CHAPTER - I

INTRODUCTION

There is the close relation between human society and natural resources since the ages. The human society is interlinked physically, psychologically, and spiritually with the plants and animals. Thus, biodiversity have significant role to the local people living close to nature. Belief systems, religions and myths of the Indian sub-continent emphasize conservation and wise uses of natural resources because of the people are living within a fixed resource base. To reduce the destruction and rapid consumption of natural resources and to control over the other groups of people, property rights related to the resources utilization is in practice. The access, withdrawal, management, exclusion and alienation are the basic rights which direct the utilization of the natural resources. The indigenous people are living in natural harmony with wise use of the available resources (Primack, 2002).

Sustainable utilization of natural resources is guided from the two schools of thoughts. The anthropocentric thought for utilization nature resource emphasizes to convert nature to wealth for the betterment of human being (Nash, 1990). However, the eco-centric thought emphasizes to conserve the available resources without proper usage of materials. The anthropocentric view led to exploitation of nature because it allows the use of available resources without any restriction. The eco-centric perspective is more protection oriented and does not allow the use of the available resources. So, there need to be the balance between these two views for the long term utilization of the natural resources for human welfare.

Forests have vital role to prevent soil erosion, provide water for irrigation and drinking, food and maintain wood supply. Besides these they also have role in the climate regulation. Forest management by professional forester was widely adopted during 1950s and the wildlife protection started during 1970s (Primack, 2002). The concept about wise use of natural resources linked with fair distribution among present consumption and between present and future consumer arise after the World Commission on the Environment and Development (1987). This concept emphasized the efficient use of natural resources without compromising the need of the future generation. The major threat to the survival of endangered species worldwide is the destruction of their habitat due to over exploitation of available natural resources. The people responsible are either unaware of other options or have no other
choices for their own immediate survival, or are not aware about the importance of natural ecosystems in maintaining the quality of their own lives over the long term.

Proper conservation of habitat requires work on all aspects of the problem. Those incorporate biological research to understand the species involved and their interrelationships, implementing long-term management and protection actions for the habitat and key individual species involved and gathering support for the action oriented program for those causing the destruction. Support from the local people is essential part and no amount of biological research or protective efforts will result in long-term conservation of either habitat or individual species without the public support. Public support can be gained either by providing economic alternatives that are compatible with the maintenance of the natural ecosystem or through awareness programs targeting the groups that determine how the ecosystem is used (Dietz and Nagagata, 2003).

The biological resources are renewable, and with proper management can support human needs indefinitely. These resources, and the diversity of the system which support them, are therefore the essential foundation of sustainable development. Conservation areas in the tropics are receiving increasing world attention. This interest has led to a marked increase in ecotourism to these areas. The market force also determines the long term utilization of the natural resources of particular area.

Forests play a key role in climate change, both sinks and sources of carbon dioxide. It has been estimated that deforestation and forest degradation contribute up to 20 percent of global emissions of carbon dioxide annually (Acharya et. al, 2009) and that standing forests sequester about 20 percent of global carbon dioxide emissions. Forests provide a more cost-effective means of reducing global carbon dioxide emissions than other sectors. If incentives could be provided to curb the deforestation and forest degradation plaguing many tropical countries, then forests could have a net positive impact on carbon sequestration and thereby contribute substantially to mitigating climate change.

Nepal is situated on the southern slopes of the central Himalayas and occupies a total area 147,181km2. The country is located between latitudes 26°22' and 30°27' N and longitudes 80°40' and 88°12' E. The average width of the country is 885km from east to west and the length varies from 145km to 241km with a mean of 193km north to south. Hills and high
Mountains cover about 86% of the total land area and the remaining 14% are the flatlands of the Tarai, which are less than 300m in elevation. Altitude varies from some 60m above sea level at Kechanakalan in the eastern Tarai to Mount Everest (Sagarmatha) at 8,848m, the highest point in the world. It has therefore, incorporated different habitats within the short horizontal distance resulting high biological diversity. It has five physiographic regions namely Tarai, Churiya (Siwalik), mid hill, high mountain and high himal. Nepal’s biodiversity (floral and faunal species) is a reflection of its unique geographic position, altitudinal, and climatic variations. Nepal’s location in the central portion of the Himalayas places it in the transitional zone between the eastern and western Himalayas. It incorporates the Palaearctic and the Indo-Malayan biogeographical regions and the major floristic provinces of Asia (the Sino-Japanese, Indian, western and central Asiatic, Southeast Asiatic, and African Indian desert) creating a unique and rich terrestrial biodiversity (Chalise 2013). Forests are also inextricably linked to the livelihoods of Nepali people. Thus, forest also plays a vital role in reducing the incidence of poverty, bolstering local livelihoods, and supporting other co-benefits like biodiversity conservation and ecosystem services (Giri, 1996).

Resource degradation has exceeded after the nationalization of private forest in Nepal (1957) mostly due to the unstable government and lack of proper institution for conservation. Later the conservation activities were institutionalized in the form of forest law (1956) and protected area law (1973). Thereafter several NGOs/INGOs, like King Mahendra Trust for Nature Conservation, World Wildlife Fund, USAID, etc. were also established, and undertaken the studies in the field of conservation of the natural resources. It was experienced that conservation activities were not so effective outside the Protected Areas, because it is still considered as common property. Therefore the law enforcement agency in the protected areas and the local communities in conservation areas worked together and showed the positive impact on resource conservation. By realizing the fact, buffer-zone concept arose as a new approach for protected area management (KMTNC, 1998).

The lowland (subtropical) region of Nepal was known for valuable Natural Resources like Sal (Shorea robusta), provide valuable timber, one horned rhinoceros (Rhinoceros unicornis), Bengal tiger (Panthera tigris) and so on. Similarly, the riverine and subtropical forest in flood plain was very rich from biodiversity point of view. The density and population of flora and fauna has been decreasing outside the protected areas. The temperate mid-hill of this country has consisted different useful plants with variety of wildlife. These resources were also used
unauthorized to fulfill the local demand (Bhatt, 1977). Therefore arrangement between the institution and the involvement of local stakeholder was formalized for conservation of natural resource in the community forest. This arrangement played a vital role for conservation, grazing pressure slow down and illegal collection of fuel wood and fodder and hunting was totally controlled.

The management of the forest in Nepal is under the jurisdiction of Ministry of Forest and Soil Conservation (MoFSC). The five departments, namely Department of National Parks and Wildlife Conservation (DNPWC), Department of Forest, Department of Forest Research and Survey, Department of Soil Conservation and Watershed Management and Department of Plant Resources are working under this Ministry. Management of forest areas are within the jurisdiction of the Department of Forest (DoF) and Department of National Parks and Wildlife Conservation. Protected areas like national parks, wildlife reserves, hunting reserve, conservation areas and buffer zone are under the jurisdiction of the DNPWC. The rest of the forest areas known as government forest are under the jurisdiction of the DoF.

Current forest management regimes in Nepal incorporated eleven different types. They are private forest, government managed forest, protected forest, buffer zone forest, buffer zone community forest, conservation area, community forest, religious forest, collaborative forest, leasehold forest, and public land forest. The management responsibilities of protected forest, buffer zone forest, buffer zone community forest and conservation area are under DNPWC. Similarly, the management responsibility of private forest, government managed forest, community forest, religious forest, collaborative forest, leasehold forest and public land forest is under the DoF (FRA, 2011).

The buffer zone is legalized from the Government of Nepal in 1995 by subsequent amendments in National Parks and Wildlife Conservation Act (1973) and formulated a legislation called as Buffer Zone Regulations. This regulation added some provisions in Wildlife Conservation Act 1973 to incorporate local people for protected area management. As per the legal instrument, the buffer zone is defined as the area surrounding a national park or a reserve encompassing forests, agricultural lands, settlements, villages, open spaces and many other land use forms (KMTNC, 1998).
Any areas around the protected areas can be declared as buffer zone by the government of Nepal. The management approach of buffer zone is the participatory. Operational institutions for the buffer zone management are buffer zone council formed from the local community around the buffer zone and respective protected areas. The Act provides that the 30-50 percent of revenues generated by the park or reserve to be retained for community development inside buffer zone areas. All the forest areas inside the declared buffer zone are known as buffer zone forests. The management responsibility of the buffer zone forest can be handed over to the local community on the basis of the approved legislation and work plan from the respective national park or reserve. These forest areas whose management responsibility is handed over to the local community are called as buffer zone community forests (KMTNC, 1998).

Pioneer step for biodiversity conservation was started with the establishment of rhino sanctuary and enactment of Wildlife Conservation Act (1958). A special unit called rhino patrol was established after a few years of formulation of the act to protect rhino (KMTNC, 1998). After the 22 years of conservation efforts in BBZCF, a sizable forest area was created and some endangered flagship species like Asian one horned rhinoceros were re-colonized. Then wildlife tourism was started in 1995 and the community has been earning more than US$ 50,000 per annum through eco-tourism. This forest is a part of the Buffer Zone of Chitwan National Park (CNP). The forest became outstanding in current conservation modalities due to: 1) first community forest which started eco-tourism, 2) less dependency on revenue generated from forest products selling, and 3) consists of area with sub-tropical forest. Conservation efforts have brought measurable ecological and socio-economic changes.

The study tried to analyze the ecological impacts on the structure and function of forest after involvement of local community in management of Baghmara Buffer Zone Community Forest (BBZCF). In this study I have tried to analyze the ecological impacts on the structure and function of community forest after imposing banned on free grazing and illegal collection of forest products in the area.
AIMS AND OBJECTIVES

The aim of this study was to assess conservation impact through participatory approach on the natural resource management and the benefits to the local people. The study also aims to find out the restoration of various wildlife species, habitat types and their current status in the area.

The specific objectives set forth of this study are:

- to analyze the different habitat types.
- to assess status of large mammals population and to compare the populations of pre and post management period.
- to analyze the prey structure of carnivores.
- to quantify the conservation benefits from the community managed forest.