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Ecotourism Potential of Tinjure Milke Jaljale Area: A Rhododendron Capital of Nepal

Dipak Khadka
Environmental Science, Golden Gate International College, Kathmandu, Nepal
d.khadka@goldengate.edu.np

Sandesh Neupane, Environmental Protection and Study Centre (ENPROSC)
Bishal Sharma, Environmental Protection and Study Centre (ENPROSC)
Sweta Dixit, ClimatEducate Project, The Alpha Team Organization
Prakash Chandra Wagle, Golden Gate International College
Luna Thapa, Central Department of Environmental Science, TU, Nepal
Anesh Bhujel, Golden Gate International College

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Corresponding Editor
Ramesh Raj Kunwar
kunwar.dr@gmail.com

Abstract

Ecotourism is a growing arena of tourism industry and is a potential tool for sustainable development. This study focuses identifying potentials of ecotourism in Tinjure-Milke-Jaljale (TMJ) area in Eastern Nepal via assessing flow of tourists, purpose for visits, major natural attractions, physical infrastructures and human resources available in the region. Direct interviews were conducted with respondents purposively selected from 50 households using structured questionnaires. Demographic variables and visit purpose were expressed in numbers and percentage using MS-Excel software. A descriptive analysis was performed for the natural features, human resource, physical infrastructures and cultural entities which were collected using standard checklist. Results showed that TMJ was visited by approximately 1, 00,000 internal and 600 international tourists throughout the year in 2018. The main purpose of visit to TMJ was to adhere the beauty of rhododendron or landscape followed by religious, study and recreational purposes respectively. While 80% percent of the respondents were aware of the need towards biodiversity

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conservation focusing Rhododendron forests which listed as a major attraction in the region and 78% agreed to impacts of tourism the area, 75% were unfamiliar with the concept ecotourism. The region with more than 80% forest coverage harbors natural and cultural attractions such as Deurali Bhulke picnic spot, Rock and Rhododendron Garden, Basantapur Botanical garden and view Tower, Tinjure Dada Pathivara Temple, Gupha Pokhari, Singhabahini Devi Temple, Gaunkhuridham, Siddhakali, Sabhapokhari. The present natural and culturally important areas in TMJ show good prospects for ecotourism. However, a detailed study focusing number of seasonal flow of tourists and services provided addressing visitor's perception is seen important to improve ecotourism.

Background

Tourism includes activities in which people travel and stay outside their usual place for not more than one year leisure, business, and other purposes (World Tourism Organization, 1994). Tourism causes both positive and negative impacts to tourism destinations (Vanhove, 2005). Tourism contributes to socioeconomic development (Minciu, 2004) and tourism also promotes conservation (Nyaupane & Thapa, 2006). Likewise, tourism causes environmental impacts such as noise, air, water and land pollution and as well as land use (Kunwar, 2017). This also leads to conflicts due to number of residents and visitors in different time and space as well as the behavior of the visitors and local (Postma & Schmuecker, 2017). To overcome these problems there is a need of sustainable tourism and ecotourism can be an alternative.

In case of Nepal, tourism has become one of the important pillars for economic development (Thapa, 2003) although it has a lot of issues (Bishnu, 2011) that need to be solved. In Himalayan region, tourism has raised demand for firewood and timber resulting in loss of wildlife and soil erosion. This has also enhanced litter leading to soil and water pollution (Gurung, 1990; Thakali, 1995). In Terai region of Nepal, pressure on forest for firewood, vehicular movement and pollutant emission have increased (Banskota & Sharma, 1996). To lower the pressure on environment, several researchers from Nepal have argued and provided evidence that ecotourism can lower the negative impacts of tourism as well as improve income. For example, in ACAP, people use alternative energy which has lower firewood usage. There are evidences where the income of local people can be enhanced through the promotion of ecotourism (K.C., Rijal & Sapkota, 2015; Nyaupane & Thapa, 2004).

Nepal's landscape, biodiversity and cultural areas have been a basis of increasing tourism industry in Nepal. Hilly region above 2200 m has unique diversity and has been famous for their iconic places. Most of them are under protected areas and some are in forming process. The tourism sector creates opportunities for the people as well as for nature conservation. In Nepal, Kathmandu, Patan, Bhaktapur,

Lumbini, Pokhara, Palpa, Gorkha, Manang, Mustang, Chitwan have been major tourist attraction areas. Nepal is in pace of developing tourism sector through plan and policy and there is an urgent need of formulation of practical plans and policies to address the new issues related to ecotourism (Aryal, Ghimire & Niraula, 2019).

Researchers like Aryal and Maharjan (2018) pointed out the need of further research to assess the potential of ecotourism which includes demand, community's willingness, socioeconomic connection to biodiversity conservation, the attractive features of the area and host the visitors (Carroll & Groom, 2006). Most of the researchers working in ecotourism of Nepal have also focused their studies inside the protected areas. Therefore, this study has made an attempt to find out the ecotourism potential of TMJ-the capital of Rhododendron of Nepal by assessing the flow of tourists, naturalness of site, physical features and human resources availability such as Bekele, Teshome, & Asteray (2017). This study will benefit the concerned authorities and local people.

Tourism

Tourism industry has been getting great attention in recent years as it is enhancing the co-operation between different countries and regions as well as it is one of the fastest growing economic activities (Pao, 2005). The different countries of Asia and Africa are gaining great economic benefits from this industry. Tourism is an act of spending time away from the home temporary for recreation and pleasure as well as activities taken during their stay and facilities provided for their needs (Mathieson & Wall, 1982; p.1, Kunwar, 2017,p.11).

Tourism impact on ecosystem through erosion, emission of waste and harming structural and function features of ecosystem resulting environmental degradation (Kipler, 2013). These forms of impact can be controlled or minimized through alternative tourism such as adventure tourism, sports tourism, cultural tourism, rural tourism as well as ecotourism which lead to sustainable tourism (Wearing & Neil, 2009; Buckley, 1994).

Sustainable tourism is a tourism which can address the demand of local communities and tourist as well as improve opportunity for future generations (World Tourism Organization, 2018). Its market is growing day by day in the world (Butzmann, 2017) as well as in Nepal, particularly in the form of ecotourism.

Ecotourism

Ecotourism is considered as a responsible tourism which has been passing through a debate and controversy since a decade (Page & Dowling, 2002). Several definitions are given for ecotourism but major variables of the definition are conservation, education; culture (Fennel, 2001). Ecotourism is a form of tourism that appreciates

nature and enhances learning of environment through best management (Weaver, 2002).

Some researchers state ecotourism arose as a growing concern due to the increasing impact of tourism on environment (EGA, 2008) and often it is viewed as an alternative to lower negative impact of tourism and to foster environment management (Honey, 2008) whereas Garcia Herrera (2011) states ecotourism concept has originated as a tool for nature conservation as it is concern with protecting nature.

Ecotourism is a fastest growing concept in tourism industry (Hvenegaard, 1994) as it promotes environment conservation and socioeconomic development (Rijal & Sapkota, 2014). The International Ecotourism society (TIES, 1990) defines ecotourism as "responsible travel to natural areas that conserves the environment and improves the wellbeing of local people". Ecotourism is a form of tourism involving visiting fragile, pristine and relatively undisturbed natural areas, intended as a low-impact. Ecotourism involves visiting natural areas in emphasis to learn, environment protection and sustainability. Ecotourism helps in community development by providing the alternate source of livelihood to local community which is more sustainable (Aryal & Maharjan, 2018).

Among the different types of tourism industry, ecotourism shows commitment towards conservation. Ecotourism contributes to protect biodiversity, enhance local people livelihood, minimize non-renewable energy use and create job opportunity (Poiani, Baumgartner, Buttrick, Green, Hopkins, Ivey, Seaton & Sutter, 1998; Daniel, Manning & Krymkowski, 2005). However, if it is not managed properly, there is threat of environmental degradation through tourism instability, economic, cultural distortions and visitor's misbehavior (Drumm & Moore, 2005).

Ecotourism activities are confined in natural resources rich areas (Nuva & Shamsudin, 2009) as such areas are critical component of a life support system (Ervin et al., 2010) and such areas should be promoted in such a way that it should prevent environment degradation (Fennell, 2001). Protected areas are a model of such areas. Such areas are believed as major assets of developing country as locals get livelihood option (Pananjay et al., 2011).

Research methodology

Study area

The study area lies in the middle Himalaya region in between 27°65'7" to 27°30'28" North latitude and 87°19'46"to 87 °38'14" East longitudes with elevation ranges 1700 to 5000 masl. It is the one of the longest mountain ridges lying between the watersheds of Arun and Tamor rivers (IUCN, 1992). The area is located between two large protected areas of Nepal, the Makalu-Barun National Park (MBNP) to the

west and Kanchanjunga Conservation Area (KCA) to the east (IUCN, 1992). The area covers seven formal Village Development Committees (VDCs) of Sankhuwasabha, ten former VDCs of Tehrathum and six VDCs of Taplejung (Figure 1).

Climate

The area has a wide climatic range from warm temperate in the lower region to alpine in the upper hill slopes. The climate of the study area is moist temperate with temperatures ranging from 10^0 C-15^0 C and average rainfall measuring 2250 mm (Limbu et al., 2012).

Biodiversity

The TMJ area is the biodiversity treasure as well as the crucial biological hotspot site of Nepal (Limbu et al., 2012) as it hosts varieties of flora, fauna and ecosystem.

Faunal diversity

The area is rich in faunal diversity it host 97 species of fauna from 30 families (Koirala, 2002) with a total of 25 mammalian wildlife species.

Floral diversity

The area is rich in floral diversity and has 216 species of angiosperm (Koirala & Limbu, 2010). A total of 326 species belonging to 83 families and 219 genera of Angiosperm plants have been documented from TMJ (Limbu, Koirala & Shang, 2012). The major plants reported are herbs. There are 178 species of herbs, 67 species of shrubs, 62 species of trees, 15 species of climbers and 4 other species and is home to 28 Rhododendron species out of 31 species that are found in Nepal (Chaudhary & Taylor, 2000).

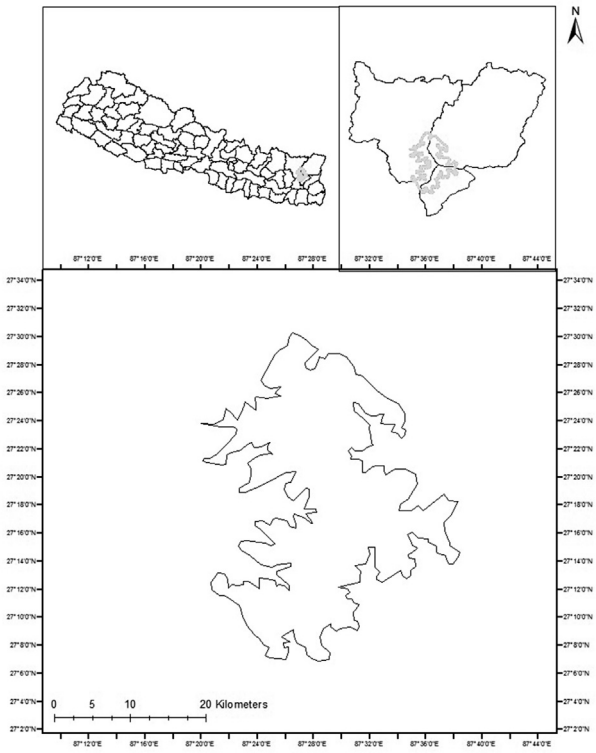
Ecosystem diversity

The area is rich in ecosystem diversity with different natural ecosystem such as forest, grasslands, meadows and wetlands (rivers and ponds) and rock and barren areas. The TMJ area is one of the largest potential rangeland ecosystems among the wet rangeland areas of Nepal.

Socio-economic features

The population of area is 85,881 with 18,377 total number of households distributed in 23 formal VDCs (CBS, 2011). The negative population growth is recorded over the area as compared to the national population growth rate i.e. 1.35 per annum. The TMJ area is also rich in ethnic, cultural and religious diversity. There are more than ten ethnic groups, who have their own cultural and religious practices, traditions and languages. TMJ is an important tourist destination 10000 of internal and international tourist visit here each year.

Figure 1: Location map of Tinjure, Milkhe and Jaljale



Data collection and analysis

The study used both qualitative and quantitative methods. Primary and Secondary Methods were adopted to gain both qualitative and quantitative data.

Primary methods of data collection

A total of 50 Households were surveyed purposefully based on their presence in households as well as only those houses close to the TMJ road to collect primary data. Beside interview observations of flora fauna, socioeconomic conditions of the people including customs and traditions, religious sites were done. The data were collected in between January 2019 to July 2019.

Secondary methods of data collection

The reviews of related literature were done which includes journals articles, reports and books were done for secondary data collection. The information found in the walls and pillars of the religious sites were also considered for the study. For land use map, the study area's land cover was extracted from land use data 2010 published by

ICIMOD on the date 2013-04-12. The outline of the TMJ region was extracted based on image previously used in IUCN report (IUCN, 2010) for the extracting roads and trails and cover categories that was obtained from the data set (Bajracharya, 2013).

Data analysis

Esri. Arc GIS Version 10.2.1 was used to extract the data from downloaded raster image. The raster image was converted into polygon using raster to vector conversion tools. Spatial analyst tool was used to extract the land use from the region based on Ministry of Federal Affairs and Local Development's provided shape file of Nepal (MoFALD, 2019). Microsoft Excel 2010 was used to analyze the data. Bar graphs, pie charts and doughnut were made as far as possible and results were shown in percentage and number.

Results

Tourist flow

From the observation and survey it is known that TMJ has a potential to attract tourists throughout the year. However, due to the lack of infrastructure, tourists were not provided with any services in the month of April and May and in November and December when the national flower Rhododendron blooms and snow falls respectively. Internal tourist flow is reported to be high in this area. Domestic tourists from Dharan, Itahari, Biratnagar, Dhankuta, Jhapa fall under the majority to visit the place. From the key informant survey, every year approximately 1, 00,000 internal tourists visit the place whereas the number of international tourists visiting the place is only 600 per year approximately.

Reason for visiting TMJ

Based on field observation and key-informant it was known that TMJ has attractive natural areas with extension of unique landscape to 585.26 km^2. A survey of 50 people showed that 56% people visit TMJ for Rhododendron forest, 24% said that the purpose of their visit was to see the landscape, 10 % visit for religious purpose and 10% replied that they visited TMJ for other purpose like study, picnic and snowfall.

Likewise 58% of people believed that the excellent factor of TMJ is the Rhododendron forest, 24% believe Ecology and Environment, 10% climate and 8% other featureslike varieties of birds and animals

Natural features

The processes run for land use showed that the region is mostly covered by forest area with more than 80% of the land cover in the region (Table 1) which host varieties of flora and fauna. From the interview and observation it was known that TMJ consists of tall trees of mixed rhododendron forests especially in south

and east facing slopes. *Rhododendron barbatum*, *R. daldhousiae* (climer species), *R. cinnabarinum*, *R. griffithianum*, *Abies spectabilis*, *Betula utilis*, *Lyonia ovalifolia, Mahonia nepaulensis, Pieries formosa, D.papyracea, Edgeworthia gardneri, lycopodium spp, Taxus baccata* are the major tree species of the area. The forest was also reported to support different fauna. Wildlife within the community forest area include Himalayan Goral (*Naemorhedus goral*), Barking Deer (*Muntiacus muntjac*), Masked Palm Civet (*Paguma larvata*), Nepal Grey Langur (*Semnopithecus schistaceous*), Assamese Monkey (*Macaca assamensis*), Hoary-bellied Squirrel (*Callosciurus pygerythrus*), Large-eared Pika (*Ochotona macrotis*), Red panda (*Ailurus fulgens*), Himalayan black bear (*Ursus thibetanus*), Leopard (*panthera pardus*) and Pangolin (*Manis crassicaudata*). Among mammals, Assamese Monkey, Himalayan black bear and Leopard are listed in vulnerable conservation status. Similarly, bird species include Hill Patridge (*Arborophila rufogularis*), Himalayan Monal (*Lophophorus impejanus*), Kalij Pheasant (*Lophura leucomelanos*), Koklass Pheasant (*Pucrasia macrolopha*), Common Shelduck (*Tadorna tadorna*), Great Barbet (*Megalaima virens*), Common Hoopoe (*Upupa epops*), White-throated Kingfisher (*Halcyon smyrnensis*), Crested Kingfisher (*Megaceryle lugubris*), Little Owl (*Athene noctua*), Rock Pigeon (*Columba livia*), Snow Pigeon (*Columba leuconota*), Steppe Eagle (*Aquila nipalensis*), Eurasian Griffon (*Gyps fulvus*), Crested Serpent Eagle (*Spilornis cheela*), Lesser Kestrel (*Falco naumanni*), Common Kestrel (*Falco tinnunculus*), Long-tailed shrike (*Lanius schach*), Grey-backed Shrike (*Lanius tephronotus*), Grey Treepie (*Dendrocitta vagabunda*), Large-billed Crow (*Corvus macrorhynchos*), Black Drongo (*Dicrurus macrocercus*), Ashy Drongo (*Dicrurus leucophaeus*), Spangled Drongo (*Dicrurus hottentottus*), Long-tailed Minivet (*Pericrocotus ethologus*), Scarlet Minivet (*Pericrocotus flammeus*), Yellow-billed Blue Magpie (*Urocissa flavirostris*), Red-billed Chough (*Pyrrhocorax pyrrhocorax*), Yellow-billed Chough (*Pyrrhocorax graculus*), Yellow-bellied Fantail (*Rhipidura hypoxantha*), Brown Dipper (*Cinclus pallasi*), Blue Whistling Thrush (*Myophonus caeruleus*), Chestnut Thrush (*Turdus rubrocanus*), Mistle Thrush (*Turdus viscivorus*),Verditter Flycatcher (*Eumyias thalassinus*), Blue-throated Flycatcher (*Cyornis rubeculoides*), Oriental Magpie Robin (*Copsychus saularis*), Black Redstart (*Phoenicurus ochruros*), Hodgson□s Redstart (*Phoenicurus hodgsoni*), White-winged Redstart (*Phoenicurus erythrogaster*), Plumbeous water Redstart (*Rhyacornis fuliginosus*), Rufous-backed Redstart (*Phoenicurus erythronota*), Little Forktail (*Enicurus scouleri*), Spotted Forktail (*Enicurus maculatus*), Common Stonechat (*Saxicola torquata*), Grey Bushchat (*Saxicola ferrea*), Common Myna (*Acridotheres tristis*) and Jungle Myna (*Acridotheres fuscus*). Likewise, herpetofauna species (amphibians and reptiles) include Skittering Frog (*Euphlyctis cyanophlyctis*), Himalayan Toad (*Duttafrynus himalayanus*), Black-Spinned Toad (*Bufo melanostictus*), Black-throated frog (*Microhyla Ornata*), Common garden lizard (*Calotes versicolar*) and Mountain keelback (*Amphiesma platyceps*).

Agricultural area covers approximately 9% of the total land. The major agricultural products of TMJ are Millet, Barley and potato. The grassland covers 3% of the land approximately which is important for livestock like sheep and Yak. Less than 1% of the land (0.02%) of the total land is barren in the region.

Table 1: Land Use condition of TMJ

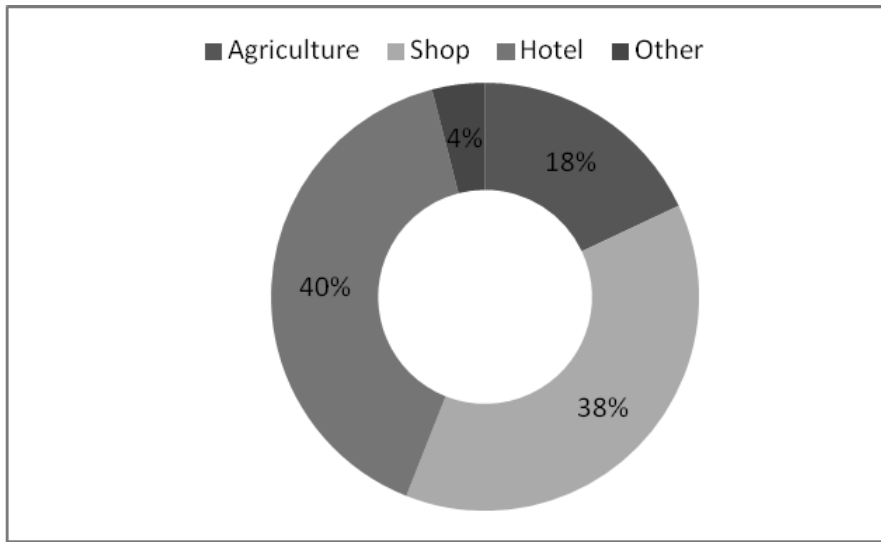
Category	Area coverage(m^2)
Forest	467718238.2
Agricultural Area	50419368.29
Barren Area	1133900.81
Grassland	47591056
Scrubland	19906817.67
Total TMJ area	586769381

Human resource features

Characteristics of respondent

Among the 50 respondents, the maximum number of respondents was from age group 31-45 and the minimum number of respondents was from age group above 50. The major occupation of the area was hotel jobs followed by shop and agriculture (Figure 2). Altogether 82 rooms were found in 20 hotels with maximum of 8 rooms and minimum of 4 rooms in each hotel. The capacity of each room is 2 to 6 people. People were keeping sheep, pig, hen, goat and other cattle as livestock.

Figure2: Occupation of people in TMJ

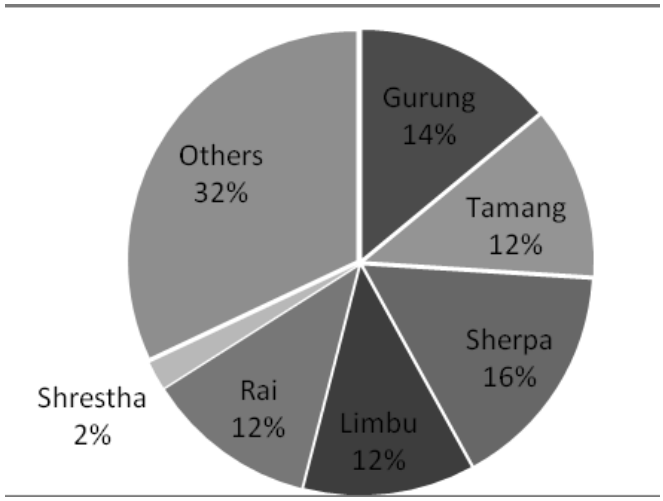


Cultural features

Ethnic group

Out of 50 households surveyed, the majority of the people belonged to Janajati (67%) which includes Gurung, Sherpa, Tamang, Limbu, Rai and Shrestha and other caste groups like Chhetri and Brahmin were only 33%, (Figure 3).

Figure 3: Cultural features of TMJ



The special food items were Tongba, Churpi, Sukuti, wine and local hen. Out of 50 households, Tongba was available in 16 households, Churpi was available in 7 households, wine was available in 10 households, and local hen was available in 2 households for sale to local people.Dashain, tihar, Baishake Purnima,, Lhosar, Pushe Mela, Baisakhi Mela, Fagu Mela are special festival of this area. The Chandi dance of Rai, Dhan Nach and Chyaprung dance of Limbu were found to be the special cultural feature of this area. Singhadevi, Siddhakali, Gaunkhuridham and Pathibara temples were reported as the important religious site of this area.

Deurali Bhulke picnic spot

This place is famous for family picnic. There is a large terrace with good environment.

Rock and Rhododendron Garden

The rock and rhododendron is one of the attractive sites of TMJ area at Basantapur, Terahathum. The park has natural ecosystems which include forest, grassland, rock and barren areas. With the prospect of sustainable development and immense potential of ecotourism, the infrastructure and facilities are being developed. The Rhododendron

forest as well as other rich biodiversity and panoramic views, magnificent landscape abundantly rich in natural, cultural, historical and religious diversity can make the best ecotourism hub in the Eastern Development Region.

Basantapur Botanical Garden and View Tower

The tower which is on the construction lies on the top of city. From here we can see hills, Himalayas, varieties of flora and fauna and beautiful places around TMJ area. These are ideal locations for increasing ecotourism**.**

Tinjure Dada Pathivara Temple

The temple is very famous from religious point of view. Most of the domestic tourist mainly Hindus come here to worship.

Gupha Pokhari

Gupha Pokhari is a natural pond situated in the height of 2890 meter which is pilgrimage site for both Hindus and Buddhists. Gupha pokhari is a peaceful lake set on ridge east towards the Kanchenjunga and west toward the Makalu which lies on the trekking trail from Basantapur to Terahthum. The beautiful panoromic views of mountains like Mt. Makalu, Mt. Kanchenjunga and Mt. Everest can be seen from this lake. Most of the people visit this place for research of flora and fauna. The global eco 200 region lies in this area.

Singhabahini Devi Temple

Singhabahini temple is one of the famous religious sites located in Myanglung Terahathum and is believed that if one prays in this holy place with pure heart then their wishes will come true.

Gaunkhuridham

Gaunkhuridham is an important religious site in Terahathum. Most of the pilgrimage visits this place in Maghe Sakranti which falls on January.

Siddhakali

The Siddhakali temple is located in Sankhuwasabha and is known as the incarnation of God Shiva. It has its own religious importance. The site attracts pilgrims seeking spiritual fulfillment and blessings from ancestor.

Sabhapokhari

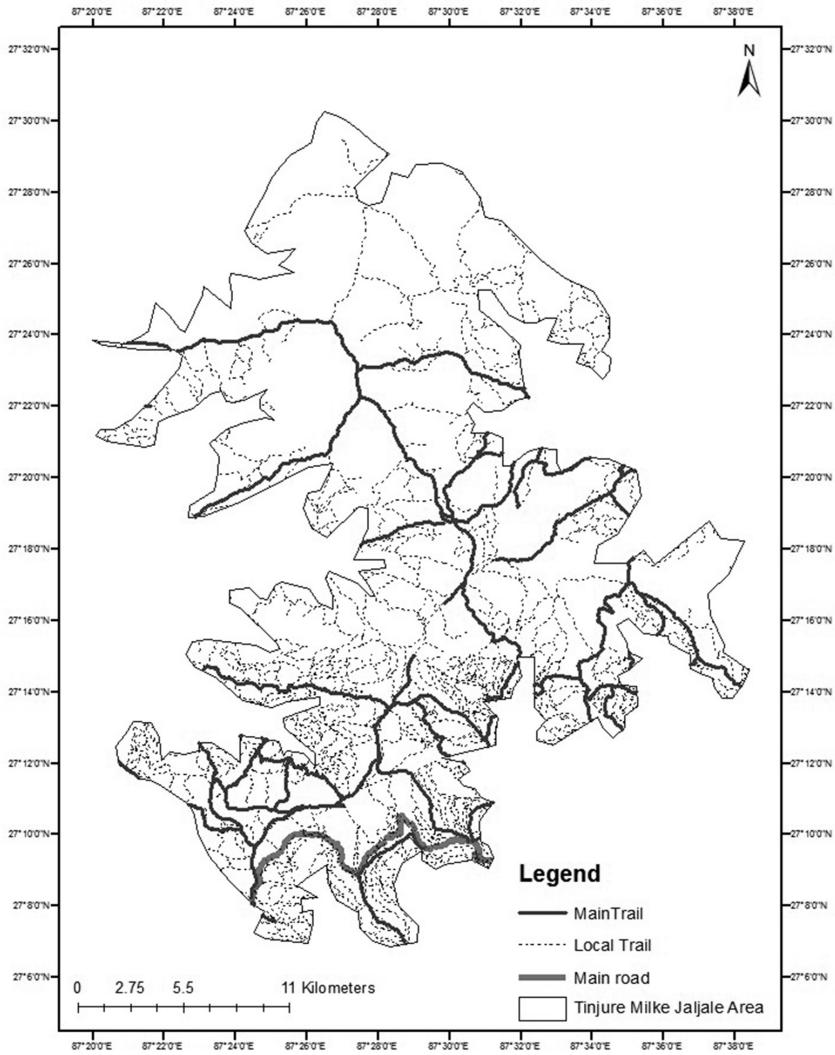
Sabhapokhari is located at an altitude of 4,240m. *Sabha Pokhari* is a natural lake that has religious significance. The place, where the lake is situated, is an extraordinary example of natural beauty and landscape and the place is good for trekking.

Physical infrastructure

Road network

There is one main road of length of 22.3 km; there is a main trail of length 246.3km and number of local trail of length 1091.6 km (Figure 4). The entry points of the main road are Basantapur Deurali and Morhang. The entry points of main trail are Menchyam Rural Municipality, Chainpur Municipality, Madi Municipality, and Saghu Munucipality.

Figure 4: Road and trails around TMJ



Source of energy used in TMJ

Woods and LPG gas are the major source of energy which were utilized by the people of TMJ area. LPG gas was considered to be the major source of energy which was 56% and wood is the second major source which was 44%. Two micro hydropower projects provide electricity to all the areas of TMJ.

Waste management

Burning, open dumping and close dumping are the main ways to manage waste in TMJ area. From the survey of 50 people it was found that 50% of the people were found to be burning waste, 26% were openly dumping and 24% were closely dumping waste in TMJ.

Water and health facilities

There are basic facilities of drinking water. There are three government managed hospitals and 90 sub health post.

Impact of tourism in environment

Various problems may arise due to tourism in specific places. So from a total of 50 respondents, study found that 78% of the people agreeing on impact of tourism and 22% disagreeing in TMJ area.

The 70% people reported tourist are moderately friendly , 20% are very friendly and 10% are not friendly.

Knowledge of eco-tourism

In TMJ area, it was found that few people knew about ecotourism (24%) and majority of people (76%) were unfamiliar with the concept of ecotourism.

Activities carried out for the promotion of ecotourism

Out of the 50 respondents interviewed, 33.33 % reported that participation of locals are increasing to enhance the ecotourism related work, 26.67% reported that awareness programs on conservation and tourism are going on, 6.67% reported that they were given hotel trainings, 6.67% said that the extension of touristic areas with the development of infrastructure and facilities is advancing. However, 30% of the respondents were unaware about it.

Besides, these people were also aware about environment conservation. The response from the survey showed that 80% of the people from the area of TMJ are aware of biodiversity protection mainly Rhododendron conservation and 20% are not aware due to the fact that the strategy was just in implementation phase. Different awareness programs and training have been conducted to empower local people. Community forest user groups and women groups of TMJ had taken initiative of conservation activities by nursery establishment of rhododendron and preventing

cutting down of rhododendron. The Environment Action Club (EAC) has been established in schools to raise awareness among the students.

Discussion

Ecotourism has been generating great changes in socio-cultural and economic aspects which serves for the socio-economic development as well as increases the awareness of nature conservation among the locals (Kiper, 2013). TMJ and its periphery can be suitable area to practice rural and sustainable ecotourism. Hotels and guest houses initiated by locals can be expected to be fruitful in creating an alternative livelihood options for local people and helps tourists to visit the place freely. Although geographical condition of this area is tough, the landscape view of rhododendron forest, climatic conditions are positive parts which makes tourists want to visit the place. Transportation facilities and all the other infrastructure aspects makes TMJ fall behind but alternative options like re-opening trek route, establishing home stay may help them to regain the tourism potential.

TMJ has been hosting both internal and external tourists. There are more than one lakh tourists each year. The flow of internal tourist is reported to be higher than external tourist. The number of external tourists visiting is only around 600. This indicates that the site can be developed in the field of ecotourism in terms of market demand.

TMJ has striking natural features for attracting tourists. The area gives full opportunity to enjoy beauty of landscape, diversity of flora especially species of Rhododendron and fauna. The disturbance in the site is also low. 80% of the area is covered with forests. This indicates that the site is good for ecotourism (Osunsina, Ogunjinmi, Meduna & Oyeleke, 2008; Aciksoz, Gormus & Karadeniz, 2010; Stankov, Stojanovic, Dragicevic & Arsenović, 2011).

TMJ has over 30 mammalian species, 274 bird species, a floral diversity of more than 250 species which has the ability to attract tourists (IUCN, 2010). The site with unique diversity of flora and fauna has potential for ecotourism (Aryal & Maharjan, 2018; Bahmanpour, Laghai & Moharamnejad, 2012).

TMJ has 9% of agricultural land which could host native varieties of crops and 3% of grassland which can serve herbivorous and livestock. These features help to enhance ecotourism. There are various examples from the Alpine Region where an agricultural area created large ecological value among tourists than lands that were extremely reduced (Scialabba & Williamson, 2004).

Physical infrastructure is key for tourism development (Ray, Das, Chaudhuri & Ghosh, 2015). The site was equipped with electricity facilities. The energy used was mostly firewood, potable water but there was not any specific sewage disposal

and treatment facilities. The site had trails and a road. The area is moderate in basic facilities for visitors which create low attractions for tourists (Erduran, Cengġz & Saglik, 2012).

TMJ is rich in cultural features. 67% of the households are Janjati with varieties and unique forms of festivals, food items, dances as well as religious sites. This sort of varieties of culture indicates that the site has good potential for tourism in terms of culture (Hillstrom & Hillstrom, 2003). The area has low number of tourist guides, and has manpower to serve the tourists in hotels but lacks trained manpower. This indicates that the site is weak in terms of skilled manpower because human resources are key in determining ecotourism (Lee, San & Hsu, 2011; Libreros, 2008).

Recently, it is found that the number of tourists visiting natural areas have increased (Kiper, 2013). The number of tourists in TMJ area was found to be increasing in spring season mainly due to Rhododendron forest. Relatively peaceful environment, improved tourism structure, increased charm of travelling among local people are the main things which attract tourists in this place. Despite having a high potential, TMJ lacks proper policy and management in tourism sectors. Lack of proper guides, tourist information centers, homestays, and trek routes in this area has caused difficulty to maintain the flow of tourist. Although a place with massive opportunities for rural ecotourism, TMJ suffers from heavy exploitation and lack of road construction which basically harms the natural resources and daily lifestyle of local communities. Tourism education is necessary for local people to run tourism programs. Training in guiding tourists, improving the local breeds, establishing good hotels, preparing local cuisines will encourage local youths to run tourism businesses.

In ecologically poor regions, increment in human interference with the environment can result in permanent damage to the ecological processes (Kiper, 2013). Deforestation, exploitation and poaching are the negative parts that led the natural resources to degrade. Most of the visitors come to see the beautiful Rhododendron forests and may not be aware about their impact on the surrounding environment during their trip. Therefore, the local management committee, government sectors, local authorities, policy makers should be conscious and stand strong to stop this kind of illegal activities in this place. Enforcement of environmental guidelines is not possible until tourists and hosts realize the impacts of tourism in such areas. Hence if there is a tourism conscious society, both locals and visitors can complement the upkeep of guidelines. This can further bring positive changes in exploitation of natural resources in the name of tourism.

Local people, who are the residents of the area, should be integrated in the program to have better results. Awareness programs should be given to motivate the locals to develop a positive attitude in tourism sector. Proper planning in tourism,

conservation and economic development can be done with the help of knowledge and experience of local people (K.C., 2016). Through a strong collaboration, there can be constructive impact of ecotourism on visitors, locals, management and operators. This would bring a sense of responsibility towards the environment (Ly & Anh, 2011). The study found TMJ has high potential to import national and international tourist in large numbers. All it needs a proper plan and execution. This may be an alternative place for tourists where they can enjoy the rhododendron forest, local foods, and natural beauty. It is found that accommodation facilities and connectivity are inadequate to meet the basic requirements of tourists in TMJ. Local participation can be enhanced by encouraging home stay accommodation for visitors thereby avoiding new constructions. According to Boxill and Severin (2004), community participation is an important aspect for sustainable ecotourism. In case of new constructions, ecological considerations should be given due importance. Any change in land use pattern or poor architectural designs may also result in environmental hazards. So, local people should be concerned with the approach of homestay which was newly planned in TMJ area.

Conclusion

The TMJ has good potential of ecotourism. Tourists enjoy beautiful Rhododendron forest in March-April, escape the hot weather in June-July-August, watch the beautiful panorama of mountains in September-October and enjoy snowfall in winter. This suggests that the area has distinctive offerings throughout the year to host tourists. Travelers seek for natural beauty during their visit to different places. The presence of high diversity of flora, fauna and bird species makes the site ideal as ecotourism destination. Besides that, domestic tourists also visit TMJ for culturally important places such as Basantapur Botanical Garden and View Tower, Tinjure Dada Pathivara Temple, Gupha Pokhari, Singhabahini Devi Temple. The infrastructure and facilities that are being developed suggest high chances for advancement of ecotourism in the area. If the plans and policies are formulated within few years, then ecotourism can improve in TMJ area. The plan and policy must include some concrete idea to attract international tourist. However, further research must be done on the number of tourist flow according to seasons or services provided to them to improve ecotourism.

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References

Adhikari, S.N., & Baral S.R. (1995). *Proceedings of the Eco-tourism Management Workshop.* Pokhara, Nepal: Institute of Forestry, 58–76.

Aciksoz, S., Gormus S., & Karadeniz N. (2010). Determination of ecotourism potential in national parks: Kure Mountains National Park, Kastamonu-Bartin, Turkey. *Afr. J. Agric. Res.* 5(8):589-599. doi: 10.5897/AJAR09.735

Aryal, C., Ghimire, B., & Niraula, N. (2019). Tourism in protected areas and appraisal of ecotourism in Nepalese policies. *Journal of Tourism and Hospitality Education*. 9. 40-73. 10.3126/jthe.v9i0.23680.

Aryal, C., & Maharjan, K. (2018). Assessment of Ecotourism Potential of Koshi Tappu Wildlife Reserve, Eastern Nepal. 1. 48-67. 10.3126/jota.v1i1.22750.

Bahmanpour, H., Laghai, H.A., & Moharamnejad, N. (2012). Identifying environmental potential and natural attraction for ecotourism development from user viewpoint (Case Study: Shahrood Nature Park, Shahrood – Iran). Eur. J. Exp. Biol. 2(3):616-622.

Bajracharya, S. (2013). Land cover of Nepal 2010 Kathmandu, Nepal: ICIMOD. Nepal, I. U. C. N. (2010). Tinjure-Milke-Jaljale Rhododendron conservation area: a strategy for sustainable development. *IUCN country office, Kathmandu*.

Banskota, K., & Sharma, B. (1996) *Royal Chitwan National Park: An Assessment of Values Threats and Opportunities*. Kathmandu, Nepal: King Mahendra Trust for Nature Conservation.

Bekele, H., Teshome, E., & Asteray, M. (2017). *Assessing protected areas for ecotourism development : The case of Maze National Park , Ethiopia*. *8*(3), 25–31. https://doi.org/10.5897/JHMT2015.0159

Boxill, I., & Severin, F. O. (2004). An Exploratory Study of Tourism Development and Its Impact on the Caribs of Dominica. *International Journal of Hospitality & Tourism Administration*, 1-27.

Gautam, P. B. (2011). "Tourism and economic growth in Nepal," *NRB Economic Review, Nepal Rastra Bank, Research Department*, 23(2),18-30.

Carroll, C. R., & Groom, M. J. (2006). Sustainable Development. In Groom, M. J., Meff e, G.K. & Carroll, C.R. (Eds.), *Principles of Conservation Biology* (pp. 591–623). Sinauer Associates, Inc. Publishers.

Chiu, Y.T. H., Lee, W.I., & Chen, T.H. (2014). Environmentally responsible behavior in ecotourism: Antecedents and implications. *Tourism Management*, 40, 321–329. doi:10.1016/j.tourman.2013.06.013

Daniel, L., Manning, R., & Krymkowski, D. (2005). Relationship between visitor-based standards of quality and existing conditions in parks and outdoor recreation. Leisure Science, 27: 157-173. doi: 10.1080/01490400590912060

Drumm, A., & Moore, A. (2005). Ecotourism development: A manual for conservation planners and managers. Volume l: An introduction to ecotourism planning. 2nd edition. USA: USAID.

EGA (2008). Ecotourism as a conservation strategy for funders a background briefing. New York, USA.

Erduran, F., Cengġz, E.O., & Sağlik, A. (2012). Potential ecotourism in the protected area: A case study at Kazdağ (Mt. Ida), *Turkey. Afr. J. Agric. Res*. 7(11):1772-1781. doi: 10.5897/AJAR11.007

Environmental Systems Research Institute (ESRI), (2014). ArcGIS Desktop Help 10.2 Geostatistical Analyst.

Fennell, D.A. (2001). A content analysis of ecotourism definitions. *Current Issues in Tourism*. 4(5), 403-421.

Garcia-Herrera, J.J. (2011). Handbook of ecotourism in protected areas of Vietnam. FUNDESO. Retrieved from http://mekongtourism.org/website/wpcontent/uploads/downloads/2011/02/Handbook-of-Ecotourism-inProtected-Areas-of-Viet-Nam.pdf on Mar 2013

Gurung, H. (1990). *Environmental Aspects of Mountain Tourism in Nepal*. Bangkok, Thailand: International Trade and Tourism Division of Economic and Social Commission for Asia and Pacific.

Gurung, C.P., & De Coursey, M.D. (1994). The Annapurna Conservation Area Project:A pioneering example of sustainable tourism? In Cater, E. and Lowman, G. (Eds.) *Ecotourism: A Sustainable Option* (pp. 177–194), New York: John Wiley and Sons.

Gyan, P.N., & Brijesh, T. (2004). Evaluation of ecotourism: A comparative assessment in the Annapurna Conservation Area Project, Nepal, *Journal of Ecotourism*, 3(1), 20-45, DOI: 10.1080/14724040408668148

Hillstrom, K., & Hillstrom, C.L. (2003). *The World's Environments: Africa and the Middle East*. California, USA: ABC-CLIO, Inc.

K. C., A., & Thapa Parajuli, R. B. (2014). Tourism and its impact on livelihood in Manaslu conservation area, Nepal. *Environment, Development and Sustainability*, 16(5), 1053–1063. http://doi.org/10.1007/s10668-013-9512-7

K.C., A., Rijal, K., & Sapkota, R. P. (2015). Role of ecotourism in environmental conservation and socioeconomic development in Annapurna conservation area, Nepal. *International Journal of Sustainable Development and World Ecology*, 22(3), 251–258.

K.C., A. (2016). Ecotourism and Its Role in Sustainable Development of Nepal. *In Tourism - From Empirical Research Towards Practical Application*. http://doi.org/10.5772/62308

Kiper, T. (2013). *Role of Ecotourism in Sustainable Development*. http://dx.doi.org/10.5772/55749

Koirala, M. (2002). Environmental determinants of the livelihood related food production system in a Mid-Himalayan landscape (Tinjure-Milke region), East Nepal. (Ph.D), Jawalharlal Nehru University, New Delhi, India.

Kunwar, R. R. (2017). Tourists and Tourism: Revised and Enlarged Edition, Kathmandu: Ganga Sen Kunwar.

Lee, M.S., San, Y.H., & Hsu, Y.R. (2011). A study of the key success factors of the ecotourism industry in Taiwan. *Afr. J. Bus. Manage*. 5(2), 627-640. doi: 10.5897/AJBM10.735

Libreros, M. (2008). Measuring employment in the tourism industries. UNWTO Workshop on Developing Tourism Statistics and the Tourism Satellite Account Project. UNWTO.

Limbu, D.K., Koirala, M., & Shang, Z. (2012). A checklist of Angiospermic Flora of Tinjure-Milke-Jaljale, Eastern Nepal. *Nepal Journal of Science and Technology*, 2, 87-96.

Limbu, D., Khatiwada, R.P., & Koirala, M. (2012). Estimating Population Density of Himalayan Rangeland Weed *Scnecio chrysamthemoides* DC. *Our Nature*, 2, 10-17. Mehta, J.N. (1995) Problems and prospects of eco-tourism in Nepal.

Mathieson, A., & Wall, G. (1982). *Tourism: Economic, Physical, and Social Impacts*. London, New York: Longman.

Ministry of Federal Affairs and Local Development (2019), http://mofaga.gov.np/, Singhadurbar, Kathmandu, Nepal

Minciu R., (2004).*Tourism Economy*, Third Edition Revised, Publisher Uranus, Bucharest.

Nyaupane, G. P., & Thapa, B. (2004). Evaluation of ecotourism: A comparative assessment in the Annapurna Conservation Area Project, Nepal. *Journal of Ecotourism*, *3*(1), 20-45.

Nyaupane, G. P., & Th apa, B. (2006). Perceptions of environmental impacts of tourism: A case study at ACAP, Nepal. International Journal of Sustainable Development and World Ecology, 13(1), 51–61. http://doi.org/10.1080/13504500609469661.

Nuva R., & Shamsudin, M.N. (2009). Willingness to pay towards the conservation of ecotourism resources at Gunung Gede Pangrango National Park, West Java, Indonesia. J. Sust. Dev. 2(2). doi: 10.5539

Onwuegbuzie A.J., & Johnson R.B. (2006).The validity issue in mixed research. *Res. Sch.* 13(1), 48-63.

Osunsina I.O., Ogunjinmi A.A., Meduna A.J., & Oyeleke O.O. (2008). Ecotourism potentials of Kamuku National Park, Birnin Gwari, Kaduna State. ASSET Int. J. ASSET Series A. 8(2), 214-224.

Page J.S., & Dowling, K.R. (2002). *Ecotourism: Themes in Tourism*, England: Prentice Hall, Harlow.

Pandey, M.B. (1994). International visitor attitudes to Sagarmatha National Park, Nepal. Master's Thesis, Lincoln University, Canterbury, New Zealand.

Pao, J.W. (2005). A Review of Economic Impact Analysis for Tourism and Its Implications for Macao. Monetary Authority of Macao. Accessed from worldwide web site; www.amcm.gov.mo/publication/quarterly/../Econ.impact_en.pdf.

Postma, A., & Schmuecker, D. (2017). Understanding and overcoming negative impacts of tourism in city destinations: conceptual model and strategic framework. *Journal of Tourism Futures*, *3*(2), 144–156. https://doi.org/10.1108/JTF-04-2017-0022

Ray, N., Das, K.D., Chaudhuri, S., & Ghosh, A. (2015). Strategic infrastructure development for economic growth and social changes. USA: IGI Global publishing.

Robinson, D.W. (1994) Strategies for alternative tourism: The case of tourism in Sagarmatha (Everest National Park, Nepal. In A.V. Seaton (Ed.) *Tourism: The State of theArt* (pp. 691–702). Chichester: John Wiley and Sons.

Scialabba, N.E.H., & Williamson, D. (2004). The Scope of Organic Agriculture, Sustainable Forest Management and Ecoforestry in Protected Area Management. Rome: *Food and Agriculture Organization of the United Nations.*

Stankov, U., Stojanovic., Dragicevic, V., & Arsenović, D. (2011). Ecotourism–an alternative to mass tourism in nature park "staraplanina". *J. Geogr. Institute "Jovan Cvijić"*. 61(1):43-59. doi: 10.2298/IJGI1101043S

Thakali, S. (1995). Mountain tourism perspectives from NGOs and the private sector: Nepal. In Sharma, P. (Ed.) *Proceeding of the Hindu Kush–Himalayan Regional Workshop on Mountain Tourism for Local Community Development* 49–53, Kathmandu, June 1995. Kathmandu: ICIMOD.

Thapa, B. (2003). Tourism in Nepal. *Journal of Travel & Tourism Marketing*. 15, 117-138. 10.1300/J073v15n02_07.

TIES (2015). What is Ecotourism? Retrieved June 28, 2017, from http://www.ecotourism.org/what-is-ecotourism.

Vanhobe, N. (2005). *The Economics of Tourism Destinations*. Elsevier Butterworth Heinemann.

Wearing, S., & Neil, J. (2009). Ecoturism: Impacts, Potentials and Possibilities (Second). Elsevier. http://doi.org/10.1016/S0261-5177(01)00019-X

Weaver, D. (2002). The evolving concept of ecotourism and its potential impacts. *International Journal of Sustainable Development*. 5. 251-264.10.1504/IJSD.2002.003753.

World Tourism Organization, & United Nations Development Programme. (2018). *Tourism and the Sustainable Development Goals – Journey to 2030*. http://doi.org/10.18111/9789284419401

World Tourism Organization. (1994). Recommendations on tourism statistics. New York: United Nations Department for Economic and Social Information and Policy Analysis, Statistics Division.

Zurick, D.N. (1992). Adventure travel and sustainable tourism in the peripheral economy of Nepal. *Annals of the Association of American Geographers* 82, 608–628.