning to generate awareness about development of ecotourism for livelihood opportunities.

3.8. Synchronization of Government Institutes and Organisation

The role of government is very much crucial in development multi-sectoral tourism industry. The government can play important role to ensure linkages, coordination, management of line departments and local institutions through a community based participation process, innovative institutional research, strategic master plans, training and awareness generation. The major responsibility of government will includes identifying ecotourism potentials, planning, zoning, creating infrastructural facilities, incentive facilities through micro financing, ownerships of programme/projects, providing social-cultural securities and highlighting environmental priorities in order to encourage people’s participation. In addition to these, there are many areas where government role is very crucial in the form of maintaining law and order, public security, security of national and government projects/institutions, providing basic public services such as water supply, health and sanitation, transport and communication, power supply, information centres etc. in order to promote and disseminate information about ecotourism.

FUTURE OF ECOTOURISM IN MANIPUR

Ecotourism has an emerging scope in Manipur and can serve as an efficient tool for conservation of ecological, environmental and cultural resources of the state if properly planned and executed through a participatory approach. It requires an holistic planning, comprehensive framework initiatives to recognize the scope and potential of ecotourism within the state. A combined initiative and collaboration with the neighbouring states and countries can also boast up and popularize ecotourism sector in the region through participation of communities both at micro and macro levels through CBOs, NGOs and various other government stakeholders including decision and policymakers. So, to make ecotourism a realization, both state and central government have to initiate an institutional interventions for technical innovations, investment, policy shift and encouraging participation of various stakeholders. The up-scaling of ecotourism or agroforestry based tourism for Manipur can be linked to entrepreneurship based livelihood for
management of NTFPs, medicinal and aromatic plants, wildlife conservation, natural resource management and promotion of Indigenous Traditional Knowledge (ITK) in association with microfinance, skill development and human development. Creation of eco-village, eco-parks, eco-camps, biodiversity parks, parks for endogenous medicinal plants, orchids, varieties of bamboo and banana species, in-situ and ex-situ wildlife parks for conservation of endemic species, research centers and institutes, eco-zones to facilitate ecotourism with conservation objectives. In this regard, development of infrastructures and other facilities can prove to be an effective, long-term and sustainable tool for developing Manipur as ecotourism hub in the region and at the same time it can promote conservation of biological diversity, natural resources, socio-economic and cultural integrity of the state.

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