RELATIONSHIP BETWEEN HOUSEHOLD'S ECONOMIC STATUS AND BENEFIT SHARING IN COMMUNITY FOREST USER GROUP: A CASE STUDY IN TAL DANDA COMMUNITY FOREST USER GROUP, TANAHUN DISTRICT OF NEPAL

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ABSTRACT

Community forestry is a successful program in Nepal whereby a large percentage of the national forest has been handed over to local communities for protection, development and utilization. The benefits from community forestry are considered to be an incentive to forest users. Benefit sharing among the user groups of various economic status is an emerging issue in the forestry sector throughout the country. The study was an attempt to identify the relationship between the household's economic status and benefit sharing derived from community forest. Also the study aimed to examine users' opinions on the existing benefit sharing system in the Tal Danda community forest user group, which is located in the Tanahun district of Nepal. The primary data was collected by using Participatory Rural Appraisal (PRA) tools and techniques along with a semi-structured questionnaire survey. A sample size of 164 households was used.

The finding indicated that the households with low economic status currently benefited less from the community forest when compared to households with high economic status. Imposing unnecessary mandatory arrangements and current simplistic equal based benefit sharing system tends to create an inequitable distribution of the major forest products among the users. The results indicated that 72% of the respondents were in favor of improvement in the existing benefit sharing system. The study, therefore, recommends that benefits from the community forest should be shared on the basis of equity with priority given to the low economic status and disadvantaged sectors of the community forest user groups.

KEYWORDS: COMMUNITY FORESTRY/ BENEFIT SHARING/ EQUITABLE/ PARTICIPATORY RURAL APPRAISAL/ WEALTH RANKING
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LIST OF ABBREVIATIONS

BS	Bikram Sambat
CF	Community Forestry
CFM	Community Forestry Management
Cu.ft	Cubic feet
CFUG	Community Forestry User Group
DoF	Department of Forest
DFO	District Forest Officer
FAO	Food and Agricultural Organization
FVS	Forest Village System
GF	Government Forest
Ha	Hectare
HH	Household
HMG/N	His Majesty's Government of Nepal
JFM	Joint Forest Management
MPFS	Master Plan for Forest Sector
PF	Private Forestry
Rs.	Nepalese Rupees (Currency)

CHAPTER 1
INTRODUCTION

1.1 Background

Community management of local natural resources has been an integral part of sustainable development policy in developing countries for past few decades. The interest of collective management in local natural resources has emerged largely as a consequence of the widespread failure of centralized government scheme to provide sufficient incentives to resources users. Community forest management has been initiated with a view of empowering local communities and providing them benefits. Currently, more than 50 developed and developing countries have been pursuing community forest management (Gilmour *et al.*, 2004). It was believed that providing the full authorities and responsibilities to local communities for controlling forest resources would result in a better management than the state controlled regime (FAO, 1976).

Community forest was initially known as forest management activities, in which local people closely involved in forest management activities with more responsibility towards management and yielding them to fetch direct benefits through their own efforts (FAO, 1999). It is known as collective action of local communities in forest management and utilization. It is clearly understood that benefit derived from community forest is an incentive for collective action in forest management activities. These benefits can be termed in both monetary and non-monetary. Non-monetary benefits associated with forests, include ecological balance, preservation of drinking water, cultural, spiritual, medicinal, recreational, and aesthetic. Including local employment, timber and non-timber forest products derived from community forest by the users are counted as monetary benefits. Further, the monetary benefits can be classified into direct and indirect. However, direct benefits contribute to users by

provision of timber and non- timber forest products and indirect benefits include employment and tourism contributes in household's economy by generating income opportunities (IUCN, 2004).

Direct benefit from community forest is the driving force for collective action in forest management. Participation of all users in community forest management is an essential component to achieve the goal of sustainable forest management. Without active participation of all users, the vision of sustainable forest management would be difficult to achieve. However, collective action in forest management could be possible when all users gain equitable benefits from the community forest (Baral, 1999).

In Nepal, community forest management has been leading towards the localization of forest management since the last few decades. According to Forest Act 1993 and Regulation 1995, community forest is a certain area of the national forest that can be handed over to local communities who have been living in the vicinity and using their traditional right. Full authorities and responsibilities have been provided to them through the existing forest related legal documents like Forest Act 1993 and Forest Regulation 1995. The management practice has been formally started since 1978 and is still in continuation with improved regime. The management system is being practiced based on local indigenous knowledge, principles of community rights, and ethics to ensure forest conservation and utilization. The country profile shows that about 35 percent of people are benefited from the community forest throughout the country (HMG/N, 2005). A large percentage of the national forests adjoining communities have already been handed over to local communities by formulating community forest user groups. Only inaccessible forest patches to local communities were left as national forest. The government is planning to hand over all potential national forests to communities by 2010.

Topographically, Nepal is divided into five regions *viz.* Terai/Plane, Siwaliks/Churia, Mid-hill, Himalaya, and high Himalaya/Mountain. Among these, Mid-hill region is significant in terms of community forest management because the management system

was first introduced in this region. The distribution of community forest over the country shows that 12.5 percent of the total community forest area has been handed over to 14 percent of total households in Terai/Siwaliks. The 68 percent of the total community forest area has been provided to 68.5 percent of the total households in Mid-hill region. In mountain, 19.5 percent of total community forest area has been handed over to 17.5 percent of the total households (HMG/N, 2005). Large number of community forests and forest user groups are located in Mid-hill region of the country (Chakraborty, 2001). Livelihood of the people in hills depends to a large extent on forest resources.

1.2 Statement of problem

According to Forest Act 1993 and Forest Regulation 1995, community forest user group is an autonomous institutional body. Community forest user's constitution and Forest Management Plan (FMP) are major guidelines constituting the users themselves and approval from District Forest Office (DFO). User group is as a self governing local body comprising of diverse socioeconomic groups with full authorities to acquire, sell or transfer forest products. They can decide independently whether forest products are used by themselves or sold in the market. Users can formulate various methods requiring procedures for best arrangement and distribution of forest products in accordance with the community forest user's constitution and FMP.

Two decades of experience in community forest management has been evaluated as a successful program to improve forest greenery throughout the country. Community forest management has been emerged as a revolution in conservation of forest resources and sustained base for poor people. Although some issues such as benefit sharing are needed to be resolved. A study was conducted by Adhikari *et al.* (2005) showing that the community forest is not being perceived as favorable for all users.

In Nepal, forest is a highly prioritized sector through which poverty reduction would be achieved according to the current 10^{th} national plan. The forest policy has focused to reduce poverty by ensuring people's active participation in the forest management

and channeling the benefits to poor and disadvantaged groups. Therefore, forest benefit sharing is being highly considered as an emerging issue throughout the country (Malla, 2001, Kanel *et al.,* 2003 and Adhikari *et al.,* 2004).

The issue of benefit sharing is significant in both local and national contexts. Regarding to local context, if anyone gets less benefit from community forest they would be unwilling to participate in the management and would refuse to pay the levy as per their share of cost (Kanel, 2004). Concerning national context, if poor people are deprived of access to forest benefit, it could be difficult to achieve the desired national objective to reduce poverty that has been set up by the current 10^{th} national plan. Hence, the study strived to identify the relationship between the household's economic status and benefit sharing in Tal Danda community forest user group and to examine user's opinion on the existing benefit sharing system.

Adhikari *et al.* (2004) recommended that Mid-hill area of Nepal is a suitable place to carry out the research on this issue. Thus, Tal Danda community forest located in Mid-hill, western region, Tanahun district of Nepal has been selected as a research site. The forest was handed over to the community by formulating the user group in 1995 (2052 B.S.) and it has been evaluated as the best community forest in the district (DFO/T, 2004). In addition, there is a high degree of socio-economic heterogeneity among the users which could be a significant aspect to examine the given issues.

1.3 Objectives

The study aimed to identify the real situation of benefit sharing derived from community forest with due considering on forest products sharing among the users with different household's economic status. Then the study focused on the following specific objectives:

1. To find out relationship between the household's economic status and benefit sharing among the users in Tal Danda community forest user group.
2. To examine user's opinion toward existing benefit sharing system in Tal Danda community forest user group.

1.4 Research questions

The study sought to identify the objectives through the following research questions:

1. How the households are categorized on the basis of their economic status in the community forest user group?
2. How has forest products been distributed among the users in the community forest user group?
3. Is there any relationship between the household's economic status and the benefit sharing derived from the forest among the users in the community forest user group?
4. Does the existing benefit sharing system need to be improved in the community forest user group?

1.5 Hypotheses

Hypotheses were postulated concerning the economic factors. A number of critical economic factors may foster inequitable benefit sharing among the users in the community forest user group. Therefore, it is hypothesized that resources used in the community forest user group differ in accordance with household's economic status of the users.

1. User group members with lower economic status receive less benefit from the community forest than those with higher one.
2. Majority of the member's opinion want overall existing benefit sharing system to be improved.

1.6 Scope of study

Community forest program is implemented throughout the country but the majority of it is confined in the hill districts. The considerable success of community forest program in the hills has earned a lot of recognition internationally. As there are few studies conducted in socio-economic issue of the community forest. The study

therefore is an attempt to find out in more detail of the socio-economic issue in Mid-hill region of the country. The study site is entirely located in Dulegaunda VDC-8, Tanahun district, Mid-hill region of Nepal. The community forest user group comprises 278 households and 1,682 inhabitants. The whole population within the territory of the forest user group was the target population of the study. Forest products derived from the community forest have been considered as forest benefit. Timber, grass, fodder, fuel wood, agriculture equipments, charcoal, and leaf litter were considered to have economic values in their locality and were being used by the members.

1.7 Conceptual framework

Conceptual framework of the study was developed to identify the household's economic status and benefit sharing including user's opinion on the existing benefit sharing system among the users. The major forest products obtained by the households from different economic statuses would assess according to their prevailing economic conditions. User's opinion on the existing benefit sharing system was a research outcome. Goal of the study was to explore the benefit sharing situation and benefited groups under the existing benefit sharing system. Base on the output, the study will recommend for improvement on the existing benefit sharing system which might be unfavorable to poor and disadvantaged group of the community. The study assumed that after realizing the current inequitable benefit sharing situation, the management authority would take initiatives for improvement on the existing benefit sharing system with given priority to those who have low economic status. When poor and disadvantage are benefited, then it would only be possible to achieve the national objective of poverty alleviation. It would also be a substantial contribution to sustainable forest management.

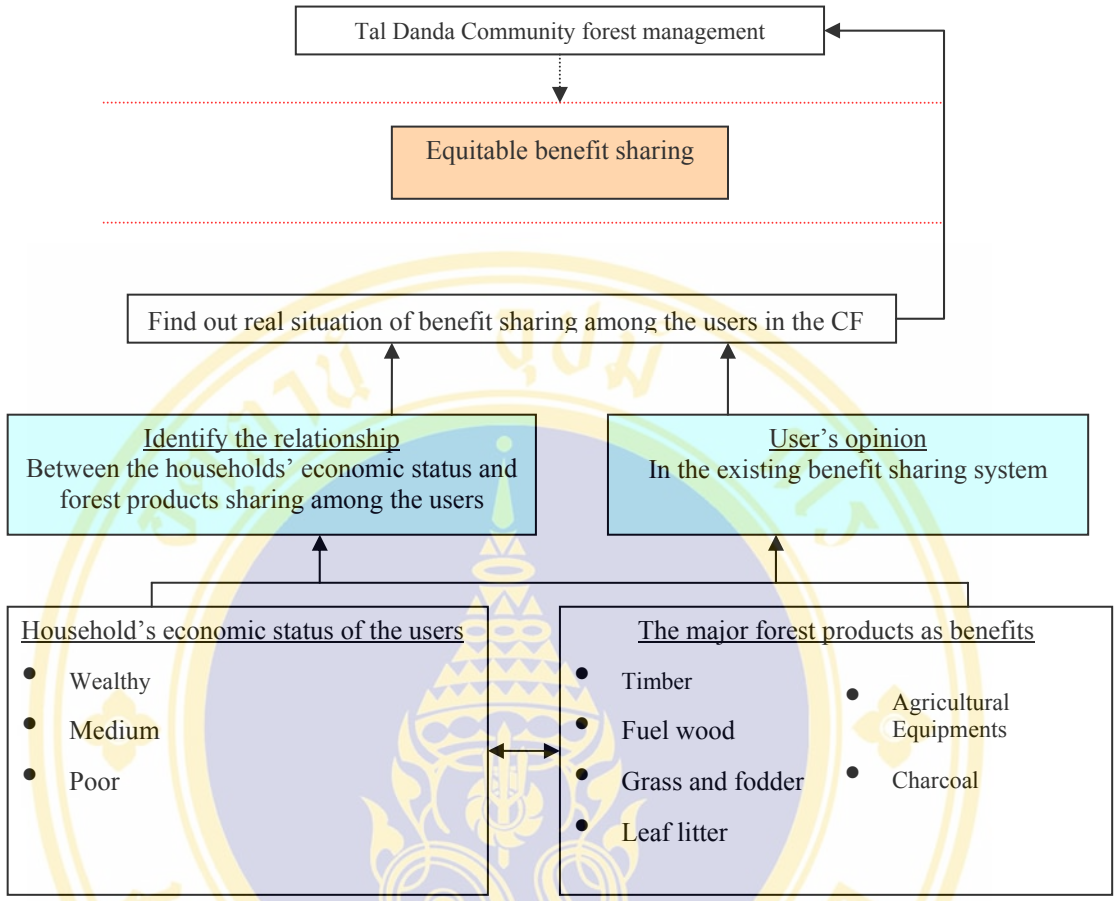

Figure 1.1 Conceptual framework

1.8 Operational definitions

Bikram Sambat (B.S.) is an official system of date keeping in Nepal. Bikram Sambat can be converted to the Gregorian calendar by subtracting 56 years and 8 months.

Building Material refers timber forest products that are used as construction material to build house, school, cowshed, agricultural equipments.

Benefit Sharing refers to the sharing of benefit derived from the community forest as tangible forest products such as timber, fuel wood, grass, fodder, leaf litter, agricultural equipments and charcoal.

Caste refers to categorization of people by their social status, based mainly on societal tradition related ancestry or occupation.

Community refers to a group of households or people in a particular area with the common interest of securing a sustained supply of forest products and sharing it among them.

Community forest (CF) refers to the situation where forests are controlled and managed as common property by groups of rural people who agree to use them to support their farms and households (Jackson and Ingles, 1995).

In Nepal, CF is defined as a certain part of a national forest handed over to a user group to manage and utilize the forest, and to sell and distribute the forest product independently by fixing their prices according to forest management plan (HMG/N, 1993).

Community Forest User Group (CFUG) refers as a group of people within the forest vicinity, given rights by the department of forests to manage, use and protect an area of forest or area of land for growing trees.

Equity refers to a fair treatment to all users in benefit distribution according to their contribution and necessity to community forest (Richards *et al.,* 1999).

Forest Benefit (FB) refers to direct tangible forest products such as timber, fuel wood, grass, fodder, leaf litter, agricultural equipments and charcoal derived from the community forest and being used for sustaining livelihood of the users.

Forest Management Plan (FMP) refers to a working plan for forest development and utilization prepared by community forest user groups with assistance of extension officers. It encompasses the community forests, and the utilization, sale and distribution of community forest products while maintaining environmental balance.

Households' Size refers to the number of individuals sharing the same house, living together, and eating together from a cumulative income of the residents.

Land Holding refers to the total usable land for crop production, grass and private forestland.

Village Development Committee (VDC) refers to the lowest level of political and administrative unit and consists of several villages. There are exactly 3,913 VDCs in Nepal.

1.9 Conclusion

Community forest is highly prioritized program to reduce poverty through providing livelihood options to poor and disadvantaged sector of the society. Particularly in the hill of Nepal, forest is an integral part of rural life. Benefit sharing among the users derived from the community forest is an emerging issue recognized globally. The study is believed that a number of critical economic factors may foster to be inequitable benefit sharing among the users in the Tal Danda community forest user group. The study, therefore, attempted to identify two major objectives. In order to attain the proposed objectives, the study has four research questions and two hypotheses. Base on objectives, the conceptual framework was developed to identify real situation of benefit sharing among the users under the existing system. The 278 households and 1,682 inhabitants in the study site are targeted populations.

The next chapter will cover the literature review on related issues and previous researches conducted in community forest sector. Reviewing the literature will focus as major scope to gain knowledge on the given topic.

CHAPTER 2
LITERATURE REVIEW

This chapter of the thesis reviewed the available documentation in order to provide rationale for the study. Literature review covers the community forest management at global, regional and country levels. Particularly, over a specific site gaining benefit from community forest, existing legal provisions on community forest and socio-economic contexts of the country are covered by reviewing the literature. Previous researches on related issues including livelihood of the people in Mid-hill area of the country are focused as major scope to gain knowledge on the given topics.

2.1 Community forest management

2.1.1 Global context

In late 1970s, it was generally perceived that widespread deforestation led to environmental degradation resulting in over flooding, drought and landslide especially in the Asian and African countries (FAO, 1976). Consequently, crisis of energy sources in many of third world countries were causes to deforestation related calamities. Widespread forest loss and its consequences on environmental degradation had affected the rural life of the area (Gilmour *et al.,* 2004). Until late 1970s, most forest landmasses were taken under the state property regime. The great deforestation over the world had clearly been indicated that state actions alone were not able to reverse the trend. In order to solve such tremendous environmental problems, the community involvement in forest management had been realized as essential. Consequently, Community Forest Management (CFM) was introduced to empower local communities in forest management initiated by the Food and Agricultural Organization (FAO).

The fundamental concept was to enhance the local communities who were really dependant upon forest resources for their livelihood previously. It was believed that local people would play significant role in the process of forest management rather than the state. A study conducted in 1976 by the FAO commission included experts from developed and developing countries came upon a conclusion with the commitment of "forestry for local community" (Arnold, 1978 cited by Baral, 2002). The commitment clearly represented that forest could be managed in a sustainable way when local people are involved in management processes and procedures. Likewise, by community involvement in forest management was believed that it would help to improve the living standard of rural people through achieving forest benefits.

Several definitions are found regarding to community forest management. Most definitions are related with local context regarding to how forest products are being used by local communities as well as country's development policy, political situation, socio-economic and cultural situations and interests toward forest management and utilization. "*Nevertheless the core concept of community forestry is similar concerning that forests are controlled and managed by a group of rural people who agree to use them to support their households*" (Jackson and Ingles, 1995). The management system is known as collective action where people participation is highly promoted as driving force for succeeding forest resources management. Dick and Knox (2001) suggested all members of the community need to have equal participation in forest management to be successful for long term. In this regard, Hobely (1996) presented the evolution of the concept or philosophy of forest management and community participation in forest management since 1970 as shown in Table 2.1.

However, participation in forest management is depended upon many socio-economic factors. According to Arnold (1992) community forest contributed to improve economic status of the users through providing goods and services *viz.* 1) the provision of forest products being essential to meet basic needs at the rural household's level, 2) the provision of food and the environmental stability and 3) the generating of income and employment to rural communities. It is believed that collective action would be

successful if users see high economic potential by their doing activities. Brown *et al*. (2002) suggested that local communities will only manage forest resources if recovering their 'costs' and getting benefits equitably from their activities invested for forest management activities.

Nygren (2005) mentioned that many developing countries have realized the need of public involvement in forest management. Further, he recommended for empowering local communities if states want to be successful on forest conservation and to maximize benefits from community forest. Similarly, it is not only developing countries but also it is being a potential source for rural livelihood in developed countries like United States (Glameir and Farrigan, 2003).

Table 2.1 Evolution of the concept of forest management

Decades	Events	Responses
1970s	▪Oil crisis and other energy crisis ▪Sahelian drought: deforestation ▪Bangladesh floods: deforestation	-Forest for local community development
1980s	▪Eco-disaster: forestry renaissance	-Creation of new forest resources: woodlots/social forestry
Late 1980s	▪Changing development practices: from top-down to bottom-up approach	-Local control and management of resources: participation, acknowledgment of value of indigenous technical knowledge, changed role of NGOs
1990s	▪New forest sector policies ▪Rio and Agenda 21 ▪Decentralization ▪Public sector reform	-Participatory management: institutional and policy reform, new partnerships, joint, participation and community forestry
2000	▪Forest for multiple objectives	-Co-management, collaborative approach

(Source: Hobely, 1996)

2.1.2 Asian context

Asian region is a mosaic of ecosystems ranging from the tropical rain forest to alpine meadows. Another common feature of the forestry sector in the region is that almost

all the countries have a national forest policy but only a few have the policy expressed in a signal comprehensive document (Gilmour *et al*., 2004). Community forest management has been currently practiced in most of the developing Asian countries. It has been shaped by international development thinking and by the specific political and historical contexts.

Community forest management in different countries is practiced by different names depending on the social, cultural, political and resource conditions (Shrestha, 2003). For example, parallel to the community forest management program in Nepal, in 1990 Joint Forest Management (JFM) concept was introduced in a number of states in India. Similarly, there is also a co-management system of forest resources management in Indonesia known as Tumpangsari (Jha, 1998). In Thailand community forest management is practiced as Forest Village System (FVS) whereas in the Philippines forestland is leased to the communities for resource development and participation in the program.

In most countries, forest policies have been shaped by the development priorities of the countries. However, the general feature of the social and economic objectives of the forest resource management are related to meet basic needs, increased employment, income generation and poverty reduction. Most of the countries in Asia have oriented to protect forest rather than utilization. However, almost all the Asian countries have been promoting people participation in forest management even though they have different forest management approaches. The status of community forest management practiced in two Asian countries (India and Thailand) is illustrated below.

i) India

In India, National Forest Policy 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 local

communities in forest management activities because the local people are heavily dependent on forest resources for their livelihood (Ahmed, 1996).

Community forest management is involved in active protection of the forest and regulation of its use, through multi - stockholder's participation. It is practiced in several parts of India (Rai *et al.,* 2002) by the name of Joint Forest Management (JFM). Approximately 62,000 village communities are benefited from JFM in India (Gilmour *et al.,* 2004). The management approach is practiced to develop partnerships between local community's institutions and state forest departments for sustainable forest management and sharing the benefit among them. Total harvested tangible forest products approximately from 25 to 50 percent of JFM go to local communities. The forest communities do not have any right to complain on the forest department's decision. The policies related with forest are more protection oriented than benefit utilization. In India, forest department still has strong influence over the forest management and benefit sharing mechanism. The main focus is given to collaborative forest management, partnership among government agencies, local political entity, communities and NGOs/INGOs.

ii) Thailand

In Thailand, community forest management has been initiated since 1968 widely known as Forest Village System (FVS). The objectives of FVS are: 1) to establish all land-less people in forest villages which offer improved facilities, a better standard of life and greater stability than a nomadic life 2) to encourage village people to establish taungya plantation to reforest the land which has been degraded by free exploitation or shifting cultivation, 3) to create opportunities for long term forest employment. Over 8,000 village groups have been formulated to manage forestland within protected areas. Furthermore, the Decentralization Act and the Revised Constitution (1997) provide rights to local authority and village councils for community management of natural resources.

Problems encountered are fundamentally embedded in the political and economic contradictions of the country's industrial development concerns. With heavy

competition for utilization of forest between the poor and the developer, encroachment of forest and illegal logging are common, resulting in commercial interest enjoying more benefits at the expense of the poor (Jha, 1998). Conflicts over the state forests were frequently caused by misunderstandings between forest officers who were responsible for forest management and villagers who used the forestland for agriculture and community settlement of nearby forest.

Local authorities have allowed limited access to utilize forest products while local communities have no access. In absence of national level community forest management framework, there have been difficulties in clarifying vicinity, role and responsibilities of local communities toward forest management including utilization mechanism of the forest resources. The Community Forest Bill (CFB) is still in parliament for discussion since the early 1990s. The proposed CFB is oriented toward strengthening rights of access to forest for Thailand's landless poor and encourage rural communities to estimate the costs of managing and conserving forest areas (Johnson and Forsyth, 2000).

iii) Lesson from Asian context

Community forest management is the most important aspect of forestry development in Asia. Community forest management has been developed in various countries depending on their social, cultural, political and resource conditions. The title may vary from country to country but the concept is rather similar. The protection and rehabilitation of degraded forests and the establishment of new forest resources are major policy objectives. This is still the case for many countries in Asian region where community forest management has come into the national agenda during the past decade. Utilization of the rehabilitated and regenerated community forests in India and Nepal has only commenced during the past decades and in other countries in the region it is barely being considered (Gilmour *et al.*, 2004).

The main target of community forest is to help poor communities to improve their socio-economic condition and their poor surrounding biophysical condition (Jha,

1998). From the analysis of the community forest in Asian countries, it is found that if communities are empowered and provided sufficient opportunities, forest resources can be well protected and well managed to fulfill people's basic needs (Joshi, 1997).

2.2 Benefits from community forest

Benefits from the community forest refer to the goods and services contributing to be well-being of an individual or a given community. Thus, a benefit is not identical with profit in the monetary or economic sense. Determining a benefit depends on needs, values, priorities and cultural expectations (Thomson, 2000). It is documented that community forest is an integrative force. Conventional forest management approach had focused only on sustainable yield and did not mention on integrative benefits. Wasi (1997) suggested that community forest has several integrative benefits or values such as socio-economic benefits, institutions and norms with scientific ecological benefits. From the economic prospective, several types of benefits or miscellaneous values are derived from community forest. Benefits have been contributing to be well being of users through providing forest goods and services for their livelihood. Benefits from forest fall into three categories as the followings: 1) direct benefits obtaining through timber and non-timber forest products, 2) indirect benefits obtaining through income generation, honey, nutrient, tourisms development and 3) non-use benefits *viz.* ecological services, biodiversity or existence, option for future use and non-use values and bequest value (IUCN, 2004).

"Forest and village commons have been important sources of supplementary livelihoods and basic necessities for rural households in many parts of the world (including in Europe in the late 18th and early 19th centuries: Humphries, 1990). In south Asia these common pool resources have provided fuel wood, fodder, small timber, and various non timber products, especially for the poor and women who own little private land, they have contributed critically to survival" (Agrawal, 2001). The above statement presents that community forest provides livelihood options to user through tangible forest products. The forest products contribute a wide range of economic benefit to users. Not only forest products but also it contributes in household

economy through generating income opportunities. Besides these, forest has numerous benefits *viz.* intrinsic, economic, ecological, cultural and aesthetic values (IUCN, 2004).

Among all benefits, direct benefit from forest is significant due to its scarce and capable nature of generating human welfare. *"Incomes to the FUG from the collection of fuel wood, poles, timber, fodder, grass, leaf litter, bedding materials, red clay and stone for construction purposes are taken as the direct benefits*" (Maharjan, 1993). Direct benefit is significant for resource dependent communities although indirect benefit derived from forest is not less important where ecosystem is fragile.

Benefits from community forest may differ from one country to another and also vary in different parts within a country. The magnitude of benefit depends on forest species, use, market accessibility and substitute goods. In global context, except Nepal, there is no other example where 100 percent from the community forest go to the local communities as direct benefit (Gilmour, and Fisher, 1991). Principally the concept of community forest management is very much encouraging and contributing to fulfill basic needs of users to support their livelihoods.

2.2.1 Equitable benefit sharing

In term of equity, there are a number of definitions which all are translated to fairness. Baral (1997) attempted to define the term in legal sense stating that "equity is practically equivalent to natural justice or morality". Although it is very difficult to say which level is exactly an equitable point, it is still at large.

The same condition was found in community forest sector where universally accepted operational definition of equity is not found. In community forest sector in Nepal, Fisher (1989) cited by Baral (1997) tried to define the term that *"The word equity has connotations of "fairness" and "justice" not necessary of equality. Equity is a subjective issue, a matter of policy, not a question, which can be decided by objective definition"*. They stressed that equity involves in getting a fair share according to

different situations. While it is not necessary to assume that equity involves equal distribution of products, it is reasonable to define highly disproportionate benefits to the relative wealthy as being inequitable (Fisher, 1989). Baral (1997) presented four different alternative scenarios for equity outcomes of intervention. They are as followings:

1. The rich get more and the poor are absolutely worse off:
2. The rich get more in absolute terms but the poor are a little better off;
3. Both the rich and the poor get proportionately the same;
4. The poor get absolutely more than the rich do.

The alternative scenarios mentioned above are in increasing order of magnitude in terms of benefit to the poor. The first scenario remains unacceptable for the equitable distribution. This is because the community forest management has focused on socio-economic improvement of the poor and disadvantage people such a program plainly cannot accept a situation where the rich get more benefits. The second alternative also does not favor on equitable distribution because it still has lower degree of benefit to the poor. The last two scenarios might be considered as more acceptable from an ethical viewpoint. Under this system, it has to be ensured that the gap between the rich and the poor would not be widened. Gilmour and Fisher (1991) also have emphasized that an equitable system, mentioned that at least, should not make further disadvantage to the poor.

Even though the view about what is equitable may differ between the elite individual and the poor counterpart. For the elite and wealthier people, equity might be equality of the opportunity. If we do consider in only needs that the richer group may get higher when compared to the poorer. Baral (1997) suggested to gain understanding the local structures or the needs of user in more detail. In order to distribute forest products the followings should be considered *viz.* distance from forest, social composition, alternative sources, economic status, culture, cost and labor, diligence in forest management for measurement of equitable benefits.

2.2.2 User's opinion

Without input of all the participants, the objectives of community forest management would difficult to achieve. It only could be possible when all partners are convinced on the benefits. Equitable benefit sharing has been considered as one kind of incentive to encourage motivation for collective action in forest management. For creating motivation, users must be satisfied with their activities' doing and obtaining benefit, from which may increase active participation in forest management.

However, user's opinion is important to make further management plan, rule and system or continuing the existing. If the opinion is different it should be surveyed by the authority for the causes of the difference. In lack of understanding about different opinions on some issues relating with community forest however it may create misunderstanding among the users, causing conflict. Opinion is a person's ideas and thoughts towards anything surrounded. It is an assessment, judgment or evaluation of given statement. It is usually based on a personal assessment. From user's opinion on existing benefit sharing system in community forest would help to further improvement by looking at existing benefit flows, rights and access upon forest products.

2.3 Forest management in Nepal

2.3.1 Forest resource

Nepal is a small, land-locked country. It covers 14.7 million hectares of land area. Of the total land area, 27.5% is used as cropland, 11.8 % grassland, 29% forest, 10.6% shrub, and 18.5% others purposes such as ice or rocks and urban areas. Land use distribution of the country is as shown in Table 2.2. Both forest and shrub together cover 39.6% of the total land area of the country (HMG/N, 2002a).

Table 2.2 Land use distribution in Nepal

Region	Cultivated	NCIS	Grassland	Forest Land	Shrub Land	Other Land	Total
High hill	252	149	1,393	1,794	243	2,479	6,310
Mid hill	1,223	667	278	1,811	404	59	4,442
Terai	1,577	182	74	1,913	59	191	3,996
Total	3,052	998	1,745	5,518	706	2,729	14,748

(NCIS: Non-cultivated inclusion) (Source: UNEP, 2000)

The country's forestry sector has been an essential building block in the continuing effort of development. In addition to agriculture, forestry plays a central role in economic and social life of the rural people (HMG/N, 1989). Trees and tree products are considered as essential for farming system as crops and livestock in Nepal. It is difficult for farming system to exist without forest products. People and forest have existed in interdependent relationship for many years. The majority of rural people depend upon forests for range of products like fuel wood, fodder, timber that are highly important to sustain the lives of Nepalese people (Adhikari, 1990 cited by Karki, 2002).

Fuel wood is the major source of energy for cooking and heating contributing 80% of the country's energy demand. Traditional fuels such as fuel wood (branches, twigs, bark, split wood, logs), agricultural residues and animal waste are easily available and relatively cheap indigenous energy sources for almost all rural people in Nepal. Currently, over 13 million tones of fuel wood are consumed annually in Nepal. Almost five million tones of fuel wood are being harvested annually from the government managed forest, another two million tones is obtained from community forest and the rest is being supplied from leasehold forest, private forest and trees of farmlands (HMG/N, 1989). In spite of self consumption, fuel wood collection and trading provide an important source of livelihood for many local people in Nepal.

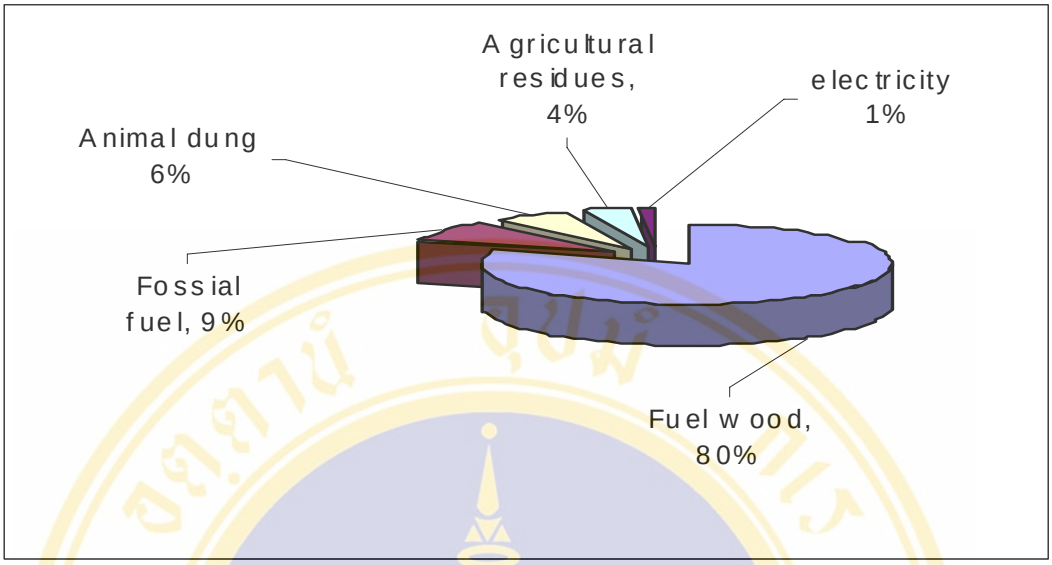

Figure 2.1 Sources of energy supply in Nepal (Source: HMG/N, 1989)

2.3.2 Evolution of forest policies

Before 1846, there was no forest management policy. The general policy, during that period was oriented to encourage people to convert the forestland into the agricultural land. Forestland in the country was more abundant relative to the size of population until the early 1950s (FAO, 1976). Prior to 1950, forests were considered as an ultimate source of revenue for the state. In 1957, the state passed the Private Forest Nationalization Act 1957 that had brought most of the forestland under its control again. Due to the weak enforcement of the Act by the government; forests became an open access and were subjected to exploitation. In recognition of the problems in associated with the state control of forestland, in 1976, the government introduced innovative and far-sighted "National Forest Policy", which encourages people's participation and local level of the forest institutions (District Forest Office) are authorized to hand over forest land masses to the communities for management and utilization.

Introduction of community forest management in Nepal is remarkable. During the late 1970, deforestation from hill and mountain areas was believed to cause an increase in soil erosion, and eventually flooding in the northern Indian plain. It was considered

that the deforestation largely occurred due to over exploitation of forest resources for livelihood strategies including farming practices. International environmentalists had noted that the ecosystem was in crisis in Nepal (Nightingale, 2003). Until late 1970, most forest landmasses were under the state property regime therefore access of forest products were open for everyone as public good for "open access". As a consequence, the forest degradation rate was reported more than 10 percent annually (FAO, 1976). International development organizations mainly the FAO had encouraged initiating participatory forest management approach in many developing countries including Nepal. Therefore, the government has started to hand over national forest to local communities especially to those who were traditional users living in vicinity of the forest. The current country profile of community forest indicates that about 35 percent of total population of the country is benefited from the community forest throughout the country as shown in Table 2.3.

Table 2.3 Country profile of community forest in Nepal

Total area of community forest	1,139,233 ha
Average size of the community forest	82.60 ha
Total number of community forest user group	13,791
Total number of households	1,575,512
Percentage of total benefited population	35%

(Source: HMG/N, 2005)

In initial stages, community forest management was oriented on forest conservation through participatory plantation of trees. Later, the focus has moved toward grass root institutional development in order to undertake forest management activities. After years of protection, growing stocks and potential yields of community forest have increased. Surplus forest products are now available for commercial sale. Over the time, the focus has changed and now four main goals are targeted as the followings: 1) providing basic needs for communities, especially for the poorest of the poor; 2) promoting economic development through the sale of forest products; 3) establishing democratic institutions into communities in the hills and 4) conserving forests (Gilmour and Fisher, 1991 cited by Nightingale, 2003). In Nepal, community forest is an essential component for both society and the environment. Forest supports the

livelihood of rural people including environmental safeguarding. Hence, community forest is considered as backbone of Nepalese agriculture sustaining livelihood of the rural people.

Over the time, the government took important initiatives to formulate the Master Plan for Forest Sector (MPFS), 1989, providing 25 years policy and planning framework for forest sector. MPFS has altogether 12 strategic programs with confined objectives to meet the people needs as shown in Table 2.4. Those programs are categorized as the primary and secondary programs and community forest is a top prioritized program out of 12 in the MPFS.

Table 2.4 Master Plan for Forest Sector strategic programs in Nepal

Primary programs	Secondary programs
• Community forest and private forest	• Policy and legal framework
• National and leasehold forest	• Institutional reform
• Wood based industrial development	• Human resources development
• Medicinal and aromatic plants and other minor forest products	• Forestry resources and extension
• Soil conservation and watershed management	• Resource information and planning
• Conservation of ecosystem and genetic resources	• Monitoring and evaluation

(Source: HMG/N, 1989)

2.3.3 Forest Act 1993 and Forest Regulation 1995

Enactment of Forest Act 1993 and Forest Regulation 1995 is a milestone in community forest development. These legal documents are formulated based on the policies and programs of MPFS. According to these legal documents, community forest is defined as “any part of a national forest handed over to a group of people in a vicinity of forest in the form of a community forest, wise utilization of forest products independently by fixing their prices according to Forest Management Plan (FMP)”. Community forest user group is defined as a group of people within the forest vicinity and given rights by the Department of Forest (DOF) to manage, use and protect the

forest area. Documental evidence signed by the District Forest Officer (DFO) confirms the rights of local communities for managing and utilizing its benefits.

2.3.4 Forest Management Plan (FMP)

The Forest Management Plan is an important component in community forest management. It is a set of rules or procedures for management of the forest. It is being prepared by the community forest user groups themselves and approval from District Forest Office. It is known as management agreement between the community forest user group and the government.

The general assembly of a community forest user group is the highest authority in all decision-making processes. The community forest user group, through the assembly prepares the FMP defines and recognizes user rights, determines rules and takes all forest management decisions including forest protection, harvesting and distribution of benefits. It also decides the operation of community forest user group funds and management of community development work. The assembly elects a forest user group's committee for the execution of community forest user group decisions and conducting day-to-day functions. After having preparation of the FMP, the forest is then formally handed over to the community forest user group.

As mentioned above Forest Act 1993 and Forest Regulation 1995 and FMP are oriented to fulfill user's basic forest product requirement such as timber, fuel wood, grass, fodder, leaf litter including conserving important forest ecosystems and contributing the growth of local and national economies by creating opportunities for income generation and employment.

2.4 Socio-economic status

Traditional Nepalese communities have strongly characterized with caste system and created hierarchy in society. Several ethnic groups live together in harmony in the mid-hills and valleys. It dictates much of the social interactions. Brahmin and Chhetri

castes are superior. Low occupational caste is known as untouchable also calling Sudra/Dalit. They are backward in education, job and other social life. Because of the social seclusion and inferiority in caste hierarchy, they are deprived from education, job, and decision making level (CBS, 2002).

Economically, the country is still listed under the poor group. The World Bank report (2003) noticed that around 42 percent out of total population of the country are poor. Majority of the people's household's economy depend on agriculture outputs. Here, household refers to the number of individuals sharing the same house, living together, and eating together from a cumulative income of the residents. In mid-hill area of the country, large degree of poverty is found and people are heavily depended on forest products for their livelihood (Chakraborty, 2001). Hence, community forest is being considered as a viable option for economic improvement of poorest of the poor.

The empirical evidences show that the access of forest products is difficulty to those who were mostly dependant upon forest products previously. Baral (1997) reported that voluntary based cost and equal base distribution systems have been practiced in almost all community forests in Nepal. Further, he suggested that the decision making level is held by elite and wealthy groups. But the community forest is expected to have a positive impact on the socio-economic improvement of the poor and disadvantaged groups although the results came out mixed (Chakraborty, 2001). The current five year national plan has focused to reduce poverty. In this perspective, each program of forest sector including community forest management is highly prioritized to be oriented toward achieving the national objective.

2.5 Related studies

Adhikari *et al.* (2005) mentioned that in many developing countries, institutional changes in resource management have shifted from central government control to community-based management. Further they highlighted on equity and distribution problems, especially the distribution of costs and benefits. Oyono, *et al.* (2005) studied in Cameroon and revealed that both inequity and imbalance in access of various

stakeholders affecting on forest financial benefits. They concluded that elite and wealthy persons who are holding decision making level have obtained much more quantity of forest products from the common forest resources than others. They suggested that benefit sharing of the community forest is a global emerging issue.

Timsina (2002) studied in mid-hills of Nepal by using various Participatory Rural Appraisal (PRA) tools and techniques. He concluded that community forestry enhanced social justice and improved the forest resources in the locality. The study conducted by Smith *et al.* (2003) also concluded the same result with Timsina (2002). Both studies mentioned that the community forest is being the greatest potential source to improve economic condition of the poor and disadvantaged people through obtaining basic forest products. He recommended that to study on the traditional caste and wealth structures from which benefit sharing derived from community forest may be influenced.

Baral and Subadi (1999) studied about benefit distribution of community forest in Terai/plan, Nepal. They suggested that community forest user groups were formulated with combined status such as elite and non-elite, powerful and power less, wealthy and poor. The study showed that the poorer were deprived of benefits derived from community forest. It was due to the dominancy of elite and wealthy group in community forest users group where decisions were made in favor of them. A study conducted by Sharma (2002) found just opposite result to Baral and Subadi (1999), Sharma presented that there was no caste and wealth discrimination on the distribution of forest products and that the benefit from the community forest was equally distributed among the users.

Rai *et al.* (2002) concluded from a study in Orissa, India, on 43 forest dependent communities that equity based benefit sharing system was found in practicing. The finding of the study showed that the poor users took out more forest products from the community forest because they dependency was more upon forest products for their livelihood compared to others. Vera (1998) conducted a study on distribution of benefit in Gujarat, India. The study analyzed the benefits distribution from a

community involved reforestation project in Gujarat on the basis of monetary term. The result of the study concluded that benefit derived from the forest had been distributed among various classes of rural people. The study concluded that the poor were benefited more.

Murshed and Gates (2005) studied in Nepal on "Spatial–Horizontal Inequality and the Maoist Insurgency in Nepal". The study found that the inequality among the people with both caste and wealth dimensions was highly relevant in explaining the Nepalese civil war. The finding of the study indicated that high inequalities in property holding and discrimination among the people as social inclusion as well as discriminate to access on opportunities to get benefit were the major cause of civil war.

2.6 Study site

2.6.1 Background of the country

Nepal is a small country in term of occupying land area but it is highly diverse in socio-economic and biophysical conditions. It is a land-locked country bordered by India in the west, south and east and by the People's Republic of China in the north and extends 800 km east to west along the southern slope in south Asia. It is situated between $26^{o}22'$ N. to $30^{o}27'$ N. latitudes and 80^{o} 4' E. to $88^{o}12'$ E. longitudes occupying the area of 147,181 square kilometers which is 0.01 percent of the world. Geographically the country is divided into five regions as shown in Table 2.5. As political and administrative point of view, the country is divided into 5 development regions, 14 zones, 75 districts and 3,913 Village Development Committees (VDC) where VDC is the lowest political entity.

Table 2.5 Geographical regions of Nepal

Geographical region	Surface area in percent	Elevation
High Mountain	23	Above 5,000 meter
Hill	20	3,000 to 5,000 meter
Mid-hill	30	1,000 to 3,000 meter
Terai/ Siwaliks	27	500 to 1,000 meter below 500 meter
Total	100	60 meter to 8848 meter

(Source: UNEP, 2000)

More than 80 percent of the people depend on subsistence farming (CBS, 2002) which is largely interdependent with the use of natural resource. The forest is an important natural resource. Forest contributes around 15 percent of the total GDP of the country. From historical evidence, during the 1960s only fuel wood was recognized as an important forest product. A closer look in recent years has revealed that farming, forests and livestock are three strongly integrated constituents of the hill farming system and cannot be separated from each other (Gilmour and Fisher, 1991; Mahat, 1986). Therefore, forest resource is considered as an integral part of Nepalese living especially in rural area of the country.

2.6.2 Tanahun district

Tanahun district is located at $27^{o}45'$N to $28^{o}8'$N latitudes and $83^{o}57'$E to $84^{o}34'$E longitudes. It is one of the hill districts of the western development region of the country. The district covers an area of approximately 1,700.11 square kilometers and its altitude ranges from 1,190 to 2,120 meter. It has 46 VDCs with total population of 315,237. Major occupation of people is farming.

2.6.3 Land use in Tanahun district

Total land area of the district comprises of approximately 49.76 percent of forest area, 41.02 percent of agricultural land, 4.10 percent of shrub land, 2.82 percent of paved space and 2.30 percent of grass land (UNDP, 2001). Detail is shown in Table 2.6. Of the total forest land area of the district, approximately 7,917.55 ha area is potential to

hand over to communities by formulating community forest user group. About 741.96 ha of forest including shrub had already been handed over to 358 community forest user groups throughout the district (DFO/T, 2004).

Table 2.6 Distribution by land use in Tanahun district

Land use distribution	Area (sq. km.)	Percentage
1. Forest area	**775.73**	**49.76**
-Hard wood forest	756.43	48.52
-Mixed forest	8.61	0.55
-Protected forest	10.69	0.69
2. Shrub land	**63.87**	**4.10**
3. Grassland	**35.87**	**2.30**
4. Cultivated land	**639.46**	**41.20**
-Cultivation in tars, alluvial fans or lower slops	157.27	10.09
-Level terraces in hill-slope cultivation	323.84	20.77
-Valley floor cultivation	24.82	1.59
5. Sand, gravel and boulders	**44.00**	**2.82**
Total	**1559.20**	**100.00**

(Source: UNDP, 2001)

2.6.4 Tal Danda community forest

Tal Danda community forest is one of 358 community forests in Tanahun district, and the area of responsibility of the Dulagaunda VDC-8 located in mid-hill region of the country. The mid-hill region runs from east to west across the center of the country. Since 1994 (2052 BS), the forest has been managed under community ownership, in which 278 households as user member formed a management and utilize benefits. It covers 75 ha of total land area which is divided into four different blocks for management and utilization purposes base on the Forest Management Plan (FMP) of the community forest user group. The study area is as shown in Figure 2.2.

The area is surrounded by agricultural land. There are two recently developed markets namely Khairanitar and Dulagaunda near the community. Therefore, forest products may use for both subsistence and commercial purposes. Agriculture and livestock is

main livelihood of a large majority of the users in the community forest user group. Forests and grazing lands are essential for them because they provide tree and grass fodder for livestock feed, leaf litter, fuel wood, timber, poles and thatching materials. Traditional occupational groups like blacksmith, local wine maker and farmer require forest products for continuing their occupations. There is a high degree of ethnic diversity, caste, and social hierarchy forming on economic heterogeneity among the users.

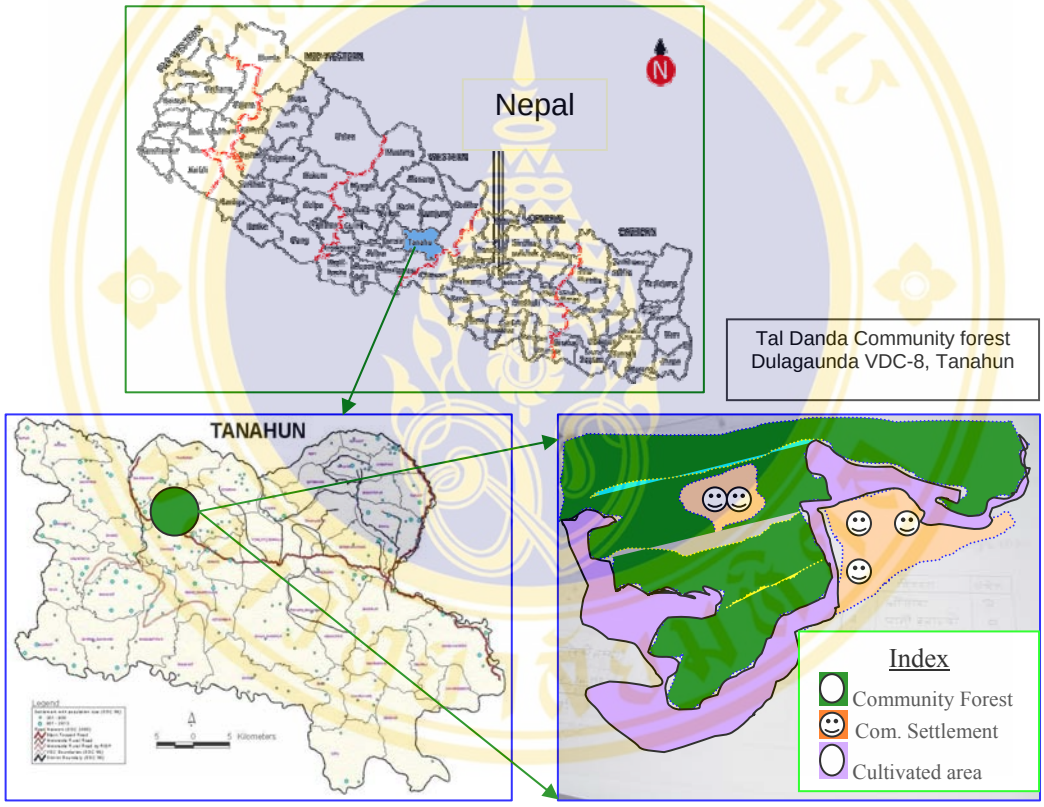

Figure 2.2 Study site, Tal Danda community forest (Source: UNDP, 2001)

2.7 Conclusions

Community forest has been considered as an essential component for rural livelihood. It plays a substantial role to improve the socio-economic condition of users and the environmental stability especially in hill area where the topographical condition is fragile. The empirical evidences show that community forest management has been able to halt forest degradation and also improves forest condition. However, sharing of

benefit, derived from forest, has to be identified as the key area of concern which plays an important role in community forest management. Equitable benefit sharing is considered as an incentive scheme which is potential to engender active participation in forest management.

This chapter has cited the various sources of literature focusing on the concept of community forestry, benefit sharing, socio-economic influences on community forestry. It has also cited the various past researches that were conducted in Nepal and other parts of the world. The study site and its physical features have also been discussed in this chapter. The next chapter will discuss on the methodology that was applied to conduct the research.

CHAPTER 3
METHODOLOGY

This chapter discusses about methodology and materials used in the study. The study is based on primary and secondary data. Collected data were analyzed using qualitative and descriptive quantitative methods. It is recognized that qualitative research can use a wider variety of techniques to collect primary and secondary data to measure specified objectives of the study. The study used Participatory Rural Appraisal (PRA) tools and techniques in the field to collect primary data. Using such tools and techniques enabled rural people to share their knowledge and conditions to evaluate their economic status, forest product sharing condition and their opinion on the existing benefit sharing system. Such process is known as combining approach of the study adopted from (Chambers, 1997). The household's survey was conducted to collect quantitative data from selected household's respondents. Semi structured questionnaire was designed as a survey instrument to collect household's information. The role of the researcher over PRA exercises was only a facilitator. The study avoided non-relevant information to save time and cost.

3.1 Criteria for selection of the study site

The study identified the purposed objectives in mid-hill region of Nepal which is significant in term of community forest management because the management was first introduced and presently the majority of the community forests which are located in the region. The study site is under responsibility of Dulagaunda VDC-8 Tanahun district of Nepal. The area is distinguished as residence of migrant mostly from nearby villages and neighboring districts. Because of migration, there is a large degree of social and economic heterogeneity among the users within the community forest user group.

Most of the hilly area of the country is still inaccessible by road. Hence, forest resources are being used for subsistence purposes more than commercial ones. But the study area has an access to the highway. On going Maoist insurgency poses a hindrance to go anywhere within the country mostly to rural areas but the study site is rather secured when compared to other parts of the country. In addition, the community forest has more than one decade's experience and it has been evaluated as the best community forest in the district in terms of forest management.

3.2 Study design

The study is based on both primary and secondary data which were collected by using PRA tools and techniques including semi-structured questionnaire survey administered through personal interviews with household's respondents. The process of the research consisted of 7 steps adopted from Neuman (2003) as illustrated in Appendix 1. The steps are: 1) Select Topic, 2) Focus question, 3) Design study, 4) Collect data, 5) Analyze data, 6) Interpret data and 7) Finding and Recommendation. The overall field work for data collection and analysis is organized as shown in Figure 3.1.

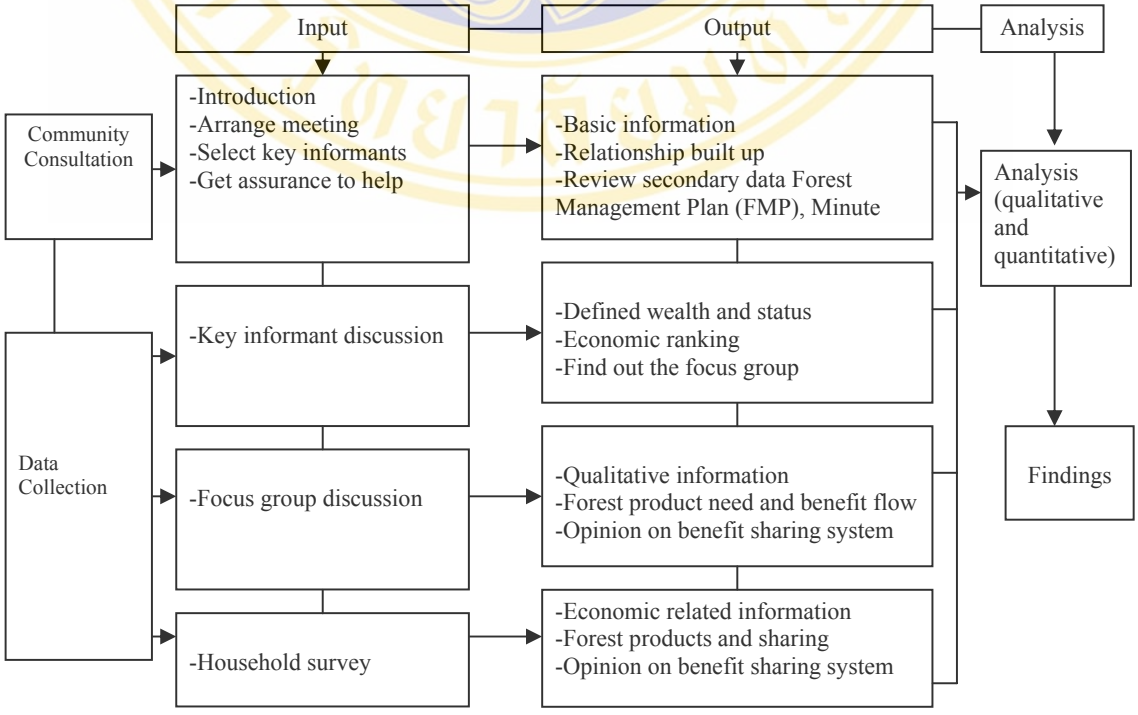

Figure 3.1 Data collection and analysis design of the study

3.3 Sample for study

Tal Danda community forest user group has 278 households as members of the community forest user group. In this study benefit referred to timber, fuel wood, grass, fodder, leaf litter, agricultural equipments and charcoal derived from Tal Danda community forest. Economic status of the users was categorized by using participatory wealth ranking tool based on local wealth definition that the users think important as possessions in their locality. Land was found to be the major asset and others livestock owned, house types and income also were considered as wealth. Further, land was categorized into four types based on land utilization such as 1) Khet (irrigated land), 2) Bari (non-irrigated land), 3) Kharbari (land to grow grass and fodder including pasture land) and 4) forest (Forest belong to person or private). Based on these, the households were categorized under rich, medium and poor economic status as shown in Table 3.1.

Table 3.1 Household distribution by the economic status

Total household	Economic category		
	Rich	Medium	Poor
278	34	141	103

The sample size of the study was selected according to population size of each economic group. Two types of sampling methods were used for the selection of the household to the questionnaire survey. Stratified random sampling was chosen for the household to be surveyed. All the sampling procedures are illustrated below.

In the first step, by using stratified random sampling method, respondents were selected for household's interview from total household's population as sample population unit by adopting Taro Yamane formula (1990). In order to calculate total sample unit, the following formulas were used with a 95% confidence level, and a 5% sampling error.

$n = N/ (1+Ne^2)$

Where,

n = Size of sample population,

N = Size of total population,

e = Variation from the acceptable randomized sample in this which is prescribed at 0.05.

Value transferred in the formula:

$n= 278/ [1+ 278 \times (0.05)^2]$

$= 164.011$

≈ 164

From the total household, 164 households were selected in the first step. The second step was to select a sample from each economic stratum; this was selected by using the following formula adopted from Cochran (1977).

$n^1 = (N^1 \times n)/ N$

Where,

n = total sample size of the study area,

N = total population in the study site,

N^1 = population size of each stratum,

n^1 = sample size for the stratum.

Value transferred in the formula:

Rich	Medium	Poor
$n^1 = (164 \times 34) / 278$ ≈ 20	$n^1 = (164 \times 141) / 278$ ≈ 84	$n^1 = (164 \times 103) / 278$ ≈ 60

To identify sample size, a running number starting from 1 was assigned to all households in strata (N^1). The required number of households (n^1) was drawn using a random number table. An additional 10 percent was sampled for reserve, which was supposed to be used in any case where a respondent from the regional sample refused to answer or was not available for interviewing. Generally the household head was selected as respondents for interview but in absence of the household head, the second influential person was considered as interviewee. The head of the household was identified by using the available data base.

3.4 Data collection

This study is based on primary and secondary data. Primary data were collected from study site by using several tools and techniques as follows.

3.4.1 Primary data

Primary data were collected by using two methods. The first method was PRA tools and techniques and the second method was questionnaire survey with selected household respondent as illustrated below.

1. Participatory Rural Appraisal (PRA)

Range of primary data was collected by using PRA tools adopted from Chambers (1992), from which both researchers and local community can learn about rural conditions quickly and effectively. The procedure is believed that it makes local communities enable to conduct their own analysis. In a broad sense, PRA refers to a range of approaches and methods to enable rural people to analyze their knowledge of life and conditions (Chamber, 1992 cited by Acharya, 2002). PRA is recognized as an appropriate methodology to understand socio-economic realities of the poor, powerless and isolated groups of people in developing countries like Nepal (Poudel, 1999). Performing useful PRA exercises can obtain much more information required for the purposed study. PRA also forms a part of the community forest program for long time therefore it is adopted as an appropriate methodology to collect data for the study. Following illustration of four tools and techniques were used during the field study *viz.* 1) key informant discussion, 2) participatory wealth ranking, 3) focus group discussion and 4) self observation.

1.1 Key informant discussion

Key informants were selected and were discussed to get basic information and for understanding of their ideas on the proposed study. Key informants were chosen based

on their in-depth knowledge and experience on the community forest, socio-economic status and forest product sharing. The key informants were local experts, former executive committee members, existing executive committee members, social workers, political leaders, old villagers, teachers and farmers. Altogether 25 members including 3 females were selected as the key informants from inside the community forest user group.

Discussions were based on the issues proposed in checklist as shown in Appendix 2. In addition, individual discussions with some community member's especially executive committee members were conducted. Discussions were conducted to obtain the followings information and result is summarized in chapter 4. 1) Basic information of the community forest, 2) Forest product sharing, 3) Decision making processes and procedures focusing on sharing of the major forest products, 4) Wealth ranking, 5) Selection of the focus groups and 6) Opinion in the existing benefit sharing system.

1.2 Wealth ranking

A prior invitation was sent to key informants for a formal meeting in the community forest office building. At first, formal introduction and explanation of the objectives of the gathering followed by economic ranking was carried out primarily by the users themselves. Group discussion was concluded that land ownership would be the main basis for the ranking. Khet (irrigated land) was considered as the most valued asset. The households having >5 Ropani irrigated lands were grouped under rich status. The households having < 5 Ropani but >2 Ropani land owners were grouped under medium status and the poor status included the land-less households and the households having an infertile piece of land, where they only can grow maize and millet. Other criteria such as livestock holding, house's type and income were also considered as indicators for wealth ranking. Majority of the household income source was agriculture besides other sources like trade; service and remittance were also considered as sources of income.

As in ranking process, one person had announced the name of household head from the first to the last households by using data base. Numbers were used to symbolize the economic status and were considered rather than using words like rich and poor. Number 1 was used for rich, number 2 for medium and number 3 for poor. The three lists from community forest user group members after the marking were collected and matched. Further discussion was conducted to settle those cases where different person had put each household in different categories. The final name list was read out for all the members for comments. In this way, all households were categorized into three different groups of poor households, medium households and rich households adopted the same process applied by Richards *et al*., (1999), Maskey, (2001), Malla, (2001), Malla *et al.,* (2003) and Adhikari *et al*., (2004). The processes and procedures gave the study team a better understanding of the objectives and priorities of the household, and their opinion on the existing benefit sharing system in the community forest user group.

1.3 Focus group discussions

Interactions with community members and focus group discussion were arranged in different places and between various groups such as traditional occupational group (blacksmith), low income group, farmer group, rich and elite group, local wine maker group and migrant user group. In order to gain information on the real situation of their economic status, forest product sharing and their opinion on existing benefit sharing system, the study was conducted by focus group discussion. Minimum eight members to maximum ten members made one focus group from different knowledge backgrounds. During the discussion period, researcher only took note and suggested direction for the discussion. The discussion was based on checklist as shown in Appendix 3. Main issues were forest product need and access, alternative sources to fulfill their basic forest product need, involvement in decision making processes and procedures and opinion on the existing sharing system. The focus group discussions were organized at different five places on different days. Each focus group had one specific socio-economic characteristic. While carrying out participatory data collection and joint analysis, users got opportunity to know the real situation that

would reflect to take action in future. Focus group discussion's venues and characteristics are shown in Table 3.2.

Table 3.2 Focus group discussion's places and characteristics

No	Focus Groups	Discussion Schedules	Group sizes		Places
			Male	Female	
1	Traditional occupational group (Blacksmith/ local wine maker)	25.09.2005	3	6	Simal Danda
2	Migrant group	28.09.2005	5	5	Galchina
3	Low income group	05.10.2005	6	4	Sukumbasi tole
4	Farmer group	07.10.2005	6	2	Shara
5	Elite group	12.10.2005	9	1	Main road

1.4 Field observation

In order to verify the information gathered from other methods, field observation was conducted by the help of key informants. Direct observation was made during the study to make the qualitative appraisals of physical and economic conditions and to cross check the information which was collected by the key informants, focus group discussion and questionnaire survey. The guideline was designed as checklist as shown in Appendix 4. In this process some questions were asked without any pre-determined topic but all questions were related with the research topic.

2. Semi structural questionnaire

Semi structural questionnaire was designed to collect household information such as family size, economic status, forest product sharing, access to forest products and opinion. The questionnaire was developed in a semi structural design and was asked openly with selected household respondent. The questionnaire was developed based on literature search and field experience.

The questionnaire was used to gather qualitative and quantitative outcomes. The focus of the survey was divided into three parts in which the first part was related with socio-economic information, the second part was related with forest products sharing

and the last part was related with user's opinion on the existing benefit sharing in the community forest user group. The questionnaire was organized in a way to make the respondent in ease, starting from economic information to their opinion. Forest products were defined as products which had economic value in their localities and users using them. Questionnaire about the user's opinion was close-ended format. The English version of the questionnaire is attached in Appendix 5.

2.1 Pre-testing of the questionnaire

The pre-testing of the questionnaires was done to make them compatible to the rural setting of the research site. The questionnaire was pre-tested in the field. Pre-testing helped researcher screen some vague questions. Pre-testing also helped to identify some issues of the study. The questionnaire was re-organized to include those specific topics to gain the user's opinion about the fairness of forest product distribution.

3.4.2 Secondary data

Secondary Data were collected from several sources like statistical office, progressive report of District Forest Office, country profile of community forest published by department of forest, forest management plan, proceedings of the community forest and minute of the community forest user group. Likewise, the data were collected from related publications, documents, research papers, reports, books, journals and internet. Forest policy, act and regulations, current national plan focusing on forest sector were used as major sources of secondary data.

3.5 Data analysis

Both qualitative and descriptive quantitative methods were used to analyze collected data. The collected data were analyzed by using qualitative method because the aims of this study is to gain as much information as possible for giving a fair, honest and balanced account of social life from a small amount of research units adapted from Neuman (2003). Most of the surveyed data were analyzed with the help of SPSS

software whereas the forest product data were analyzed using Microsoft excel. Mostly the simple mean, frequencies and percentage were used for analyzing the collected data.

3.6 Conclusion

Data for the study were collected by using PRA tools and techniques and household survey. Collected data from PRA were analyzed by using qualitative method and data from questionnaire survey were analyzed by using both qualitative and descriptive quantitative methods. Mean, frequencies and percentage were used to analyze collected data. Qualitative research is known as a wider research because the study is followed descriptive report on benefit sharing aspect of Tal Danda community forest user group.

This chapter has illustrated of the methods and materials that were used in the study for collecting data and for its analysis. The next chapter will discuss the results and discussions of the data.

CHAPTER 4
RESULTS AND DISCUSSIONS

The background and methodological framework for achieving the main goal of the study were described in the previous chapters. The study aimed to identify relationship between household's economic status and benefit sharing in Tal Danda community forest user group along with examines user's opinion toward the existing benefit sharing system that might be required for improvement. The qualitative and quantitative methods were used to conduct the study. In collecting data, Participatory Rural Appraisal (PRA) tools and techniques like key informant discussion, participatory wealth ranking, focus group discussions and self observation were used. Besides the PRA tools, households questionnaire survey with selected household's respondents was applied in order to get quantitative data over the field study period. The application of the methodologies, methods of conducting research and organization in the field were described in chapter 3. The aim of this chapter is to present the results and to discuss the interpretation of the collected data. This chapter is divided into five main sections and several other sub sections.

1) Community settlement and forest management,
2) Socio-economic characteristics of the household,
3) Benefit sharing in the community forest user group,
4) Opinion on the existing benefit sharing system,
5) Other significant findings.

4.1 Community settlement and forest management

This section covers the community settlement, institutional arrangement, existing forest condition, annual growth and harvesting plan, demand and supply situation of major forest products and general processes and procedures. Data were collected by reviewing of the Forest Management Plan (FMP) and the minutes of Tal Danda

community forest user group as well as information from key informant and focus group discussions.

4.1.1 Community settlement

Tal Danda community forest is located in the southern slope, adjoining to Prithibi highway (the highway links two large cities of the country *viz.* Kathmandu and Pokhara), under jurisdiction of Dulagunda VDC-8, (the lowest administrative and political entity of Nepal), Tanahun district. Majority of the users are settled near the highway where the land is not much fertile. The community settlement area can be divided into two parts based on land location like upstream and downstream. Majority of the households are located in downstream part and were listed under the rich and medium groups (as described in chapter 2). The second area which is located in upstream part is completely surrounded by the forest and majority of the households are of blacksmith listed under the poor group.

For the study purpose, the community settlement area was divided into five different blocks based on socio-economic characteristics of the households (Near the highway, Shara, Simal Danda, Sukumbasi hamlet and Galchina). In order to obtain socio-economic information, five different focus groups discussions were organized separately at five different places on different days.

The first block is in the area which is located near the highway and majority of the households from the area were listed under the rich group and the rest were in the medium group. The second block is Shara area, by name it is recognized as agricultural land. In the area, households were found with mixed economic status. The third block is Galchina area and majority of users were migrants from nearby communities and neighboring districts. They had a small land holding and few livestock. So, majority of the households were listed under the poor group. The fourth block is Sukumbasi Tole/ Hamlet (Landless people settlement area) and majority of the users had no land and only few members owned nominal land and livestock. Being the landless poor are much more dependent on forest products when compared to the

rich households for their subsistence. The fifth block is Simal Danda located in upstream part but rather far from the highway. Majority of the households from the Simal Danda area were blacksmith, a traditional occupational caste. Almost all the households from the area were listed under the poor group.

The study found high diversity of wealth status among the users. This diversity of community interests and the demand for forest products make the distribution system much more complex. From the key informant and focus group discussions, wealth was found as a major determinant factor of the forest product consumption. The prime interest of the rich households was to obtain more timber than other products. Even the quantity of the other forest products was not lesser than the poor households. The major intention of the poor households was to obtain fuel wood as they had no adequate alternatives to fulfill their demands. In case of occupational group, their intention was to obtain both fuel wood and wood for making charcoal. In fact, in the community, some few blacksmiths have foregone their traditional occupation.

4.1.2 Institutional arrangement

The access to the forest products was open prior to implementing community forestry. As a result, the forest had deteriorated gradually. Hence, local people initiated to form user group for management of the forest. After formulating of the community forestry, it has imposed strong protection arrangement, as the consequent the forest ecological condition got better. Prior to the existing system, the open forest is a source of livelihood with low economic status.

At present, the community forest user group has a written Constitution and a Forest Management Plan (FMP), from which the community forest user group performs all management activities and decisions. The general assembly of the community forest user group is the apex body making decisions about forest management and utilization. Normally, the community forest user group operates through an executive committee appointed by the general assembly. Participation of poor families in general

assembly and executive committee was found low and these members have not raised the issues regarding their livelihood strongly.

4.1.3 Forest condition, annual growth and harvesting

The hill Sal (*Shorea robusta*) forest is very common forest type of hilly region of Nepal. Sal being dominant species and Chilaune (*Schima wallichii*), Katus (*Castanopsis spp*.), and Jamun (*Syzigyum cumuni*) are major associated species. The study observed that the growth rate of the new tree is well. Forest ecosystem is getting better in condition when compared with the previous condition under state property regime. Total area of the forest is divided into four blocks for management and utilization purposes. The forest could be able to fulfill basic needs of the user adequately. They extract the forest product based on the FMP. The forest existing condition and annual growth rate is shown in Table 4.1.

Table 4.1 Existing forest condition, annual growth and harvesting

Block no	Area (Ha.)	Forest species	Existing forest condition				Annual growth rate				Plan for harvesting			
			Pole Size tree (No)	Mature tree (no)	Fire Wood (Bhari)	Thatching Grass (Bhari)	Pole Size Tree (No)	Mature tree (no)	Fire Wood (Bhari)	Thatching grass (Bhari)	Pole Size Tree (No)	Mature tree (no)	Fire wood (Bhari)	Thatching grass (Bhari)
1	28.25	Sal	8,475	1,237	111,389	86,487	339	24.7	4,456	3,460	102	7.4	1,782	1,384
		Others	541	212	-	-	21	4.24	-	-	12	2.4	-	-
		Total	9,089	1,449	111,389	86,487	360	28.94	4,456	3,460	124	9.8	1,782	1,384
2	15.36	Sal	4,608	672	60,564	47,025	184	13.4	4,455	1,881	55	4	1,453	1,128
		Others	279	115	-	-	11	2.3	-	-	6.5	1.3	-	-
		Total	4,887	787	60,564	47,025	195	15.7	4,455	1,881	61.5	4.3	1,453	1,128
3	13.40	Sal	4,020	587	52,836	47,025	161	11.7	2,113	1,641	48	3.5	845	656
		Others	243.8	100	-	-	9.76	2	-	-	5.8	1.2	-	-
		Total	4,263.8	687	52,836	47,025	170.76	13.7	2,113	1,641	53.8	4.7	845	656
4	17. 00	Sal	5,100	744	67,031	5,206	204	14.8	2,681	2,082	61	4.4	1072	833
		Others	309	127	-	-	12.3	2.5	-	-	4.9	1.5	-	-
		Total	5,409	871	67,031	5,206	216.3	17.3	2,681	2,082	65.9	5.9	1072	833

Source : FMP , 2004

According to Table 4.1, the extraction amount of forest products is very low when compared to growth rate. So, the intention of the plan seemed to be protection oriented. Harvesting of forest products was generally associated with silvicultural operations in view to improve forest condition. The community forest user group members carried out all the silvicultural activities like thinning, pruning, weeding, harvesting as well as distribution at free of charge. While carrying out the silvicultural activities, priority was given to remove the less valuable and deformed trees. Split fuel wood (approximately 2½ to 3 feet) was distributed among the users. Table 4.2 presents the annual demand and supply situations of the forest products in the community forest user group.

Table 4.2 Forest products demand and supply situation

Block no.	Forest product	Unit	Annual demand	Annual supply and source		
				CF	PF	Others
1	Timber	Cu. ft	4,000	223	400	3,377
2	Fuel wood	Bhari	59,110	6,445	20,165	32,500
3	Grass	Doka	60,120	19,240	22,734	18,146
4	Leaf litter	Bhari	12,008	1,230	7,650	3,128
5	Thatching grass	Bhari	16,560	8,290	8,270	-
6	Agricultural equipments	Set	185	185	-	-

Remarks: CF = Community Forest, PF = Private Forest and Others = products supplying from near by national forest, from market, from other substitution via. Biogas, liquid petroleum gas and electricity

(Source: FMP, 2004)

The current demand and supply situations represent that the community forest has contributed less than the private forest. After reviewing the FMP, the study found that basic needs of forest products to the household in different economic groups were neither considered nor fully identified while preparing the FMP. The quantity of forest products that is planned to harvest represents that the livelihood of the poor was ignored while preparing the harvesting plan. The harvesting plan is based on the rotation system as shown in Table 4.3.

Table 4.3 Plan for harvesting the major forest products

Block No.	Fiscal year	Forest species	Pole size tree (No.)	Timber		Fuel wood (Bhari)	Thatching grass (Bhari)
				Mature tree (No.)	Cu. ft		
1	2005/2006	Sal	510	10	361.7	1,782	1,153
		Others	132	3	88.0	-	-
		Total	642	13	449.7	1,782	1,153
2	2006/2007	Sal	275	6	341.0	1,453	940
		Others	74	2	46.0	-	-
		Total	379	8	387.0	1,453	940
3	2007/2008	Sal	240	5	324.0	845	547
		Others	64	2	42.0	-	-
		Total	304	7	366.0	845	547
4	2008/2009	Sal	305	6	356.0	1,072	595
		Others	54	3	53.0	-	-
		Total	359	9	309.0	1,072	559
1	2009/2010	Sal	510	10	361.7	1,782	1,153
		Others	132	3	88.0	-	-
		Total	642	13	449.7	1,782	1,153

(Source: FMP, 2004)

Remarks: Stand (trees and shrubs) distribution was counted in each plot according to diameter categories, based on local product use patterns viz. (small pole; 11-16 cm, large pole; 17-25 cm, tree; 26-52 cm and mature tree; >52 cm).

Collections of grass, fodder, dry & dead branches and leaf litter were allowed at free of charge and round the year. Trees which are not suitable for timber are distributed as fuel wood once a year on the basis of equality. Users have fixed a certain rate for different forest products as fuel wood per Bhari (back load) at the rate of Rs. 15, agricultural equipment per-set (1 set ~ 3 cu. ft. of hard wood) at the rate of Rs. 10, charcoal per Doka (back load) at the rate of Rs. 5. Similarly, timber of the different species had different rates such as Sal (*Shorea robusta*) at the rate of Rs. 100 per cu. ft., Chilaune (*Schima wallichii*) at the rate of Rs. 45 per cu. ft. and other species at the rate of Rs. 25 per cu. ft. The rest of the timber products were valued based on the pole size as shown in Table 4.4. Users are not allowed to cut standing trees from the community forest. In special condition like gutted house, festival or social ceremonies,

small timber for construction work are provided at free of charge. Community forest user group has set rules that limit the quantity of forest product harvesting.

Table 4.4 Processes and procedures of forest products sharing

No.	Product	Unit	Rate (Rs.)	Process	Procedure
1	Timber • Sal • Chilaune • Others	Cu. ft.	100 45 25	• Should not be more than fixed amount. • Committee can make a decision on quantity based on necessity. • Necessity will be identified based on application that is required.	Should be harvested only in selected block.
2	Fuel wood	Bhari	15	One person from each household should be involved while forest is open.	Committee can decide time and days
3	Thatching grass	Bhari	Free of charge	One person from each household should be involved while forest is open.	Committee can decide time and day
4	Dead wood	Bhari	Free of charge	One person from each household should be involved while forest is open	Committee can decide time and day
5	Grass	Bhari	Free of charge	One person from each household should be involved while forest is open.	Committee can decide time and day
6	Fodder	Bhari	Free of charge	One person from each household should be involved while forest is open.	Committee can decide time and day
7	Charcoal	Doka	5	Application should be given by putting clearly the purpose and the quantity of demand	Totally forbidden for making charcoal inside the forest
8	Agricultural equipments	Set	10	Every household should have an ox to get agricultural equipments	According to committee's decision

(Source: FMP, 2004)

4.1.4 Scale for measurement of forest benefit

The forest products harvested and distributed among the users are calculated yearly. A questionnaire was designed to evaluate information for 12 consecutive months because the amount of forest products collected varied with months due to weather, culture, and other social events. Although the quantity of timber product harvested from the community forest was less consequently the data were used of all the last ten years (Timber obtained during the last ten years after formulation of the community forest). Assessment of benefit from the community forest to each member in Tal Danda

community forest user group was carried on by comparing the quantities of forest products obtained over the last one year. The quantity of products was measured by the followings scale as shown in Table 4.5.

Table 4.5 Scale for measurement of forest products

Forest product	Unit	Scale
Timber	Cu. ft.	1 cu. ft. = 0.28 cu. m.
Fuel wood	Bhari (back load)	Approx. 50 kg
Grass	Doka (back load)	Approx. 25 kg
Thatching grass	Bhari (back load)	Approx. 30 kg
Fodder	Bhari (back load)	Approx. 25 kg
Leaf litter	Doka (back load)	Approx. 15 kg
Charcoal	Doka (back load)	Approx. 20 kg
Agricultural equipments	Set – (cu. ft)	1 set ~ 3 cu. ft

(Source: FMP, 2004)

4.2 Socio-economic characteristics of the household

4.2.1 Socio- economic status

Since, socio-economic position of the household could not be assessed by a single criterion, participants of the Participatory Rural Appraisal (PRA) had to categorize into three different groups based on multiple criteria that the users considered as important while assessing an individual household's economic status in the user group. Households' economic attributes such as the amount of land holding, the number of livestock, types of house they owned and annual income were used to categorize the households into three different economic groups *viz*. poor, medium and rich as the sample units of the study.

The study had selected 164 households from the three economic groups for the questionnaire survey. Of total, 12% of the respondents belonged to the rich group, 51% to the medium group and 37% to the poor group. The percentage of the caste representation was 36% from the higher caste (known as Brahman/Chhetri), 43% from the medium caste (known as Baishya) and 21% from the lower caste (known as

Sudra/Dalit). Majority of the respondents from the lower caste were listed under the poor group. Representation of the lower caste in different economic groups was 35% in the poor group, 14% in the medium group and 5% in the rich group. Similarly, the percentage of the higher caste was 55% in the rich group, 42% in the medium group and 22% in the poor group. The representation from the medium caste was more or less as the same in all economic groups as shown in Figure 4.1.

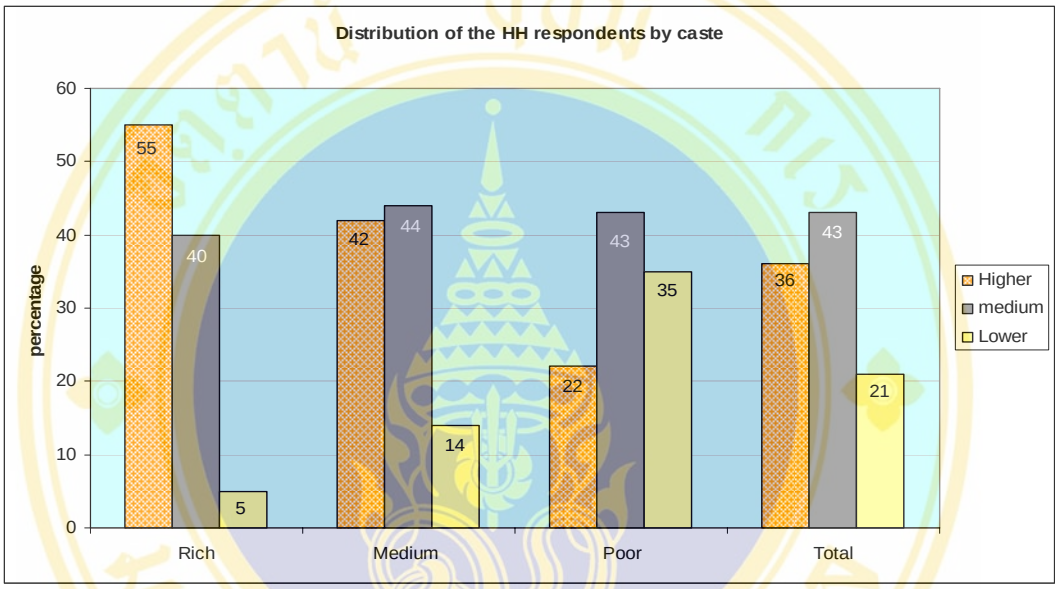

Figure 4.1 Socio-economic status of the respondents

4.2.2 Gender and age

The percentage of male representatives was found less than female ones, where male and female were 48% and 52%, respectively. Similarly, the percentage of male and female respondents from different groups varied while 60% male and 40% female in the rich group, 54% male and 46% female in the medium group and 37% male and 63% female in the poor group as shown in Figure 4.2. Household head from the medium and poor groups worked outside to earn livelihood. Thus, their wives, the second influential persons of the household were considered as respondent. Therefore, female population among the respondents in the poor group was found much higher compared to the rich group.

Respondents from the rich group were a little older when compared to other groups. Average age values of the respondents were 44, 41.39 and 41.78 from the rich, medium and poor groups, respectively. In absence of household head, the second influential persons were a little younger hence the average age of the poor group was lower when compared to that of the rich group.

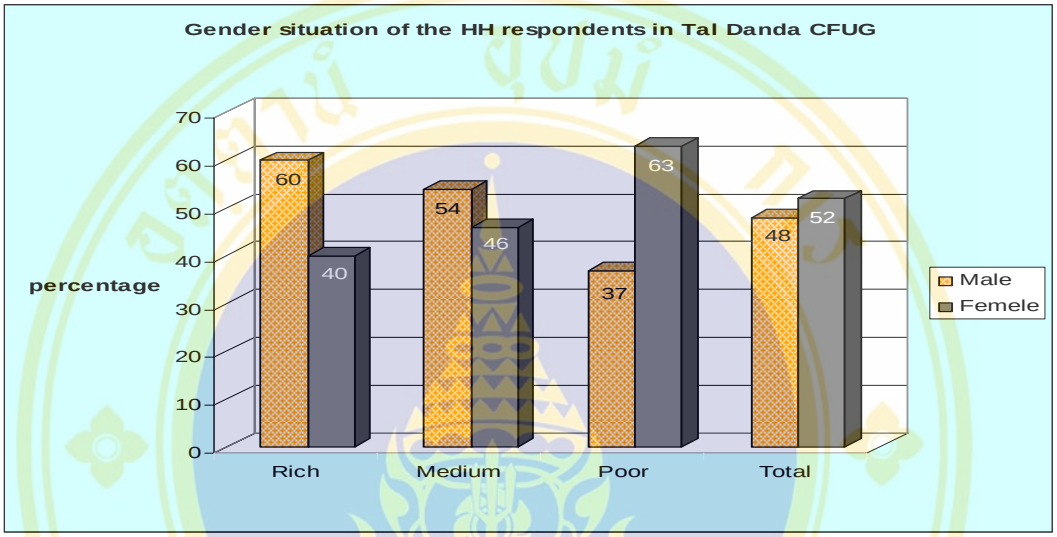

Figure 4.2 Gender representations of the respondent

4.2.3 Family size

Average family size of the respondents was 6.07 members with the range from 1 to 17 members. The trend showed that the richest households had small family size when compared to the poor households. Table 4.6 shows the average family size in all economic categories as 6.05, 5.86 and 6.38 members for the rich, medium and poor groups, respectively. In average, family size of the respondent was not significantly different among all groups but the range significantly varied as shown in Table 4.6. Thus, family size could be a critical factor for the distribution.

Table 4.6 Family size of the respondents

Economic status									Total	
Rich			Medium			Poor				
Min	Max	Mean	Min	Max	Mean	Min	Max	Mean	Mean	Std. dev
3	9	6.05	1	17	5.86	1	15	6.38	6.07	2.71

4.2.4 Education Status

The 31% of total respondents were illiterate and among them the percentage from the poorer group was more than other groups. Similarly, the percentage of illiterate decreased in the medium to rich groups. The educational status of the respondents was 25% in primary level, 15% in lower secondary level, 19% in secondary level and 11% in university level. In the rich group, higher percentage was in primary level because the respondents were as old as those with the same educational status. In general, the educational situation of the respondents did not show significant difference among the users from different economic groups due to the small sample size chosen from the same location shown in Table 4.7.

Table 4.7 Educational status of the respondent

Educational status	Economic status						Total	
	Rich		Medium		Poor		No.	%
	No.	%	No.	%	No.	%		
Illiterate	4	20	23	27	23	38	50	31
Primary	7	35	21	25	13	22	41	25
Lower Secondary	4	20	10	12	10	17	24	15
Secondary	2	10	21	25	8	13	31	19
University	3	15	9	11	6	10	18	11
Total	20	100	84	100	60	100	164	100

4.2.5 Land holding

The land area was divided into four categories based on of its utilization. Khet (irrigated land) in which rice and wheat were grown. It was the most valuable land in the village because it yielded two crops a year, each household of the rich group held 6.02 Ropani Khet (19 Ropani = 1 hectare), 2.21 Ropani for the medium group and 0.52 Ropani for the poor group. Bari (non-irrigated land) consisted of out-sloped area which yielded crops like maize and millet once a year. Kharbari was for grass and fodder production (for roofing thatch and livestock feed). In addition, some households had their own forestland where they grow trees. Total land holding

situation of the respondent was 14.52 Ropani for the rich group, 8.11 Ropani for the medium group and 3.31 Ropani for the poor group. Table 4.8 shows the landholding situation of the household respondent from the different economic status in the community forest user group.

Table 4.8 Land holding by the respondents

Economic status	No of house hold	Statistic used	Khet (Ropani)	Bari (Ropani)	Kharbari (Ropani)	Private forest (Ropani)	Total (Ropani)
Rich	20	Mean	6.20	5.20	1.80	1.50	14.52
Medium	84	Mean	2.21	4.10	1.24	0.64	8.11
Poor	60	Mean	0.52	1.28	0.50	0.15	3.31

Remarks: Khet - irrigated land, Bari - non irrigated land, Kharbari - land only for grass and fodder yield including pasture land, Private forest - private land with trees, 19 Ropani = 1 hector (1 Ropani = 0.0526 hector)

Table 4.9 shows the average landholding situation by household respondents across the community forest user group surveyed. There was a significant difference between the areas of land owned by households from different economic status. The rich households owned nearly more than five times as much land on average than the poorer ones. The trend exacerbated because the rich households possessed a greater proportion of the better quality Khet as well as other types of land, whilst the poor households had less Khet and similar quantities of Bari. The poor households did not have as much Kharbari as the rich households. The land holding size varied significantly among the rich, medium and poor households as shown in Figure 4.3.

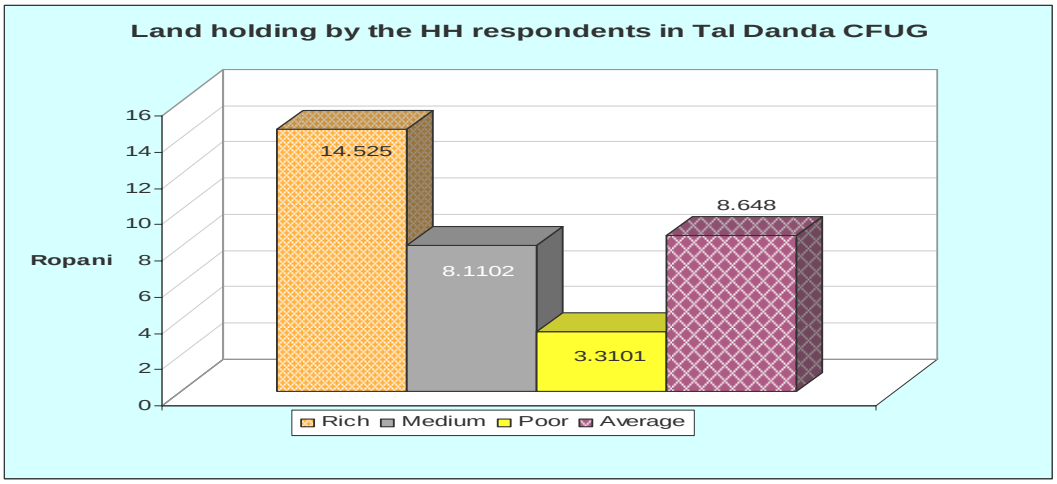

Figure 4.3 Land holding by the respondent

4.2.6 Livestock owned

Livestock is the major capital asset at the study sites. Buffalo, cow and goat were found as major livestock while forest products are essential for their survival. Buffaloes were kept mainly for milk production and manure; oxen to plough and manure; and goats for meat. Livestock had played a critical role as a source of cash income. There was a significant difference between numbers of livestock owned by different economic status as shown in Figure 4.4. The average livestock numbers of each household group were the rich group with 4.25, the medium group with 2.54 and the poor group with 1.9.

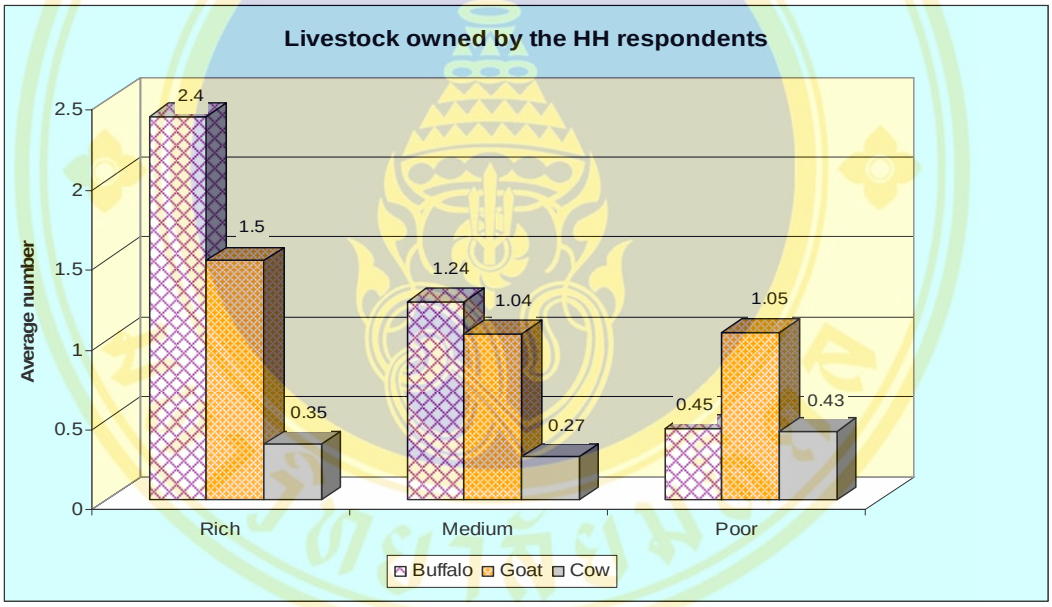

Figure 4.4 Livestock owned by the respondents

The rich households owned proportionately more buffaloes than the poor households. This was because the price of a buffalo was too high for the poor to afford. Buffaloes also required more fodder and since the rich households had more access to fodder. The rich households also owned more oxen to plough for agricultural production. Therefore, the rich households might have collected greater quantity of forest products such as grass, fodder, thatching grass, leaf litter for feeding and bedding to their livestock as well as materials to make cow shed and manure.

4.2.7 Major sources of income of the respondents

Agriculture and livestock production activities were the major source of income in the household economy. It was found that 58.33% of the rich household's major source of income, 53.33% of the medium one and 57.31% of the poor one were in relation with agriculture production (Figure 4.5). Having different land holding and livestock numbers, the income from agriculture was also significantly different among the different economic status.

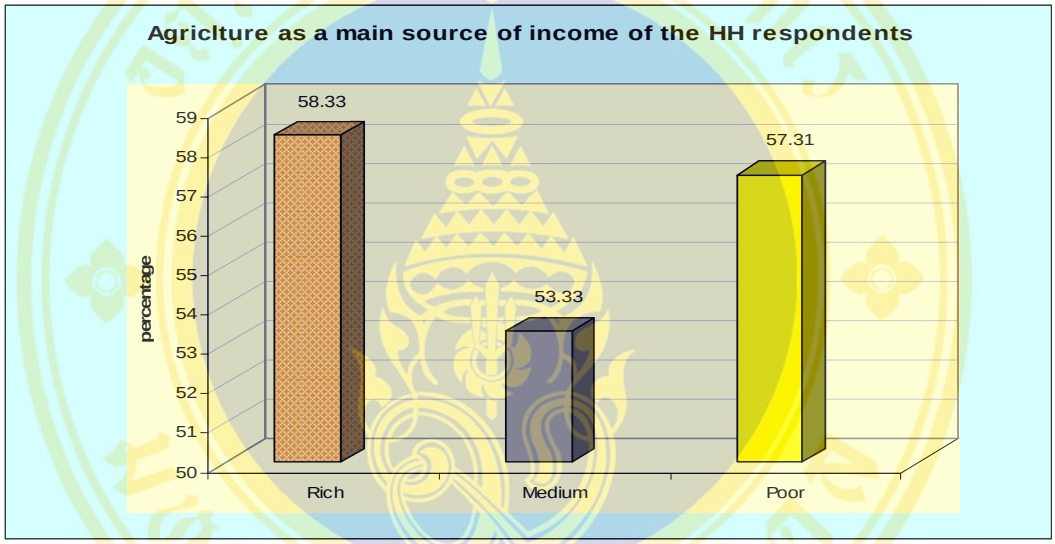

Figure 4.5 Agriculture as a major source of income of the respondents

Although off-farm source of income such as government service, pension, interest, employment in private sector, job in schools and colleges as well as income from oversea countries played a vital role in household economy. Other work such as daily wage labor in construction work in their locality also existed. Members from the poor households involved mostly in daily wage labor. Average annual income of the surveyed households, rich group was Rs. 222,500 followed by the medium group with Rs. 108,620 and the poor group with Rs. 31,400 as shown in Figure 4.6.

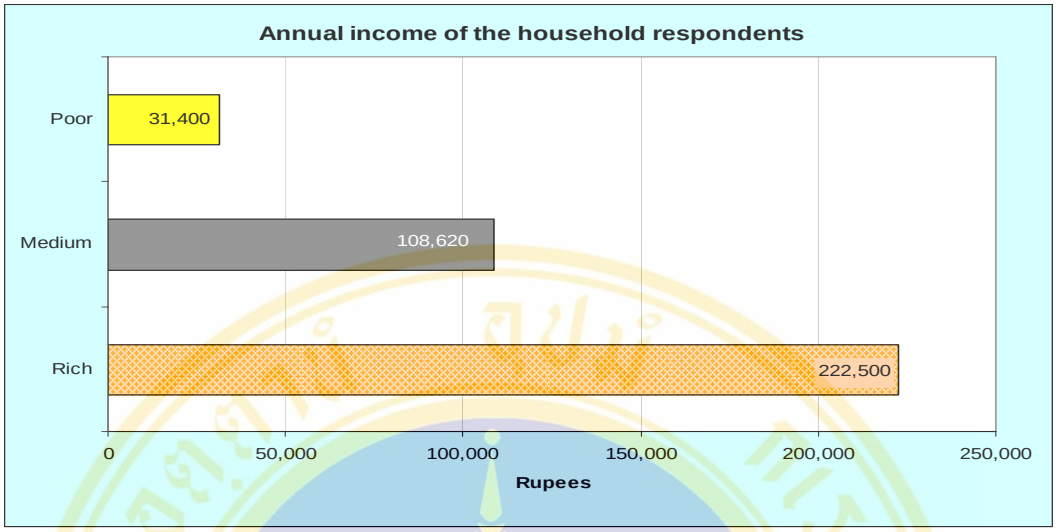

Figure 4.6 Annual incomes of the respondents

4.3 Forest products sharing

In this section, major forest products obtaining by the users are explained. Timber, fuel wood, grass, fodder, leaf litter, agriculture equipments and charcoal were considered as benefit from the community forest with economic value in the local area and among the users using them for their subsistence livelihood.

4.3.1 Timber product

Timber is used for making houses, agriculture equipments, and other construction materials. Table 4.9 summarizes the information of timber and distribution. About 13 cu. ft, the largest portion of timber was obtained by the rich households whereas 7.04 cu. ft; almost half quantity than the rich households obtained by the poor households. The medium households obtained 10.29 cu. ft, not much different than the rich households as shown in Figure 4.7. According to FMP of the community forest user group, user can harvest only limited numbers of timber trees. The price of timber was fixed on the basis of their use value, according to this, Sal was considered as the highest valuable timber because it is strong and durable for construction. Most of timber products were consumed by the richest households especially for making houses and agricultural equipments.

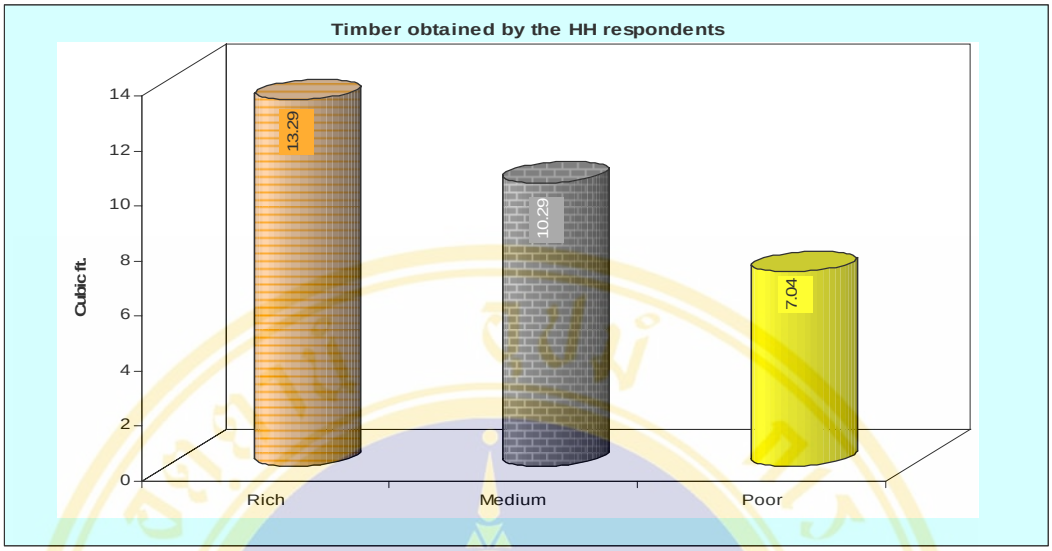

Figure 4.7 Timber product obtained by the different economic groups

4.3.2 Fuel wood

Household members furnished information of fuel wood in terms of Bhari (back load with the approximate 50 kg). Table 4.9 summarizes the quantity of fuel wood used by the households from different groups of economic status. There was not much significant difference in total quantity of fuel wood obtained by the households from different groups. Although the rich households were likely to obtain better condition to meet the needs of fuel wood from their own sources. The households from all groups were not excluded by the benefits that they harvested commonly and distributed equally without any discrimination. However, the distributed quantity of fuel wood that they obtained once a year was equal but the households from the rich group frequently went to the forest for collecting grass and fodder and had greater opportunity to collect dry and dead woods. The households from the poor group did not possess large numbers of cattle and hence they did not use the forest frequently for grass and fodder and thereby they were deprived of the benefit. Hardly ever, the poor households went to the forest for collecting dead and dry wood as the opportunity cost would be high if the visit was solely for fuel wood collection.

Table 4.9 Forest products obtained by the different economic groups

Forest product	Statistic used	Rich	Medium	Poor	Average
Timber (cu. ft)	Mean	13.29	10.29	7.04	10.57
Fuel wood (Bhari)	Mean	32.00	27.00	26.00	28.00
Grass (Doka)	Mean	130.00	115.00	111.00	117.00
Fodder (Bhari)	Mean	73.00	57.00	46.00	58.00
Leaf litter (Doka)	Mean	61.00	52.00	44.00	52.00
Thatching grass (Bhari)	Mean	25.00	25.00	25.00	25.00
Agricultural Equipments (Set)	Mean	1.67	1.48	1.20	1.49
Charcoal (Doka)	Mean	00.00	00.00	00.00	00.00

Remarks: 1 cu ft. = 0.28 cu. m., Fuel wood in Bhari (back load) = approx. 50 kg, Grass in Doka (back load) and fodder in Bhari= approx. 25 kg, Thatching grass in Bhari = approx. 30 kg, Leaf litter in Doka = approx. 15 kg, Charcoal in Doka = approx. 20 kg, Agricultural equipment 1 set ~ 3 cu. ft

4.3.3 Grass and fodder

The grass from the forest was a main source for livestock feed throughout the year. All kinds of plant biomass available in the community forest are used by the households to feed their livestock. The respondents provided information about grass in term of Doka and fodder in Bhari. Figure 4.8 presents that the quantity of grass and fodder of the rich households was higher while they obtained 130 Doka of grass and 73 Bhari of fodder annually. The medium and poor households had obtained 115 and 111 Doka of grass and 57 and 46 Bhari of fodder annually, respectively. The trend of obtaining such products is gradually decreasing from the rich households to the poor households. Table 4.9 summarizes the amount of grass and fodder obtained by the households from different economic status. The trend of consumption of grass and fodder by the households from the poor group are not much different although they had few numbers of livestock when compared with the groups with better economic status. It happens due that the households held different sizes of private land to supply such products from their own sources. The poor households with small size of landholding and the households with no land at all depended heavily on the community forest for collecting grass and fodder for their few livestock. Of total sample size, 10% from the

rich households, 20% from the medium households and 50% from the poor households did not obtain such products at all.

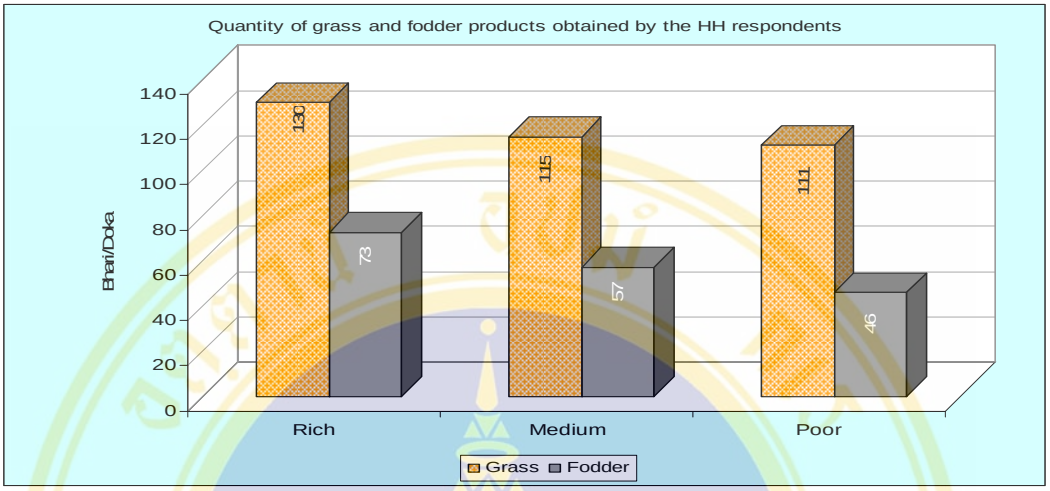

Figure 4.8 Grass and fodder products obtaining by different economic groups

4.3.4 Leaf litter

Leaf-litter was used for livestock bedding and as compost by mixing it with animal manure (fertilizer for agricultural production). Green leaf was used as a plate for ceremony, festival and other cultural occasion. The rich households collected significantly much more leaf litter than the poor households as shown in Table 4.9. Leaf litter was collected in Doka (basket made of bamboo for carrying leaf litter). The average consumption pattern of the leaf litter by the households from different economic status varied, in which the rich households collected 61 Doka annually. While the medium and poor households collected 52 and 44 Doka, respectively. The result shows that the share of leaf litter was significantly different among the households of different economic status. Of total sample size, 20% from the rich group, 30% from the medium group and 45% from the poor group were excluded from such benefit.

4.3.5 Agricultural equipments

Agriculture is the major occupation and source of income for the households in the study site. Timber is found indispensable for the production of agriculture equipments

like plough, harrow, and yoke. At least 3 cu. ft. (1 set) of hard wood is required for making such equipments. The trend of obtaining agricultural equipments indicates that there is significantly difference among the households from different economic status. The rich households had taken in average of 1.67 sets (≈ 5.0 cu. ft.), the medium households for 1.48 sets (≈ 2.5 cu. ft.) and the poor households for 1.2 sets (≈ 1.5 cu. ft.) annually. Majority of the poor households and some of the medium households were excluded from the access to such products. Having oxen is mandatory criterions to obtain timber for making agriculture equipments but those who have low economic status were not qualified for getting the equipments. The criteria favored only for the rich households. Of total sample size, 5% of the rich households, 20% of the medium households and 55% of the poor households were excluded from such benefit.

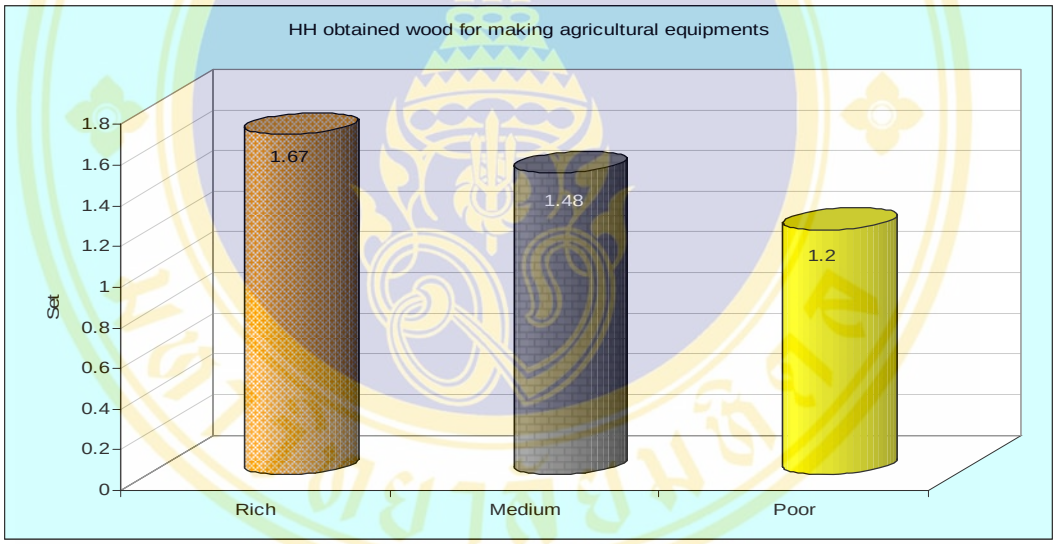

Figure 4.9 Agricultural equipments obtained by different economic groups

4.3.6 Charcoal

Charcoal making was a common practice for certain occupational households, such as blacksmiths when the forest was under state control. At present, charcoal making is completely prohibited. Research conducted by Baginski *et al* (2000) also found the same condition in other parts of the country. Wood and root of some hard wood species *viz.* Sal, Chilaune and Jamuno were used for making charcoal. The respondents were asked to provide information on obtaining quantity of charcoal in term of Doka. The response on the question was found negative because no one had

been benefited from such type of forest product so far. The study found that charcoal making inside the forest was totally prohibited as mentioned apparently in FMP.

The blacksmiths traditionally entailed producing charcoal from the forest to produce and repair agricultural tools for the upper-caste people. They made agriculture equipments, knife for cutting leaves, cooking stove, and other kinds of utensils made of iron. Unfortunately, the community forest management committee set a new production fee on charcoal which was difficult for the blacksmiths to afford. As a consequent, they were deprived of their traditional use right of the forest and risked producing charcoal illegally from national forests. Even though they still could not make enough charcoal to meet customer demands, they had to raise their prices which disgruntled their customers hence such occupation had almost been abandoned.

4.4 User's opinion

This section describes about user's opinions on the issues of the access upon forest products from the community forestry, fairness of benefit sharing system, opinion on improvement of the existing benefit sharing system. In order to get user's opinion, questions were designed for yes/no format and multiple responses. The result and discussion are presented based on primary data collected by using questionnaire survey as well as key informant and focus group discussions.

4.4.1 Opinion on access of the major forest products

In order to gain user's opinion on access to the major forest products, the statement was given "whether easy or difficult to obtain the following forest products from the community forest". The statement was designed with five options to articulate user evaluation on the given statement. The options were 1) Very difficult 2) Difficult 3) Easy 4) Very easy and 5) don't know. On the given statement, very easy means the situation in which the forest products were available to users without any restriction. Likewise, easy refers to the situation in which the forest products were available with some limitation. Similarly, difficult means the situation in which the forest products

were available in less in quantity than their basic requirement for a subsistence livelihood. Very difficult refers to the situation in which the forest products were restricted or totally prohibited for collection.

The opinion on access to the timber products from the community forestry varied among the users of different economic status. 50% of the rich group had favored to the easy option but the opinion from the poor group was just opposite to the rich group. 61.7 % of the poor group had expressed their opinion for the difficult. From 38.1% of the medium group favored the easy option and 33.3% favored the difficult option. The opinion on the favor to the very difficult was found 5% from the rich group, 19% from the medium group and 20% from the poor group.

Fuel wood was distributed equally among the users even though the opinion was found different. The rich group had favored to the very easy option by 45%, to the easy by 45% and to the difficult by 10%. The opinion from the medium group was similar with the rich group. But the opinion from the poor group was found different. Of total sample size of the poor group, 51.7% had favored to the difficult option and 31.3% for the easy option and 11.7% for the very easy option. However, the opinion on access of grass, fodder and leaf litter was found positive. Majority of the respondents had viewed that such products were easy to obtain from the community forestry then this means that those products were available in free of charge over the year.

However, the opinion on agricultural equipments was found significantly different among the economic status. It was found that 37.3% of total sample size had the opinion on the difficult option to obtain agricultural equipments. Out of total sample size of poor economic stratum, 53% respondents had felt it difficult. In case of charcoal, almost all the respondents from all economic status had expressed their opinion in favor of very difficult option to obtain such product from the community forestry as shown in Table 4.10.

Table 4.10 Opinion on access of the major forest products

Forest product	Opinion	Economic status		
		Rich	Medium	Poor
		HH respondent (%)	HH respondent (%)	HH respondent (%)
Timber	Very Easy	10.0	8.3	5.0
	Easy	50.0	38.1	10.0
	Difficult	35.0	33.3	61.7
	Very Difficult	5.0	19.0	20.0
	Don't Know	-	1.2	03.3
Grass	Very Easy	40.0	52.4	33.3
	Easy	60.0	40.5	63.3
	Difficult	-	3.6	-
	Very Difficult	-	2.4	1.7
	Don't Know	-	1.2	1.7
Fodder	Very Easy	35.0	40.5	28.3
	Easy	50.0	46.4	61.7
	Difficult	15.0	7.1	3.3
	Very Difficult	-	3.6	1.7
	Don't Know	-	1.2	3.3
Fuel wood	Very Easy	45.0	39.3	11.7
	Easy	45.0	42.9	31.7
	Difficult	10.0	16.7	51.7
	Very Difficult	-	1.2	3.3
	Don't Know	-	-	1.7
Leaf litter	Very Easy	40.0	53.6	38.3
	Easy	55.0	39.3	55.0
	Difficult	-	2.4	1.7
	Very Difficult	-	1.2	1.7
	Don't Know	5.0	2.4	3.3
Charcoal	Very Easy	-	-	-
	Easy	-	-	-
	Difficult	25.0	32.1	11.7
	Very Difficult	70.0	61.9	85.0
	Don't Know	5.0	6.0	3.3
Agricultural equipments	Very Easy	5.0	7.1	-
	Easy	25.0	16.7	6.7
	Difficult	35.0	23.8	31.7
	Very Difficult	25.0	44.0	53.3
	Don't Know	-	-	3.3

4.4.2 Opinion on fairness on distribution of forest products

In order to gain user's opinion on fairness of the existing benefit sharing system, the statement was provided as "the existing benefit sharing system is fair to distribute forest benefit in the community forest user group" which had five options as: 1) Highly fair, 2) Fair, 3) Unfair, 4) Highly unfair 5) Don't know. It was found that 44% of total sample size was in favor of the statement meaning that the existing benefit sharing system is fair. While 46% expressed the opposite opinion meaning that the existing benefit sharing system is not fair. The result showed that the opinion on the given statement was found significantly different among the different economic status as shown in Table 4.11. More than 80% of the rich group had favored on the highly fair and fair options but the trend was found just opposite in the poor group while 64% had viewed in favor of unfair and highly unfair options. Not all the respondents indicated their responses over the option.

The executive committee that was dominated by the elite and wealthier members, made the decisions in favor of them. Consequently, the elite succeeded to impose the unnecessary conditions on forest product sharing as putting the higher rate of forest product beyond the poor capacity and ignored the family size for the distribution. These conditions showed the trend of unfairness in forest products sharing among the users with different economic status.

Table 4.11 Opinion on fairness of the existing benefit sharing system

Opinion	Economic status						Total	
	Rich		Medium		Poor			
	No of HH respondents	%	No of HH respondents	%	No of HH respondents	%	No of HH respondents	%
Highly Fair	5	25	5	6	-	-	10	6
Fair	11	55	38	45	13	22	62	38
Unfair	4	20	33	39	28	47	65	40
Highly Unfair	-	-	1	1	10	17	11	6
Don't Know	-	-	7	8	9	15	16	10

4.4.3 Opinion on improvement of the existing benefit sharing system

In order to gain user's opinion on whether the existing benefit sharing system has to be improved or not, a statement was designed as "the existing benefit sharing system has to be improved" that had only two options of "yes" and "no". It was found that 72% of total sample size had expressed their opinion for improvement in the existing benefit sharing system. The result showed that the existing benefit sharing system did not support the majority of users especially the poor group in the community. On this given statement, 60%, 70% and 78% from the rich, medium and poor groups respectively favored for improvement as shown in Figure 4.10. Hence, the result is clearly represented that 72% which are more than two third of the respondents agreed on accepting the hypothesis as "Majority of the user's opinion on the overall existing benefit sharing system was in need to be improved".

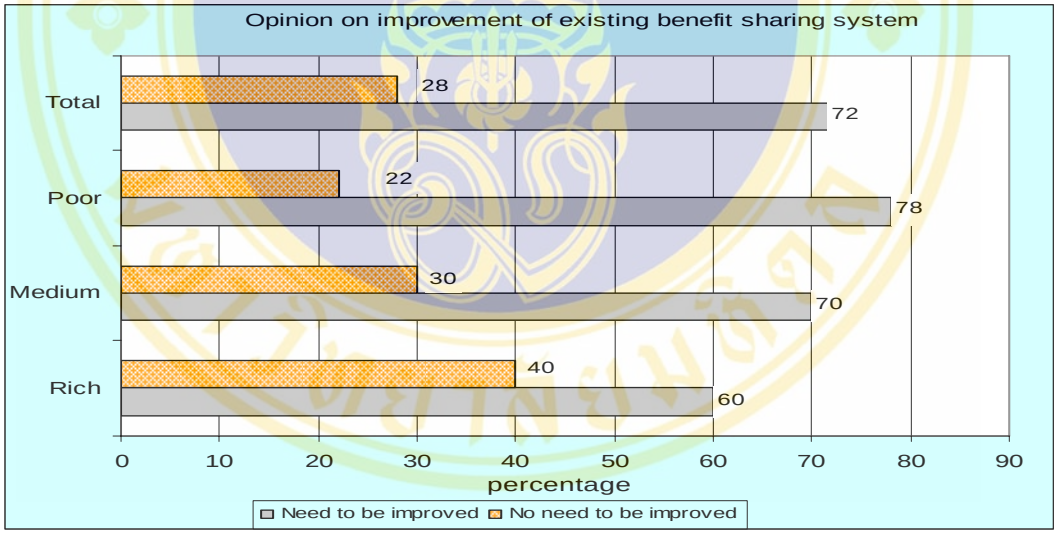

Figure 4.10 Opinion on improvement of the existing benefit sharing system

4.4.4 Preference of benefit sharing system

The respondents were asked to choose the preference on a benefit sharing system from the given six options: 1) Equal basis 2) Need basis 3) As per royalty 4) According to committee decision 4) According to investment of labor and cost 5) As per family size. It was found that 54% of total sample size preferred the need basis option while 35% preferred the equal basis option. Table 4.12 presents that 50% respondent from

the rich group, 39% from the medium group and 23% from the poor group preferred the equal basis option. The rich group preferred the equal basis option more when compared to other groups. Similarly, 20% from the rich group preferred the need basis option more and the preference on this option increases from the medium group to the poor group. 50% from the medium group and 72% from the poor group preferred the need basis option. The as per royalty option was preferred by 25% from the rich group. For the two options of according to committee decision and according to investment of labor and cost were favored by nominal percentage of the respondents. The as per family size option was preferred by 4% from the poor group and 5% from the medium group. The result clearly indicated that the households with better economic status preferred the equal basis option and the households with low economic status preferred the need basis option.

Table 4.12 Preference a benefit sharing system to the community forest user group

Opinion	Economic status			Total
	Rich	Medium	Poor	
	%	%	%	%
Equal Basis	50	39	23	35
Need Basis	20	50	72	54
As per Royalty	25	-	-	3
According to Committee Decision		6	2	4
According to Investment of Labor and Cost	5	-	-	1
As per Family Size	-	5	4	4

4.5 Other significant findings

This section presents some other significant findings that were collected from the field study. Information using in this section were collected by reviewing forest management plan, minute available from the community forestry user group. Beside this key informant and focus group discussions during the field study period as well as suggestions from the respondents through the questionnaire survey are summarized in this section.

4.5.1 Decision making process

The community forest management is based on the Forest Constitution and Forest Management Plan but only little percentage of the users had knowledge about those documents. The study had tried to identify whether the users have knowledge about the basic rule and regulation or not. The level of knowledge on right and responsibility might increase their bargaining power in all community processes and procedures that took place in community forestry user group. The result indicated that 85% of users had lack of knowledge on the existing rules and regulations regarding to community forest management and benefit utilization. The higher percentage of the poor group on the knowledge was found when compared to the groups of better economic status as shown in Table 4.13. Having less knowledge on the existing rules, rights and responsibilities, the poor group might not be able to voice in decision making processes and procedures. Thus, it may be the reason of ignoring the traditional use right of the poor and occupational group.

Table 4.13 Knowledge on the existing major legal documents

Status	Economic status						Total	
	Rich		Medium		Poor			
	No.	%	No.	%	No.	%	No.	%
Having knowledge on the existing major legal documents	7	35	14	17	4	7	25	15
Lack of knowledge on the existing major legal documents	13	65	70	83	56	93	139	85
Total	20	100	84	100	60	100	164	100

4.6 Conclusion

Majority of the users complained on the regulatory arrangements imposed for forest protection. Wealthier and elite users had accused to the poor for trying to violate the community rules and regulations for their own benefit. Although almost all of the users agreed on the statement that was “the poor and disadvantage group should be prioritized in the benefit sharing derived from the community forest”.

Female members of community forest user group were vital for deciding on the quantity, quality, time and place of collection forest products. In this sense, they were the real users of forest products. However, women were excluded from discussion on benefit sharing; hence they were found more aggressive rather than male participants during the focus group discussions.

Agriculture and livestock activities were major sources of income of the surveyed households in Tal Danda community forestry user group. Livestock based subsistence farming had contributed to income generation for most of the households in the study area. Off-farm incomes like service, pension and remittance contributed in household economy. The collected data indicated the households belonging to higher income groups were better endowed in term of land, livestock and house ownership.

Timber was the most valuable forest product that had been distributed according to executive committee decision. In fact, households with better economic status had high demand of timber for house construction, maintenance and agricultural equipments. Having low capacity to afford, the poor group got less benefit when compared with the groups of better economic status. Regarding to fuel wood, all economic groups were found equally benefited because of low price, equal basis of distribution and importance of fuel wood. Even the richest households in community with plenty of private forest obtained higher quantity of fuel wood when compared to the poorer households. Other miner forest products like grass, fodder, leaf litter, dry & dead branch and thatching grass were allowed at free of charge round a year. Agricultural equipments and charcoal were difficult to obtain for the poor group due to the mandatory arrangements favored only for the rich group. The analysis of the opinion on existing benefit sharing system showed that the existing benefit sharing system favored to the household with high economic status. If the existing benefits sharing system is being continued, the poor group is likely to be further marginalized.

This chapter discussed the results obtained from the study and also their interpretation. The results are concluded in the next chapter which will discuss the final conclusions and also recommendations for applications and further study.

CHAPTER 5
CONCLUSION AND RECOMMENDATION

The aim of this chapter is to summarize the findings of the study and to devise recommendations that appropriately contributed to Tal Danda community forest management and provide scope for further study. The chapter also discusses whether the study is successful in meeting the objectives and answering the research questions formulated in chapter 1. Besides, this chapter will also discuss the limitations of the study. Some actions should be taken for enabling the poor group of the community through ensuring equitable benefit sharing among the users in Tal Danda community forest user group which will be recommended in the conclusion section.

5.1 Summary of the major findings

Conclusions are drawn based on the sequential order of the objectives of the study; 1) to find out relationship between the household's economic status and benefit sharing among the users in Tal Danda community forest user group and 2) to examine user's opinion towards the existing benefit sharing system in the community forest user group.

5.1.1 Relationship between the household's economic status and benefit sharing

Three different sections have been formulated consistent with research questions set up for achieving the main goal of the study. These are 1) household's economic status of the users in Tal Danda community forest user group 2) sharing of the major forest products among households with different economic status, and 3) relationship between household's economic status and benefit sharing in the community forest user group.

1) Household's economic status of the users

Agriculture and livestock were found as the major source of income of the users in Tal Danda community forest user group. Apart from which off-farms incomes like trade, service in both government and private sectors, labor in local and urban areas including in overseas and pension were also found as the important sources of income in the household economy. The data collected clearly presented that economic inequality among the user's households in the samples of the study. It appears that households belonging to higher economic status were better endowed in terms of land, livestock and house ownership. Conversely, the poorest households commonly had nominal subsistence level of land, private forest and a few numbers own livestock. Therefore, having little or no land, the poorer households were dependent on tenuous livelihood strategies as labor, porter, local wine maker, and traditional occupation possessor while some had gone aboard for higher income. Disparity in wealth was associated with the differences in interests and needs of forest products among the users in Tal Danda community forest user group.

2) Sharing of the major forest products

In order to manage and utilize community forest, the community forest user constitution (FC) and the Forest Management Plan (FMP) were found important in which benefit sharing mechanism was not well defended. The price was fixed for timber, fuel wood, wood for making agricultural equipments and charcoal. Everyone has to pay for obtaining such types of products but FMP has not clearly mentioned the price for other products. (i.e., fodder, grass and leaf litter). The FMP mentioned that major forest products (timber and considering under natural climates) should be shared according to decision taken by the executive committee.

Timber was being sold within the user group at a lower rate than the market price but it was not allowed for selling either inside or outside the community. Hence, timber was purchased and used by the households of the better economic status, since they had greater demand and ability to pay. However, the households with lower economic

status had less requirement of timber product for their own consumption and also they had less ability to pay for timber product.

Extractions of fuel wood (only dry and dead woods), fodder, grass and leaf litter were allowed round the year (but the forest shall be open once or twice in a week for collecting the products individually). The amount of dry and dead woods available in forest was limited throughout the year. For the poorer households, especially those without land, livestock had no value of fodder, grass and leaf litter hence the households with the better economic status were mostly benefited from such forest products. The poorer households also had few livestock to graze in the community forest.

The use of fuel wood by the users did not exhibit the disparity of benefit seen in the other above mentioned products. That was because the product had been distributed equally with no discrimination in wealth, caste and family size. Having the better economic status, the richer households frequently went to the forest for collecting grass and fodder, at the same time they can also collect dry wood and dead branches for fuel wood. In case of the poorer households, going to the forest only for fuel wood collection might have higher opportunity cost hence the households with better economic status had obtained better quantity of forest products when compared to the households with the poor economic status.

3) Relationship between household's economic status and benefit sharing

In the community forestry user group, the trend of access on forest products varied among the households from the different economic status. The households with better economic status had more probability to obtain the forest products when compared to the poorer households. The result presented that under the existing benefit sharing system the households with better economic status obtained higher quantity of forest products. This suggested the benefit inequitable among the users in Tal Danda community forest user group. Similarly, it was found that the existing quantity of the forest products obtained by the households with lower economic status was quite

lower than their basic requirement for their livelihood. A substantial proportion of the richer household needs (fire wood, grass, fodder, leaf litter and timber) can be supplied from their own private sources.

The study found that the existing benefit sharing system favored the households with better economic status, making the poor marginalize further. A study conducted by Adhikari *et al*., (2004) also supported to the present finding mentioned that "Common forest resources" were always positive to those who had private land and livestock. The study suggested that the richer households gained more benefit from common forest resources because they can sustain other days in absence of community forest. But in case of the poor households, they can not sustain their needs on the other days. Therefore, the hypothesis of "user group members with lower economic status receive less benefit from the community forest than higher one" is highly accepted because of the poorer households were currently benefited less when compared to the households with better economic status.

5.1.2 User's opinion toward existing benefit sharing system

The user's opinion in the existing benefit sharing system varied among the different economic status. The result clearly presented that the poor households disagreed with the existing benefit sharing system which was found unfavorable to them. The main reasons were that low involvement of the poor households in the decision making level, benefit had been shared without considering the basic requirement of the poor and occupational groups for their livelihood. The distribution was based on household size rather than members in a household, mandatory provision such as oxen for agricultural equipments, totally prohibiting of charcoal making inside the forest, restriction to sell forest products even if they have enough for consumption. Paying system and equal basis of cost and benefit sharing among the unequal economic status make the poor households likely to further marginalize. As a result, more than two third majorities of respondents favored to the option of improvement in the existing benefit sharing system. Majority of the respondents preferred the need basis benefit sharing system to the existing one. The result clearly presented that 72% of the

respondents agreed on the hypothesis of "majority of the member's opinion want to improve in the existing benefit sharing system".

5.2 Limitations of study

Due to budgetary and time constraints, the study covered only one community forest user group. The finding and recommended strategies may nevertheless be applicable to some parts of the country although one may need to be careful in making certain generalizations.

It is difficult task to determine household income in which various sources of income have been contributing in household economy. To find out the household's economic status, the study had chosen only major sources of income such as agriculture, trade, service, labor and remittance. The economic ranking has been done based on local definition of wealth by fixing some indicators like landholding, number and kind of livestock, household annual income, and house type.

The country is facing security problem from the current Maoist insurgency in several parts of the country. As a result, most of the respondents were apprehensive to provide their socio-economic information sincerely. By using various participatory tools and techniques, the study tried to make information reliable through check and balance process.

The study focused only on key forest products derived from community forest such as timber, fuel wood, grass, fodder, leaf litter, agricultural equipments and charcoal but other products such as medicinal herb, vegetable, fruit may be available although these products are being used in nominal scale.

5.3 Final comments

The study found that Tal Danda community forest management was oriented toward long-term benefit with strict protection. Gradually the protection scheme improved the

quality of the forests and increased the richness of species and overall biodiversity. However, the study observed that there was lack of use full potential of forest. The poorer households had been receiving inadequate benefit for meeting their livelihood. Therefore, the poorer households and the traditional occupation possessor were suffered more from the existing benefit sharing system. Many land less and occupational caste people were being compelled to use forest products from the adjoining national forests due to the closure of community forest in the name of protection. The overall result of the study indicated that both the national objectives of poverty reduction and the sustainable forest management would be difficult to be achieved without improvement in the existing benefit sharing system.

Overwhelming participation of users in forest management and their active role to conserve the forest were found very much positive in making community forest program successful as they were dependent on the forest considerably. The study observed that the poor and occupational groups represented less in executive committee even though their contributions in overall forest management process were remarkable in terms of time and cost as levy to the forest conservation. There was no conflict recorded on benefit gaining among the user groups even though the households with low economic status benefited less when compared to the households with better economic status. The study realized that if the existing benefit sharing system is being continued then the poorer households are likely to be marginalized.

5.4 Recommendations

5.4.1 Further study

The finding of the study did not represent the whole situation of the district due that different places had different conditions as well as economic composition of users however the study may help to illustrate a certain picture for applying to the similar situation.

The study had selected a small sample size and a small patch of the forest as the scope of the study although the issue has been recognized as both national and global emerging issues. Therefore, further study should cover with consideration on social and cultural factors that may also influence on benefit sharing derived from the community forest. Similarly, the in-depth study is needed to find out the economic contribution from the community forest in household economy for poverty reduction. The composition of the users was clearly indicated that there were different in traditional occupation groups, caste and economic groups as members therefore the further study should cover the dependency upon forest resources in the community forest.

5.4.2 Application

The research concluded that the household's economic status of the users has highly influenced on the benefit sharing among the user in Tal Danda community forest user group, Tanahun of Nepal. The results indicated that by continuing the existing benefit sharing system might increase conflict unless specific measures of equitable benefit sharing in order to fulfill their basic needs were enforced. Since the poorer members were unable to gain benefits as much as they required for their livelihood, forest management regimes needed to be oriented towards more integrated management. In order to do so, it is important to improve both the productivity of forests and the efficiency of the sharing systems.

Therefore, certain actions are required to make equitable benefit sharing in the community forest although it is not so easy to alter the existing benefit sharing system which is highly dominated and initiated by the elite and wealthy groups. In absence of identification of traditional users and their dependency upon forest products can create problem for success of the community forest systematically. A progressive change is required in solving the situation on existing benefit sharing system in the community forest user group. The study did not attempt to identify the actions which need to be taken, but it would recommend the following critical considerations:

- Focus on production oriented management instead of protection oriented management is required.
- Some mandatory provisions such as oxen for agricultural equipments, timber use only for personal purpose, charcoal making inside the forest should be ceased.
- A need based benefit sharing system should be developed.
- Community forest management plan should include the provision that ensures the benefit to the poor group. So that the participation can be encouraged and poverty can be alleviated.

5.5 Conclusion

Conclusion of the study is drawn based on the proposed objectives and hypotheses of the study. Some significant findings associated with main objectives are concluded. The major findings of the study indicated that the households with poor economic status are getting less benefit from the community forest. The national goal as well as sustainable forest management objective would be difficult to achieve by continuing the existing benefit sharing system. It seems unfavorable to the poor and disadvantaged groups. Over restriction, imposing some mandatory provisions, paying system, equal basis benefit sharing system seems to favor to the households with better economic status. More than two third majorities of the respondents agreed to alter the existing benefit sharing system. Hence, the study recommends that to adapt equitable benefit sharing system in the community forest user group with great consideration to the poor and disadvantaged sector of the community through putting priority on benefit by Forest Management Plan.

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APPENDICES

APPENDIX 1

Study procedure

Stage I

The study topic was selected at first. The topic was " Relationship between household's economic status and benefit sharing in community forest, a case study in Tal Danda community forest, Tanahun district of Nepal"

Stage II

In second step of the study consisted of the followings activities

- Reviewing the literature covers the followings illustrated issues: background, global, regional and country profile of community forest, evolution of community forest management and benefit sharing arrangements, formulation of community forest user groups, existing legal provision about community forest management, socio-economic feature of the country as well as study site.
- The research questions were formulated.

Stage III

In third step, as the following illustrated activities were prepared for the research.

- Research design was conceptualized. PRA tools & techniques and semi structural questionnaire for household's survey were proposed for collection of primary data from the study site.
- Planning of data collection was prepared for the field study.

Stage IV

For data collection, one and half months were spent in field site Tal Danda community forest user group, Tanahun district of Nepal, activities were done in field over the period are listed as followings:

- Introduction of self and study objectives to the community forest user group members in the field site. Key informants were selected to those who had in-

depth knowledge and were interested to participate. They helped through providing basic information, secondary data that were available in the community forest user group.

- Wealth ranking exercise was carried out to identify economic categories of the households. Wealth ranking was done based on local definition of wealth that they think important to categorize their economic status. Based on this, all the households were categorized into three economic statuses such as poor, medium and rich.
- Sample size of the household's respondent was chosen based on the economic status. Respondents were selected by adopting Taro Yamane (1990) and Cochran (1977) formulas. Total 164 households were selected as household's respondents from the economic groups.
- The questionnaire was pre-tested before the main survey with small 'focus' groups to know their reactions on questionnaire.

Stage V

After return to Thailand, the following illustrate activities were preformed:

- Summarized the HH information in SPSS computer program
- The study undertook an analysis of relationship between the household's economic status and benefit sharing in Tal Danda community forest user group including user's opinion on the existing benefit sharing system.

Stage VI

In this step, the study performed the followings illustrate activities:

- Wrote a final report and presented the research findings and
- Submitted the final reported

Stage VII

In final step, the study recommended the findings of the study to Tal Danda community forest management for an improvement of the existing benefit sharing system.

APPENDIX 2

Checklist for key informant discussions

1. Information about community forest and community settlement
2. Decision making processes and procedures, focus on benefits sharing
3. Secondary information available in the community forest about given issue
4. Wealth ranking
5. Select focus groups

APPENDIX 3

Check list for focus group discussions

1. Needs and access of forest products
2. Alternative sources to fulfill needs
3. Mandatory provisions
4. Opinion on the existing benefit sharing system
5. Suggestions and comments on the given issues

APPENDIX 4

Checklist for field observation

1. Observation of forest condition
2. Observation of forest products use
3. Discussion at executive committee meeting

APPENDIX 5

Questionnaire for household's survey

I am a student from Mahidol University Thailand. I am here for a short period, to study about relationship between households economic status and benefit sharing in your community forest user group. I also would like to know your opinion how you evaluate the existing benefits sharing system. (I have chosen a number of households by using stratify random sampling method from your user group). I hope, all the information that you will provide me would help to identify the real situation of the benefit sharing in your community forest user group. I hope it also would help you in improving benefit sharing system through recommendation as a research document. I request you to answer the following questioners as thoughtfully as possible. All information will be kept confidential and will only be used in this research.

A. Economic status of the households

1. Gender: Male □ Female□

2. Caste _____

3. Age:_____

4. Education: Primary□ Secondary □ Higher Secondary □University□

5. Major occupation:

Farming □ Labor □ Trade □ Employee□ Remittance □

6. Households annual income: _____ Rs

7. Households size: Total _____ Male _____Female _____

8. Do you or anyone in your family own of the followings land? Yes □ No □

If yes, please provide the followings information.

Type of land	Owned land (Ropani)
Khet (irrigated land)	
Bari (non-irrigated land)	
Kharbari (to grow grass and fodder)	
Forest	

(*20 Ropani=1ha, 1 Ropani = 0.0526 ha.*)

9. How many of the followings livestock does your family keep own?

Kind of livestock	Numbers
Buffalo	
Cow	
Goat	

10. What type of house does in your family own?

Cemented □ Tin roof □ Thatch roof □

11. Which of the followings energy sources do you use for cooking and heating? Please rank all of the following sources.

Fuel Wood □ LPG Gas □ Bio Gas □ Kerosene □ Electricity□

B. Forest products sharing

12. How much of the followings forest products did you bring over the last one year from the community forest? (Timber product over the period after formulation of the community forest user group)

Forest products	Unit	Quantity
Timber	Cu.ft	
Fuel wood	Bhari	
Grass	Doka	
Fodder	Bhari	
Leaf litter	Doka	
Thatching grass	Bhari	
Agricultural equipment	set	
Charcoal	Doka	

(1 Bhari fuel wood =approx. 50 kg, 1 Bhari fodder= approx. 25 Kg, 1 Doka grass = approx. 25 kg, agricultural equipments1 set= approx. 3 cu. ft timber, 1 Doka leaf litter= approx. 15 kg, 1 Bhari Thatching grass= approx. 30 kg, Charcoal 1 Doka = approx. 20 kg, 1 cu. ft = o.28 cubic meter)

13. Did you get any consideration on forest products distribution from your community forest? Yes □ No □

C. Opinion on the existing benefit sharing system

Please provide your opinion on the existing benefit sharing system that has been practiced in your community forest user group. Please check on the boxes that appropriately describe the degree of your expectations.

14. How do you evaluate the following statement "To obtain the followings major forest products from the community forest is"					
Forest products	Opinion				
	Very Easy	Easy	Difficult	Very difficult	Don't know
Timber					
Fuel wood					
Fodder					
Grass					
Leaf litter					
Thatching grass					
Charcoal					
Agricultural equipment					

15. How do you been evaluate the following statement " the degree of freeness of the existing benefit sharing system to distribute major forest products among the users in your community forest user group is"				
Highly fair	Fair	Unfair	Highly Unfair	Don't know

16. Did you involve in decision-making processes and procedures related with forest products distribution? Yes □ No □

17. Do you know about the existing rules and regulations that have been used as guideline to distribute of the major forest products in your community forest user group? Yes □ No □

18. What do you think that improvement of the existing benefit sharing system is needed? Yes □ No □

19. If yes, what types of distribution system among the followings do you prefer in your community forest user group?					
Equal Basis	Need basis	As per Royalty	According to executive committee decision	According to contribution of cost and labor	As per family size

20. Do you have any suggestions for the improvement of the existing benefit sharing in your community forest user group?

_____

_____-

_____

BIOGRAPHY

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