1. INTRODUCTION

1.1 Background

Baghmara is a buffer zone community forest (CF) managed by the local people. Buffer zone is an impact zone of National Park where communities are provided 50% of the Park's revenue for conservation and local livelihood supports. The forest is contiguous which Chitwan National Park (CNP) and forms a part of barandabhar corridor forest. The corridor forest is very critical habitat which connects CNP with the middle mountains (the Mahabharat hill) of Nepal. The CF covers an area of 215 ha.of which 163 ha.is purely a plantation and regeneration site. The forest was handed over to the local users for management in 1995 by the Government of Nepal. Before mid 1980s the area was much degraded open grazing land and some part was under encroachments by the squatters. There was a need of immediate action to restore the area. National Trust for Nature Conservation (NTNC) formerly known as King Mahendra Trust for Nature Conservation (KMTNC) which was primarily working in the field of wildlife research and monitoring in and around Chitwan broadened its area focusing more on community needs with twin objectives. Firstly, to motivate local people towards conservation by meeting their felt needs like fodder and fuel wood through community and private plantations and secondly offset existing pressures on the National Park and create a positive attitude towards biodiversity conservation. In 1989, NTNC initiated community plantation project and mobilized the local communities for plantation and conservation of the area through the support of CNP, forest office and WWF. At present, Baghmara is a model community forest to show rest of the world how conservation can bring multifaceted benefits to the communities and how communities can take a stewardship to conserve the even dangerous wildlife like rhino, tiger, leopard and crocodiles next to their yards.

The Baghmara was a dense forest and famous hunting ground for the tiger, and hence given the name Baghmara. This (Kampa chaur) forest also famous for drying many skin of many other wild animals like rhino, leopard, deer, bear, hare, jackal etc. in previous days the area of this community forest also facilitated by airport, after malaria eradication in the 1950's. People from the hills migrated to the terai region clearing forest to make their land for cultivation, after the area was gazetted as Chitwan National Park in

1973, the demand for fuel, fodder and timber also increased pressure on existing forest resources.

The Baghmara community forest also harbors various animals like hare, jackal, sambar, barking deer. Hog deer, spotted deer, python, yellow monitor, civet cat, rhesus monkey, languor monkey, wild boar, and fishing cat as well as 200 species of bird including endangered species and several aquatic species.

The Baghmara forest located on the northeast boundary of national park lies on Bachhauli village development committee (VDC). The area is surrounded by Rapti in the south Budi Rapti and Khagedi River in the northwest and settlement in the east. This community forest lies 200m to 300m at the elevation (altitude) from the sea level. It lies from 27^0, 28' 43" to 84^0 29'42" eastern directions.

The forest plays an essential role in the economic and social well- being of rural people who comprises almost 99% of Nepal's population. The forest resources provide habitat for several endangered species including one horn rhinoceros and tigers and are the foundation for the tourist industry. the forest provide many basic necessities such as fuel and fodder used by local villagers the forest also provide environmental services such as flood control and water shad protection . In addition to these direct benefit from forest resources. The forestry sector has helped to stimulate with the local and national economy by providing jobs mainly in fuel wood and fodder collection (HMG/Ministry of forestry).

1.1.1 Community forest

Nepal is experienced severe pressure on its forest resource due to the ever increasing population growth and also due to rapid urbanization. Between 1975 and 1980, 15% of Nepal's remaining forests were destroyed m if Nepal were to lose its remaining humid tropical forest, it has been estimated that 10 species of highly valuable timber, 6 species of edible fruit trees, 4 species of traditional medical herbs and some 50 species of little known trees and shrubs would be lost forever. In additional the habitat for 200 species of severally be affected (HMG/IUCN1998). The conservation initiatives that begin with the establishment of Chitwan National Park in 1973 continued with the establishment of more protected area after 1976. Community forest has a significant benefits impact on forest covered slow rate of deforestation in Nepal. The area covered by national forest and protected area system the forest area has decreased at an annual rate. recent study of the 20 Terai in the plain region s of Nepal shows that the rate of deforestation has substantially decreased (8000 to 800 hectors/years) mainly due to

implementation of community forest, during the period from 1942 to the mid 1970 forest management was exclusively protection oriented, because people live near and are dependent on forest management must include local people as they fulfill their need for firewood, fodder and timber.

Nepal is an agricultural country. It's forest play an important role in agricultural production. Forest resources are the foundation of balancing environment and human development. But these valuable resources are decreasing day by day both in quality and quantity and this has greatly affected the natural environment and agricultural production. Community forest involves handling over use rights and management responsibility to local people who have traditionally use the forest and are willing to accept management responsibilities. Though the conservation and preservation aspects of community programs have been very successful Nepal but creating income generating opportunities and sustainable use of forest products through community forest especially for the poor have not yet been satisfactory.

1.2 Rationale of the Study

Biodiversity, the source of all basic needs such as food, shelter, clothing etc. is not only fundamental for the well being of the current generation but essential for survival of coming generations. It is the matter of sorrow that the human pressure on natural resources vicinity poaching of animals, unplanned growth of tourism, and pollution of water covers depleting the biodiversity of the forest.

Local people are the guardians of the biodiversity. They should not be ignored when concerning with biodiversity conservation. Government agencies, local communities and conservation organization most build of partnership among themselves. Biodiversity conservation should therefore, ideally began from community development activities. Realizing this fact legal framework has been promulgated to embrace local people involvement to manage community forest. Consequently community forestry program is unique in situ conservation of forest biodiversity in Nepal.

In community forestry, forest is controlled and managed as common property by groups of rural people according to their wish and require for supporting their farms and household. FUG protect, harvest and regenerate favorable species for their local use like firewood, timber and animal feeding etc. Therefore, the quantity and the quality of the

forest may be enhanced and availability of forest products may be increased in terms of favorable species. But they may not be aware about the conservation of all the species and the status of biodiversity in community forestry. There is very little information about status prospects of biodiversity conservation of community forest. It is necessary to access the status of biodiversity conservation. It is assumed that this study will provide information on species diversity and state of species diversity. It will also help to determine trend of species conservation. The finding of the research may be helpful in developing strategies for species/habitat conservation through community forestry.

1.3 Objectives

The main objectives was to assist biological research and monitoring functions, alternative livelihood option to the community, in power local community to become guardian of their own resources.

The specific objectives were

- To study the management practices for bio-diversity conservation in community forest.
- To study about people's participation in management practices.
- To identify the attitude of FUG towards biodiversity conservation
- To analyze the benefits sharing and distribution pattern of community forest product.

1.4 Limitation of the study

Respondent's illiteracy was the main limitation of the study. Since respondents were illiterate, it must take a long time to explain most of the questions. The study is limited for only four toles (small inhabitant area in village) respondents. Respondents were also limited to the FUG members (mainly chairman, secretary, treasure and other members) instead of the entire composition of the FUG.

It is hopefully said that the outcomes of the study will be helpful to introduce different types of benefits derived from community forestry programmed. There was no baseline information about the biodiversity of Baghmara community forest. Therefore, the changes in biodiversity in the forest were assessed on only through interviews with users. However, it is not enough to express total biological diversity of the whole area. It

is widely understood by people and is considered to be the measured parameters of biodiversity.

The following are the main limitation of the study

- The study covers only a single C F. of Bachhauli V D C. therefore generalization may not be valid for all the western terai region of Nepal.
- The changes in biodiversity in the forest are assessed through interviews with local people only due to the lack of baseline information on biodiversity for the past.
- All facts of biodiversity are not deal in the study.
- Not based on any theoretical frame work.

1.5 Significance of the Study

This study tried to fill the management objectives of the Baghmara community forest and tried to fulfill the basic needs from forestry products such as fuel wood, fodder and timber on a sustainable basis.

This study also may help to conserve natural water spring, control soil erosion and help to conserve forest for future generation. This study felt an urgent need to documents. These concerns to serve as a valuable tool for future forestry program.

At the local level, it is hope that the result of the study will serve as an added valuable input the improvement and strengthening of the community forestry program, especially the forest user concept.

The findings of this study can be used by forestry planners, specialists, policy makers, implementers and forest user groups to improve policy and practices in support to community forestry and related program. Similarity, the findings can be useful to social scientist and researchers in comparing the results of related studies and in recommending areas for the further research. Ultimately, the result of the study may at to the body of knowledge currently available on community forestry. It helps to contributing to search for the ideal in such emerging field or concern as biodiversity conservation, protected areas management and community based forest management.

2. Literature Review

The demand for the forest product lends urgency to the need to establish effective conservation measures. However Nepal suffers from a death of biological information and lack resources, institutional capacity and infrastructure with which to coordinate and undertake such and such measures (HMG/N, 1988).

Jackson and Ingles (1994) in "Developing Rural Community and conserving to biodiversity of Nepal's Forest through Community forestry" discussed about the conservation of biodiversity in community forest of NACFP area. According to them in NACFP area plantations with high level of plant diversity are preferred by FUGs due to the opportunities provided for forest regeneration and for obtaining a wider variety of products .Substantial improvement of both quantity and diversity of vegetation can be achieved through the established and management of plantations by FUGs and these changes can have direct positive effect on other aspects of biological conservation such as soil maintenance and availability of wild life habitat.

Sharma (1999) studied on "Biodiversity conservation: prospects and retrospect in the community forest of Nepal and concluded that the management operation carried out by the FUGs are being helpful for better forest condition. Measures for promoting natural as well as artificial regeneration and application of different treatment in favor of useful crop have resulted significant positive impact to increase the number of plants species of herbs, shrubs and thorny bushes favoring open forest naturally as well as artificially. Numbers of wild animals have been increased with the improvement of forest condition.

Eckholm (1979) highlighted that community forestry is an "A process of social change that requires the continuous participation of whole communities in planning developmental activities, sharing of products and solving of problems and conflicts.

Rao (1983) noted that community forestry will only succeed if the local people are convinced and their needs are fulfilled.

Community forestry, as currently practiced in most developing countries has been shaped by international development thinking and by the specific political and historical context in these areas. It has incorporated many of the ideas from main stream development thinking. The most recent of which is the concept of sustainable

development (Pulhin, 1996) in India, the National Forest Policy of 1988 reflects the desire of the Government to seek people's involvement in protection, development and management of forest. The sharing of authority and forest products plays a vital role to motivate the local community to participate in community forestry because the local people are dependent on forest resources for their sustain food security and some extent even livelihood (Ahmed, 1996)

To fulfill the above objectives community forestry is practiced in India to provide ownership rights on parts of tree successfully planted and protected (Gulati, 1990).

In Thailand community forestry means "forest area and other area, which is allotted as community forest. It will be managed or afforested/reforested by the community and for the community (Suttisrisinn, 1996). The community will utilized the community forest perpetually with regard to community rules, beliefs and culture of local people.

Community forestry has been practiced and developed for a long period of time in the three typical community conditions: the community in the agricultural area, the community around the forest and the community with in the forest (Suttisrisinn, 1996).

Community forest management is significantly influenced by the socio-economic characteristics of FUG members because the members are heterogeneous in terms of age, sex, ethnity, religion ,marital status, household size ,literacy level, origin, housing condition, occupation, landholding, livestock ownership and organization affiliation. Cernea (Pulhin, 1997) noted that in social forestry programmers wrong social actors will lead to the failure of the programmed as has happened regularly.

Coser (1956) as cited by Garin (1985) was of the opinion that conflict is a violent confrontation where conflicting parties might indeed destroy each other William (1970) as cited by Forsyth (1987) define conflict as the interaction in which the party intends to deprive, control, injure or eliminate another against the will of that other.

Pulhin (1996) highlighted that conflict between neighboring villages, gender ,inequities and simple misunderstanding often inhibit the abilities of local institutions to assume management rights and responsibilities. In Nepal, Shrestha (1995) noted that conflicts can be seen in community forestry as conflict within a forest user group, between and or more FUG and between FUG and DFO.

Forestry in Nepal in the past (i.e. until the 1970s) mostly benefited the state authorities and the elite. The policy and legislation on forest did not give serious consideration to the need of the poor. Let alone involve them in the consideration and management of the country's valuable natural resource (Chettri and Pandey)

Without proper motivation and ownership feeling the sustainable management of resources is hard to achieve. So benefit sharing process should be equitable to every member of the CFUGs. Benefit sharing is an important aspect of community forestry. The success of any program depends on how its benefits are distributed. As no standard criteria for benefit sharing has been set, we find variation in benefit sharing mechanism from one FUG to another. In fact the mechanism a cocas developed on past experience and customary practices, generally, benefit sharing premised on equitable leases in the community forestry. (Pokharel, 2000)

During the 1980s there has been an enormous rise of interest in the buffer and community zones. Things have largely been driven by the wish of people in rich countries to conserve nature in the tropics and at the same time, contribute to improve the welfare of people living in these countries. (Sayer, 1991)

Forestry research needs to be comparative holistic and procedural. It should focus in interaction between people, resources and culture. He further mentioned in riser group characteristic ethnic, proximity, protection harvesting and alternative sources are also to be discussed. It provides a well established trend of community forest management (Chettri et al., 1992).

Sharing and utilization is the key area of concern which plays an important role in the success of community forest management. Kabnoff (1991) states that people use a variety of principles or values as basis of distributing outcomes, equity, equality and a number of other distribution rules are involved depending on the social context or the form of social interdependence that is involved, people adopt different kinds of distribution rules according to their relationship or interdependency. Unequal distribution results in frustration and injustice. Ultimately conflict in the organization many researchers have confirmed the importance of equity as a distributive rules in organizations.

Tenth plan (2002-2007) of Nepal has focused on poverty reduction as main development objectives. The forestry sector policy has included major objectives of poverty reduction and conservation of forest resources (HMG, 2004). The last 25 years, community forest program has been implemented with the objectives of the forest restoration and fulfilling the basic forest needs of the local people. It ensures the participation of the community forest user groups (CFUGs) in the management of the forest and allows them to derive forest goods and services for their benefits. In the context of community forestry in Nepal, a forest consider sustainable managed if it fulfills (Kanel and Acharya 1999).

Within the community, the dependency of forest product was related to the other resources of households. It is common to find that it is the poorest households, with less agricultural land, livestock, labour etc, that are the predominant collectors of forest products. For these poorest households, while the actual amount of income earned from forest products may be small, it may provide the largest portion of household's income. These are the households that are the most vulnerable to competition both within and between communities (Arnold, 1997).

In 1978, community forestry was adopted as a new strategy that initially emphasized people participation in re-forestation of degraded lands (Hunt.et al., 1996). by the late 1980s, community forestry had been transformed to include participatory forest management is the handling over control of local forest to the forest user groups (FUG), that have locally recognized rights to use a forest. The forest act in 1993, supported by the forest rules issued in 1995, gave FUGs legal rights to all the forest products (but not rights to sell the lands, build houses or cultivate the area) in return for assuming responsibilities for the protection of the forest (Hunt et al., 1996).

The development of the forestry is especially important to meet the basic needs of people as well as conserve and wise use of forestry resource for the promoting economy of people who actually dependent on forest resources. Forest plays an important role in their daily lives. Fodder for live stocks, leaf litter manuring, firewood for cooking and heating timber and poles for making houses and animal sheds and many other products like medicinal herbs, root crops, fruits, thatch grass and charcoal are derived from the forest. These forest products are very important to sustain the lives of the people of Nepal (Adhikari, 1990).

Community forestry is linked to the existence of indigenous forest management practice which was adopted for a long time. Now several means and ways have been applying in modern community forestry approach from the past experiences that are legalized by concerned government authority (Karki.et al., 1994).

Like other countries in Asia, Nepal suffers from forest destruction, rapid population growth, forest in encroachment and frequent of government policy (Mahat et al.,1986) documented the significance of the forests of Nepal as a national resource during the past 250 years.

Community forestry was originally conceived to protect forest and fulfill the basic needs of forest products for the local population (Shrestha and Shrestha, 2000). Conservation and protection of forest can be taken as major success of community forestry. Forest status and condition need to be assessed for better management of the forest. It is needed to ensure that the productivity of community forest does not decline further, but is maintained or even improved. Users have requirement of particular forest products of specific quantity and quality (Varghese, 2000). Community forestry has made a significant progress in terms of handling over the forest since its beginning.

The rich biodiversity repository of the Niger Delta region of Nigeria is under severe threat from diverse sources such as deforestation, inadequate farming practices, urbanization and oil and gas exploration and development activities. Biodiversity “hot spot” is the second most sensitive environment in Africa. The over 70 protected areas (PAs) have lost substantial portion of their area which translate to loss of biodiversity. The need to select representative sites within each of the ecological zones of the region for effective and sustainable biodiversity conservation is therefore, essential. Vital site criteria that have ecological, socioeconomic and cultural dimension were selected and access through a combination of relevant scientific information (Colding et al., 2009).

Sharing and utilization is the key area of concerned which plays an important role in the success of community forest management. Kabnoff (1991) states that people use of variety of principle or values as basis of distributing outcomes. Equity, equality and a number of other distribution rules are involved depending on the social context or the form of social inter dependence that is involved. People adopt different kinds of distributive rule according to their relationship or inter dependency. Unequal distribution results in frustration and injustice and ultimately conflict in the organization. Many

researchers have confirmed the importance of equity as a distributive rules in organization.

Shrestha (1995) noted that conflicts can occur when people have different views or perceptions on an issue, when someone interest is not considered or fulfillment when a decision is made, or when another interest are encroached upon. These conflicts can be between individuals, within a group, between groups or even between institutions. Similarly, in community forestry conflict are also seen within a FUG between two FUGS or between a user group and DFO. This study tried to identify and analyze both the degree to which a forest user group followed or compiled with its operational plan to manage its forest products as well as the problems and conflicts they encountered. Moreover, it attempted to describe and analyze community forestry management and product distribution policy, considering the role of forest user group member's opinion regarding utilization and sharing of various products and ability to resolve problems and conflicts.

Involvement of local communities is essential for successful natural resource management. If community forestry is a strategy for both sustainable forest management and sustainable rural development, it must support the participation of local people in the management of forest resources, in defining the needs and in setting the priorities and implementing forestry related activities (Hunt et al., 1996, citing Jackson and Ingles 1994). Sharing a forest management may not be a local priority for a wide range of reasons, including the distance from the forest, degraded status of the forest alternative sources of tree and forest products, other opportunities to generate income. Effective sustainable development of forest resources may fail if the inequities in access to and benefits from communities are not addressed. The challenge for community forestry is to identify how the most dependent groups in the community will be affected by changes in forest management and the way in which any negative impact can be mitigated (Tewari and Tewari, 1997). The link between benefits and sustainable development appears to be strong one, with improvement due to shared forest management seen in the quantity, quality, variety and security of forest (ODA, 1996)

3. Materials and Methods

3.1 Selection of the study area

The objectives of this study conducted to the people's participation in management practices and their attitude towards the biodiversity conservation of FUG of Baghmara community forest .The study area was selected due to following reasons:

- Reasearcher is familiar with that area
- Easy accessibility to the area
- No such study has been done in that area in the past
- Community forestry program had been implemented in the area.

Social, economic, technical, environmental and institutional dimension of the community forest was given due consideration in order to make the study more practicable and reliable with the present situation of the community forest.

3.2 Source of data

The primary data like socioeconomic information, people's participation, in the forest management, attitude towards biodiversity conservation, existing conservation procedure etc. were collected through field work. The available relevant written documents e.g. Village profile, FUG constitution and operational plan of the FUG, meeting, minute of FUG, publication and reports of ministry of forest and soil conservation of source of secondary data.

3.2.1 Secondary data

Secondary sources of information were collected through VDC, FUG officer, research library internet, ICIMOD, WWF, department of national park and wild life conservation, community forest division. The following documents and publications were reviewed.

3.2.2 Primary data

3.2.2.1 House hold survey

The structured questionnaire was prepared for household survey. The primary data regarding the socioeconomic status of the forestry users, their participation towards forest

management, attitude towards biodiversity, existing conservation procedure etc. were included in such questionnaire.

3.2.2.2 Questionnaire survey

A questionnaire was prepared for primary data collection. It is done in the selected house holds. Nepali language was used for questionnaire survey for the sake of easy understanding by the rural people and also to save time. The language was kept as simple as possible. An additional questionnaire survey was also done with FUG members. Formal and informal discussions were performed with them. The discussion was focused on their contribution, history of community forest and status of participation in the forest management. Maximum focus was given to collect qualitative data.

3.2.2.3 Key informant's survey

FUG members, village development committee members, local people were the key informants for the study. Formal and informal discussions were performed with them. The discussion was focused on the contribution, history of CF and status of women participation in forest management. They were asked about the status of biodiversity in the CF. maximum focus was given to collect qualitative data from the key informants with the help of survey schedule.

Table 1 Frame work for analysis

S. N.	Objectives	Indicators
1	To study the management practices for biodiversity conservation in CF.	Forest management practices and forest product utilization system have increased or decreased on flora and fauna after handover as CF. and changes the condition of forest.
2	To study about people's participation in management practices.	Have created suitable condition for appearance and conservation of high no. of plant and animal species by arrangement practices.
3	To identify the attitude of FUG towards biodiversity conservation.	Favored to high no. of plant and species and created suitable environment to faunal diversity.

4	To analyze the benefit sharing and distribution pattern of CF products.	Explain the utilization and sharing of the forest products among FUG members and distribution, decision of sharing benefits.

3.3 Study Area

3.3.1 Description of the study area

The Baghmara was a dense forest and famous hunting ground for the tiger, and hence given the name Baghmara .This (Kampa chaur) forest is also famous for drying many skin of many other wild animals like rhino, leopard, deer, bear, hare, jackal etc. in previous days the area of this community forest also facilitated by airport, after malaria eradication in the 1950's. People from the hills migrated to the terai region clearing forest to make their land for cultivation, after the area was gazetted as chitwan national park in 1973, the demand for fuel, fodder and timber also increased pressure on existing forest resources. The Baghmara forest located on the northeast boundary of national park lies on Bachhauli village development committee (VDC). The area is surrounded by Rapti in the south Budi Rapti and Khagedi River in the northwest and settlement in the east. This community forest lies 200m to 300m at the elevation (altitude) from the sea level. It lies from 27° 28' 43" to 84° 29'42" eastern directions.

3.3.2 Seasons

This community forest is influenced by tropical monsoon climate with relativity high humidity, winter, spring and monsoon are the three main seasons.

3.3.3 Biodiversity

Biodiversity conservation is the conservation preservation and management of natural resources and the regeneration of forest adjacent and increased animal habitats including pond conservation, community forest has significant beneficial impact on forest cover and a slow rate of deforestation Baghmara community forest has become a model of sustainable community forest conservation in Nepal. The forest using groups (FUG's) has spent money on habitat management and has hired forest guards a mud fill dam has been constructed in Baghmara to create an aquatic habitat. Water from Budi Rapti River was channeled to fill the pond. the creation of two patches of grassland will also provide for greater biodiversity Baghmara community forest whose total area now stands to 400

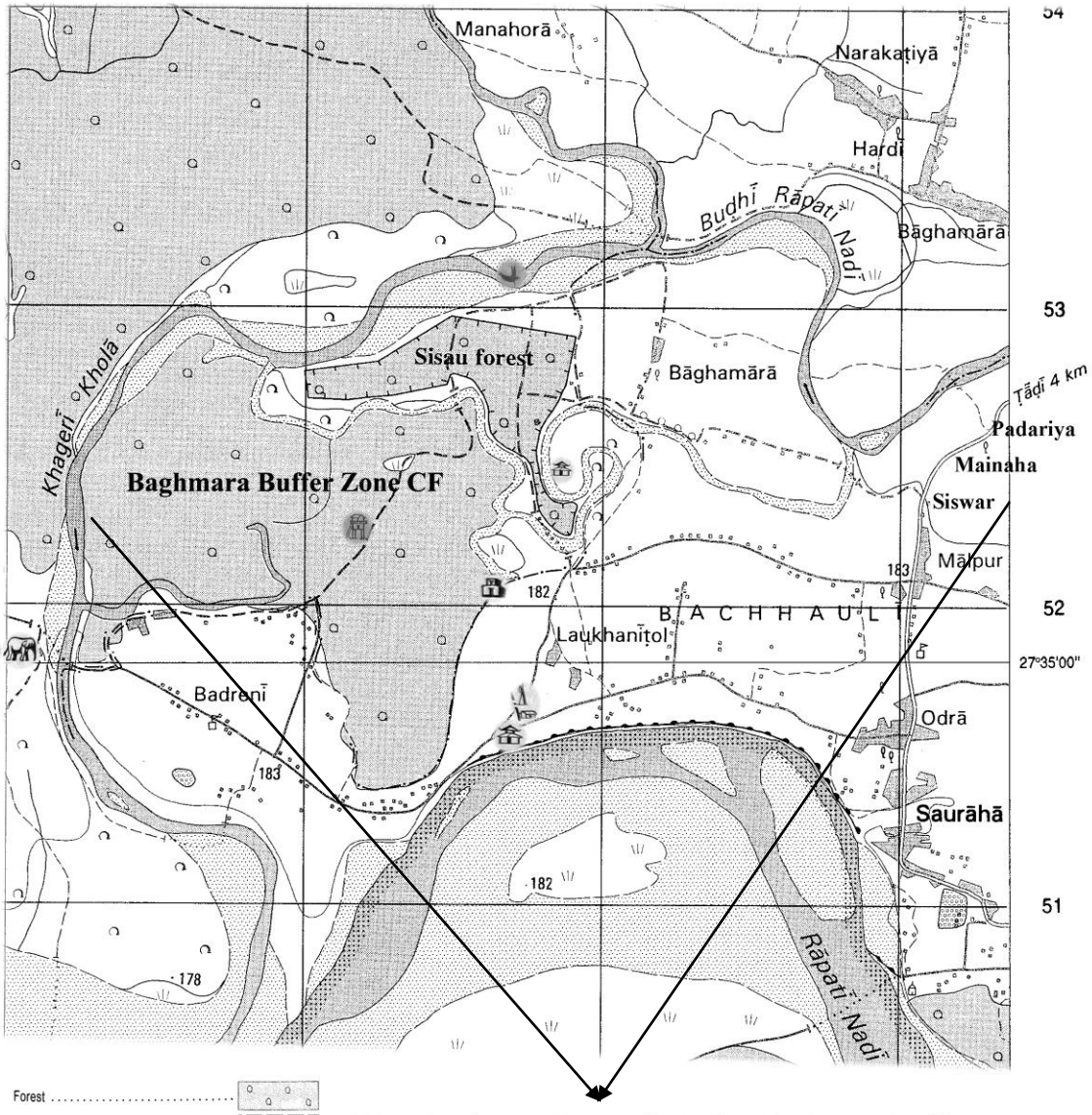
hector comprising of total , mixed and naturally regenerated forest was officially handed over two the user groups on 15th June 1995 and able to restore one of the potential site of high biological value. Although the community forest is a rather small, it supports a large number of species.There are 21species of mammals (tiger, rhino, leopard, chital, sambar, hog deer, muntjack, sloth beer etc),162species of birds, 27species of butterfly, 27species of fish and 10 species of reptiles including gharial and marsh mugger crocodile. Similarly, 81 species of trees and 115 species of medicinal herbs have been recorded in the CF. There are 5-10 rhinos regularly living the CF. A tigers successfully raised 3 cubs in the CF in year 2009. The forest is mainly riverine forest dominated by Simal (*Bombax ceiba*), Padke (*Albizzia* spp), Vellor (*Trewia nudiflora*), Kutmiro (*Litsea monopetala*) and Sissoo (*Dalbergia sissoo*). There are some short grassland dominated by *Imperata cylindrica* and *Saccharum spontenum.* (Brochure of Baghmara CF).

Table 2 Name of the members of the executive committee and their Post.

S.N.	Name	Post
1	Bishnu Prasad Aryal	Chairman
2	Jas Bahadur Tamang	Vice-Chairman
3	Sigha Bahadur Lama	Secretary
4	Parsuram Lamichane	Asistant Secretary
5	Sigha Bahadur Tamang	Treasure
6	Purna Man Shrestha	Committee general member
7	Govinda Prasad Pandey	Committee general member
8	Narayan Mahato	Committee general member
9	Dukhana Mahato	Committee general member
10	Mrs. Mina Chaudhary	Member
11	Mrs. Sikhani Chaudhary	Member
12	Mrs. Santa Maya Tamang	Member
13	Mrs. Yatoriya Mahato	Member

Source: Committee of Baghmara CF

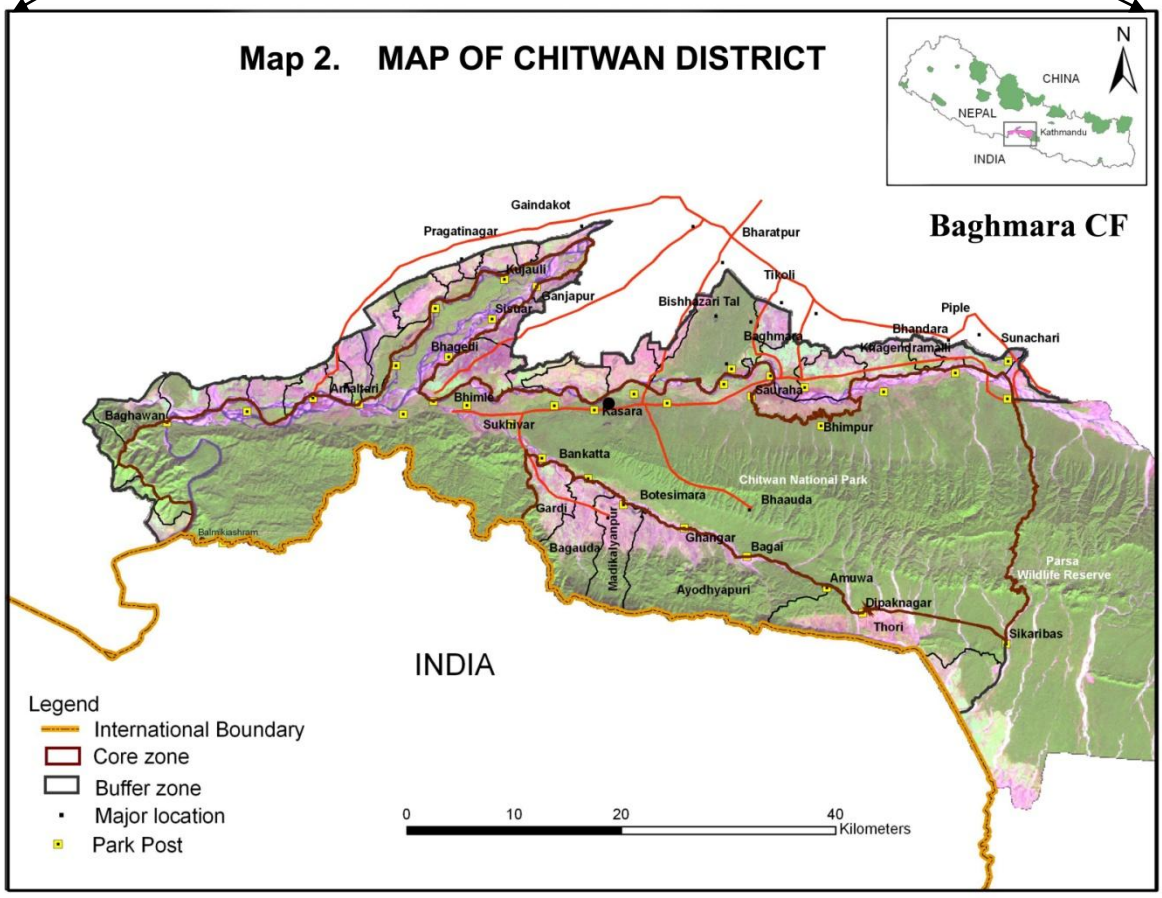
Map 1 Map of Study Area



Forest .....
Swamp.....
River with water fall and rapid .....
Forest Boundary ----------
Machan Tower
Canoe Point
Community Forest Office
Temple
Elephant Breeding centre

Map showing study area including Baghmara Buffer zone Community Forest

Map 3. Map of Nepal Showing Chitwan District



4. RESULTS

4.1 CFUGs characteristics/socioeconomic condition

After the eradication of malaria the land almost covered by forest and only local Tharu people were livings in this area due to their immunity of malaria. The entire area of Baghmara was also dense forest and it was prime wildlife habitat for some endangered rhinoceros and tigers. After malaria eradication in the 1950's people from the hills migrated to the terai region clearing forest to make their land for cultivation. This migration encouraged by the HMG through its resettlement scheme. During this migration period of nearly three decades, huge area of forest in the lowland was cleared and overgrazed to fulfill the growing need of the people.

In its initial stage 32 ha of highly degraded land was planted with fast growing fodder and timber species of Sisoo (*Dalbergia sisoo*) and khair (*Acacia catechu*) and some fodder saplings. In 1994,400 ha. of highly degraded forest land have been fenced of which 348 ha. have been set aside for the natural regeneration area. The entire area of 400 ha. is already handed over to the Local User's Group Committee (UGC) for its management and utilization. In the first year of implementation. NCRTC faced various problems, because the local people were against the forestry program in a fear that the park will extend its area. Similarly, the groups of land encroachers were against to this plantation program because they were working hard to register the land privately. Some people were also thought that they would deprive their cattle grazing area. However, some local people who realized the importance of the afforestation program to derive both environmental and economic benefits supported the afforestation program.

If the intervention was not taken at that time it would have been great loss to the neighboring subsistence farmers who were heavily dependent on their forest resources. There many have been scarcity of the forest to the homes daily requirement of fuel wood, fodder and other forest products. The land would have been captured by local elite who have nothing to do with the local development and environmental conservation of the area. Ultimately, the poor people would have been suffering more by falling into the trap of poverty.

4.1.1 Socioeconomic characteristics of the FUGs

4.1.1.1 Ethnic composition of the sampled households

The total population of Baghmara community is 6000 according to the 2067 data the total population of sampled households is 482 , out of which the population of male is 231 and female is 249, the populations of male and female are 47.92% and 51.65% respectively , the FUG is comprised of 361 households . Out of which 60 households were taken as sample households.

The table 3 makes clear the people from four toles i.e. marinara, padariya, siswar and lokhani. The total no. of sampled households in mainaha, padariya, siswar and lokhani is 80, 90, 75 and 144 respectively. Ethnic composition of the sampled household's population composition by caste and ethnic group.

Table 3 Ethnic composition of the sampled households

S.N.	Caste and ethnic group	H.H.	No. of population	percentage
1	Tharu	275	3480	58
2	Brahmin	25	1140	19
3	Mangolian	196	1080	18
4	Others(Dalit)	*	300	5
	Total	496	6000	100

Source: Committee of FUGs

The ethnic composition of the sampled households shows that majority of the respondents are 58% Tharu followed by 19% Brahmin, 18% Mangolian and other (Dalit5%) etc.

4.1.1.2 Age composition of the respondents

The respondents are divided into four age classes i.e. 20-30, 31-40, 41-50 and above 50. Most of the respondents (55%) are age class 20-30 years . 30% are of 31-40years , 10% are of 41-50 years and last old age more than 50 years are also 5% . the age composition of the respondents is shown in the table 4.

Table 4 Age composition of the respondents

Age class (years)	No. of respondents	Percentage
20-30	33	55
31-40	18	30
41-50	6	10
>50	3	5

4.1.1.3 Occupation status of the sampled households

Occupation of the local people is one of the important aspects while concerning with forestry activities depending on forest, attitude towards conservation and level of participation is governed by their occupation, the occupation of the respondents is shown in table 5. Most of the users (73.33%) in this area are farmers. followed by business (15%), services (6.66%) and labor (5%).

Table 5 Occupational status of the sampled households

S. N.	Occupation	Frequency	Percentage
1	Agriculture	44	73.33
2	Business	9	15
3	Labor	3	5
4	Services	4	6.66
	Total	60	100

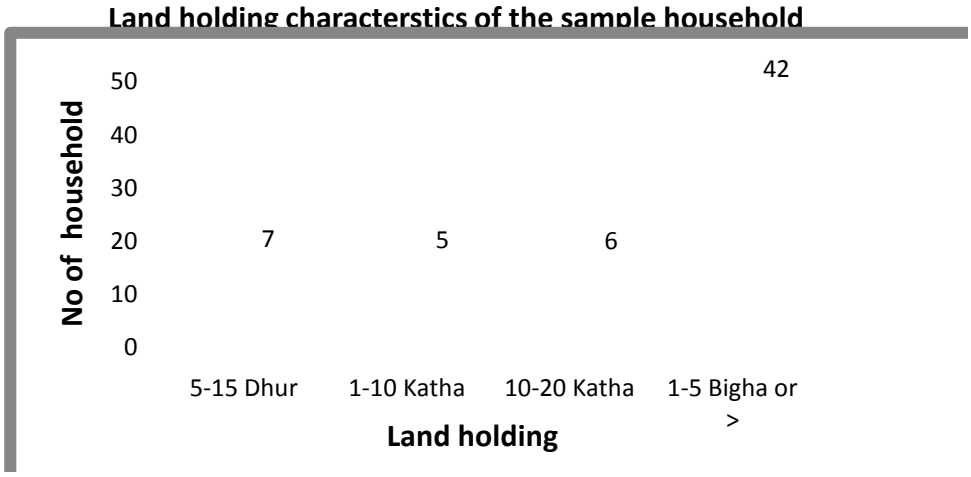
4.1.1.4 Land holding characteristics of the sampled households

From the study, it is found that users economy is largely depend on agriculture, it was also found that most of the respondents have their own land. The land holding characteristic of 60 households is shown table 6

20 Dhur-1 katha

20 katha-1 Bigha

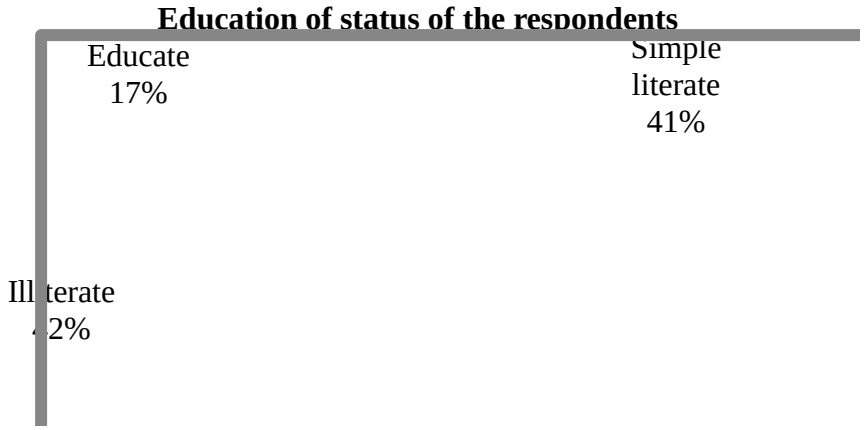
Fig 3 Land holding characteristics of the sample household



4.1.1.5 Educational status of the respondents

Education is one of the major factors influencing peoples knowledge, attitude, participations and perceptions and hence management practices and biodiversity conservation, the level of respondents is divided into three categories is educated, simple, literate, and illiterate. Most of the respondents (42%) are illiterate followed by simple literate (41%) and educate (17%).

Figure 4 Educational status of the respondents



Source: Committee of BFUGs.

4.1.1.6 Live stock status of the respondents

As the major occupation of the people is agriculture, most of the respondents have raised cattle, buffaloes, goats in various combinations. As the livestock requires fodder and grazing and directly or indirectly depend on forest, they also affect the status of

biodiversity, so the livestock population and their feeding system have important aspects in this study. The average number of cattle per households is 6.77 %, buffalo is 47.45% and goat is 45.76%. Overall, livestock per households is 7%.

Table 8 Live stock population of sampled households

S.N.	Live stock type	Total	Percentage
1	Cattle	16	6.67
2	Buffaloes	112	47.45
3	Goats	108	45.76
	Total	236	100

4.1.1.7 Feeding system

Live stock feeding system indicates the pressure of livestock on grazing land and forest. Table shows the feeding system of live stock of the sampled households most of the households have kept live stock. 80% of respondents are found to stall feed their livestock in the whole year where as 16.66% of the respondents produce both stall feeding and grazing very low 3033% of the respondents send their livestock for grazing.

Table 9 Live stock feeding system of the sampled households

S.N.	Feeding system	Total	Percentage
1	Grazing	2	3.33
2	Stall feeding	48	80
3	Combined	10	16.66
	Total	60	100

5. DISCUSSION

5.1 Management practices and influences of the FUG on biodiversity conservation

Human influence of biodiversity is remarkable. This research study aims to explore the practices and influences of the FUG on biodiversity conservation within the community forest. A forest user group is a group of people who have common interest in protecting and managing a forest to meet their basic needs. Baghmara FUG seems to be developing due to the institutionalization of the FUG for the protection, management and utilization of the forest resources. The forest management objectives set

- To fulfill the basic needs from the from forestry products such as fuel wood, fodder and timber on a sustainable basis.
- To control. Soil erosion
- To conserve natural water spring
- To conserve forest for the future generation.
- To maintain the granary and ecological balance.
- To develop community
- To increase flora and fauna and thereby increase the growth of tourism and associated infrastructures.

5.1.1 Protection system

Forest protection was to be one of the most vital activities necessary for biodiversity conservation. The lack of protection system was considered to be one of the main causes of forest degradation in the past. This was expressed by all the users interviewed. In addition, they agree that present state of improved biodiversity was the result of strict and effective protection system in the community forest. They mentioned that for the enhancement of the community forest management process and also for the improvement in biodiversity, forest protection would be the first step to be adopted. This community forest was excessively degraded and mainly used for grazing animals, illegal felling, no any users of the management. Finally increasing population after 1950. In the year 2046, bhadra 15, the residents of all tools realized the poor condition of forest and they formed “forest conservation committee” and initiated the forest protection activities. They firstly banned on grazing and illegal felling. Protection was major need of the forest

after a few years, the forest started again recovering by small regeneration .the local people cooperated by restricting the cattle grazing. It explained major implication, such as natural regeneration was enhanced in the forest, the children who had to be engaged to look after the cattle in the forest got opportunity to go to school. Similarly grass cutting increasing its production. Hence they did not need to go far place for grass collection. They mentioned that castle grazing might damaged the root of the grasses and thus if grazing was practiced, grass would not grow well in the subsequent years.

Baghmara community forest has done all protection work, the most remarkable features of forest protection of this CF. this may be considered a very significant achievement of forest protection. There are more offences from the outsides and negligible cases violating rules by the users. Baghmara community forest operational plan has strictly prohibited the following activities in the forest.

- Illegal extraction of forest products
- Forest fire, coal burning
- Poaching
- Grazing in the plantation areas
- Shifting cultivation
- Encroachment
- Mining, quarrying of stone
- Making house and huts
- Entry without permission

  Due to such protection system adopted, the users expect that the following changes have a occurred in Baghmara community forestry

- Forest products (timber, fuel wood, grass, leaf litter) can easily supply
- Water supply has increased and water sources become permanent
- Landslide and soil erosion in the community forest has significantly decreased
- Forest condition has improved
- Richness of plant and animals species has also increased

5.1.2 Plantation Activity

After the handover of the forest to the users, they were found to be more active in plantation in the community forest. The reason for the plantation activity was as follows:-

- To control the soil erosion in the community forest.

- To increase number of preferred species in the community forest.
- To generate large income from tourist and to future benefits for fodder, fuel, timber.

The plantation program has directly influenced biodiversity conservation within the community forest by increasing the diversity of plants, species which also helps to create more territory for animals and give suitable environment for them. This could have an implication to the ecosystem through creation of different ecosystem by the presence of various plant species. For management practices, there is most and frequently activities namely bush cutting and thinning. Many changes and improvements can see after handover the community forest. The users expressed that the participation of male, female, adults and all castes was very good in plantation. This was supported by questionnaire survey.

The plantation program has directly influenced biodiversity conservation within the community forest by increasing the diversity of plant species which also helps to create homes or territory for animals and give suitable environment for them. This could have an implication to the ecosystem by the presence of various plant species.

5.1.3 Forest management practices and utilization of the products

The production and supply of forest products needed by users seem to be the incentive to the users to be involved in the protection and management of the community forest. Though the management practices and the intensity of harvesting are determined by the condition of the forest, the report that they have been acquiring forest products such as leaf litter, fuel wood, and timber from community forest more than they used to obtain before that forest was handed over to them. Regarding biodiversity conservation, it is realized that management practices are as important as the protection mechanism. Users justified that management would produced forest products according to their need and this will encourage them to take on active part in the protection of community forest. Users mentioned management practices include cleaning, thinning, weeding, pruning, singling and felling trees.

They had experience that management operation would provide the base for natural regeneration. This also seems to promote regeneration of diverse species in the community forest. None of the users said that the condition had deteriorated after the handing over the forest. When the users were asked about the reason behind this improvement, they said that it was due to good management practices of the forest.

Management improvement regeneration, growth existing plant and animals and the covers of the ground floor, reduced soil loss and maintained the forest canopy which directly related to maintain biodiversity in the forest and its conservation in respect of both positively and negatively. Additionally, they said that the number of plant and animal species has increased.

5.2. Consequences of community forest management practices with respect of biodiversity

5.2.1 Comparative study of floral and faunal species in the community forest

Biodiversity of CFUGS (flora and fauna) appeared in the community forest. Here the appeared species (before and after) the application of management practices.

See the table of Comparative study of floral and faunal species in the community forest on Appendix-1.

According to (Table 9) above recovery and changes have shows that consequence on management practices is very good. There is vast improvement has shows, there is better existence of such works in CF. the member of CFUGS have come to know that such practices plays a vital role to developed a well recognized CF with conserving biodiversity due to forest management practices.

5.2.2 Problems in Biodiversity conservation

Although majority of the users are well familiar with biodiversity and its importance and the community forest has added some inputs in biodiversity conservation. The users after the interviews expressed that they have many problems and constraints in conserving biodiversity in their CF. Biodiversity is directly related with the protection ,management and utilization of forest which has been already discussed.

There is also high pressure of people in this CF mainly for fuel wood, fodder and bedding materials for their cattle**.** which is serious constraints in biodiversity conservation. Sometimes the incidents of fire and poaching have been recorded in the community forest.

5.2.3 People's participation in management practice and attitude of the FUG towards Biodiversity Conservation

5.2.3.1 Peoples view on Management practices

The member of the FUG were asked whether they know about "management practices" most of the people were found to the term "Management Practices" they had well conceptualized to the management works or its practices. They had been practicing the management works such as thinning pruning, cleaning etc, they expressed their views and discussed about local participation in such words. They had mentioned several practices to be held in future to manage and maintain forest with fulfilling their requirements from CF.

About impact of management practices on biodiversity conservation FUG members are agreeing to this because of the result which they had seen after the utilization of such works to the forest with different management practices. Some of the people are not well known about this may be due to lack of illiteracy.

5.2.3.2 Status of technical understanding of FUG towards management practices

Table 10 Technical Understanding of sampled Households

S.N.	Technical Understanding	Total	Percentage
1	Very High	32	53
2	High	20	33
3	Low	5	8
4	Very Low	3	5
	Total	60	

Technical understanding of the people are so high in respect to data people are having good knowledge in management practices it is highest percentage is the sampled Households , other followed by high (20%) ,very low(5%) it shows that CFUGS of the Baghmara community forest are well aware of the management practices.

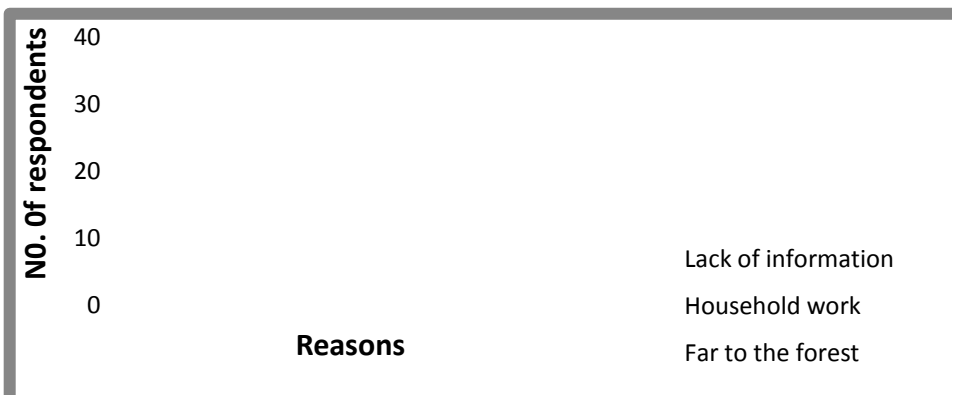
5.2.3.3 People's knowledge on biodiversity

The members of the FUG were asked whether they know about "Biodiversity" in this question although 51(85%) respondent out of 60 are found unfamiliar to the term "Biodiversity" they had not well conceptualized the term "Biological diversity" to mean the variability of plant and animal species in their community forest after being explained by the researcher, they expressed their views of discussed about local efforts to maintain high number of plant and animal species in their CF. rest of 9 (15%) respondents were found well known to the term biodiversity. The unfamiliarity of such a large proportion of users to the term "Biodiversity" may due to the lack of extension activities in this context and their illiteracy.

5.2.3.4 Participation in CF management practices and different activities

People's participation in management practices in the key role to successful community forestry management and consequently reflects the status of Biodiversity conservation as well the respondents were asked whether they participate in CF management practices 53 (83.33%) respondents were found to participate in different community forest management practices or activities such as plantation, thinning, pruning, cutting, cleaning, weeding and rest of 7 (11.66%) respondents replied that they did not participate in CF management practices anddifferent CF activities. It was found from the informal discussion that the participation were compulsory from each household.

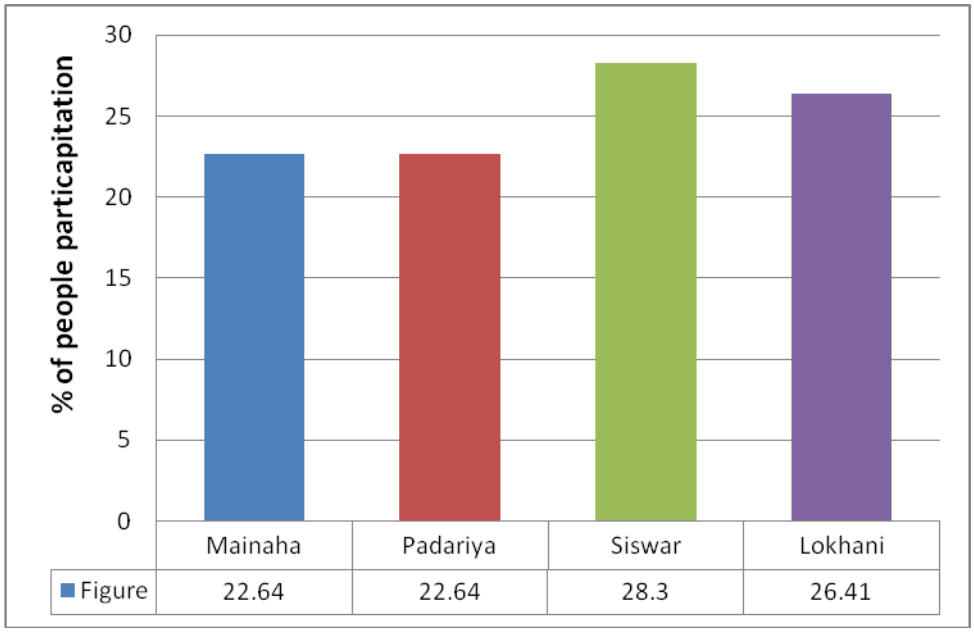
Fig. 6 Reasons for not participate in C.F management practice

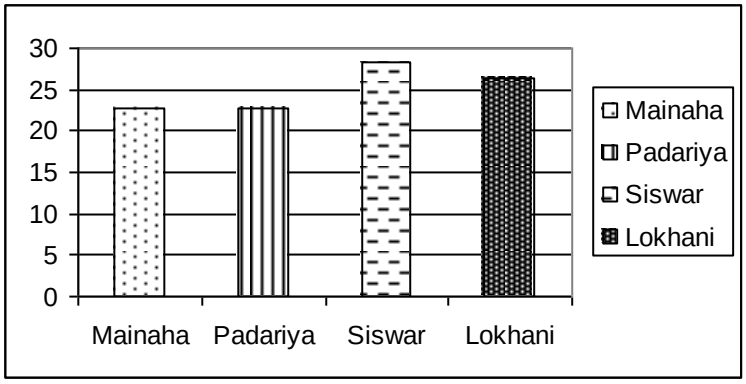


In the context of toles, highest participation was found from siswar while lowest participation from mainaha and padariya the reasons for highest participation from siswar

and lokhani are close to the forest, they got more benefits and their voice was seriously heard in meetings padariya and mainaha are quite for from forest and their voice was not taken seriously in the decision making the tole wise population in CF activities is shown in figure.

Fig. 7 Percentage of People Participation





In general assembly, how often users participate in the assembly and whether their voices are actually incorporated or not is very crucial in constitution of Baghmara CFUG each of the members of each household must participate or presence in the general assembly. According to FUG members they use to inform all the users timely by using different media such as litters for each household, public, notice, milking etc.

According to the FUG members was due to the improper time for calling assembly when the users were busy in agriculture work and the researcher also did not find any case of the lack of trust on user committee, regarding the activities in the beginning of the assembly ,most of the users participated were found active it has decreased gradually.

5.2.4 Attitude towards Biodiversity Conservation

Respondent's attitude towards the conservation of biodiversity was assessed by taking seven different statements. These statements were categorized into two aspects in which former four were used positively and later three were negatively to measure the attitude from both sides i.e. positive and negative.

5.2.4.1 Attitude of the respondents on positive statements

The major of the respondents were found disagreeing with the first statement "Existing floral and faunal composition in the CF is satisfactory " (mean score 4.06) this means that they are not satisfied with the plant and animal diversity in their community forest they expressed their views that they were not getting adequate supply of forest products and they need more diverse floral and faunal composition in CF (table), in the second statement " existing floral and faunal composition should be conserved " the respondents were found agreeing (mean score 2.16). the relates their attitude with that first statement that because of the unsatisfactory plant and animal composition and their need of getting more forest products from diverse floral and faunal composition in their CF they are practicing for the conservation of the plants and animal diversity by applying different forest management practices table 11.

Table 11 Attitude of the respondents on positive statements

S.N.	Statements	Attitude scale					Mean
		St. agree				St.disagree	
		1	2	3	4	5	
1	Existing floral and faunal composition in the CF is	1	2	3	40	14	4.06

	satisfactory	(1)	(4)	(3)	(160)	(70)	
2	Existing floral and faunal composition should be conserved	8 (8)	22 (44)	13 (78)	-	-	2.16
3	More plant species diversity should be created in the CF	24 (24)	22 (44)	14 (42)	-	-	1.83
4	Diversity of medicinal plants should be created in the CF	30 (30)	22 (44)	8 (24)			1.63

In the third statement "More plant species diversity should be created in the CF" the respondents were found agreeing (mean score 1.83). This means that the users are desirous to create more plant species diversity in their CF. this may be due to their need of daily required diverse products and the value of diversified species contained forest appreciated by them. (Table 12)- On the fourth statement "diversity of medicinal plant should be created in the CF" the respondents were found agreeing (mean score 1.63). This means that the users are desirous to create diversity of not only their daily –requirement forest products but also medicinal plant as well. This has stressed more positive attitude in the conservation of biodiversity.

In the fifth statement "only the valuable timber species should be conserved in the community forest" the respondents were found disagreeing (mean score 4.16) the disagreement of users with this statement means that they are against of conserving only the valuable timber trees and plant other than timber as well . This might be due to the result of higher value put by them on their need of fodder, fuel wood and bedding material then that of timber, this disagreement with this statement supports that they are desirous to create and conserve more diversified plant composition in their CF (table 11).

5.2.4.2 Attitude of the respondents on Negative statements

Table 12 Attitude of the respondents on Negative statements

S.N.	Statements	Attitude scale					mean
		St. agree			St. disagree		
		1	2	3	4	5	

1	Only the valuable timber species should be conserved in the CF.	1 (1)	2 (4)	4 (12)	32 (128)	21 (105)	4.16
2	Animal and birds species diversity should be reduced in the CF	1 (1)	3 (6)	4 (12)	22 (144)	30 (150)	5.21

In the sixth statement "Animal and bird species diversity should be reduce in the CF" the respondents were found strongly disagreeing (mean 5.21) the strong disagreeing of users with this statement means that they are against of reducing the animal and bird sps diversity in the CF, they want to create suitable condition for the increase of animal and bird population in the CF.

The attitude of people for creation and conservation of high number of plant and animal species were found highly positive from the above statements. The natural resource was the beauty of the forest and it is the main income source of CF, after handing over the forest as remarkable increase in the no. of animals and birds species.

5.2.5 Utilization and sharing of forest products

Utilization and sharing is one of the major important issues to motivate the users group and effectiveness of their contribution in all activities through equitable distribution of forest products among the forest users. The rules regulation and policies, quantity of harvest table forest product and their sharing arrangement are clearly identified which is decided by FUG committee. Sometimes inequitable sharing arise problems and conflicts. Fair utilization and sharing helps successful operation plan.

The forest products consumption situation put great pressure on the community forest in the subsistence agricultural economy of the forest user group. Almost every household in the area needs timber, fuel wood, fodder, grass and leaf litter, apart from using wood as fuel energy, the people also use it for construction of houses and livestock shed and other kinds of farm implements. Certain type of liana that is used to make furniture (bamboo is also used to make furniture). The following table 14 Shows measure species of forest products use by FUG.

Table 13 Name of species of forest product

S.N.	Name of forest product	Species
1	Timber	Simal, sisso, padke,karma,tik,khair, sigane, Budhgairo.
2	Fuel wood	Veldar, Bakino, padke, sisso, khair,Bilaune,Ipil Ipil
3	Fodder	Kamuna, Jamuna, Harro, Barro, Badhar.Amala
4	Medicine	Amala, Harro, barro sindure padke, bataino
5	Grasses	Dale grass, saula, siuri, amleso.

Source: Committee of FUGs

Forest is only one major source which able to fulfill the subsistence need of people, like timber, fuel wood, fodder, leaf-litter, grass and other forest products. Only uprooted, drying dead trees are employed. The distribution systems of forest products among all the users are same or equal there is no provision to give timber by cutting further green standing trees. The timber is provided to all users member should pay Rs. 75 / quintal, which are distributed once in a year. Similarly fodder. 43226.22 quintal was distributed for all users with free of cost.

Table 14 Recommended forest product and amount

S.N.	Forest product	Total growing stock/year	Amount
1	Timber	1133.91 cu ft.	Rs.113391
2	Fuel wood	2112 quintal	Rs 158400
3	Fodder/ ground grass	43226.22quintal	Free of cost.

Source: Committee of FUGs

User groups are the grass root level institution and it is the target area of any development and conservation activities. in case of fund management they should be facilitated properly of the better use off fund to enhance their socioeconomic uplift .planning budgeting implementation and ultimately review and revision have to be done by committee benefit sharing is practiced is the equality basis making move convenient system. But the community development works are highly desired than conservation work.

User groups are the grass root level institution and it is the target area of the any development and conservation activities. The participation of the user group in each and

every activity is highly desired by the present community development bottom up approach. In case of fund management they should be facilitated properly for the better use of fund to enhance their socio economic uplift. Planning budgeting implementation and ultimately review and revision have to be done by committee. Benefits sharing are practiced in the quality basis making more convenient system. In 2008, over 43226.22 of grass were harvested from the plantation area. Total of 1133.91 cu.ft. of woody biomass was harvested by silviculture. About 2112 quintal of fuel wood was collected by pruning and shrub clearance. Besides, the local people cut and carry fodder from the plantation area regularly (Table 14). These extracted resources were equally distributed to the local users in equal cost and generate cash revenue to undertake the local development works such as road maintenance, school support, nursery establishment for poor people, fencing, river bank protection etc. Baghmara CF also earn income source through many other activities.

Table 15 Following activities are offered by visitors

Activities	Price NRs
Elephant safari	300/ elephant
Canoeing	205/ person
Machan stay	350/ night/person
Jungle walk and bird watching	20/ person for Nepali 50/person for SAARC countries and 100/ person for other than SAARC countries
Camping	300/ night/ person

The community forest earns over 100,000 USD every year. Majority of the income comes from the tourism activities. Annually more than 60,000 visitors visit the Baghmara CF. All types of income goes directly to the treasury of CF and it is spent on conservation and management of forest, local development, livelihood supports to the wildlife affected families and marginalized households. It also provides supports to the alternative energy schemes basically biogas installation. Other supports include capacity building programs for its users, local school buildings renovation. It also helps to develop

and manage tourism facilities in the Sauraha area. The community forest is also providing direct employment to 25 local youths.

5.2.6 Perception of users to management practices for biodiversity conservation

This was only hypothetical statement used by the researcher to test the percentage of users towards management practices for biodiversity conservation, all the users convinced to conserve their CF but they did not have seen such practice we can mark somewhat changes in species diversity of this CF.

From this above discussion the following lesson was learned which as followings:-

- Development cannot be achieved without local participation and CFUGs are strongly participating in biodiversity conservation CF.
- They have been practicing the management works with good knowledge of technical understanding also
- Local people have involved in different protection work and good awareness about destruction of diversity in CF and their lead effect if not protect them properly.

6. CONCLUSION AND RECOMMENDATION

6.1 Conclusion

- Management practices are found to be enhancing the floral and faunal species diversity in the community forest .it has also been providing forest products needs of the users as an incentive for managing the community forest.
- The users have been undertaking plantation activity in order to introduce desirable plant species. This activity has a positive impact on biodiversity conservation within the community forest.
- The Baghmara community forest has found good knowledge of management practices with high technical understanding.
- Consequences of management practices for biodiversity conservation is positive and improving the users are very conscious to conserve the forest resources by giving much attention towards protection and are found to be effective and sustainable .
- The users of this FUG have positive attitude towards biodiversity conservation, they are not satisfied from the existing flora and faunal composition and desirous to create a diverse forest.
- They are supporting for the creation and conservation of animal species diversity and conservation of less valuable plant species as well.
- The preparation of people in physical labor in C.F. activities is high but in meeting s assembly and decision making is remarkable low.
- Baghmara community forest have security of long term rights to the forest so that they are assured that they will receive the benefits from the protects and improvement of the forest resources.
- Management and utilization of their community forest is not only the traditional user rights of the local people over the resources but also they play vital role in sustainability of the forest resources.
- The remote communities made more awards of the alternative sources to minimize their dependency on forest.

- Although majority of the members of the FUG are unfamiliar to the term biodiversity or management they have made a well concept and understood the meaning of the term after the explanation by the researcher
- Management practice has great influence in biodiversity conservation with respect to both negatively or positively.
- The users of the FUG have positive attitude towards biodiversity conservation. They are not satisfied from the existing flora and faunal composition and are desirous to create diverse forest heavy various timber product as well as medicinal plants.
- The extracted resources were equally distributed to the local users and generate cash revenue to undertake the local development works such as road maintenance, school support nursery establishment, fencing around the forest, river bank protection etc.

6.2 Recommendations

- Management operation should be carried out with scientifically and technically sound.
- The realistic implication biodiversity conservation in community forestry and suitable management practices should be explore which can make change and skills should be provided to the FUG for better conservation of plant and animal species in their CF.
- Silviculture system should be implemented.
- People's participation at the decision making should be promoted.
- Monitoring and evaluation of effectiveness of operational plan should be regularized and its effects on biodiversity should be measured through technical approach and its results should be displayed among users and policy making.
- The knowledge about the importance of management practices in CF and biodiversity should be disseminated through extension activities.
- A strategic implementation should be carried out to reduce the dependency of users in CF for their daily used products by applying alternative resources.
- Women are an integral part and indispensible part of CFUG but their involvement in institutional development is low. Further study should thus be conducted on the role of women in succession of CFUG.

- The necessities of further study focused on the impact of commercialization of CF on forest user groups.

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APPENDIX I

Comparative study of floral and faunal species of the community forest.

Table10: Species of (flora and fauna) in community forest

Common Tree Species Found In Study Area "Before 2065"

S. N.	Common Name	Scientific Name
1.	Chair	*Acacia catechu*
2.	Karma	*Adina cardifolia*
3.	Beal	*Aegle marmelos*
4.	Siris	*Albizzia sp.*
5.	Chhatiwan	*Alstonia scholaris*
6.	Nim	*Azadiracta indica*
7.	Kalo siris	*Albizzia lebbek*
8.	Padke siris	*Albizzia mollis*
9.	Seto siris	*Albizzia procera*
10.	Kadam	*Anthocephalus cadamba*
11.	Katahar	*Artocarpus integrifolia*
12.	Badahar	*Artocarpus laxoocha*
13.	Tanki	*Bauhinia purpurea*
14.	Koiralo	*Bauhinia variegata*
15.	Tilkhudo	*Bambax malabaricun*
16.	Simal	*Bambax cebia*
17.	Bohari	*Cordiadicho tumafoster*
18.	Rajbrikshya	*Cassia fistula*
19.	Tooni	*Cedrella toona*
20.	Dhyar	*Cedrus deodara*
21.	Kalkephool	*Callistemon viminalis*
22.	Yamir	*Citrus limon*
23.	Bimiro	*Citrus medica*
24.	Mewa	*Carica papaya*
25.	Kumbhi	*Careya arborea*
26.	Satisal	*Dalbergia latifolia*
27.	Sisau	*Dalbergia sissoo*

28.	Tateberi	*Dalbergia satipulacea*
29.	Gulmohar	*Delonix regia*
30.	Ram Phal	*Dallenia indica*
31.	Tantari	*Dallenia pentagyna*
32.	Jamun	*Engenia jambolona*
33.	Kaymun	*Eufenia opperculota*
34.	Amala	*Emblica officinalis*
35.	Rudarakshya	*Elaeocarpus sphaericus*
36.	Masala	*Eucalptus species*
37.	Swami	*Ephedra gerardiana*
38.	Khanu	*Ficus cunia*
39.	Nebhro	*Ficus cunia*
40.	Kabhro	*Ficus ramphiblume*
41.	Pipal	*Ficus relgiosa*
42.	Bar	*Ficus ramphi*
43.	Dumri	*Ficus racmosa*
44.	Gamari	*Gmelia arborea*
45.	Dhasingaray	*Gautthtria fragramtissima*
46.	Bhutkul	*Hymendictyon excelsum*
47.	Bilauni	*Maesa chisia*
48.	Sindurey	*Mallotus philippinesis*
49.	Aanp	*Mangifera indica*
50.	Bao	*Melia azadarach*
51.	Kimbu	*Morus alba*
52.	Chanp	*Michelia champaca*
53.	Bijaysal	*Pterocarpus marsupium*
54.	Rakta chandan	*Pterocarpus santalinus*
55.	Pan	*Piper betle*
56.	Gidhari	*Premna integrifolia*
57.	Aarupattay	*Prunus napaulensis*
58.	Anar	*Punica franatum*
59.	Amba	*Psidium guyava*
60.	Naspati	*Pyrus communis*
61.	Mainphal	*Randia spinosa*
62.	Bhalayo	*Rhus wallichi*

Common Tree Species Found In Study Area "After 2065"

S. N.	Common Name	Scientific Name
63.	Ander	*Rscinus communis*
64.	Sal	*Shorea robusta*
65.	Chilaunay	*Schinaa wallichi*
66.	Ritta	*Sppindus mukorosi*
67.	Agasti	*Secbania grandiplora*
68.	Amaro	*Spondias pinnata*
69.	Bhaledar	*Trewia nudiflora*
70.	Barro	*Terminalia belerica*
71.	Harro	*Terminalia chebula*
72.	Pahelo karbir	*Thevetia peruviana*

73.	Ashok	*Saraca asoca(roxb)*
74.	Gabray sallo	*Pinus wallichiana*
75.	Palans	*Butea prondosa*
76.	Kaulo	*Machilus odoratissima*
77.	Simalia	*Vitex nugundo*
78.	Gulalichi	*Plumeria acuminata ait*
79.	Pidar	*Xeromphis uliginosa(Retz)*
80.	Kutmiro	*Litsea monopetala(Roxb)*
81.	Dudhkhirro	*Holarrhene pubescens*

Common Butterfly Species Found In Study Area "Before 2065"

S. N.	Common name	Scientific name	Family name
1.	Great morman	*Papilio memnon angenon*	Papilionide
2.	Common morman	*Papilio polytes ormolus*	Papilionide
3.	Yellow helen	*Papilio neplelus hann*	Papilionide
4.	Common raised	*Pachhiopla aristolochiae*	Peridae
5.	Large cabbsge white	*Pieris brassicae nepalensis*	Peridae
6.	Indian cabbage white	*Pieris canidia indica*	Pieridae
7.	Bath white	*Pontia daplidice moore*	Pieridae
8.	Pioneer	*Belenois aurota aurota*	Pieridae
9.	Spot puffin	*Appias lalage lalage*	Pieridae
10.	Lemon emigrants	*Catopsilia pomona pomona*	Pieridae
11.	Motted emigrants	*Catopsiliappyranther pyranther*	Pieridae
12.	Common bGrass yellow	*Terias heeabe contubernalis*	Pieridae
13.	Three spot grass yellow	*Terias blands silhetana*	Pieridae
14.	Apefly	*Spalgis epeus epeus*	Lycaenidae
15.	Angled sunbeam	*Curetis acuta dentate*	Lycaenidae
16.	Banded line blue	*Prosotas nara ardates*	Lycaenidae
17.	Tailess line blue	*Prosotas dubiosa indica*	Lycaenidae
18.	Common pierrot	*Castalius rosimon rosimon*	Lycaenidae
19.	Red lacewing	*Cethosia biblis tisamena*	Nymphalidae
20.	Common leopard	*Phalanta palatha phalantha*	Nymphalidae
21.	Painted lady	*Vanessa cardui*	Nymphalidae
22.	Peacock pansy	*Precis almana almana*	Nymphalidae
23.	Great egg fly	*Hypalmnas balina jacintha*	Nymphalidae
24.	Commander	*Limenitis procris procris*	Nymphalidae
25.	Common sergeant	*Athyma perius*	Nymphalidae
26.	Colour sergeant	*Athyma nefte inara*	Nymphalidae
27.	Pallas sailer	*Neptis sappho astola*	Nymphalidae

Common Butterfly Species Found In Study Area "After 2065"

S. N.	Common name	Scientific name	Family name
28.	Short banded sailer	*Phaedyna columella ophiana*	Nymphalidae
29 .	Common map	*Cyrestis thyodamasthyobamas*	Nymphalidae

30.	Circe	*Hestina nama nama*	Nymphalidae
31.	Common E: brown	*Melanitisleda ismene*	Nymphalidae
32.	Jengle brown	*Orsotrioena medus medus*	Satyridae
33.	Common five ring	*Ypthima baldus*	Satyridae
34.	Large three ring	*Ypthima nareda*	Satyridae
35.	Plain tiger	*Danaus chrysppus chrysppus*	Satyridae
36.	Common tiger	*Danaus genutia*	Satyridae
37.	Common ind.crow	*Euploea core core*	Danaidae
38.	Chocolate demon	*Ancistroides nigritadiocles*	Hesperiidae
39.	Common gester		Acraeidae
40.	Orange oakleaf	*Kallima inachus*	Nymphalida

Common Birds Species Found In Study Area "Before 2065"

S. N.	Common name	Scientific name	Family name
1.	Black farancolin	*Francolinus francolinus*	Phasianidae
2.	Red jungle fowl	*Gallus gallus*	Phasianidae
3.	Indian peafowl	*Pavo cristatus*	Phasianidae
4.	Small button quail	*Turnix sylvatica*	Turnicidae
5.	Ruddy shelduck	*Tadorna ferruginea*	Anatidae
6.	Bar-headed goose	*Anser indicus*	Anatidae
7.	Cotton pygmy goose	*Mettapus coromandelianu*	Anatidae
8.	Common teal	*Anas crecca*	Anatidae
9.	Mallard	*Anas platyrhynchos*	Anatidae
10.	Lesser whistling duck	*Dendrocygna javanica*	Dendrocygnidae
11.	Eurasion wryneck	*Jynx torquilla*	Picidae
12.	Grey capped pygmy Wood pecker	*Dendrocopos canicapillas*	Picidae
13.	Fulvous breasted Wood pecker	*Dendrocopos macei*	Picidae
14.	Greater yellow napa Wood pecker	*Picus flavinucha*	Picidae
15.	Lesser yellow napa Wood pecker	*Picus chlorolophus*	Picidae
16.	Himalayan Flamback Wood pecker	*Dinopium shorri*	Picidae
17.	Black reumped Flamdak Woodpecker wood pecker	*Dinopium benghatense*	Picidae
18.	Lineated barbet	*Megalaima lineate*	Megalaimidae
19.	Blue Throated barbet	*Megalaima asiatica*	Megalaimidae
20.	Copper smiph barbet	*Megalaimahaemacephala*	Megalaimidae
21.	Oriental pied hornbill	*Anthracaceros albirohtris*	Bucerotidae
22.	Great hornbill	*Bucerous bicornis*	Bucerotidae
23.	Common hoopoe	*Upupa epops*	Upupidae
24.	Indian roller	*Coracias benghalensis*	Coractidaea
25.	Dollard bird	*Eurystonius orientates*	Coractidaea
26.	Blue heared beesater	*Nyetyornis*	Meropidaean
27.	Green bee-eater	*Merops orientalis*	Meropidaea

28.	Blue tailed bee-eater	*Merops philippinus*	Meropidaea
29.	Chestnut,headedbee-eater	*Merops leschenaultia*	Meropidaea
30.	Common kingfisher	*Halcyonsmyrnensis*	Alcedinidae
31.	Stork bill kingfisher	*Halcyon capensis*	Halcyoionidae
32.	White throated kingfisher	*Halcyon smyrnensis.*	Halcyoionidae
33.	Pied kingfisher	*Ceryle rudis*	Cerylidae
34.	pied cuckoo	*Clmatojacobinus*	Clidaeucu
35.	Chestnut winged cuckoo	*Clamatcoromandus*	Clidaeucu
36.	Common hawk cuckoo	*Hierococcybarius*	Clidaeucu
37.	Banded by cuckoo	*Cacomtsonneratii*	Clidaeucu
38.	Asian koel	*Eudynascolopacea*	Clidaeucu
39.	Green billed malkoha	*Phaenicophatristis*	Clidaeucu
40.	Sirkeer malkoha	*Phaenicophaeus leschenaul*	Clidaeucu
41.	Indian cuckoo	*Cuculumicropterus*	Clidaeucu
42.	Plainitive cuckoo	*Cacomantmerulinus*	Clidaeucu
43.	Alexandrine parakeet	*Psittaculeupatria*	Psittacidae
44.	Rose-ringed parakeet	*Psittaculkrameri*	Psittacidae
45.	Plum headed parakeet	*Psittacyonocephala*	Psittacidae
46.	Red breasted parakeet	*Psittaculalexandri*	Psittacidae
*4*7.	Hamalayan swiftlet	*Collocalibrevirostris*	Apodidae
48.	White rumped needle tail	*Zoonavensylvation*	Apodidae
49.	House swift	*Apus affinis*	Apodidae
50.	Brown fish owl	*Ketupzeylonensis*	Strigdae
51.	Jungle owlet	*Glaucidiuradiatum*	Strigdae
52.	Spotted owlet	*Athene brama*	Strigda
53.	Langtail nightjar	*Caprimulmacrarus*	Caprimulgdae
54.	Indian nightjar	*Caprimulgusiaticus*	Caprimulgdae
55.	Rock pigeon	*Columba livia*	Columbidae
56.	Ashy wood pigeon		Columbidae
57.	Oriental turtle dove	*Strreptopchinensis*	Columbidae
58.	Spotted dove	*Strreptopechinens*	Columbidae
59.	Eurasian collared dove	*Strreptodecaocto*	Columbidae
60.	Orange-breastedgreen pigeon	*Treron bicincta*	Columbidae
61.	Thick-billedgreen pigeon	*Trercurviroslra*	Columbidae
62.	Emerald dove	*Chalcophapindica*	Columbida
63.	Yellowfootedgreen pigeon	*Terphoenicoptera*	Columbidae
64.	Pin-tailed green pigeon	*Teron apicauda*	Columbidae
65.	White-breasted water hen	*Amaurphoenicurus*	Rallidae
66.	Common moorhen	*Gallinchloropus*	Rallidae
67.	Green sand piper	*Tringa ochrops*	Scolopacidae
68.	Common sand piper	*Actitihypoleucos*	Scolopacidae
69.	Little-ring plover	*Charadridubius*	Charadriidae
70.	Red-wattled Lapwing	*Vanellus indicus*	Charadriida
71.	River lapwing	*Vanellusduvauceli*	Charadriida
72.	Grey headed	*Vanelluscinereus*	Charadriidae
73.	Pacific golden	*Pluvialis fulva*	Charadriida
74.	Eurasian oystercatcher	*Haernanostralegus*	Charadriida

75.	Black tailed godwit	*Limosa limosa*	Charadriida
76.	Egypiian vulture	*Neophron peronopterus*	Accipitridae
77.	White-rumped vulture	*Eyps benghalensis*	Accipitridae
78.	Eurasian griffon		Accipitridae
79.	Osprey	*Pandion haliaetus*	Accipitridae
80.	Black baza	*Aviceda leuphotes*	Accipitridae
81.	Black shouldered kite	*Elanus caeruleus*	Accipitrida
82.	Short-toed eagle	*Circaetus gallicus*	Accipitridae
83.	Crested serpend eagle	*Spilornis cheela*	Accipitridae
84.	Black eagle	*Ietinaetus malayaensis*	Accipitridae
85.	Shikra	*Accipiter badius*	Accipitridae
86.	Besra	*Accipiter virgatus*	Accipitridae
87.	Oriental honey buzzard	*Pernis ptilorhyncus*	Accipitrida
88.	White eyed buzzard	*Butastur teesa*	Accipitrida
89.	Steppe eagle	*Aquila nipalensis*	Accipitridae
90.	Collared falconet	*Micro hiercaerulescens*	Falconidae
91.	Lesser kestrel	*Falco naumanni*	Falconidae
92.	Dater	*Anhinga melanogaster*	Anhingidae
93.	Little cormorant	*Phalacrocorax niger*	Phalacrocoracidae
94.	Great cormorant	*Phalacrocorax carbo*	Phalacrocoracidae
95.	Little egret	*Egretta garzetta*	Ardeidae
96.	Entermidiate egret	*Mesophoyx intermedia*	Ardeidae
97.	Great egret	*Casmerodius albus*	Ardeidae
98.	Grey heron	*Ardeola cilerea*	Ardeidae
99.	Cattle egret	*Bubulcus ibis*	Ardeidae
100.	Indian pond heron	*Ardeola grayii*	Ardeidae
101.	Little heron	*Butorides striatus*	Ardeidae
102.	Black bittern	*Dupetor flavicollis*	Ardeidae
103.	Blackcrowne night heron	*Nycticorax nycticorax*	Ardeidae
104.	Greater caucal	*Centropus sinensis*	Centropodidae
105.	Lesser coucal	*Centropus bengalenisis*	Centropodidae
106.	Bronze winged jacana	*Metopidius indicu*	Jacanidae
107.	Black ibis	*Pseudibis papillosa*	Threskiornithidae
108.	Asian openbill	*Anastamus oseitons*	Ciconiidae
109.	Woolly-necked stork	*Ciconia episcopus*	Ciconiidae
110.	Black stork	*Ciconia nigra*	Ciconiidae
111.	Lesser adjutant stork	*Leptoptilos javanicus*	Ciconiidae
112.	Indian pitta	*pitta brachyara*	Pittidae
113.	Golden fornted leafbird	*Chloropsis qurifrons*	Irennidae
114.	Orange bellied leafbird	*Chloropsis hardwickii*	Irennidae
115.	Brown shrike	*Lanius schach*	Laniidae
117.	Grey backed shrike	*Lanius tephronotus*	Laniidae
118.	Rutous treepie	*Dendrocitta*	Corvidae
119.	Large billed crow	*Corvus macrorhynchos*	Corvidae
120.	House crow	*Corvus splendens*	Corvidae
121.	Ashywood swallows	*Artamus fuscus*	Corvidae
122.	Eurasian golden oriole	*Oriolus oriolus*	Corvidae
123.	Black hooded oriole	*Oriolus xanthornus*	Corvidae

124.	Large cuckoo shrike	*Coracina macei*	Corvidae
125.	Black winged cuckoo	*Coracina malaschistos*	Corvidae
126.	Scarlet minivet	*Pericrocotus flammeus*	Corvidae
127.	White throated fantail	*Rhipidura albicollis*	Corvidae
128.	White browed fantail	*Rhipidura aureola*	Corvidae
129.	Black drongo	*Dicrurus macrocercus*	Corvidae
130.	Ashy drongo	*Dicrurus leucophaeus*	Corvidae
131.	White bellied drongo	*Dicrurus caerulescens*	Corvidae
132.	Lesser racket tailed drongo	*Dicrurus remifer*	Corvidae
133.	Greaterrackettailed drongo	*Dicrurus paradiseus*	Corvidae
134.	Spanged drongo	*Dicrurus hottentottus*	Corvidae
135.	Crow bill drongo	*Dicrurus annectans*	Corvidae
136.	Bar-winged flycatecher	*Hemipus picatus*	Corvidae
137.	Long tailed minivet	*Pericrocotus ethologus*	Corvidae
138.	Black napped monarch	*Hypothymis azurea*	Corvidae
139.	Asian paradise flycatcher	*Terpsiphone paradise*	Corvidae
140.	Common iora	*Aegithina tiphia*	Corvidae
141.	Tickell`s thrush	*Turdus unicolor*	Muscicapidae
142.	Dark throated thrush	*Turdus ruficollis*	Muscicapidae
143.	Orenge headed thrush	*Zoothera citrina*	Muscicapidae
144.	Red throated flycatcher	*Ficedula parva*	Muscicapidae
145.	Verditer flycatcher	*Eumyias thalassina*	Muscicapidae
146.	Grey headed cannary	*Culicicapa ceylonensis*	Muscicapidae
147.	Pale chinned flycatcher	*Cyornis paliogenys*	Muscicapidae
148.	Oriental magpie robin	*Copsychus saularis*	Muscicapidae
149.	White rumped shama	*Copsychus malabaricus*	Muscicapidae
150.	Black-red star	*Phoenicurus ochruros*	Muscicapidae
151.	Plumbeous water-red	*Rhyacornis fuliginosus*	Muscicapidae
152.	Common stone chat	*Soxicola torquata*	Muscicapidae
153.	Pied bush chat	*Soxicola caprata*	Muscicapidae
154.	White tailed stone chat	*Soxicola leacura*	Muscicapidae
155.	Little pied flycatcher	*Ficedula westermanni*	Muscicapidae
156.	Asian pied starling	*Sturnus contra*	Sturnidae
157.	Common myna	*Acridotheres tristis*	Sturnidae
158.	Bank myna	*Acridotheres ginginanus*	Sturnidae
159.	Jungle myna	*Acridotheres fuscus*	Sturnidae
160.	Chestnut tailed starling	*Sturnus malabaricus*	Sturnidae
161.	Brahming myna	*Sturnus pagobarum*	Sturnidae
162.	Hill myna	*Gracula religiosa*	Sturnidae
163.	Chestnut bellied nuthatch	*Sitta castanea*	Sturnidae
164.	Velvet-fronted nuthatch	*Sitta frontalis*	Sturnidae
165.	Grey tit	*Parus major*	Paridae
166.	Sand martin	*Riparia riparia*	Hirandinidae
167.	Plain martin	*Riparia paludicola*	Hirandinida
168.	Barn swallow	*Hirundo rustica*	Hirandinida
169.	Black crested bulbul	*Pycnonotus*	Poicnonotidae
170.	Red-whiskered bulbul	*Pycnonolus jocosus*	Poicnonotidae
171.	Red-vented bulbul	*Pycnonotus cafer*	Poicnonotidae

172.	Black bulbul	*Hypsipetes*	Poicnonotidae
173.	Yellow belliedprinia	*Prinia flavientris*	Cisticolidae
174.	Ashy prinia	*Prinia socpalis*	Cisticolidae
175.	Zitting cisticola	*Cispicola juncidis*	Cisticolidae
176.	Ooriental white-ege	*Zosterops palpebrosu*	Zosteropida
177.	Common tailor bird	*Orphopomus sutorius*	Sylviidae
178.	Common chiffchaff	*Phylloscopus collybita*	Sylviidae
179.	Greenish warbler	*Phylloscopus*	Sylviidae
180.	Jungle babbler	*Turdoides striatus*	Sylviidae
181.	Puff-throated babbler	*Pellorneum ruficeps*	Sylviidae
182.	Greater short-toed lark	*Calandrella*	Alaudidae
183.	Ashy crowned sparrow	*Eremopterix grisea*	Alaudidae
184.	Rufous winged bush lark	*Mirafra ethologus*	Alaudidae
185.	Purple sunbird	*Nectarinia asiatica*	Nectariniidae
186.	House sparrow	*Passer domesticus*	Passeridae
187.	Eurasian tree sparrow	*Passer montanus*	Passeridae
188.	White wagtail	*Motacilla alba*	Passeridae
189.	White browed wagtail	*Motacilla maderas*	Passeridae
190.	Citrine wagtail	*Motacilla citreola*	Passeridae
191.	Yellow wagtail	*Flava*	Passeridae
192.	Paddyfield pipit	*Anthus rufulus*	Passeridae

Common Birds Species Found In Study Area “After 2065”

S. N.	Common name	Scientific name	Family name
193.	Olive backed pipit	*Anthus hodgsoni*	Passeridae
194.	Baya weaver	*Ploceus philippinus*	Passeridae
195.	Scaly breasted munia	*Lonchura punctulata*	Passeridae
196.	Crested bunting	*Melophus latham*	Fringllidae

Common Mammals Species Found In Study Area 2065

S. N.	Common name	Scientific name	Family name
1	House shrew	*Suncus murinus*	Sorcidae
2	Indian flying fox	*Pteropus giganteus*	Pteropdidae
3	Rheus macaque	*Macaca mulatta*	Cercopithecidae
4	Indian Hare	*Lepus ruficaudatus*	Leporidae
5	Indian palm Squirrel	*Funambulus*	Sciuridae
6	House Rat	*Mus musculus*	Muridae
7	Jackal	*Canis aureus*	Canidae
8	Red fox	*Vulpes vulpes*	Canidae
9	Sloth bear	*Melursus*	Ursidae
10	Common otter	*Lutra lutra*	Mustelidae
11	Large Indian civet	*Viverra zibetha*	Viverridae
12	Small Indian civet	*Vijverricula*	Viverridae
13	Jungle cat	*Felis chaus*	Felidae
14	Spotted leopard	*Panthera pardus*	Felidae
15	Bengal tiger	*Panthera tigris*	Felidae
16	Indian grey mongoose	*Herpestes*	Herpestidae
17	Spotted –deer	*Axis axis*	Cervidae

18	Barking –deer	*Muntiac*	Cervidae
19	Sambar deer	*Cercus unicolor*	Muntjak
20	Wild boar	*Sus sorola*	Suidae
21	One-horned rhino	*Rhinoceros unicornis*	Rhinocerotidae

Some Important Medicinal Plant of Baghmara Bufferrozone Community

S. N.	Nepali name	Botanical Name	Family name
1	Aakash beli	*Cuscutareflexa(roxb)*	Convolvulaceae
2	Haleda	*Curcuma angustifolia*	Zingiberaceae
3	Kachur	*Curema zedoaria(rocs)*	Zingiberaceae
4	Betlauri	*Costu Speciodsus(koen)*	Zingiberaceae
5	Amala	*Phyllanthus emblica*	Euphorbiaceae
6		*Ricinus communis(L)sp*	

Appendix II

Question for Household Survey

A Study on role of community forest in biodiversity conservation and development

1. Personal Profile

   Respondent's Name Age Sex

   Ward no. Occupation

   Address

2. Educational Status in the family

Sex /Level	Illiterate	Below S.L.C.	Above SLC	Total
Male				
Female				
Total				

3. Source of Status

Agriculture		Business		Labour	
Service		Social service		Others	

4. Land Holding and Tenure System

Type /area(Katta)	Farmers own	Land Lord rented in	Rented out	Total

5. How many Livestock do you have? And their feeding system?

S.N.	Type	Number	Feeding system		
			Grazing	Stall feeding	Combined
1	Cow				
2	Buffalo				
3	Goat				
4	Others				

6. When do you collect follow in products of community forest?

Fuel wood	Timber	Fodder	Jadibuti	Others

7. What inspire you make the community forest?

   Inspiration Source -- Date --

8. How do you measure the effectiveness of community forest?

   Very good ( ) Fair ( ) Good ( )

9. What do you think of the advantage of community forest?

10. What do you think of the disadvantage of community forest?

About peoples participation in management practice

11. Are women, janjati's & Dalit involved in community forest management?
    Yes ( ) No ( )
12. How do you evaluate following activities of community forest?

Activities	Good	Fair	Poor
Plantation			
Protection			
Meeting			
Silviculture Treatment			
Other			

13. How do you familiar with these community forest management practices?

14. What do you do during meeting?

    Raise questions React on ideas keep quite

15. What were the species of flora and fauna found in your community forest five years earlier?

S. N.	Flora	Fauna

16. What are the new species seen in your community forest?

S.N.	Flora	Fauna

17. What type of plant species do you like to remove from community forest?

18. Do you plant only economic plant species?
    Yes ( ) No ( )
19. Which plant species do you plant?

20. What should be done for biodiversity conservation?

21. What are the community development activities initiated by community forest?

22. What are positive impacts of community forest on Biodiversity?

23. What are the negative impacts of community forest on Biodiversity?

24. How can Forest User Group's can be mobilized for Biodiversity conservation?

25. How do you suggest sustaining your community forest?

26. What is a technical understanding on community forest management practices?

Management Practices	Technical Understanding			
	Very High	High	Very Low	Low

27. How often do you participate in management practices?

Always participate		Mostly participate		Mostly do not participate	

Do not participate		Others			

28. If you do not participate, why?

Due to lack of information	No timely information	Wage labour
Household work	Male dominance	Improper time

29. Do you participate in community forest management practices?
    Yes ( ) No ( )
30. What are you applying about silviculture system to manage well your community forest?
31. Do you agree with participation of people in management practices is good for community forest as well as Biodiversity conservation if yes gives your opinion?

About people's attitude towards Biodiversity

32. What were the plant and animal species found in this forest just before handover as community forest?

Plants	
Animals	

33. What changes in this forest have you seen in the years after community forestry handover?

Attributes		Change (increased/decreased)
S.N.		
1	Forest product supply (Timber/Fuel/wood/fodder)	
2	Water supply	
3	Landslide/Erosion	
4	Forest condition improvement	
5	Tree species richness	
5	Animal species richness	

34. List the plant species which are disappeared, regenerated or planted after handover of the community forest?

Means of regeneration	Species
Natural	
Artificial	

35. List the plants which are disappeared after handover of the community forest?

Species	Reason for disappearance

36. What are the favoured and unfavoured species found in your community forest?

Rank	Favoured	Unfavoured	Major use		
			Fuel wood	Fodder	Timber

37. Are there any particular wild animal (including birds) whose population do you think have changed in present year?
    Yes ( ) No ( ) Don't know ( )
38. Do you agree wild animals should exist in your community forest?
    Agree ( ) disagree ( ) No opinion ( )
39. Do you know about the term Biodiversity? If yes what about?

40. Do you feel the need of Biodiversity conservation? If yes give reason in brief to support your answer?
41. Do you think these species should be conserved? If yes, why?
    strongly agree Agree Neutral disagree

42. Put your opinion (agreement/disagreement) with the following statements.

Statement		Attitude Scale	
		Agree	Disagree
S.N. 1	Existing floral and faunal composition in the community forest is satisfactory.		
2	Existing floral and faunal composition should be conserved.		
3	More plant species diversity should be created in the community forest.		
4	Diversity of medicinal plant should be created.		
5	Only the valuable timber should be conserved.		
6	Animal species diversity should be reduced.		
7	All useless species should be eliminated from a community forest.		

Utilization and Sharing Of the Forest Product

1. According to your operational plan how much forest products can your forest provide to satisfy the need of FUG member per year?
   Recommended forest product and amount

S.N.	Forest product	Total growing stock/year	Amount
1	Timber		
2	Fuel wood		
3	Fodder/ ground grass		

2. Please indicate in the following table the amount or quantity of the forest product
   share to the FUG members and those sold to outside members.

Forest product	2008/2009		2009/2010	
	Insider cost (Qty)		Outsider cost (Qty)	
Round timber	……	……	……	……
Pole timber	……	……	……	……
Agricultural tools	……	……	……	……
Fuel wood	……	……	……	……
Fodder	……	……	……	……
Leaf litter	……	……	……	……
Ground grass	……	……	……	……
Medicinal plant	……	……	……	……
Others (specify)	……	……	……	……

3. According to your operational plan, who makes the decisions in the distribution of each of the following products that can be gathered from your community forest?

Forest product	FUG	DFO	DFO & FUG
Round timber	…..…….	..……	……
Pole timber	……	……	……
Agricultural tools	……	……	……
Fuel wood	……	……	……

Fodder	……	……	……
Leaf litter	……	……	……
Ground grass	……	……	……
Medicinal plant	……	……	……
Others (specify)	……	……	……

4. Irrespective of what to group (FUG, DFO, and FUG & DFO etc.) makes the decision in the distribution of forest products, what guide line/criteria was used in relation to the quantity of forest products to be gathered/utilized by the FUGs.

Forest product	Need	Demand	Equal	Others
Round timber	…..…….	..……	……	……
Pole timber	……	……	……	……
Agricultural tools	……	……	……	……
Fuel wood	……	……	……	……
Fodder	……	……	……	……
Leaf litter	……	……	……	……
Ground grass	……	……	……	……
Medicinal plant	……	……	……	……
Others (specify)	……	……	……	……

5. List top 10 members of FUG (including FUG members) in the utilization of each forest product, their position and corresponding quantity used during 2008/2009 and 2009/2010.

Forest product	Recipient	Quantity	Why/Reason
Round timber	…..…….	…..……	……
Pole timber	……	……..	……
Agricultural tools	……	..……..	……
Others (specify)	……..	……..	……

6. What community development activities were under taken in your community that was financed either partially or fully by the income derived from your community forest?

	Activities	Partially	Amount
2008/2009	……..	…….	……..
2009/2010	……..	…….	…….

Appendix: III

Check list used for focus group discussion for management practices

1. What does the FUG understand by the term management?
2. What is the perception and attitude of the FUG towards management practices in their community forest?
3. What values does the FUG perceive in management practices for themselves?
4. What is the change in management in terms of plant species after handing over of the forest as a community forest?
5. Is there any specific programme for management practices in operational plant?
6. What do you do for the protection of the community forest?
7. What are the motivating factors for the involvement in community forest?
8. Which species of plants and animals have been appeared / lost from your community forest?
9. What are the plant species planted in your community forest?
10. What inspired you to make community forest?
11. What are the advantages of community forest?
12. What are the impacts of community forest on Biodiversity?
13. What do you do to sustain your community forest?

Observation check List

1. Women activities in meeting.
2. Fencing system of community forest.
3. Meeting minute record.
4. Forest observation.

5. Map of the community forest.
6. Constitution of FUG.
7. Accounting system.
8. Others social work done by community forest.

APPENDIX IV

Photo plates

Researcher performing Household survey

C.F users sharing their experiences with researcher

Researcher performing interview

Carrying fuel wood obtained through thinning & pruning

Carrying leaf litter by people's of FUG

Members of executive committee with researcher

Distributing fuel wood to the member's

Of FUG

Lake inside Baghmara CF