

Sustainable Nature Tourism in Mukandra Hills Tiger Reserve India

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Abstract: *India has a rich heritage of historic sites, cultural monuments and natural resources which make India a preferred destination for tourist. Mukandra Hills Tiger Reserve, notified as third Tiger Reserve of Rajasthan in 2013, is endowed with rich biodiversity. It is located in the south-eastern Rajasthan, India and has profound scope to be developed as sustainable nature tourism site. The sustainable nature tourism is an emerging concept that includes research and designing of conservation strategies for the biota along with natural sites and cultural heritages. By creating the employment opportunities and enhanced services-access for the local communities dwelled near such sites, it can contribute significantly to their livelihood. The deliberated planning efforts and successful execution will improve awareness which, in turn will attract sustainable ways for infrastructure creation culminating into better socio-economic order. Thus, it is dire need to devise meticulous policies for sustainable nature tourism in Mukandra Hills Tiger Reserve.*

Keywords: Biodiversity; Conservation; Local Community; Socio-economic.

I. INTRODUCTION

The association of the local community and tourist with conservationist and ecologists is a good one that can provide a better-quality life for all stakeholders[1]. The relationship between conservation and tourism is important for the sustainable development in view of biodiversity targets of the MD Goals [2]. Most of the bio-reserves have potential of ecotourism [3]. There are many adverse effects associated with tourist inflow in sensitive natural habitats [4]. Thus, only responsible tourism to natural areas is ecotourism [5]. The similar phenomena are sustainable tourism [6], geo-tourism [7] and nature-based tourism [8]. Tourists are allured to natural areas because of their quality of natural resources[9]. Tourist's interest is increasing in spending holidays in unexploited natural areas [10]. Ecosystem service includes climate control, water cycle, erosion regulation, waste management and recreation. These natural destinations would not wish to kill the hen that lay the golden egg [11]. One third of money spent on tourism belongs to nature-based tourism[12]. Large sum of money corresponding to nature tourism is actually gone to local community. As much as the residents get the profit from tourism, they become more supportive to tourism [13]. Fantastic example of economic importance of nature-based tourism is a lion (*Panthera leo*). A Lion might earn a lot of tourist revenue as compared to the poacher earn from meat and skin of Lion [14]. Big cats might be the most valuable wild animals that can generate revenue by attracting tourists from the world and tourism potential should be used to boost the economic benefits for local community[15].

Tourism in tiger reserves is known as ecotourism, which must be ecological sustainable nature tourism. It is emerging as a significant part of tourism industry. It is different from mass tourism in having sustainable, impartial, community focused effort for the better living standards of local people living in and around tiger reserves. Wildlife in India is facing challenges of following burning issues: habitat fragmentation or loss, biotic pressure to forest resources, dependence on wildlife and forest products for income, increasing wildlife-human conflicts, poaching, hunting and illegal trade of parts and products of wildlife, public support for conservation of wildlife [16].

II. MATERIAL AND METHODS

This study was conducted during 2016-2019 to find out the scope of sustainable nature tourism in this newly established reserve. The study site Mukandra Hills Tiger Reserve(MHTR) is notified, third Tiger Reserve of Rajasthan (India) under the Project Tiger (F3 (8) FOREST 2012; 09 April 2013). It includes 417.17 km² core zone and 342.82 km² buffer zone with a total area of 759.99 km². There are 16 villages within core zone and 14 villages within buffer zone. Ahu, Chambal and Kalisindh rivers are situated at south, west and east boundary of this reserve. It includes Darrah Sanctuary, Mukandra National Park, Chambal Ghadiyal Sanctuary and Jawahar Sagar Sanctuary and lies on 24° 38' to 25° 7' N and 75° 26' to 76° 12' E. It is situated in the south eastern Rajasthan and includes Kota, Bundi, Jhalawar and Chittorgarh districts. Mumbai Delhi Railway track and Jabalpur Jaipur National Highway passing through Mukandra fragmented reserve in two parts. Rawatbhata Kota State Highway also fragmented the western part of the reserve.

The research is completely exploratory with the objective to create new avenues for nature tourism in south east Rajasthan. The researcher explored the reserve and encountered all the related people directly or indirectly. The information was collected through primary and secondary data. Primary data was collected using questionnaire, interviews, discussions and observations. Field survey was done to know the floral and faunal biodiversity. Secondary source includes unpublished and published sources. Unpublished sources were records maintained by the studies undertaken by previous researchers. Published sources were newspapers, reports, national and international publications. The study includes the local communities and government officials. The researcher gathers the required data from documentation, interviews, archival record and direct observation. Questionnaire and interviews were done with related people and responses were recorded. The archival records and documentation were gathered from variety of sources. Observation includes looking as well as listening, everyday one-to-one interaction and group discussion.

III. RESULTS AND DISCUSSION

Mukandra has high tourism potential due to good transportation facility and comfortable accommodation facilities available in nearby cities at a distance less than 50 kilometer. It is blend of heritage coupled with wildlife adventures. The Badoli temple group, Gagron fort, Rawtha mahal, Ablimeenika Mahal and Bhainsrodgarh are heritage and religious sacred establishments which allow tourist to stay in closer vicinity of nature and witness spirituality within a beautiful forest. Tourism department has initiated many facilities like boating in Chambal River which attract tourists. Eco Trails includes Laxmipura to Gadde ka Mala, Laxmipura to Raotha Mahal, Laxmipura to Girdharpura, Kolipura to Girdharpura, Selzer Chauki to Watch Tower, Selzer Chauki to Mauzer, Garadiya Mahadev to Jawahar Sagar. Tiger reserve also has watch towers for tourist to see wild animals and have great view of natural scenic beauty. Sustainable nature tourism is proposed to be encouraged under 'Project Tiger' for the profit of local community as a part of the 'Tiger Conservation Plan' with a focus on carrying capacity and buffer areas. Tourism event in areas of tiger reserve which are now denominated as core area is now regulated as low reach tourism areas concern to area specific carrying capacity.

According to conservation plan any new infrastructure must not be permitted in core area. Forest buffer areas should be developed as wildlife home with active participation of local community living in fringe areas. This would extend tiger habitat for its biorhythm dynamics and improve quality of life of local community by reducing the resource dependency and human-tiger conflicts. The opportunities for stakeholders could manage and provide low-cost accommodation for tourists, guide services, sale outlets, excursions programs and ethnic dances. This paper presents the natural treasure, which is totally unexplored by the tourists. This region is visited only by the researchers, adventurers and explorers. The researcher visited the study site and explored natural beauty and potential for tourism development in and around this reserve. Mukandra Hills in the south-eastern Rajasthan with sub-tropical deciduous forest support a vast variety of wildlife, which make it the ideal destination for enjoying holidays [16].

3.1 Observation

One can witness tribal rural life very closely and can explore native flora, fauna and their ethnic use. It has several structurally and functionally identifiable ecosystems, such as different types of forests, pastures, grasslands, river catchments, swamps and ponds. The potential to attract bird watchers, wild life lovers and sacred explorers is immense.

3.1.1 Local Community and their Dependence

A large number of tribal human populations are living in and around this beautiful forest. Gurjar, Meena, Bhil, and Rajput community are resident of this reserve. Human and cattle population exert immense biotic pressure on forest. Human settlements living inside core zone were initiated to relocate. The intricate relationship of the tribal with forest was remarkable. They were fully dependent on forest for housing, fodder, fencing material, agricultural implements and wild fruits. Livelihood of local people was based on agriculture, collection of non-timber forest products, animal husbandry and labour.

3.1.2 Climate and Vegetation

This Reserve is composed of low hills and discrete plateau with plain surface. Famous Darrah sanctuary is the distinguishing feature of this range. Generally, the soil is dry, fertile and rich in humus in this forest. The core zone is hilly with network of rivers and streams. The Chambal and Eru traverse the core and flow in northern direction. Chambal, Kalisindh, Ahu and Amjhar are perennial but flow only on the boundary of this reserve. Most of the Nallahs and streams pass through the core zone are seasonal and hence forest department has built anicuts in the core zone to provide drinking water during pinch period. The climate was subtropical with semi-arid dry deciduous forest which includes *Anogeissus pendula* (Kala Dhok), *Anogeissus latifolia* (Safed Dhok), *Butea monosperma* (Chila), *Acacia catechu* (Khair), *Bamboos*. Many other plants like *Acacia lecofolia* (Raunj), *Ziziphus mouratiana* (Ber), *Diospyros melanoxylon* (Tendu), *Prosopis cineraria* (Kejra), *Dalbergia latifolia* (Shisham) along with grasslands enrich this reserve. Parthenium and Lantana were dangerous weeds posing threat to flora in core zone.

3.1.3 Major Faunal Diversity

Tiger is a key stone species for forest ecosystem. Tiger is a shy animal, yet the chances of sighting in the sub-tropical dry deciduous forests of Rajasthan is much better than in any other tiger reserves. The leopard (*Panthera pardus*) is adaptable predator and resident of the dense forest (woodland) as well as in the open degraded forest (scrubland). It is effortless for this subtle predator to hunt domestic animals. This reserve support good enough population of this cunning predator (Panther). Sloth Bear prefers to inaccessible habitat and feeds on fruits, flowers, honey and vegetation. Striped hyena and Jackal (nocturnal and scavenger) are sympatric species. Indian Civet, Jungle cat, Caracal and Wolf are also resident of this fascinating forest. It is rich in herpetofauna such as Monitor Lizard, Garden Lizard, Chameleon, snakes, Bufo, Indian bull frog etc. and avifauna such as Common Peafowl, Vulture, jungle fowl and aquatic birds. Gharial, Crocodile and Otters live in river banks. Langur, Monkey, Hare, Squirrel, Porcupine and Rat were also present. Among wild ungulates *Cervus unicolor* (Sambhar), *Axis axis* (Chital), *Gazella gazelle* (Chinkara), *Boselaphustragocamalus* (Nilgai) and *Sus scrofa* (Wild Pig) were common.

3.2 Analyses and Interpretation

It is time to take planned marketing strategies such that, reserve can be promoted as tourist place and its wild life wealth could be introduced among potential tourist. This region has all potential to become famous tourist spot and emphasis must be given on capitalizing the unexplored potentials of conservation and marketing. This is the time when government and local community have to come forward for the conservation of the wild life. Tourist started to visit to Kota region with the purpose of wildlife tourism hence conservation strategies are required. In this area poaching, hunting and capturing of wild animals is prohibited. During exploration, the researcher explores the local community, discuss with them about their relationship with wildlife. Then researcher discussed with the forest officials and tried to interpret the actual situation of development of sustainable nature tourism. Development of sustainable nature tourism

will be beneficial both for the natural resources and inhabitants. Effective cooperation among biologist, researcher, forest department and local community would be helpful for conservation and protection of wildlife and creating environment for sustainable development. Community based ecotourism with proper planning will help the local community as well as ensure conservation of biodiversity. One of the prime reasons for the development of the region as potential eco-tourist place is its rich biodiversity and close association of local people with nature. Government must make strategies for survival and development of this lush green reserve. The state government, forest department, biologist and researchers must encourage local people and create awareness for protection of this natural habitat and discuss with them about importance of sustainable tourism in this region. Target tourist would be only nature lovers and nature professionals. Developing tourism at this site should be in a sustainable way. The natural treasure provides an adequate opportunity to the native people for livelihood through developing nature tourism. Through government support, training with community involvement would be helpful in conservation of natural resources.

IV. CONCLUSION

Aim of the research was to explore eco trails, analyze the natural treasure and socio-economic development through sustainable nature tourism. It can create opportunities for spreading the economic, cultural and social benefits of tourism to local communities. Policymakers should be acquainted that local people are more relevant stakeholder for activities related to nature tourism and government strategies need to support local communities. Thus, all tourism activities in natural areas must be meticulously planned, locally designed and governed in an eco-friendly manner.

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