

## Tourism in Protected Areas and Appraisal of Ecotourism in Nepalese Policies

**Chandramani Aryal**

Tri-Chandra Multiple Campus, Tribhuvan University  
*aryal.mani@gmail.com*

**Bina Ghimire**

Tri-Chandra Multiple Campus, Tribhuvan University  
*bghimire@cdes.edu.np*

**Narayan Niraula**

Saptagandaki Multiple Campus, Chitwan, Nepal  
*narayanniraula@smc.edu.np*

### Abstract

*Ecotourism is a form of nature-based tourism. It is recognized as the sustainable alternative to the mass tourism and is executed to contribute to the protection and enhancement of various component of the environment. As environmental and cultural diversity are considered as the greatest assets to ecotourism, Nepal with high cultural and environmental diversity is prime destinations for ecotourism and other forms of nature-based tourism. Ecotourism contributes to the conservation of biodiversity as a primary source of internal funding in the protected areas. Researches on the aspects of ecotourism in Nepal were focused towards potentiality evaluation, impact assessment and the impact of climate change including others. Despite the significance of ecotourism in the Nepalese economy, research on governance aspects of ecotourism is limited. This article aims to analyze the role of government*

*in ecotourism development in Nepal through policy-based approach. Beside this, data of visitation in the protected areas was evaluated. Tourist number in the protected area was observed to increase in a gradual fashion in response to the growing number of tourists visiting Nepal. Tourism policies of government primarily focus to increase the number of tourists in the country and fail to recognize tourism carrying capacity and environmental implication. Different tourism and other sectoral policies attempt to cover the issues of ecotourism, but, ecotourism specific policy is yet to be drafted. In addition to this, the tourism aspect is addressed by the species conservation action plan for species-level conservation within the country. In all, nine action plans reviewed, the provisions relating to tourism were found to be too general, most of them acknowledging ecotourism as a source of conservation funding but failed to define species-specific policy. A similar trend can be observed in the protected area management plan excluding the Chitwan and Banke National Park. Further study on the implementation status and formulation of new policy to address the holistic issues of ecotourism is an urgent requirement.*

**Keywords:** *Biodiversity, conservation, ecotourism policy, nature based tourism, sustainable development.*

## **Introduction**

Protected areas are the designated sites for sustainable management of natural resources. They are cornerstones of conservation in the face of growing global challenges. The International Union for Conservation of Nature (IUCN) defines protected areas as “a clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long term conservation of nature with associated ecosystem services and cultural values” (IUCN, 2008). IUCN recognizes six different categories of protected areas, ranging from Strict Nature Reserve and Wilderness Areas (categorized as IUCN category I protected areas) to Protected Areas with Sustainable Use of Natural Resources (categorized as category VI protected area). The degree of restrictions is gradually loosening from category I to category VI. Tourism can provide the positive force for the conservation within all these categories of protected areas (Leung, Spenceley, Hvenegaard, Buckley, & Groves, 2018). The protected area is one of the prime destinations for ecotourism in most part of the globe. Protected areas based ecotourism are initiated with the aim of establishing mutually beneficial relationship between the local people, park authority and tourism (Xu, Lü, Chen, & Liu, 2009). Complex natural, social and economic background appears as a challenge to the establishment of an ideal relationship where all the three fronts of the environment are balanced and there appears the discrepancy

between theoretical and real field scenarios. Complexity level is determined by the ability of the local people to harmonize their livelihoods with the development and conservation needs considering the long term relationship between those issues (Xu et al., 2009). In such issues, the government can play an important role to develop the harmonious relationship between different actors involved in protected area based tourism through policy intervention.

### **Tourism**

Tourism is one of the fastest growing economic sectors in the world that emerged in the late 1980s with all the years since 2010 have seen the growth of at least 4% or more while in 2017, the growth rate was a whopping 7% (World Tourism Organization, 2018). The number of people who traveled and stayed overnight was 1.4 billion in 2018 following the momentum produced in the year 2017 with the growth rate of 6% despite Brexit uncertainty (UNWTO, 2019). The growth of tourism was led by the Middle East, Africa and the Asia Pacific region. Tourism industry makes a significant contribution to the economy by generating a substantial amount of revenue. Thus, tourism is often valued by the politicians/policy makers as an important source of wealth in the majority part of the globe. The economy of a country is not a single area, influenced by tourism, it has a substantial impact on the environment which can be considered to have two facets (Goeldner & Ritchie, 2012). Some regard tourism as significant as Climate change, industrialization and logging for biodiversity degradation, while others have different ideas. As the fastest growing economic sector in the world, tourism is highly acknowledged by the rest for its potentiality for jobs and wealth creation, economic growth and poverty alleviation along with environmental conservation, ensuring the triple win situation if they are planned and executed properly (World Tourism Organization & United Nations Development Programme, 2017).

Despite the significance of tourism in the economy of a country, the benefits are rarely distributed to all the stakeholders. A significant proportion of the income generated through tourism are taken by outsiders, including tour operators and only limited fractions are retained at the local level. In fact, the group who has to make sacrifices due to tourism are rarely benefited from tourism. Tourism also comes with many externalities such as pollution, cultural encroachment, and price hike for goods in the market, including other, which largely affect the groups deprived of the benefits. Various elements of the ecosystem are highly affected due to tourism activities such impacts include environmental disturbance, alternation in habitat, disturbance to animals, erosion of the soil, increase in water demand causing exploitation of water from the natural sources, emission from the vehicles and transport causing air pollution and change in the behavior of the wild animals due to human presence (Kiper, 2013).

To ensure the benefits are supplied to the ground level, ecotourism should receive proper policy guidance. Properly planned and executed tourism activities are vital in uplifting the social and economic status in the country along with environment conservation (KC, 2016). To achieve this, the government plays an important role, through policy intervention, in promoting tourism for enhancement of the social and economic environment while minimizing the footprints in the physical environment. Alternative forms of tourism such as Adventure tourism, sports tourism, cultural tourism, and rural tourism are considered as the sustainable alternatives of mass tourism.

Nevertheless, alternative tourism bear positive features and address the environmental and cultural sensitivity; preserve, protect and enhance the quality of resources; enhance local heritage and environment for the development of visitors' services; and endorse sustainable economic growth within the carrying capacity of the environment (Wearing & Neil, 2009). Ecotourism as a form of alternative tourism; has some inherent characteristics regarding carrying capacity, environment conservation and local development (Moore, 2004). Ecotourism is primarily focused on the natural area (natural history) and focuses on education and interpretation which may not be the characteristics of other forms of tourism (Fennell, 2003; TIES, 2015).

### **Ecotourism**

Ecotourism, the nature oriented niche of tourism, is defined differently by various scholars. The definitions of ecotourism in many cases have been equated with nature-based tourism, support for conservation, sustainable management of the resources and environmental education (Buckley, 1994). According to the Québec declaration on ecotourism adopted in 2002, any form of tourism can be attributed as ecotourism on the basis of five distinct characters viz. nature-based products, minimal impact management, environmental education, contribution to conservation, and contribution to the community (UNEP, 2002).

Ecotourism has been recognized by the United Nation Environmental Program (UNEP) as one of the sustainable green economy sectors owing to its role in the conservation of local natural, cultural and built resources while maintaining and enhancing the quality of life along with the enhancement of visitors' experience at destinations. Generally, ecotourism deals with living part of the natural environment with major focus to travel in destinations where flora, fauna or cultural heritages are the primary area of attraction.

As ecotourism is taken as the sustainable form of modern tourism, policy guidance plays a key role in making the tourism industry sustainable (World Tourism Organization & United Nations Development Programme, 2017).

The International Ecotourism Society (1991) defines ecotourism as the responsible travel to the natural areas that conserve the natural environment and improve the living standard of the local people. This definition was updated in 2015 to embrace education and interpretation involved in ecotourism. Ecotourism is now defined as “responsible travel to natural areas that conserves the environment, sustains the well-being of the local people, and involves interpretation and education” (TIES, 2015).

Similarly, according to Weaver (2002) ecotourism is a form of tourism that promotes learning experiences and appreciation of the natural environment, or some component thereof, within its associated cultural context which primarily enhances the natural and cultural resources with its best use and operation. Some other author mentioned that ecotourism is people for natural resources and natural resources for the people (Gajurel, 2004) where the activities of ecotourism in natural resources are for the prevention of wider usage and damage of natural resources through proper ecological planning and management (Cengiz, 2007). Ecotourism is deployed in order to provide the people around protected areas with financial benefits and also to protect the natural areas at the same time (Cengiz, 2007). Sustainability is one of the key components of ecotourism and four major different criteria that is needed to be incorporated are finance, ecology, visitation and economics (Aylward, Allen, Echeverria, & Tosi, 1996). Major goal of ecotourism must be sustainable use of natural resources ensuring the equitable sharing of resources to the generations by reducing the use and dependency of natural resources by locals.

The concept of sustainable tourism was emerged and accepted after the Rio Declaration on environment and development agenda 21 (WECD, 1987). Sustainable tourism is, however conceptualized between sustainable development and ecotourism, which is mainly concerned with the development of local livelihood and conservation of natural resources (Thompson, Gillen, & Friess, 2018). Ecotourism is one of the components of sustainable development which could be achieved through integrating the social, economic and environmental resources (Bhuiyan et al., 2012).

### **Ecotourism Policy**

Ecotourism policy refers to the intention of the government to motivate or discourage the actions related to ecotourism (Hall, 2004). This includes the action, inaction, decisions, and non-decisions of government with regard to the choice of alternatives available for ecotourism promotion and development within the country (Hall & Jacksins, 2004). Ecotourism policy does not occur in a vacuum. They are the outcome of a policy-making process which reflects the interaction of actors' interests and values in the influence and determination of the tourism planning and policy processes (Hall, 2002). The policy is relevant to the tourism industry to make the choice and define priorities among the different forms of tourism available with

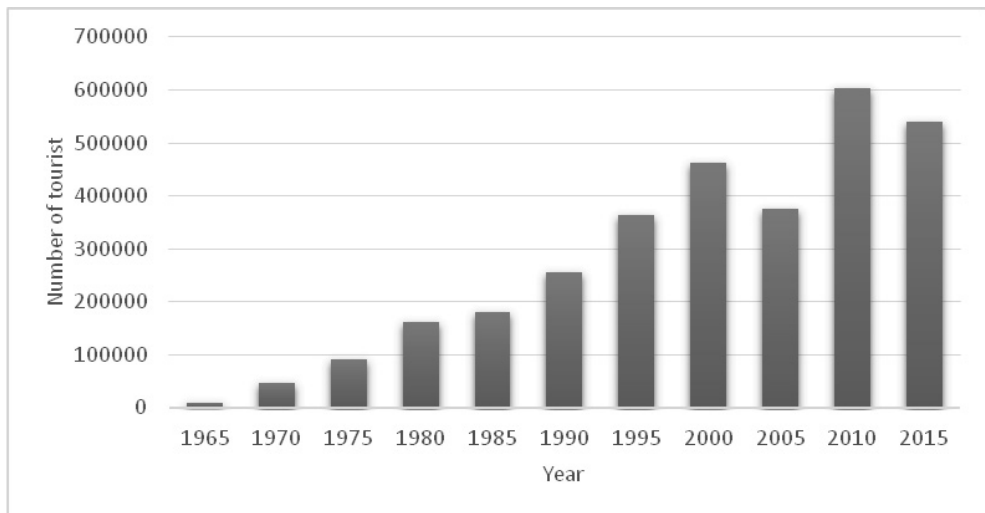
consideration of ethical approach to management, conservation of natural resources and willingness of local people (Dowling & Fennell, 2009). In the absence of such policy guidance, conflicting interests of multiple actors involved in different stages of ecotourism activities cannot converge. This will create a situation where balance between the conflicting interests such as conservation versus development, supply versus demand, benefits versus cost and people versus environment cannot be achieved and in turn tourism will hinder the sustainability of the system on which ecotourism is based (Dowling & Fennell, 2009). The policy is vital to turn out the challenges of ecotourism into opportunities. The harmonization of three fronts of the environment with relevance to ecotourism such as physical, social and economic (conservation, development, and livelihood) can be better achieved through ecotourism policy. For this, participation of the local people in policy-making process is equally significant as the provision of policy (Holtz & Edwards, 2002). Partnership in the policymaking process can be a good initiative measure for developing harmonization in an effort to reduce the adverse impact of tourism in all sectors (Holtz & Edwards, 2002).

### **Tourism and its impact in Nepal**

Nepal bears peculiar property for the development in tourism sector exclusively because of, and a great variance in products, key attraction sites for the tourists such as trekking and adventure activities, and religious and diversification in cultural sites (Basnet, 2016). Nepal has been always a tourist destination with Manjushree regarded as the first tourist to visit Nepal (Shrestha & Shrestha, 2012). But the actual development of tourism takes place after 1950 which generates a large number of employment opportunities. Tourism is one of the easy source to the Nepal's revenue due to its variance in landscape, biodiversity and culture, it poses huge potential for the tourism as an industry (Gautam, 2008). Despite various efforts there always existed insufficient marketing and promotion of alternative tourist destinations and attractions around the country. For the last decade after the end of internal conflicts, the number of tourists visiting Nepal has been increasing (Bhattarai, Conway, & Shrestha, 2005). Currently, tourism is one of the major foundations of the Nepalese economy. Similar to the global trend, in the case of Nepal, the major bulk of share in revenue can be attributed to the tourism industry (Kafle, 2014; WTTC, 2018). The contribution of tourism and travel in the gross domestic product of Nepal in the year 2016/17 was 2.3 % (MoCTCA, 2018). With the increase in numbers in national and international tourist, it leaves many negative impacts, including depletion of environmental resources within and outside protected areas. Majority of international tourists entering Nepal (about 70%) mentioned their motive as trekking and Mountaineering in the year 2017 (GoN, 2018). Regardless of those positive effects of tourism, it has some negative aspects as well. As tourism in Nepal is more concentrated towards mountain tourism, the use of firewood for cooking

purpose is leading to deforestation (Nyaupane & Thapa, 2006). Degradation of the environment mainly due to the cutting of the hill foot for making foot trails and road, causes trail erosion, deforestation and environmental pollution in hilly regions of Nepal (Gurung, 1998). In addition to this, tourism in Nepal has enhanced the litter production, especially in Mountain areas, insufficient sanitation and disposal of the wastes as well (Pandey, Chettri, Kunwar, & Ghimire, 1995). Tourism has contributed to increased litter, inadequate sanitation and solid waste disposals in the mountain communities, while toilets built at the edge of local streams and rivers have resulted in water pollution (Boselli, Caravello, Scipioni, & Baroni, 1997). The total number of tourists in Nepal in a various year is shown in figure 1.

**Figure 1: Annual variation of international tourist in Nepal**



*Source: Nepal Tourism Statistics 2017, MoCTCA 2018*

### **Ecotourism in Nepalese Perspective**

Nepal, a country of cultural and environmental diversity is prime destination for ecotourism (K.C., 2017). In Nepal ecotourism focuses on meeting the demands of major three dimensions which includes conservation of biodiversity, poverty reduction and promoting the local business using sustainable principles and practices (KC, 2016; K.C., 2017). However, tourism in Nepal is more concentrated towards mountain tourism. The government of Nepal has placed emphasis on mountaineering tourism and hence receives more and more tourists day by day for mountaineering purposes, but the most needed things are: the government should focus on sustaining the environment and tourism has to follow the principle of ecotourism. But today to minimize the situation, the climbers are not allowed to burn

fire woods on the trail and it has to be on the proper site if necessary. A few years back a group of climbers cleared two tons of debris as they are committed to climbing. The climbing expedition should be led by the companies which are totally committed to the environment of Everest. This is just an example and solution to the environmental effects of tourism (Thapa, 2012).

### Protected Area based Tourism

Nepal is at the forefront in protected areas based conservation. Aichi target adopted by the convention on biological diversity has envisioned to expand the protected area coverage by 17% on the terrestrial environment, and Nepal was ahead on that front, where 23.39% of the land is allocated as protected areas (CBD, 2010). Chitwan National Park, established in 1973 was the first protected areas of Nepal. After that, coverage of protected areas is in increasing trend and as of now, there are 20 protected areas in Nepal. This includes 12 National parks, 6 conservation areas, 1 wildlife reserve and 1 hunting reserve (Table 1) (Shrestha & Pantha, 2018). These protected areas are important areas in terms of potentiality for ecotourism development (Aryal & Maharjan, 2017, 2018). Beside this, buffer zones of thirteen protected areas, ten Ramsar sites (Wetlands of International Importance) and protection forests, some of which overlap with the protected areas, all are considered as the protected sites which offer potentiality for ecotourism development.

**Table 1: Protected Areas of Nepal**

SN	Name	Estd. (AD)	Area Covered (Km <sup>2</sup> )	Buffer Zone (Km <sup>2</sup> )	Geographic region	Major Attraction
1	Chitwan NP	1973	952.63	729.37	Terai	Megafauna such as Tiger, Rhino and Birds along with tharu culture
2	Bardia NP	1976	968	507	Terai	Megafauna such as Tiger, Rhino & other mammals and Birds along with Tharu Culture



SN	Name	Estd. (AD)	Area Covered (Km <sup>2</sup> )	Buffer Zone (Km <sup>2</sup> )	Geographic region	Major Attraction
3	Sagarmatha NP	1976	1148	275	Mountain	Landscape Highest Mountain: Sagarmatha, Scenic Mountain, Himalayan tahr
4	Langtang NP	1976	1710	420	Mountain	Landscape, Musk Deer and other mammals, Trek to Gosaikunda, Helambu and Langtang valley
5	Rara NP	1976	106	198	Mountain	Rara Lake, landscape
6	Shey Phoksundo NP	1984	3555	1349	Mountain	Phoksundo Lake, Shey Monastery, Landscape, Snow leopard, blue sheep
7	Khaptad NP	1984	225	216	Mountain	Landscape,
8	Makalu Barun NP	1991	1500	830	Mountain	Landscape,
9	Shivapuri NP	2002	159	118.61	Midhills	Birds
10	Banke NP	2010	550	343	Terai	Tiger
11	Sukhlaphanta NP	1976 (2017*)	305	243.5	Terai	Barasingha
12	Parsa NP	1984 (2017*)	627.39	285.30	Terai	Tiger

SN	Name	Estd. (AD)	Area Covered (Km <sup>2</sup> )	Buffer Zone (Km <sup>2</sup> )	Geographic region	Major Attraction
13	Koshi Tappu WR	1976	175	173	Terai	Wild water buffalo
14	Annapurna CA	1992	7629	-	Mountain	Mountain range, Gurung culture, Snow leopard, blue sheep
15	Dhorpatan HR	1987	1325	-	Mountain	Wildlife hunting, landscape,
16	Manaslu CA	1998	1663	-	Mountain	Landscape
17	Kanchanjunga CA	1997	2035	-	Mountain	Landscape, Snow leopard, blue sheep
18	Api Nampa CA	2010	1903	-	Mountain	Landscape
19	Gaurishankar CA	2010	2179	-	Mountain	Redpanda, Landscape
20	Krishnashar CA	2009	16.95	-	Terai	Blackbuck

\* Upgraded to National Parks, NP : National Parks, HR= Hunting Reserve, WR= Wildlife Reserve, CA= Conservation Area

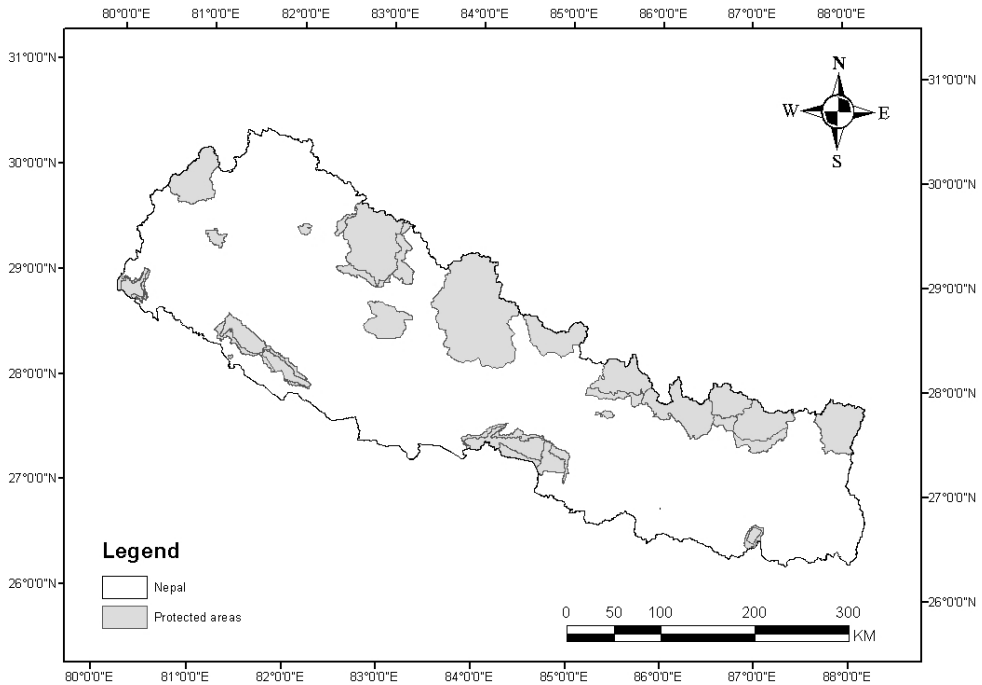
As Nepal in the frontline in community-based conservation strategies, conservation area and buffer zone programme of National parks and wildlife reserves are of great significance (Bhattarai et al., 2017). A country where nearly a quarter of total area is allocated for conservation and with some potential negative impact of those protected areas in livelihood involvement of local people in several tourism activities which could be the potential way-out for the conservation of the natural areas, increasing revenue through people's participation in tourism and sustainable management of resources (Bajracharya & Lama, 2008). In order to address such issues, the concept of ecotourism or eco-friendly tourism had emerged. In addition to this, the Government of Nepal has many policies, acts, rules, regulations, and action plans to discourse and implement ecotourism. Ecotourism potential of protected area, their role in conservation and sustainable development and impact of climate change in

ecotourism are explored by various scholars (Aryal & Maharjan, 2018; K. C & Thapa Parajuli, 2014; K.C., 2016; K C & Thapa Parajuli, 2015; Nepal, 2002). But the study on the policy discourse of ecotourism in case of Nepal are greatly limited in scope and number. This paper aims to identify the issues and opportunities of tourism in protected areas and the evaluation of ecotourism related policies in Nepal.

## **Materials and Methods**

### **Study Area**

Nepal (28.3949° N, 84.1240° E) with the area of 147,181 Km<sup>2</sup>, covering about ~0.03% of the total area of the globe, is the country with diverse environmental and cultural resources. Despite its position within the sub-tropical zone of the globe, mountainous regions often cited as the third pole, climate analogous to all climate zones are found in Nepal, with the pseudo-tropical climate in the lowland areas, the sub-tropical climate in the Midlands and polar equivalent climate in the northernmost region. This diverse climate has resulted in high natural diversity. Within the short north-south transect of 150-200 Km, 118 ecosystem types have been identified and, 3.2 percent and 1.1 percent of the world's known flora and fauna, respectively. This includes 5.2 percent of the world's known mammals, 9.5 percent birds, 5.1 percent gymnosperms, and 8.2 percent bryophytes (GoN/MoFSC, 2014). With the population of Nepal is about 30 million, the threats to this diversity are very high. Thus, a protected area network of 20 different protected areas has been established in Nepal (Figure 2). These protected areas are one of the major attractions for ecotourism in Nepal. Beside these protected areas, there are 37 Important Bird Areas, and 10 Wetlands of International Importance (Ramsar sites).

**Figure 2: Map of Nepal with Protected area Network****Methods:**

Policy based approach was used to understand the role of government in the development of ecotourism. Except for the guidelines endorsed by the Ministry of Forest and Environment for the promotion of ecotourism in community forest, no specific policy document specifically dedicated towards ecotourism were available. Thus, the analysis was based on the provision of ecotourism stated on the other sectoral and national policy documents. For this, species conservation action plans, periodic plans (first to fourteenth), protected area and buffer zone management plans and tourism management plan (wherever applicable) of selected protected areas (based on availability as e-copy) were reviewed. To understand the status of ecotourism in protected areas, the data provided by DNPWC on its annual reports were analyzed. Ratio of tourists visiting to the protected areas were calculated as:

$$\text{Proportion of Tourists in PA} = \frac{\text{Number of tourist in Protected Area in particular year}}{\text{Total international tourist entering Nepal in that year}}$$

Trend of this proportion was analyzed for the year 2005/06 to 2016/17 by Man Kandel Tau and Sen Slope Index in trend package of R Software (Pohlert, 2018; R Core Team, 2018).

## Results and discussion

### Tourist in Protected areas of Nepal

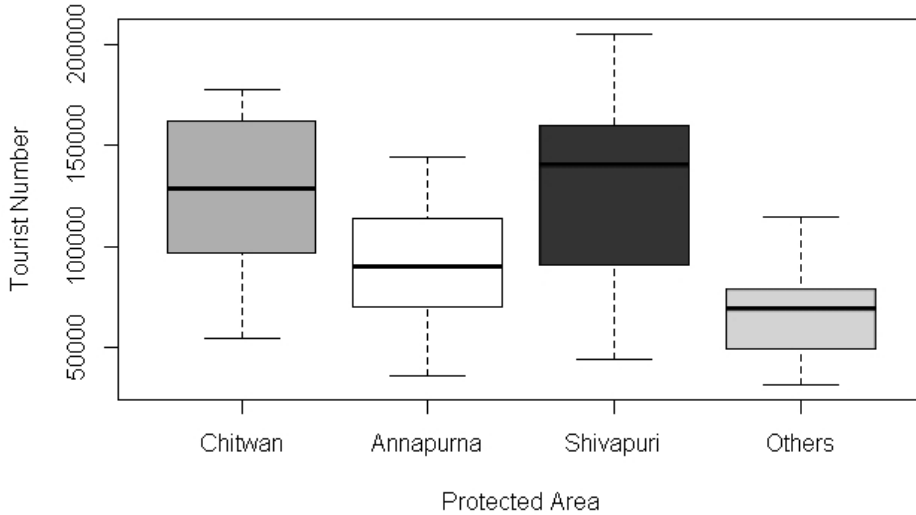
Majority of the tourist arriving in Nepal visit the protected areas. The proportion of the tourist visiting the protected areas of Nepal with reference to total tourist entering the country was found to be 48.48%. The proportion of total foreign visitors to the visitors visiting the protected areas of Nepal was found to increase gradually in twelve years of the period considered (between 2005/06 to 2016/17) as shown in the table 2 below. The rate of increase was found to be 1.8% per annum (1.3 to 4.09%).

**Table 2. Trend Analysis of Proportion of visitors in Protected Areas with reference to International Tourist**

Man Kandel Tau	Sen Slope Index		Z	p	N	
	Estimate	95% confidence interval				
	Max	Min				
0.4848	0.0180	0.0409	0.0013	2.1257	<0.05	12

In Nepal, twenty protected of different categories are established but tourist flow in three different protected areas outnumber rest seventeen protected areas by a million mile. As shown in figure 3 and table 3, tourist flow between Chitwan National Park (CNP) and Shivapuri Nagarjun National Park (SNNP) are comparable. A significant proportion of tourist visit to Annapurna conservation Area (ACA) as well. But, the number of tourist in other protected area combined do not reach the figure achieved by each of the three aforementioned protected areas. A high number of tourist in Shivapuri Nagarjun National Park can be attributed to its location. SNNP being the national park within the capital city of Nepal and close to the international airport could explain the high visitation to the park (Ceballos-Lascuráin, 1996). CNP and ACA both offer a unique experience to the visitors. Status of CNP as the world heritage site along with high biodiversity and easy access to the park owing to its easy connectivity with the major cities of Nepal are attributable factors explaining the high visitation in the park. Presence of Charismatic species such as Greater One Horned Rhinoceros, Royal Bengal Tiger, and high avifaunal diversity within the CNP attracts visitors to visit CNP. ACA has been described as one of the top trekking destinations in case of Nepal.

**Figure 3: Boxplot showing tourist number in different protected area (2005/06-2015/16)**



(Data source: Annual Report 2018, DNPWC)

**Table 3: Summary of Tourist flow in Selected protected areas**

	Chitwan NP	Bardia NP	Langtang NP	Sagarmatha NP	Shivapuri Nagarjun NP	Annapurna CA
<b>Mean</b>	127000	9019	9496	31700	129800	90760
<b>Std. Deviation</b>	39920	4966	3450	6599	48320	31530
<b>Range</b>	123800	16570	10090	25010	161900	108400
<b>Minimum</b>	54450	1394	4230	20100	43800	36000
<b>Maximum</b>	178300	17960	14320	45110	205700	144400

NP= National Park, CA= Conservation Area (Data source: Annual Report 2018, DNPWC)

As mentioned above, higher tourist numbers are skewed towards few protected areas while rest despite of having diverse cultural and environmental attractions, receive a few number of tourists and their income through ecotourism activities are very insignificant. In the protected areas where the flow of tourist are significantly higher, they do have seasonal patterns of tourist flow and can be balanced by attracting internal tourist to the area. But, in many ecotourism destination communities have

mentality to consider that only foreigners as the tourist which needs to be revised and adopting an ecotourism policy that seeks to attract both foreign and domestic tourists is sensible. Indeed, the long term viability of these projects will depend also on how much domestic tourists these areas can attract (Nepal, 2007).

### **Government of Nepal and Ecotourism Development**

Ecotourism policy to guide the ecotourism development in all sectors is yet to be promulgated. Recently, the Ministry of Forest and Environment have endorsed the Standard Operation protocol for implementation of ecotourism in the community forest of Nepal (GoN, 2018) (Protocol hereafter). The policy despite being the initiation of promulgation of policy for ecotourism in Nepal, have come with a limited scope. The Protocol envisions to develop the responsible travel in community forest with educational, observational, recreational motive within the principles of community forest-based ecotourism set forth by the protocol. The principles of community forest-based ecotourism are mainly engrossed on providing economic benefits, creating job opportunities, promoting local resources and culture as well as making a good relation among local people and tourist.

For this, each community forest is required to include the ecotourism into their operational protocol which is prepared periodically (5-10 years). Owing to the success of certain community forest in the promotion of ecotourism to generate revenue for conservation (Bhattarai, 2011), it can be expected that the protocol will be successful in scaling up ecotourism activities in the wider arena of community forest networks. But, the protocol has the provision for the establishment of a zoo within the community forest in the protocol. This provision is intended to attract more tourists to the community forest while ensuring guaranteed wildlife view and generating additional revenue for community forest conservation. But this provision can be counterproductive. As community forest user group and government officials within the regulating mechanisms have limited capacity to assess the status of wild animals within the community forest and impact of capturing the animals in the wild to keep in captive conditions. Excluding some of the buffer zone community forests of Terai, most of the community forest in Nepal operate with a limited annual budget. Which implies that they have limited capacity to invest for the establishment of the zoo taking the animal welfare issues in concern. Thus, they can turn out to become the exhibition centers instead of support for the conservation of wild animals.

### **Ecotourism in Tourism Policy**

The Government of Nepal has introduced different tourism-related policies in the retrospective fashion. Tourism policy, long-term/mid-term/short-term plans, and Vision 2020 are the major policy documents of Nepal introduced with the objective of easing the rules and regulations for the smooth flow of tourism activities in the

country. There is a rising focus on infrastructure, particularly the modernization of airports and the development of new tourist destinations (Shakya et al., 2013). Tourism Policy 2065 and tourism vision 2020 are an important tourism-related policy in Nepal. Beside this two tourism policy, policy statement made through different tourism related laws (act, regulations, and guidelines) is of equal significance to understand the role of government. Both Tourism Policy 2065 and Tourism Vision 2020 have a common policy at core i.e. they envision to develop tourism infrastructure, increase tourism activities and in turn create employment opportunities in rural areas through tourism and share the benefit arising from the tourism industry at the grassroots level. Most of the policy document related to tourism are focused towards increment of tourist number.

Tourism policy 2065, has recognized ecotourism as a separate niche of tourism. Besides that, there are other provisions which carry the motive of ecotourism. This policy has recognized the need for addressing the environmental concerns for the sustainability of the tourism sector. In article 8, tourism policy 2065 (BS), need for the prioritization of the environmental sector in the development, construction, and implementation of tourism infrastructures is addressed (GoN/MoCTCA, 2009). The policy also envisions about the utilization of the certain fraction of the income from the rural tourism for development of tourism infrastructure and to conserve environment at the local level. Ecotourism and tourism for the poor community have been identified as a tool for the conservation of the environment as well as sustainable use of natural resources. This includes sustainable utilization of cultural and natural resources, prioritization of ecotourism over commercial tourism and enhances people's participation to enhance tourism sectors (MoCTCA, 2008). It also recognizes the need to diversify the tourism industry and to attract the elite group of tourist from the national parks to the rural areas. Besides this policy also recognizes the need for sustainable management of trails, mountains, rivers used for water transportation and enhancement of the cultural diversity (MoCTCA, 2008). The policy is not limited to propose the action for the development of ecotourism and other forms of tourism in the country. It also identifies the environmental pollution as one of the challenges for tourism/ecotourism industry in the country (MoCTCA, 2008). The provision in this policy is well addressed by tourism-related acts rules and regulation. For instance, Tourism act 2035, in its article 35 stresses to the pollution free tourism where a mountaineering excursion team, shall comply with the prescribed conditions in order to not causing the environmental pollution at the time of mountaineering (GoN, 2016). Beside this, Travel and Tourism rules, 2006 in its article 12 has provision related to the environmental cleaning and waste management where tourist are responsible for the management of waste generated by them during trekking or camping. Tourism act 2035 in its article 35 states the pollution free tourism where a mountaineering excursion team, shall comply with



the prescribed conditions in order to not causing the environment to be polluted at the time of mountaineering. Rafting rules 2063 (GoN, 2006) have a provision relating to the environmental clearing and management of wastes in the river due to rafting activities where the rafting entrepreneur is responsible for the collection of wastes and should not be near the source of water resources. It also assigns the responsibility for proper management of wastes to the river guides under Article 17. Mountaineering Expedition Rules, 2059 (2002) explicit that the mountaineering team shall not damage or destroy natural and cultural resources in the route of mountaineering and team shall work for non-polluting as recommended by Government of Nepal. Standard Operating Protocol for Homestay Operation in Nepal has obliged the operators of homestay to involve tourist in different cultural and nature-based tourism activities such as cultural dance, bird watching, jungle walk, wildlife viewing among other. Besides, the protocol also obligate the visitors to be responsible for biodiversity and ecology of the environment (GoN, 2010).

### **Ecotourism in other sectoral Policy**

Nepal is a signatory of Convention on Biological Diversity and each party to the convention are obliged to prepare their national level policy for the conservation of biodiversity within their jurisdiction (CBD, 1992). Nepal prepared Nepal Biodiversity Strategy in 2002 (hereafter NBS-2002) and Nepal Biodiversity Strategy Implementation Plan in 2006 (hereafter NBSIP-2006) for the fulfillment of the obligation of the convention. Tenth Conference of Parties of CBD was held in 2010 in which Aichi Target for the conservation of biodiversity was adopted. To tie up with the changed targets along with the learning of implementation of NBS-2002 and NBSIP-2006 government prepared Nepal Biodiversity Strategy and Action Plan 2014-2020 (hereafter NBSAP-02) (GoN/MoFSC, 2014) and promulgated in 2014 which contain a target for short term and mid-term (2020 and 2040 respectively). Now, NBSAP-02 is one of the important policy for Nepal. The major provisions related to ecotourism in NBSAP-02 (GoN/MoFSC, 2014) are:

- a. Identification of Protection Forest such as Madane Protection Forest (Declared in 2010) and Panchase Protection Forest (Declared in 2011) as an important ecotourism destination.
- b. Envision to promote eco-friendly tourism, with a particular focus on community-based ecotourism for management of mountain diversity.
- c. Identification of ecotourism as an important internal funding source for the conservation of biodiversity inside and outside protected areas.
- d. Acknowledge the importance of linking communities to the benefits of protected areas which could play a role in the management of protected areas. Also envisions to increase the revenue from the tourism in protected

areas which could be an economic opportunity to the local communities for sustainable tourism.

Owing to the success made on the conservation after initiation of Buffer zone program in some protected areas of Nepal especially the protected areas with high income, the strategy has acknowledged the importance of linking communities to the benefits of protected areas to scale up peoples role in the management of protected areas (Bhusal, 2015; Dhakal & Thapa, 2015; GoN/MoFSC, 2014). It also envisions to increase the revenue from tourism in protected areas which could bring economic opportunities to the local communities from sustainable tourism (GoN/MoFSC, 2014). After implementation of buffer zone program in the protected areas of Nepal, which has the provision to return 30-50% of the income of protected areas to the people of buffer zones through standardized mechanism, sustainable development works are being initiated in selected areas of Chitwan National Park, Bardia National Park and other selected parks of the country with high number of tourist and high income. As revenues collected by the park are proportional to the number of visitors, ecotourism can become important initiator for sustainable development in other parks as well which requires collaborative actions of different stakeholders.

Environmental policies of Nepal have accredited the importance of ecotourism in Nepal. Nepal Environmental Policy and Action Plan (NEPAP 1993) which was promulgated prior to the implementation of buffer zone policy can be considered to be the pioneer to develop the concept of redistribution of a certain portion of income for community development. It also ensures the fuel wood not to be sue by the trekkers and trekking companies and recognizes the need to promote biodegradable materials during trekking and encourage effective waste management systems in national parks of Nepal. Sustainable development Agenda for Nepal is another policy which acknowledges the need of promoting public participation in forest sector as a means to contribute to the sustainability of the physical, social and economic environment and recognize the need of promoting protected areas as a tourist destination (HMG/NPC & MoPE, 2003). Nature conservation strategy recognized ecotourism as a climate-sensitive sector and vulnerable to climate change (GoN/NPC, 2015). Beside this other sectoral policy related to environments such as forest and wetland sector have acknowledged the ecotourism as a tool for sustainable development.

Forest sector policy have recognized forest-based ecotourism as the major contributor to sustainable development in the country. Forest sector policy 2000 has recognized the need to regulate protected areas and to be kept within the carrying capacity of the protected areas (GoN/MoFSC, 2000). Forest sector policies prepared after the initiation of buffer zone programme in protected areas of Nepal have made their acknowledgment towards the principles underneath the buffer zone concepts highlighting the need of redistribution part of the income of protected areas for

community development. Forestry sector strategy 2016-2025, which is developed as the future development of Nepal's forestry sector has recognized the forest sector as the areas with the cultural and environmental significance for ecotourism development (GoN/MoFSC, 2016). The strategy aims to increase the role of the private sector for developing enterprise for ecotourism and recognize community-based management as an entry point for ecotourism development. Forest Sector strategy has also recognized ecotourism as a viable option for low-intensity forest management plans focusing on forest conservation for biodiversity and envisioned to create employment opportunities by expanding ecotourism activities in all protected areas and other areas outside protected areas (GoN/MoFSC, 2016). Protection Forest concepts introduced to protect and restore important biodiversity areas and conservation corridors outside protected areas also acknowledge the role of ecotourism in the conservation of those forests (GoN/MoFE, 2018; Kafle, Aryal, & Baral, 2016). Newly formulated National Forest Policy 2075 BS has also acknowledged ecotourism as one of the tools for sustainable utilization of forest resources.

In addition to this, Wetland areas of Nepal are also important with respect to culture and environment and are important ecotourism destination as acknowledged by wetland-related policies of Nepal. National Ramsar Strategy and Action Plan, Nepal (2018-2024) has recognized ecotourism as one of the potential sources of funding to implement the strategy (Ministry of Forest and Environment, 2018). Wetland action plan also highlights the need to involve the private sector to develop wetland as an important ecotourism destination. The strategy also acknowledges the importance of wetland ecosystem in higher elevational regions as the sites having higher importance from ecotourism perspectives compared to their lowland counterparts (Ministry of Forest and Environment, 2018). Other policies related to the management of wetland are in the forefront to acknowledge ecotourism for its sustainable management. For example, National wetland policy 2059 (2003) has its provision for the Development of environmental friendly tourism with minimum environmental impacts and mobilize acquired profits, as far as practicable, for wetlands management and ensure the benefit of local people and local people's participation in the preparation of work plans for the conservation and management of wetlands. Wetland policy was updated in 2012 which recognizes the role of wetland to contribute to the economy of the country through ecotourism (GoN/MoFSC, 2012). The policy envisioned to classify the wetlands on the basis of their importance and has proposed to classify the sites with ecotourism potential as national wetlands. Now people are aware of the values of wetland and goods and services provided by wetlands. They have recognized the importance of wetland from ecotourism perspectives and are showing initiation to restore and maintain ecological integrity and promote ecotourism as illustrated in case of Jokhad Tal (Kailali district) and Betana Tal Morang, which are restored and

managed by local management committee and are performing successful ecotourism initiatives (GoN/MoFE, 2018).

Ecotourism as a cross-cutting issue can be recognized in other sectoral policies as well. National Urban Development Strategy-2017 has proposed to promote the environment, heritage, and tourism friendly economic functions in the Kathmandu Valley as one of the proposed actions (MoUD, 2017). Climate change policy of Nepal also highlights tourism as one of the sectors with the potential to be affected by climate change (GoN, 2011). This understanding has been a central element to the climate change-related other policy in the country. Handbook prepared to guide the process of harnessing Green Climate Fund (GCF) has identified tourism as one of the climate-sensitive sectors in Nepal and also identified tourism based livelihood and engaging in the tourism industry as one of the potential methods to improve climate resilience in Nepal (Ministry of Finance, 2017).

#### Ecotourism in Species Action Plans

Species conservation action plan were available for nine species which includes six mammals, two birds and one reptiles. All the management plans have acknowledged ecotourism/tourism as the important source of revenue for conservation of that particular species (Table 4).

**Table 4: Species action plan and ecotourism**

SN	Species	Implementation Period	Acknowledgement of Tourism/ Ecotourism	Source
1	Tiger ( <i>Panthera tigris</i> )	2016-2020	Identify tiger based tourism as important income source for local economy	(DNPWC, 2016b)
2	Snow leopard ( <i>Panther uncia</i> )	2017-2021	Aims to pilot at least one snow leopard based ecotourism project. Propose to develop nature-based tourism plan for high priority mountain PAs	(DNPWC, 2017a)
3	Greater One Horned Rhino ( <i>Rhinoceros unicornis</i> )	2017-2021	Envision to promote nature based tourism to benefit local communities	(DNPWC, 2017b)

SN	Species	Implementation Period	Acknowledgement of Tourism/ Ecotourism	Source
4	Asiatic Elephant ( <i>Elephus maximus</i> )	2009-2018	Ensure breeding of captive elephants with their wild counterparts to maintain heterozygosity and contribute to tourism	(DNPWC/ MoFSC/GoN, 2009)
5	Red Panda ( <i>Aluris fulgens</i> )		Identify ecotourism as a means to foster local development and to enrich local and visitors about the ecological importance of Red Panda Recognize the cautious approach to be implemented while promoting species based tourism Envisions to develop red panda based ecotourism promotion manuals Aims to increased Red Panda based tourism sites	(DNPWC & DFSC, 2019)
6	Pangolin ( <i>Manis sps.</i> )		Identify pangolin based ecotourism for enhancing local livelihood. Aims to design and implement community based ecotourism and train local people for the same.	(DNPWC & DoF, 2018)

SN	Species	Implementation Period	Acknowledgement of Tourism/ Ecotourism	Source
7	Bengal Florican (Houbaropsis bengalensis)		<p>Acknowledge the need to explore the potential of managed tourism to link Bengal Florican conservation with livelihood of local people.</p> <p>Aims to assess the potentiality for Bengal florican based tourism through stakeholder involvement (local people and tourism professional)</p> <p>Propose to sensitize local people for tourism, incorporate its conservation issue in tourism guide training and promote home stay tourism.</p> <p>Also propose to explore and implement livelihood enhancement programs including the potential for suitably managed tourism</p>	(DNPWC, 2016a)
8	Vulture	2015-2019	<p>Envisioned to promote community-led vulture-based ecotourism in proposed Vulture Safe Feeding Zones(pVSZs) and Vulture Safe Feeding Zones (VSZs)</p>	(DNPWC, 2015)

SN	Species	Implementation Period	Acknowledgement of Tourism/ Ecotourism	Source
9	Gharial (Gavialis gangeticus)	2018-2022	Restrict tourism in the designated utility area of the gharial Propose to conduct survey on "willingness to pay" with national and international tourists, donors for sustainable management of Gharial Conservation and Breeding Centre	(DNPWC, 2018)

### Ecotourism in Periodic plan of Nepal

In the history of more than 62 years of periodic planning, ecotourism are hardly acknowledged by the periodic plans of Nepal. However, with the phase of time the development on importance of ecotourism by periodic plans have been recognized. The major agenda of tourism and ecotourism is shown in table 5.

**Table 5: Ecotourism Provisions in Periodic Plans of Nepal**

SN	Periodic Plan	Policy for tourism	Ecotourism in periodic plan	Source
1	First five year plan 1956-61	<ul style="list-style-type: none"> <li>- Focused on improvement of facilities for tourism</li> <li>- Acknowledged the need for promotion for tourism</li> <li>- Worked for the Renovation of cultural, natural and mountain tourism</li> </ul>	<ul style="list-style-type: none"> <li>- Recognized natural resources as matchless asset for tourism development</li> </ul>	(NPC, 1956)
2	Second three year plan 1962-1965	<ul style="list-style-type: none"> <li>- Focused on basic facilities and promotion activities</li> </ul>	-	(NPC, 1962)

SN	Periodic Plan	Policy for tourism	Ecotourism in periodic plan	Source
3	Third Five year Plan 1965-1970	<ul style="list-style-type: none"> <li>- Envisioned to increase the annual flow of tourist to 20,000 (excluding Indian tourist)</li> <li>- Focused on construction of modern fitting and facilities</li> </ul>		(NPC, 1965)
4	Fourth Five-Year Plan 1970-1975	<ul style="list-style-type: none"> <li>- Envisioned to develop first Master plan for tourist sector</li> <li>- Seeks to increase the day of stay of tourists</li> <li>- Seeks to search alternative of Kathmandu valley</li> <li>- Emphasis for increasing tourist facilities and construction of information centers</li> </ul>		(NPC, 1970)
5	Fifth Five-Year Plan 1975-1980	<ul style="list-style-type: none"> <li>- Emphasis for preservation of historical, culture and geographical attractions of the country</li> </ul>		(NPC, 1975)
6	Sixth Five-Year Plan 1980-1985	<ul style="list-style-type: none"> <li>- Emphasis on infrastructure effective, touristic spot eye catching, and encourage use of domestic products and involvement of people as provision of employment opportunity</li> </ul>	<ul style="list-style-type: none"> <li>- Acknowledged wildlife sanctuaries and national parks as tourist destination and planned</li> </ul>	(NPC, 1980)



SN	Periodic Plan	Policy for tourism	Ecotourism in periodic plan	Source
7	Seventh Five-Year Plan 1985-1990	Acknowledged the need to develop tourism without any harm to the natural resources and the cultural heritage	– To develop tourism without any harm to the natural resources and the cultural heritage	(NPC, 1986)
8	Eighth Plan 1992-1997	– Aimed to involve and encouraged private and foreign investor in tourism industry.	– augmented the use of local materials and services in the tourism industry  – Envisaged for the environmental plans  – envisioned for the special care for the recovery on environmental pollution and ecological loss	(NPC, 1992)
9	Ninth Five Year Plan 1997-2002	Promote tourism as key employment sector  Emphasis on expansion of tourism in villages	Focused on promotion of ecotourism through the development of model tourist villages, development of new trekking areas, maintenance of environmental quality conducive to tourism	(NPC, 1997)

SN	Periodic Plan	Policy for tourism	Ecotourism in periodic plan	Source
10	Tenth Year Plan (2002-2007)	Worked on the development of making Nepal as one of the major tourism destination	Gave special emphasis on the participatory forest management and development of eco-tourism by proper management of the forest, wild life and vegetation in the leasehold forest handed over to institution or entrepreneurs	(NPC, 2002)
11	Eleventh 3 year interim plan 2007/08-2009/10	Considered for Broadening the concept of tourism market by developing education tourism, health tourism, wildlife tourism, and agro eco-tourism, sports, mountaineering and trekking tourism, adventure and entertainment tourism, cultural tourism, seminar tourism, movie tourism, and religious tourism in addition to mountain tourism	Envisaged for generating Employment opportunity by managing eco-tourism in the conservation areas with the involvement of the private sector and non-governmental organizations.	(NPC, 2007)

SN	Periodic Plan	Policy for tourism	Ecotourism in periodic plan	Source
12	Twelfth plan (2011-2013)	Increased productivity of tourism sector	Develop balanced and coordinated program to integrate rangeland, biodiversity, climate change, agriculture for implementing ecotourism to address livelihood issues of nomads and forest dependent communities.	(NPC, 2011)
13	Thirteenth Plan (2013-2016)	Explored new areas and services for tourism  To address institutional and policy level obstacles for tourism development  To achieve annual growth rate of 8.6% in tourism sector	Developed legal basis for development of ecotourism	(NPC, 2013)

SN	Periodic Plan	Policy for tourism	Ecotourism in periodic plan	Source
14	Fourteenth Plan (2016-2019)	<p>Enhancing partnership with general public and private sector to develop and enhance tourism related activities</p> <ul style="list-style-type: none"> <li>– To enhance public participation for rural tourism</li> <li>– To promote internal tourism for coping up with seasonality in tourism sector</li> <li>– To develop and diversify tourism sector and promote new and established destination in coordinated and unified manner</li> </ul>	<ul style="list-style-type: none"> <li>– State the need to enhance access and involvement of public in sustainable management of biodiversity and watershed areas, and reconstruction and re-establishment of ecotourism areas.</li> <li>– Target to involve private sector to develop and design programs and infrastructures for ecotourism development in Rara and Khaptad Area</li> </ul>	(NPC, 2016)

### Ecotourism in Protected Area Management Plan

Management plans of all the protected areas have acknowledged the importance of ecotourism/tourism as an important source of funding for conservation. CNP has developed tourism plan for park and its buffer zone so as to preserve the biodiversity and cultural heritages within CNP (CNPO, 2017). Ecotourism has been identified as the major conservation strategy of the park. The policy envisions to enhance positive impacts of ecotourism and regulate negative one. Besides CNP has recognized the essence of an ecotourism model based partnership between the concerned stakeholders including tourism entrepreneurs, forest community buffer zone and national park (CNPO, 2017). Owing to the high diversity of avifauna in Koshitappu Wildlife Reserve (KTWR), management plan of KTWR has envisioned to develop

nature based tourism focusing on avi-tourism. Management plan has acknowledged the essence of promotional activities, periodic monitoring of impact of tourism along with the need of local participation (KTWR, 2018). Krishnashar Conservation Area where conflict exists between the people and park authority due to the issue of force resettlement also envisioned importance of ecotourism around the park to reduce conflict and improve the livelihood of local people (Khanal & Chalise, 2010; KrCA, 2017). Banke National Park has prioritized the zonation of park areas for tourism activities and envisioned to monitor and regulate the activities within the protected area. Besides, promotion and institutional coordination activities are also highly acknowledged by the management plan of the park (BaNP, 2018). Plan has acknowledged community based ecotourism in buffer zones as a means of sustainable livelihoods. Parsa National Park has prioritized the development of tourism infrastructure considering the area as high potential for ecotourism development. The management plans of PNP also prioritized the essence of partnership with the concerned stakeholders to minimize negative impacts (PNP, 2018). As in case of all protected area, infrastructure development has been identified as essence for Sagarmatha National Park. Besides that, need to maintain delicate balance between conservation and development, diversification of ecotourism and local involvement are identified as potential areas to address (Department of National Parks and Wildlife Conservation, 2016). Api Nampa Conservation area, owing to its pristine destinations, is identified with cultural heritage as the unique features it can offer to the tourists and is wished to promote tourism activities with minimal harm to the cultural and biological environment (GoN/MoFSC/DNPWC, 2015). In fact, all the management plans of protected areas reviewed have given high importance to the ecotourism activities as the potential source of funding to the park and as a means to develop harmonious relationship with the park authority and local people. But, most of the plans of the protected areas are identical to each other and failed to recognize the special products they can offer to the visitors. The dark side of the tourism are hardly recognized by those management plans (Buckley & Dodds, 2009; DeFries, Karanth, & Pareeth, 2010).

### **Conclusion**

Tourist number in the protected area of Nepal was found to be increasing in a gradual fashion in response to the increasing international tourist flow, improved tourism infrastructure, relatively peaceful environment and increased charm of traveling among Nepalese youths. As the tourism industry is one of the important sector recognized by Nepalese economic sectors, different policies relating to tourism can be found. Despite having a high potential for ecotourism, policy and institutions guiding the ecotourism in Nepal are limited in scope and number. But, sectoral policies relating to Biodiversity (forest, wetland, and environment) and other policies

have acknowledged ecotourism within them. In addition to this, periodic plans of Nepal, species conservation action plans, protected area, and buffer zone management plans also guide ecotourism development in their respective fields. The contradiction between the government policies, some recognizing ecotourism as a separate niche while others failing to do so, is prominent. And in case of species action plans, provisions in most of them are too general, most of which just recognize ecotourism as a source of funding but fail to recognize the strength weakness, opportunities, and threats in implementing the ecotourism for species conservation. Similar is the situation with the protected area management plans. Regardless of the integration of ecotourism tourism and other sectoral policies, the government has acknowledged the fact that the sincere efforts have not been made to cash up the potentiality offered by the cultural and biological resources (GoN/MoFE, 2018). Potential benefits from ecotourism activities can be properly harnessed when existing tourism policies are backed up with practical plans and budgets. Also, separate institution and ecotourism policy are of urgent essence to address the issues of prioritization and specificity about ecotourism in existing policies and ease in promotion through the development of detailed action plans and strategies. In such plans and strategies prepared, allocation of specific responsibilities and specified timeframe, milestones, targets for facilitating the process of monitoring the progress made in the ecotourism sector and embracing adaptive management options are the ways forward.

### **Acknowledgements**

Authors like to express their brief thanks to Mr. Saroj Pokhrel, Mr. Ram Chandra Nepal, Ms. Smrita Acharaya and Mr. Badri Baral for their constant support. We would like to express our sincere gratitude towards Mr. Prakash Chandra Aryal, of Goldenate International Collage for his constant motivation. We are indebted towards all other who have supported directly indirectly for this preparing this article.

### **References**

- Aryal, C., & Maharjan, K. K. (2018). Assessment of Ecotourism Potential of Koshi Tappu Wildlife Reserve , Eastern Nepal. *Journal of Tourism & Adventure*, 1(1), 52–71. <https://doi.org/10.3126/jota.v1i1.22750>
- Aylward, B., Allen, K., Echeverria, J., & Tosi, J. (1996). Sustainable ecotourism in Costa Rica: the Monteverde Cloud Forest Preserve. *Biodiversity & Conservation*, 343, 315–343.
- Bajracharya, Siddhartha B., & Lama, A. K. (2008). Linking Tourism to Biodiversity Conservation: A Paradigm Shift in Protected Area Management. In Siddhartha B Bajracharya & N. Dahal (Eds.), *Shifting Paradigms in Protected Area Management* (pp. 107–118). Kathmandu, Nepal: National Trust For Nature Conservation.

- BaNP. (2018). *Banke National Park and its Buffer Zone Management Plan 2075/76-2079/80*. Obhari, Banke, Nepal: Banke National Park Office.
- Bhattarai, B. R., Wright, W., Poudel, B. S., Aryal, A., Yadav, B. P., & Wagle, R. (2017). Shifting paradigms for Nepal ' s protected areas: history , challenges and relationships. *Journal of Mountain Science*, 14(5), 964–979. <https://doi.org/10.1007/s11629-016-3980-9>
- Bhattarai, K., Conway, D., & Shrestha, N. (2005). Tourism, terrorism and turmoil in Nepal. *Annals of Tourism Research*, 32(3), 669–688. <https://doi.org/10.1016/j.annals.2004.08.007>
- Boselli, A. M., Caravello, G. U., Scipioni, A., & Baroni, A. (1997). Sustainable Tourism Development in Nepal: Evaluation and Perspectives. *Journal of Human Ecology*, 8(1), 1–12. <https://doi.org/10.1080/09709274.1997.11907229>
- Buckley, R., & Dodds, R. (2009). Environmental impacts of Ecotourism. *Annals of Tourism Research*, 36(4), 747–748. <https://doi.org/10.1016/j.annals.2009.04.009>
- CNPO. (2017). *Chitwan National Park and Buffer Zone Tourism Plan (2017/18-2021/22)*. Kasara, Chitwan: Chitwan National Park Office, Department of National Park and Wildlife Conservation.
- DeFries, R., Karanth, K. K., & Pareeth, S. (2010). Interactions between protected areas and their surroundings in human-dominated tropical landscapes. *Biological Conservation*, 143(12), 2870–2880. <https://doi.org/10.1016/j.biocon.2010.02.010>
- Department of National Parks and Wildlife Conservation. (2016). *Sagarmatha National Park and Its Buffer Zone Management Plan 2016-2020*.
- DNPWC/MoFSC/GoN. (2009). *The Elephant Conservation Action Plan For Nepal (2009-2018)*.
- DNPWC. (2015). *Vulture Conservation Action Plan for Nepal (2015-2019)*. Kathamandu, Nepal: Department of National Parks and Wildlife Conservaiton and Deptment of Forests and Soil Conservation.
- DNPWC. (2016a). *Bengal Florican Cosnervation Action Plan 2016-2020*. Kathamandu, Nepal: Department of National Parks and Wildlife Conservaiton and Deptment of Forests and Soil Conservation.
- DNPWC. (2016b). *Tiger Conservation Action Plan for Nepal (2016-2020)*. Babar Mahal, Kathmandu, Nepal: Department of National Parks and Wildlife Conservaiton and Deptment of Forests and Soil Conservation.
- DNPWC. (2017a). *Snow leopard conservation action plan for Nepal (2017-2021)*. Department of National Parks and Wildlife Conservation.

- DNPWC. (2017b). *The Greater One-horned Rhinoceros Conservation Action Plan for Nepal (2017-2021)*. Kathmandu, Nepal: Department of National Parks and Wildlife Conservation, Kathmandu, Nepal.
- DNPWC. (2018). *Gharial Conservation Action Plan for Nepal (2018-2022)*. Kathmandu, Nepal: Department of National Parks and Wildlife Conservation and Department of Forests and Soil Conservation.
- DNPWC, & DFSC. (2019). *Red Panda Conservation Plan for Nepal 2019-2023*. Kathmandu, Nepal: Department of National Parks and Wildlife Conservation and Department of Forests and Soil Conservation.
- DNPWC, & DoF. (2018). *Pangolin Conservation Action Plan for Nepal (2018-2022)*. Kathmandu, Nepal.
- Gautam, B. P. (2008). Economic Impact of Tourism Finance in Nepal. *Economic Review*, 62–73.
- GoN/MoFSC/DNPWC. (2015). *Management Plan for Api Nampa Conservation Area, Darchula (2015-2019)*. Kathmandu, Nepal: Government of Nepal/ Ministry of Forests and Soil Conservation/Department of National Park and Wildlife Conservation.
- GoN. Rafting Rules, 2063(2006) (2006). Nepal.
- 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. <https://doi.org/10.1007/s10668-013-9512-7>
- K.C., A. (2016). Ecotourism and Its Role in Sustainable Development of Nepal. In *Tourism - From Empirical Research Towards Practical Application*. <https://doi.org/10.5772/62308>
- K.C., A. (2017). Ecotourism in Nepal. *The Gaze: Journal of Tourism and Hospitality*, 8(1), 1–19. <https://doi.org/10.3126/gaze.v8i0.17827>
- K C, A., & Thapa Parajuli, R. B. (2015). Climate Change and Its Impact on Tourism in the Manaslu Conservation Area, Nepal. *Tourism Planning & Development*, 12(2), 225–237. <https://doi.org/10.1080/21568316.2014.933122>
- Khanal, L., & Chalise, M. K. (2010). Population Status of Blackbuck (*Antelope cervicapra*) at Khairapur, Bardiya, Nepal. *Journal of Natural History Museum*, 25, 266–275.
- Kiper, T. (2013). Role of Ecotourism in Sustainable Development.
- KrCA. (2017). *Krishnasaar Conservation Area Management Plan (2074/75-2078/79)*. Khairapur, Bardiya, Nepal: Government of Nepal, Ministry of Forest and Environment, Krishnasaar Conservation Area Office.



- KTWR. (2018). *Koshi Tappu Wildlife Reserve and It's Buffer Zone Management Plan (2074/75-2078/79)*. Koshi Tappu Wildlife Reserve Office, Paschim Kushaha, Sunsari, Nepal.
- Nepal, S. K. (2002). Mountain Ecotourism and Sustainable Development. *Mountain Research and Development*, 22(2), 104–109. [https://doi.org/10.1659/0276-4741\(2002\)022\[0104:MEASD\]2.0.CO;2](https://doi.org/10.1659/0276-4741(2002)022[0104:MEASD]2.0.CO;2)
- Nepal, S. K. (2007). *Indigenous perspectives on ecotourism in Nepal : the Ghale Kharka-Sikles and Sirubari experience*. (J. Higham, Ed.), *Critical Issues in Ecotourism: Understanding a complex tourism phenomenon* (1st ed.). London: Elsevier Ltd. <https://doi.org/10.1016/B978-0-7506-6878-1.50021-9>
- NPC. (1956). *First Five Year Plan (1956-61)*. Kathamandu, Nepal: National Planning Commission, Government of Nepal.
- NPC. (1962). *Second Five Year Plan*. Kathamandu, Nepal: National Planning Commission, Government of Nepal.
- NPC. (1965). *Third Five-Year Plan(1965-70)*. Kathamandu, Nepal: National Planning Commission, Government of Nepal.
- NPC. (1970). *Fourth Five Year Plan (1970-75)*. Kathamandu, Nepal: National Planning Commission, Government of Nepal.
- NPC. (1975). *The Fifth Plan (1975-80): In Brief*. National Planning Commission, Government of Nepal.
- NPC. (1980). *Sixth Five Year Plan 1980/81-1984/85*. Kathamandu, Nepal: National Planning Commission, Government of Nepal.
- NPC. (1986). *Seventh Plan (1986-1990)*. Kathamandu, Nepal: National Planning Commission, Government of Nepal.
- NPC. (1992). *The Eighth Plan (1992-1997)*. Kathamandu, Nepal: National Planning Commission, Government of Nepal.
- NPC. (1997). *Nineth Five Year Plan(1997-2002)*. Kathamandu, Nepal: National Planning Commission, Government of Nepal.
- NPC. (2002). *Tenth plan (2002-2007)*. Kathamandu, Nepal: National Planning Commission, Government of Nepal.
- NPC. (2007). *Three Year Interim Plan (2007/08 – 2009/10)*. Kathamandu, Nepal: National Planning Commission, Government of Nepal.
- NPC. (2011). *Twelfth Three Years Plan (2067/068-2069/070)*. Kathamandu, Nepal: National Planning Commission, Government of Nepal.

- NPC. (2013). *Thirteenth Plan (2070/71-2072/73)*. Kathamandu, Nepal: National Planning Commission, Government of Nepal.
- NPC. (2016). *Fortheenth Plan (2073/74-2075/76)*. Kathamandu, Nepal: National Planning Commission, Government of Nepal.
- Nyaupane, G. P., & Thapa, 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. <https://doi.org/10.1080/13504500609469661>
- Pandey, R. N., Chettri, P., Kunwar, R. R., & Ghimire, G. (1995). *Case Study on the Effects of Tourism on Culture and the Environment - Nepal. RACAP Series on Culture and Tourism in Asia* (Vol. 1).
- PNP. (2018). *Parsa Nationaland its Buffer Zone Management Plan (FY 2075/76-2079/80)*. Aadhavar, Bara, Nepal: Parsa National Park Office.
- Pohlert, T. (2018). trend: Non-Parametric Trend Tests and Change-Point Detection. Retrieved from <https://cran.r-project.org/package=trend>
- R Core Team. (2018). R: A Language and Environment for Statistical Computing. *R Foundation for Statistical Computing*, 1(2.11.1), 409. <https://doi.org/10.1007/978-3-540-74686-7>
- Shrestha, H. P., & Shrestha, P. (2012). Tourism in Nepal: A Historical Perspective and Present Trend of Development. *Himalayan Journal of Sociology & Antropology*, V, 54–75.
- Thompson, B. S., Gillen, J., & Friess, D. A. (2018). Challenging the principles of ecotourism: insights from entrepreneurs on environmental and economic sustainability in Langkawi, Malaysia. *Journal of Sustainable Tourism*, 26(2), 257–276. <https://doi.org/10.1080/09669582.2017.1343338>.