CHAPTER 1

INTRODUCTION

1.1 Background

Community forestry[1] is most accurately and usefully understood as a social forestry term denoting a wide range of activities which link rural people with forests, trees, and the products and benefits to be derived from them. Gilmour and Fisher (1991) define community forestry in terms of control and management of forest resources by the rural people who use them especially for domestic purposes and as an integral part of their farming systems. Community forestry constitutes both social and biophysical elements, both of which are equally important. The "resource" can be managed effectively with a clear understanding of forest management principles and knowledge of natural system and "social" part can be dealt with a clear understanding of a society and their relationships with the resource and institutions related to it.

Nepal is a predominantly an agricultural country where the majority of the population depend on agriculture for their livelihood. Most of the rural people depend upon forest for their daily needs like fuel wood for cooking, fodder for feeding livestock, timber for construction and leaf litter for manure.

A livelihood comprises the capabilities assets, including both materials and social resources, and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base. (Carney, 1998) Different livelihood approaches have been developed in order to uplift the living condition of rural people during 1990s. The sustainable approach developed by DFID, however the Oxfam's sustainable livelihood approach is more similar than other approaches, has been followed mostly because it is easy to understand and new one among them.

[1] "Any situation, which intimately involves local people in a forestry activity. It embraces a spectrum of situation ranging from wood lot areas, which are short of wood and other forest products for local needs, through the growing of trees at the farm level to provide cash crops and the processing of forest products at the household, artisan or small industry level to generate income, to the activities of forest dwelling communities" (FAO, 1978). Similarly Gilmour and Fisher (1991) define community forestry in terms of control and management of forest resources by the rural people who use them especially for domestic purposes and as an integral part of their farming systems.

Approximately 70% of the world's poor are directly dependent upon natural resources such as land, forests and fisheries. The sustainable management of natural resources is therefore vitally important for their livelihoods.

The origins of livelihoods approaches are inextricably linked to the evolution of natural resources management (NRM) thinking. Together with more participatory approaches in NRM, livelihoods approaches have changed the emphasis from focusing primarily upon natural resource productivity to placing people at the centre of development. This includes understanding the different roles and perspectives of people depending on factors such as gender, ethnicity, age, wealth etc.

In the past development initiatives in NRM focused on building natural capital. Livelihoods approaches highlight the importance of understanding how natural resources combine with other assets, such as financial, physical, social and human capital to sustain and improve poor people's livelihoods. Such approaches also address resource governance issues through advocating for the need to understand natural resource use in the context of the complex policies, institutions and processes affecting poor people's lives.

By the implementation of Master Plan for the Forestry Sector, community forestry programme has become a most active and successful program in Nepal. It was firstly introduced in order to conserve the degraded condition of forest and fulfill the basic forest needs of local people. With change of time, the role community forestry has been changed. Community forestry has been developed as a means of poverty alleviation, ultimately leading towards the livelihood improvement of local people.

This study is mainly focused on to understand the effects of community forestry on livelihood of local users at Pipra Simara VDC of Bara district. However, it is specially concerns to access the contribution of community forest on livelihoods of users and level of participation of users on community forestry activities.

1.2 Problem Statement and Research Questions

Community forestry policy was firstly introduced in order to control and protect the forest from deforestation, encroachment and several other factors (MPFS, 1987). It was introduced as a protective measure rather than a management programme. A number of forest patches have been

handed over, since the introduction of community forestry policy. Different issues have been raised together with the increased number of community forests. Role of women, disadvantaged groups, strengthening of Community Forest User Groups have been simultaneously studied and developed policy to include these so as to balance the different aspects of community. After strengthening Community Forest Users Groups (FUGs) in their all aspects, community forestry program is being a means of poverty alleviation in local level.

Despite achievements and contribution that community forestry has made in Nepal, there are many unresolved issues and challenges in all areas of capitals as well as governance. Although Community Forest User Groups have been successful in terms of their institutional capacity to get people organized and form capital at group level. While trends towards resource degradation have been arrested and in many cases forest cover are reported to have improved, the livelihoods of the local forest dependent communities, particularly the poor and disadvantaged, have not improved as expected (Dhungana, 2006). In worst cases, in fact, the implementation of CF policy has inflicted added costs to the poor, such as reduced access to forest products and forced allocation of household resources for communal forest management with insecurity over the benefits.

However, the CF policy has been developed as a means of protecting forest for the fulfillment of basic forest needs through its sustainable management by local users; nowadays, it has become an integral part of rural livelihoods and has been developing as a means of poverty alleviation.

This study intended to assess the impact of community forestry on livelihood in the studied area. Therefore, this has explored the effects of CF program on livelihood development of local users; it explored the present trends and realistic status of community forestry and its impacts on livelihood improvement. On the basis of the above problem, the researcher has tried to find out the answers of the following questions:

1. What is the existing socio-economic status of FUGs?
2. What are the activities that local users initiated in the community forest?
3. What types of benefits that local people are deriving from the community forest?
4. What types of participation has been practiced in the community forest user group?
5. How community forest has been contributing in enhancing the livelihood of the local users?

1.3 Objectives of the Study

The general objective of this study is to assess the effects of community forestry on livelihood of local users whereas the specific objectives of the study are as follows;

- To assess the level of participation on community forestry activities;
- To examine people's perception on the availability of the forest products; and
- To examine the contribution of community forest on livelihoods of users;

1.4 Significance of the Study

Livelihood is an important subject matter for sociological study. In this regard, this research is importance form sociological point of view. This study oriented to find out the relationship between livelihood and community forestry especially focusing on the role of community forest on livelihood of the users. Therefore, this study will be supplementary source of information to understand the role of CF on livelihood of the users for further researchers and reader who will show interest in the field.

To some extent, this research will attempt to find out the interrelationship between livelihood and community forest which may be helpful to planners, policy makers and others who are interested and responsible to solve the problem related to livelihood and CF. Similarly, this study will also open the debate and pave the way for future researchers and readers who are interested in this field.

CHAPTER 2

LITERATURE REVIEW

"Forestry development will be consciously directed towards rural development and the eradication of poverty.... Government of both developed and developing countries should lend support to institutionalizing self-reliant mechanisms by which forestry activities will be increasingly based on endogenous decision making and the full participation of the rural poor" (FAO, 1980, as cited by Dangol, 2002).

It has been increasingly realized that local people can themselves identify and diagnose problems and discover the appropriate solutions to the problems facing them. Ohlsson and Byron (1988) advocated that rural people are not only the solution and resources but they are also assets for forest development. It is, therefore, important for rural people to become involved in and take the responsibility of forest management. Thus, there are some very important and significant reasons, which have given voice to the concept of community forestry. The failure of industrial forestry to lead to socio economic development,

2.1 Aims and Objectives of Community Forestry Programs in Nepal

The idea of preparing a forestry master plan, to address a period of 25 years, was brought up in a donor's meeting in 1984. The first national community forestry workshop held in 1987 contributed to the prioritization of the community forestry program in the Master Plan for the Forestry Sector. (Dhungana, M. 2006**).** The Master Plan analyzes country's forest resources and their potentials, and has prepared simulation models for the assessment of wood and fodder supply and demand balance. It identifies sectoral issues and analyzes these against existing conditions. The plan identifies four long term and three medium term objectives with a view to preparing a long-term development plan (MPFS, 1987). The long-term objectives relate to meeting the basic needs of the people, protecting the soil and water resources, conserving ecosystems and gene base and consolidating local and national economies. The medium term objectives focus on democratizing the regulation of forests, and making legal, institutional and structural adjustments to that effect.

These objectives have led to the framing of six primary development programs, of which the community and private forestry program has principal focus: some 47% in terms of financing.

All other primary development programs of the Master Plan effect, or at least relate to community forestry processes. However, the community and private forestry program of the plan forms the foundation for community forestry initiatives.

MPFS (1987) also charts and phases the output targets against required inputs. The inputs required achieving the targets stem from two sources: (a) community forest establishments, and (b) private tree farm establishments. The input for community forest establishment (that includes plantations,

10% enrichment, 5% enrichments, and zero enrichments for the year 2000-01 is 549.6 thousand hectares, and that for the end of the Master Plan period (2010-11) 1285.6 thousand ha, considered on the basis of cumulative accomplishments (MPFS, 1987). Community forest establishment in the present legal provisions implies handing over of plantations, zero-enrichment natural forests or enriched forests to the communities.

2.2 Participation and Forest Management

Community forestry in Nepal has been evolved as the complete participatory management by users group, where the users utilize and manage forest resources. The initial state was participatory conservation of environment through planting of trees, which later developed into institutional development of community forest users group where the forest management and resource control was undertaken by the user groups. Later the objective of community expanded to mobilization and empowerment of the user group to development of the rural community.

Gautam, N. (2006) stated that the ethnic composition, political ideology, and culture within the community could create problems at the user level. In order to have a successful common property, every individual should have an equal level of participation in decision-making. With in common property resource management, participation of different interest groups is important to minimize the risk of excluding access to certain resource poor of people.

Pokharel, B. K. (2002) stated that the poor households do not benefit from community forests as much as affluent households and are not very interested in community participation. Poor households also have a high opportunity cost of participation as the time spent on participation could be used as labor for cash income. Medium class households benefit more than the high and

low class households. Upper class households are indifferent as they have low opportunity- cost of participating in the management.

Sharma (2002) suggested that there was no caste and wealth discrimination within the distribution of forest products and that the benefit from the community forests was equally distributed to all users groups.

Shrestha, K, (2002) Viewed that all members of the community forest user group need to have equal participation in management in order for economically disadvantaged groups to receive benefits. Equal participation is necessary to create effective and equitable management for decision making, which ensures equal benefits for all users groups. Demand for forest products also affects the participation in community forest management. Involvement of community forest management practices is necessary to have access to desire forest products and to bring success to the community forestry projects

It is important to understand the various perspectives involved in order to identify the successful outcomes. Different groups have different views about the outcomes and the results from the participatory processes. However taking account of primary users of the community forestry is important. In particular, consideration of low-income groups is essential to ensure an equitable outcome. Pokharel (2002).

2.3 Poverty and the Poverty Trap

Poverty is a socio economic phenomenon whereby the resources available to a society are used to satisfy the needs of the few while the many do not have even their basic needs met. This conceptualization features the point of view of that poverty is essentially a social phenomenon and only secondarily a material or physical phenomenon (Kurien, 1978). Poverty is the result of sustained gap between the income and expenditure at the household level, which is based on the proportion of income spent on food. A household spending more than 70% of its income on food is also classified as poor (NEFAS, 1992).

2.3.1 The Poverty Trap

Still examining the poor households and their immediate environments we can see the clusters of disadvantage interlock. This is variously described as the vicious circle of poverty, the syndrome of poverty and the poverty trap.

Figure 1: The poverty trap

Source: Chambers, 1983; Rural Development: Putting the Last First

Poverty is the strong determinant of the others. Poverty contributes to physical weakness through the lack of food, small bodies, malnutrition leading to low immune response to infections, and inability to reach or pay for health services; to isolation because of the inability to pay the cost of schooling, to buy a radio or bicycle, to afford to travel to look for work, or to live near the village center or a main road; to vulnerability through the lack of assets to pay large expenses or to meet contingencies; and to powerlessness because lack of wealth goes to low status : poverty has no voice. (Dhungana, M. 2006)

The physical weakness of a household contributes to poverty in several ways; through the low productivity of weak labour; through an inability to cultivate larger areas, or to work longer hours; through lower wages paid to women and to those who are weak; and through the withdrawal or weakening of labour through sickness. It sustains isolation because of lack of time or energy to attend meetings or to seek information, especially for women because children make travel difficult. It accentuates vulnerability by limiting the ability to overcome a crisis through harder work, new activities, or negotiations for help. It contributes to powerlessness through the lack of time or energy for protest, organization, or political activities: sick and hungry people dare not bargain hard. **.** (Dhungana, M. 2006)

Isolation sustains poverty: Services do not reach those who are remote. Isolation goes with physical weakness: remote households may have a high level of migration of the able bodied to towns or to other rural areas. Isolation also accentuates vulnerability – remote marginal areas are more liable to crop failures, and area less well provided with services to handle contingencies like famine or sickness. And isolation means lack of contact with political leaders or with legal advice, and not knowing what the powerful are doing.

Vulnerability is part of many links. It relates to poverty through the sale or mortgage of productive assets, to physical weakness because to handle contingencies, time and energy have to be substituted for money; to isolation through withdrawal whether spatial or social following shocks and contingencies and to powerlessness through the dependence on patrons to which it gives rise.

Finally, **powerlessness** contributes to poverty in many ways, at least through exploitation by the powerful. It limits or prevents access to resources from the state, legal redress for abuses and ability to dispute wage or interest rates; and only feeble influence on government to provide services for the poorer people and places. It reinforces physical weaknesses because time and energy have to be devoted to queuing for access, because labour obligations to patrons reduce labour available for household production or other earning; and because relief food supplies in time of famine may never be obtained because people are powerless to demand what is meant for them. Isolation is linked with powerlessness to attract government aid, schools, good staffs or other resources. Powerlessness also makes the poor more vulnerable to sudden demands for the repayments of loans to threat of prosecution and fine or imprisonment, or to demands for a bribe in a dispute.

2.4 Integrated Rural Development Vs Sustainable Livelihoods Approach

One of the early 'criticisms' that has been labeled at the livelihoods approach is that it is too similar to the failed Integrated Rural Development (IRD) approaches of the 1970s. It is easy to see where this reflection is coming from; the two approaches share much in common. But the sustainable livelihoods approach endeavors to build upon the strengths of IRD (especially the recognition of the need for broad-based support in rural areas) without falling into the traps that caused IRD's downfall. In particular, the livelihood approach does not aim to establish integrated programmes in rural areas. While recognizing the importance of rural poverty reduction of a wide range of factors it will target just a few core areas (with the help of thorough analysis of existing livelihoods and a bottom-up planning process) so that activities remain manageable. The livelihood approach will also address macro level and institutional factors where these are a major constraint. IRD, by contrast, was forced to operate within a hostile macro-economic and institutional environment, dominated and often heavily distorted by government.

2.5 Concept of Sustainable Livelihood and Livelihood Assets

According to the researcher, livelihood means earning a life through use of different capitals/assets. These livelihood capitals are natural, social, physical, financial and human. Hence, livelihood in totally means how a person lives his life by using these capitals to the maximum extent. A livelihood comprises the capabilities assets, including both materials and social resources, and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and

assets both now and in the future, while not undermining the natural resource base. (Carney, 1998) Different livelihood approaches have been developed in order to uplift the living condition of rural people during 1990s. The sustainable approach developed by DFID, however the Oxfam's sustainable livelihood approach is more similar than other approaches, has been followed mostly because it is easy to understand and new one among them.

Figure 2: Sustainable livelihood framework

Source: DFID, 1999

The livelihood approach is concerned first and foremost with people. It seeks to gain an accurate and realistic understanding of people's strengths (assets or capital endowments) and how they endeavor to convert these into positive livelihood outcomes. The approach is founded on a belief that people require a range of assets to achieve positive livelihood outcomes; no single category of assets on its own is sufficient to yield all the many and varied livelihood outcomes that people seek. This is particularly true for poor people whose access to any given category of assets tends to be very limited. As a result they have to seek ways of nurturing and combining what assets they do have in innovative ways to ensure survival.

2.6 The Asset Pentagon (livelihood assets)

The asset pentagon lies at the core of the livelihoods framework, 'within' the vulnerability context. The pentagon was developed to enable information about people's assets to be presented visually, thereby bringing to life important inter-relationships between the various assets.

Figure 3: The livelihood pentagon

It is important to note that a single physical asset can generate multiple benefits. If someone has secure access to land (natural capital) they may also be well-endowed with financial capital, as they are able to use the land not only for direct productive activities but also as collateral for loans.

Similarly, livestock may generate social capital (prestige and connectedness to the community) for owners while at the same time being used as productive physical capital (think of animal traction) and remaining itself as Natural capital.

2.6.1 Natural Capital

Natural resource stocks (soil, water air, genetic resources etc.) and environmental services (hydrological cycle, pollution sinks etc.) from which resource flows and services useful for livelihoods are derived.

Community forests handed-over to communities are natural capital. Evidence shows that there are positive changes in both forest condition and the availability of forest products, with a concurrent reduction in the time spent for collecting forest products. Thousands of FUGs have planted and protected denuded hills, carried out forest management and silvicultural operations, utilized and marketed various forest products for their livelihoods (Pokharel, 2002). Forests can improve the welfare of communities by providing multiple goods and services. It is widely accepted that millions of rural people depend on forests for their livelihood and that forest provides the safety net particularly important to the poor (Pokharel, 2002). Forests are also a significant source of employment and income. For example, total forest based employment is around 47million full time employments world wide (ILO, 2002). Formal sector employment is more than 17million. Employment in the informal sector is much higher (34%) (Blomback, et.al 2003).

2.6.2 Social Capital

The social resources (networks, social claims, social relations, affiliations, associations) upon which people draw when pursuing different livelihood strategies requiring coordinated actions.

Forest policies, forest acts and FUGs rules, the CFUG organization, social relations and networks, inclusion through the active participation of women and disadvantaged groups and the practice of democratic process in decision-making increases the social capital of CFUG. It is reported that the community forestry process has increased social cohesion, which has enhanced social capital of those who have been powerless, left in isolation and excluded from mainstream social and political processes (Pokharel, 2002).

2.6.3 Human Capital

Human capital represents the skills, knowledge, ability to labor and good health that together enable people to pursue different livelihood strategies and achieve their livelihood objectives. At a household level human capital is a factor of the amount and quality of labor available; this varies according to household size, skill levels, leadership potential, health status, etc. (DFID, 1999)

Since the inception of the Community Forestry Programme, a number of trainings, workshops and exposure visits have been conducted for a number of organizations and individuals at community level, government and non government organization level that has increased

knowledge and skill related to forest silviculture, community development, organizational management and leadership development, all of which are basically human capital (Pokharel, 2002).

2.6.4 Financial Capital

Financial capital comprises the capital base (cash, credit/debt, savings, and other economic assets including basic infrastructures and production equipments and technologies), which is essential for the pursuit of any livelihood strategy. Financial capital refers to stocks of money to which the household has access. This is chiefly likely to be savings, and access to credit in the form of loans.

Neither money saving nor loans are directly productive forms of capital; they owe their roles in the asset portfolio of households to their convertibility into other forms of capital, or, indeed, directly into consumption (Ellis, 2000).

2.6.5 Physical Capital

It comprises the basic infrastructure and producer goods needed to support livelihoods (DFID, 1999). Infrastructure (affordable transport; secure shelter and buildings; adequate water supply and sanitation; clean, affordable energy; and access to information) consists of changes to the physical environment that helps people to meet their basic needs and to be more productive. Producer goods are the tools and equipment that people use to function more productively. Ellis, 2000 defined the physical capital in economic terms as a producer good as contrasted to a consumer good. They are: Infrastructure consists of changes in the physical environment that helps people to meet their basic needs and to be more productive. Producer goods are the tools and equipment that people use to function more productively.

The literature review is totally focused on the understanding related to community forestry management, participation in community forestry management, an understanding on livelihood and its capital. This literature review helped a lot for providing a clear picture and framework to precede the study ahead.

CHAPTER 3

METHODOLOGY

3.1 Study Site and the Rationale for the Selection of Site

The study was conducted in Thanimai community forest of Bara district. The district is for the purpose of study because of the reasons mentioned below:

- The popular community forest in the district.
- The community forest has been awarded as the best CF by District and by government
- The household coverage is high with the users living in 11 toles /clusters.
- There are users from different caste groups.

3.2 Research Design

Nature and Sources of data: Both qualitative and quantitative data were gathered in order to fully understand and analyze my research objectives.

Primary and secondary data were collected to obtain the mentioned research objectives**.** Primary data were collected through key informants interview, focus group discussion and observation.

Likewise secondary data were collected through books, documents and literature related to livelihood, participation and community forest management from libraries of different institutions and organizations. These institutions and organizations are Institute of Forestry, Library search from Central Campus, Tribuban University, Kirtipur, Annapurna conservation area, Pokhara, District forest office, Bara, Community forest user group (CFUG), Thanimai office.

3.3 Sampling Frame

There were 779 HHs in the Thanimai CFUG. Out of them, 10% HHs (80 HHs) were selected randomly for the study as primary respondents. The name of the users of Thanimai community forest was collected from DFO, office Bara. After reviewing the document provided, the users were selected randomly based upon caste, gender, religion, wealth class and distance from the CFUG.

Pre-testing of Questions*:* About 10 (questionnaires) sheets were used as pre-testing of questions of household survey in neighboring CF named “Pragatisil CFUG Pipra Simara, 6, Bara.

Corrections were made after pre-testing and the questions were finalized to conduct household survey.

3.4 Data Collection tools and techniques

3.4.1 Interview

Respondents were selected according to sampling frame. Subsequently, interview was carried out household members to collect first hand data from the study area after finalizing questions from pre-testing. A face-to-face interview was conducted with a total of 80 respondents. The household list was obtained from constitution of CFUG and visited with two committee members.

The schedule was underwent extensive changes based on the pretest results. The schedule was later finalized and translated into Nepali before administration. Interview was conducted with the above 18 years old sampled household members.

3.4.2 Key Informant Interview (KII)

In depth interview was also conducted with some key informants, like committee members, village elders, local leaders, schoolteachers, and DFO staffs, with an expectation to gather detailed information. A total of fifteen key informants were interviewed. These key informants were selected purposively for interview so as to cover representation from different categories. Through the KII, researcher collected information related to the condition of the forest before and after, changes in each of the five livelihood capitals of the people, agents responsible to bring these changes.

3.4.3 Focus Group Discussion (FGD)

According to Greenbaum (1988) multiple respondents of similar background can get opportunities for interaction with their own views and ideas on a related issue in focus group meetings. FGD in this study helped to understand the real situation on the issue .Two FGDs were carried out for acquiring actual information from women and men separately, who is valuable to put their voice and also to understand their real situation in conflict.

Focus group discussions were conducted to discuss the research issues and to gather information about programmes launched in the study area. Through these discussions information about pro

poor programmes and their performance, income generation activities, micro credit programmes etc. was collected. The participants in the discussion were represented from the committee members, women, disadvantaged groups and the poor**.** The common vulnerability context and the livelihood strategies adopted by the local people were assessed during the focus group discussion. The checklists (Annex 2) were made in order to record data and information of different items.

3.4.4 Direct Observation

This method was used to make qualitative data like physical and social conditions of the studied population as well as area. Direct observations were made in various places like respondent's home, farms. Amounts of forest products in homestead, decision-making process in committee, distribution of forest products and selling within CFUG were observed.

3.4.5 Secondary Data Collection

Different published and unpublished relevant articles, records, websites and journals of different organizations regarding the subject matter were reviewed and collected. Mainly, IOF library Pokhara, DFO Bara, Thanimai CFUG Office Samara was consulted for secondary information.

3.5 Data Presentation and Analysis

The collected data were first coded and tabulated then the data were analyzed by using quantitative and descriptive analysis technique. For statistical analysis "Statistical Package for Social Science (SPSS)" program, version 11.0 was used wherever possible and subjective interpretations were made for qualitative information. Different charts, tables, graphs were introduced from "Microsoft Excel Program" to clarify the analyses.

Different statements were placed for the respondents to know their attitude which was measured in a strongly agree to strongly disagree (1-5) five point Likert Scale Format. Opinion of respondents on different activities were also analyzed giving scale as very good, good, not good and don't know. Average weighted mean were used to clarify the result.

The respondents' responses or perception, decision making role, priority ranking were performed in Likert scale to interpret it in quantitative way using index of relative ranking (IRR). The IRR value thus, obtained was categorized into several strata, which is the relationship:

$$IRR = \frac{R_1S_1 + R_2S_2 + ...R_nS_n}{nr}$$ Where, R1 = rank of first order, Rn = rank of last order, S1 = score of first order, Sn= score of last order, n=number of observation, r=number of order,
Livestock Unit (LSU), *(Neupane, 1995)*
Buffalo=1, cattle= 0.8&goat=0.08
Arithmetic mean (weighted mean) was also used while presenting response according to the response number.

3.6 Inferential Statistics

One of the applications of chi-square, X^2 - tests as a test of independence, is useful to find out whether two or more attributes are associated or not. In order to test whether or not the attributes are associated we take the null hypothesis that there is no association of attributes under study or, in other words, the two attributes are independent. If the calculated value of X^2 -is less than the table value at a certain level of significance, we say that the results of experiment provide no evidence for doubting the hypothesis or, in other words, the hypothesis that the attributes are not associated holds good. On the other hand, if the calculated value of X^2-is greater than the table value at a certain level of significance, we say that the results of the experiment do not support the hypothesis or, in other words, the attributes are associated. Chi square test gives the relationships between the attributes at a certain level of significance rather than its strength and direction.

Therefore, Chi-square test as a test of independence was used to draw the inference on the independence of the variables at 5% level of confidence.

For chi square test

$$\text{¡}^2 = \frac{(O-E)^2}{E}$$ Where, $$E = \frac{RT \times CT}{N}$$
E = expected frequency, RT = the row total for the row containing the cell, CT = the column total for the column containing the cell, N = the total number of observation

Degree of freedom for X^{2-}test: While comparing the calculated value of with the table value we have to determine the degrees of freedom. This is the number of classes to which the values can be assigned arbitrarily or at will without violating the restrictions or limitations placed. The degree of freedom for X^{2-} (v)= (c-1) (r-1); Where, c refers to column and r refers to rows.

3.7 Limitations of the Study

- Though much attention had been paid to analyze and verify the collected data by using different statistical tools, it includes subjective interpretation in some ways.
- It was difficult to carry out different group discussion, other participatory group method of information collection with limited resource.
- Among the five livelihood assets, the study takes into consideration only two assets viz. social and natural assets.

CHAPTER 4

SOCIO ECONOMIC CHARACTERISTICS OF THE POPULATION

4.1 Study area: Glimpse of Bara District

Bara lies in Narayani zone of Nepal covering 1295.63 sq. Km. The district is surrounded by Rautahat district in the east, Parsa in the West, Makawanpur in the north and Bihar state of India in the south. Geographically it lies between 26051' to 27002'N latitude and 84051'E to 85016'E longitude. Altitude of the district varies from about 152m to 915m. Tropical to subtropical climate is found within the district. It is one of the districts having largest population density, which is 470/km².

The major rocks found in the district are Sandstone, siltstone, shale and conglomerate. The average annual rainfall is 1760.6mm and average annual temperature is 250^0 C. Ecologically the district covers two zones: Terai and Siwalik.

The social structure of the district is heterogeneous in term of caste and ethnic composition. Hill origin caste and ethnic groups as well as Tarai origin caste/ethnic groups were residing harmonious for the centuries. However, Tharu were the indigenous ethnic groups of the area.

Basic statistical Report 2062 B.S also reported that out of the total land cultivated land covers 54%, forestland 41%, grassland 2% and other 3%. This district covers 52559 ha (41%) forest and the major species found are Sal *Shorea robusta* (Sal), *Acacia catechu* (Khair), *Adina cardifolia* (Asna,) *Termenalia tomentosa* (Karma),*Mallotus Philipinensis* (Sindhure), *Legestromia Parviflora* (Bot Dhayero).

4.1.1 Flora and Fauna

Thamimai CFUG is rich in bio-diversity. It is a habitat of different kinds of wild animals, birds, reptiles, insects, and plants. The pristine Saal (Shorea robusta) forest is available in the study area. Besides Saal, various other timber species like Karam (Adina cordifolia), Kaymuna (Syzygium cerasoides), Rajbriksha (Cassia fistula), Jamuna (Syzygium cumini), Sirish (Lbizzia lebbek), Budhidhagero (Woodfordia fruitcosa), etc. are found in the forest. In addition to timber products, shrubs, bushes and various other non-timber products, such as medicinal plants: Apamarga (Achyranthus asperal), Jethimadhu (Ghucyrrhiza glabra), Barro

(Terminalia bellirica), Harro (Terminalia chebua), etc., edible plants: Bantarul (wild yam), Niguro, Chyau, Sisnu (Urtica dioica), Kafal, shoot of wild bamboo etc., ceremonial plants: Bhorla (Bhuheni vahlii), (Oroxylum indicum), Bhalaya (Semicorpus anacordium), Kaulo (persea udorantissima), Bel (Bengal quineel), Jhankri- syauli, leaves of Saal (shorea robusta) etc. and domestic use plants: Bhorla (Bauheni vahlii), wild bamboo(Dendrocalamus hamiltonii) etc. are found in Irautar. Several kinds of colorful flowers, shrubs, cripple plants/veins and grasses are also available in the area.

Wild animals like fishing cat (Felis viverrina), foxes, jackals (Canis aurreus), rabbits (lepus ruficaudatus), wolfs (Canis lupus), jungle cats (Felis chaus), deer, doe, monkeys (Macaca mulatta) are common in this area. Different kinds of birds such as parrot, pheasant (Lophura euomelana), peacock (Pavo cristatus), owls (Bubo nipalenis Tito), myna (Acridotheres tristis), dove, are also found in the jungle. Similarly, several kinds of snakes and other reptiles, butterflies and insects are also found in the forest. According to the villagers wild animals, birds, reptiles, butterflies and other insects' numbers are increasing in the study area after the establishment of CF.

4.1.2 Brief view of Thanimai CFUG

Thamimai CFUG (TCFUG) lies in Pipara, Simara VDC ward no. 1,2,4,5, and 6 of Bara district. It covers Pathlaiya Birgunj Road in the west, *Bahune* River in east, CF as described by the map of Operational forest management plan (OFMP) in the north and Airport in the south.

The forest was handed over to the villagers as Community Forest in 2056 B.S. Out of total 19 committee member, there were 12 male and 7 female members. There were all together 779 households managing the community forest as users.

The CF covering total area of 93.75 ha, comprises tropical type of climate. The major timber species are Sal, Asna, Karma etc. Major NTFPs species found in the forest are Kurilo, Amala, Harro, Barro etc. For managing the forest properly, it has been divided into 4 bocks namely; Pudus Ghari (20 ha), Banmara Ghari (20 ha), Sindure Ghari (25.75 ha), Lasune Ghari (28 ha). Mainly sandy, black, loamy type soil are found in the forest.

Figure 4: Map of Study area: Pipra, Simra of Bara District

Source: DFO office Bara

4.2. Socio-Economic Characteristics of Studied Population

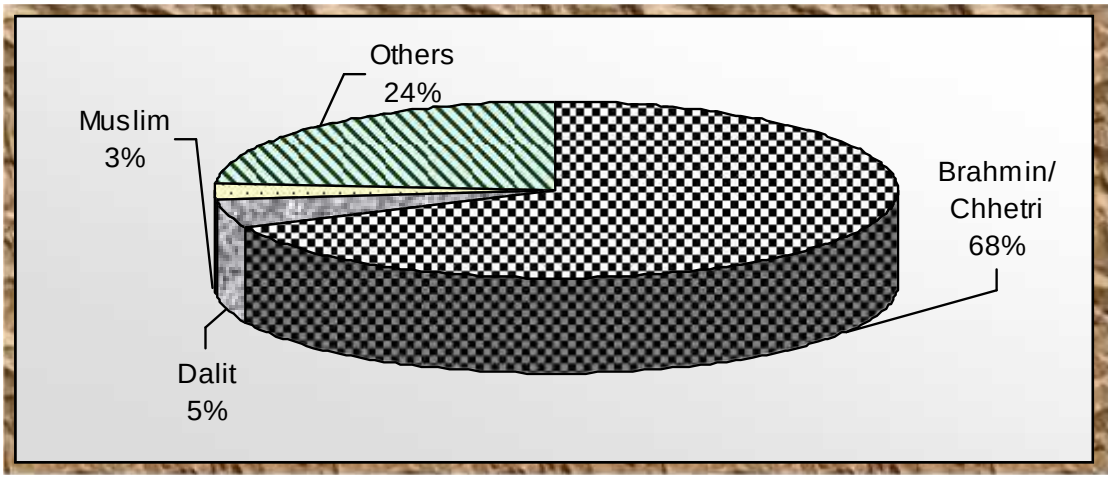
Socio-economic characteristics are important aspect to be taken into consideration in the study of CF. Socio-economic characteristics such as educational status, land holding, family size, livestock population, caste/ethnicity composition have direct effect on management activities of CF. It directly or indirectly related with the livelihood of the local people in CF.

4.2.1 Caste and Ethnic Composition of Respondents

Most of the respondents were Brahmin/ Chetri i.e 68% followed by 5 % Dalit, 3% Muslim and 24% others. There was all together 11 toles in the FUG and one of them was “Miya tole” which consisted only 17 HHs out of 799 HHs and which was the smallest tole too.

Others include –Newar, Magar, Tamang, Rai and Dalit includes-Biswakarma which covers the 24% of the total poplation. The figure shows the distribution of population by caste/ethnic composition among the sample HHs in the studied population.

Figure 5: Ethnic composition of HHs



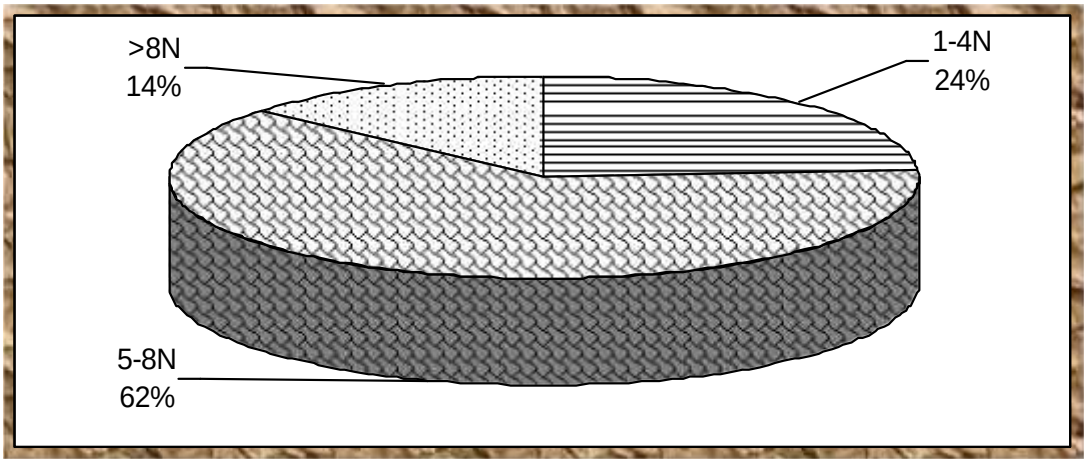
Source: Field survey, 2009

4.2.2 Average Family Size of the Sampled Respondents

Family size gives idea about the degree of interaction with the natural environment. The family size of the 80-selected HHs was 451 .Out of total sampled HHs, 14% HHs had more than 8 family members, 24% had 1-4 members and remaining 62% had above 5-8 members.

There was the HHs having minimum family members i.e. 2 members to maximum of 15 members. The average family size of the sampled HHs of TCFUG was about 5.64 members per HH, which is smaller than the avg. family size of Bara district i.e. 6.38 described in Basic statistical Report, 2062. It can be said that users of the CF are somewhat aware about family planning. The figure shows the family size of sampled HHs in the studied population.

Figure 6: Family size of sampled HHs (N stands for number)



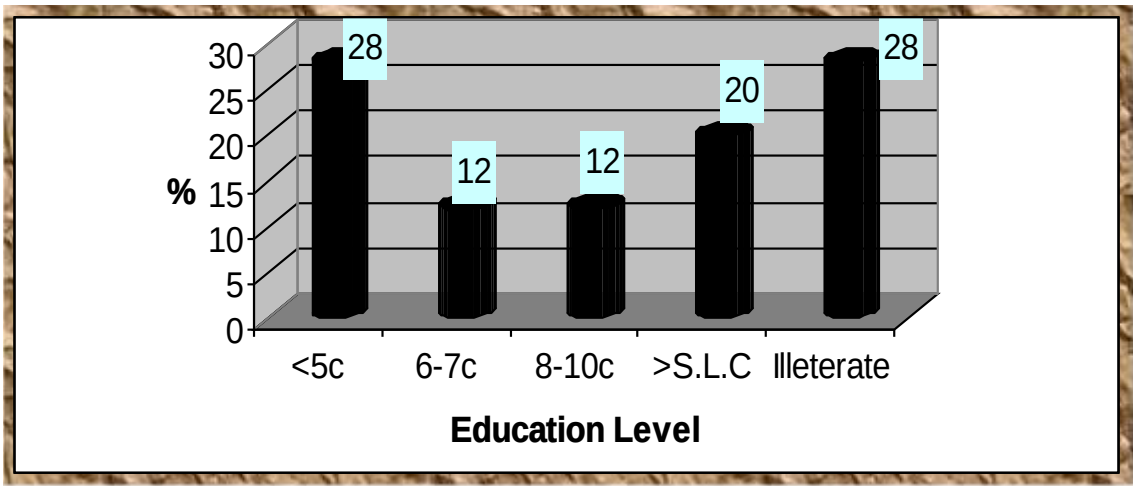
Source: Field survey, 2009

4.2.3 Educational Status of Sampled HHs

For sustainable socio-economic development, education is a major one and is fundamental to develop ownership feelings towards nature and natural environment, make people aware and to build a harmonious society. The effort to conservation and management of natural resource is very effective if community education status is higher.

About 28% population of sampled HHs were in primary level (less than 5 class) and the same percentage of population were Illiterate.12% Population were up to lower secondary level (6-7 class) and the same percentage were in higher secondary level(8-10 class). And 20% populations of sampled HHs were above S.L.C. the figures preset the distribution of population by education status.

Figure 7: Educational status of family



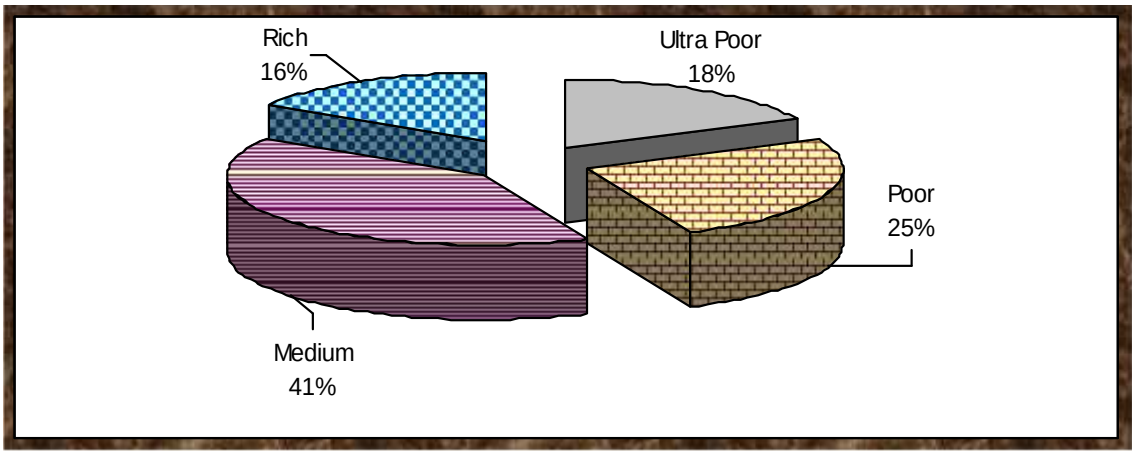
Source: Field survey, 2009

4.2.4 Economic Status of Respondents

In the study area, I found no similar economic condition of all sampled households. The villagers themselves categories into 4 categories like rich, medium, ultra poor and poor categories through the wealth ranking. The figure below shows, out of total sampled HHs, 16% HHs belonged to rich category followed by 41% medium, 25% poor and 18% ultra poor economic status. Form the figure it was clear that most of the respondents were of medium economic status and least were of rich status.

From observation and discussion I found, people of rich economic status were only for fulfilling their demand of timber when they needed and others dependency on the CF was higher than the higher status users. Besides that, poor and ultra poor users were also not have much time to spend for managing the forest properly as they had to work as labor to earn their life.

Figure 8: Distribution of sampled HHs by economic class



Source: Field survey, 2009

4.2.5 Major Sources of Income of Sampled HHs

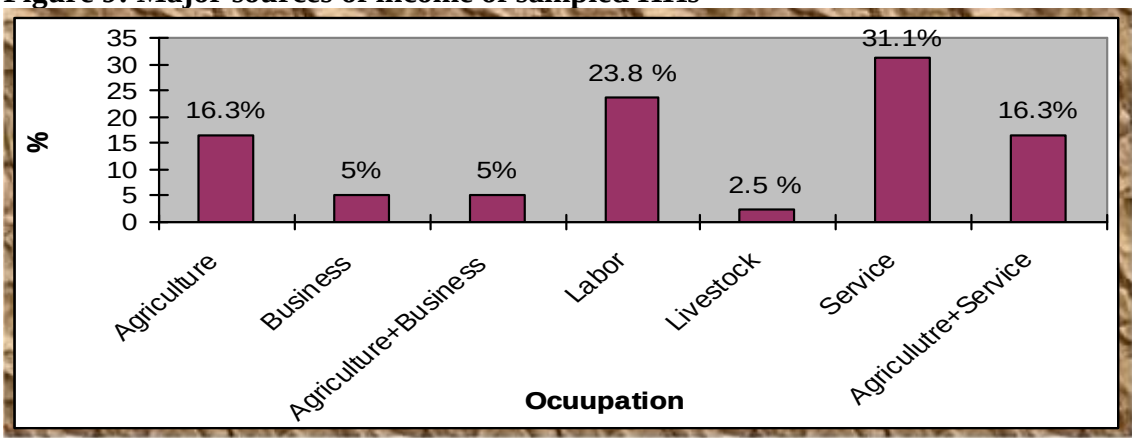
Finding income sources or occupational status help to identify the rural dependency on the forest resources and clarifies how rural people earning their life. The sampled HHs have been generating income from various sources such as agriculture, livestock, business, service, working as wage labor.

The sampled HHs were generating income for their living from various activities. The figure 9 clarifies the major income source of sampled HHs of the study. Most of the sampled HHs i.e. 31.1% were dependent on service, 23.8% earned their life by working as a labor, 16.3%, HHs

were fulfilling their daily demand from agriculture and the same percentage were from agriculture +service, 5% of HHs were earning their life from business and 5% from agriculture +business. The least HHs was dependent on livestock i.e. 2.5%.

During my field observation I noted that major respondents were earning their life from service and secondly from labor so they were busy in outside work and their contribution for managing the CF is less as compared with the other respondents having other occupation.

Figure 9: Major sources of income of sampled HHs

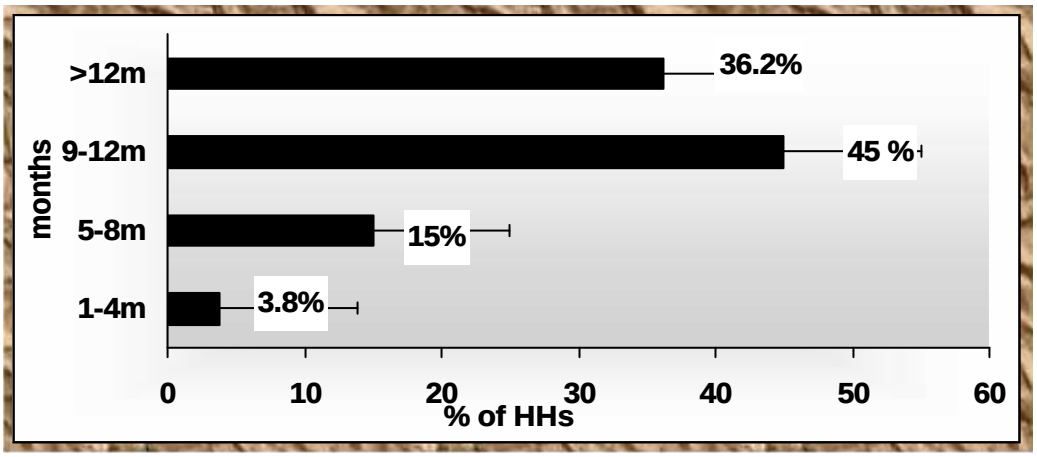


Source: Field survey, 2009

4.2.6 Income Support for Month to HHs

In the study area, major sources of income mentioned in the above support for greater than 12 months for 36.2% of sampled HHs, 9-12 months, 5-8 months and 1-4 months for 45%, 15% and 3.8% of sampled HHs respectively. Here, Income from their occupation is just sufficient for most of the HHs i.e. only for 9-12 months.

Figure 10: Income support for Month to HHs



Source: Field survey, 2009

4.2.7 Land holding Characteristics of Sampled HHs

The major land types were Khet, and Bari owned by HHs in the FUG. Khet consists of leveled plain on which rice and wheat are grown. It is the most valuable land in the village because it yields two crops per year. Bari is unirrigated land, which consists of land which yield one crop per year. Kharbari land is set aside for grass and stream banks, which are also used for growing trees.

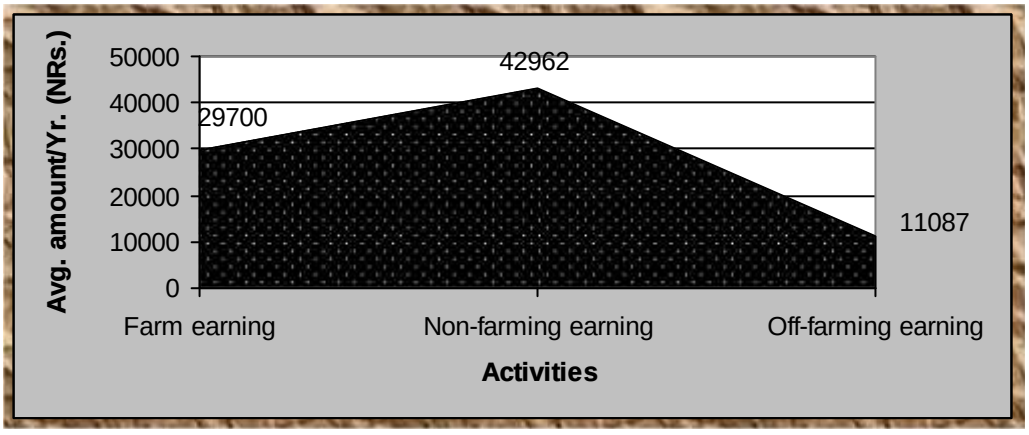
4.2.8 Average Annual Farm, Non farm and off Farm Earning of Sampled HHs

Avg. earning i.e. NRs.42962 per year from Non-farm activities comprises the best earning activities per sampled HH of Thanimai community Forest User Group and secondly comes Farm i.e NRs.29700/year and lastly off-farm (NRs. 11087/year) activities. It was found that off-farm activities had supported only little avg. annual amount for the CFUG.

Here, Farm activities include income from vegetable, livestock selling, milk selling and others that from their own soil land.

Non-farm activities include income from sources like service, business, pension, remittance etc whereas Off-farm activities comprise income from wages labor, bataiya, kamaiya, adhiya, livestock selling, milk selling, vegetable selling where land is not the person involving in such activities.

Figure 11: Average annual earning of sampled HHs from different activities

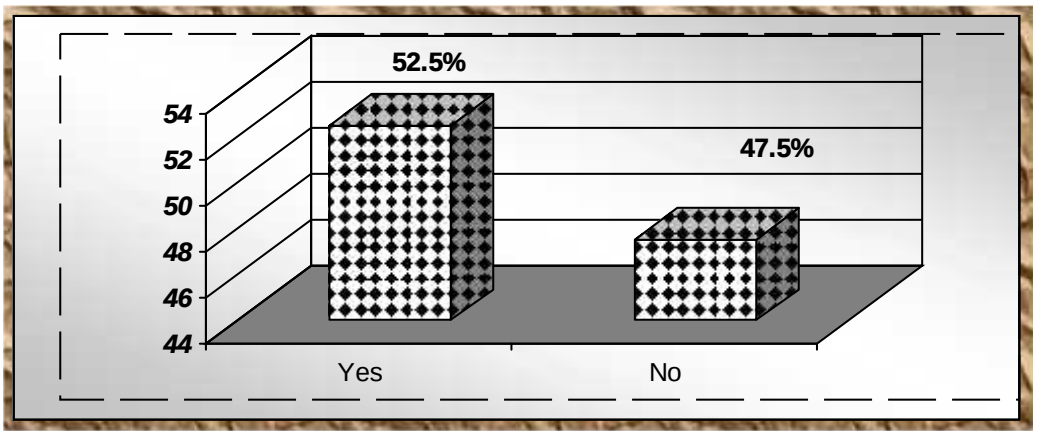


Source: Field survey, 2009

4.2.9. Livestock of Sampled HHs

Out of total sample households, 52.5% are rearing livestock and 47.5% have no livestock. The figure below clarifies the sample households who have livestock or not.

Figure 12: Livestock holding percentage of the sampled HHs



Source: Field survey, 2009

Out of total livestock holding of the HHs, 49% were rearing goat followed by 29% buffalo and 22% cow. Here, I found buffaloes and cows were kept mainly for milk and manure production, goats for meat. Livestock was playing a critical role in maintaining the fertility of agricultural land and for some HHs livestock was the only source of cash income.

CHAPTER 5

PARTICIPATION IN COMMUNITY FOREST MANAGEMENT ACTIVITIES AND THE STATUS OF SOCIAL CAPITAL

This chapter is divided into two parts: the first part deals with the participatory aspect of the users in community forestry management such as CFUG meetings, skill development trainings, benefit sharing, conservation management activities, NTFP management etc and the second part discusses about the status of social capital in the study area.

5.1 Causes to be member of CFUG

In the field observation, the respondent gave several reasons like resident of nearby forest, village elite, village poor, and resident of priority VDC to be community forest user. Most of the respondents i.e. 76.3% expressed their ideas to be user of CF due to resident of priority VDC. 15% respondents became user of CF as they are near by forest and expecting to collect forest products as their need. 6.3% respondents said, they are poor and to fulfill their daily demand they have registered their name in the constitution as user of the CF. 2.5% of the respondents answered that being the village elite, they became user of the CF.

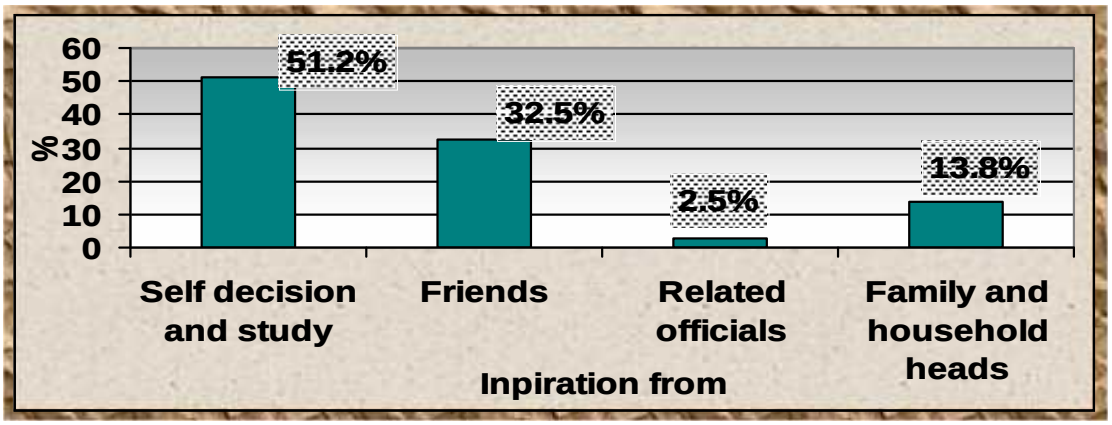
Table 1: Initial Causes to be Users

Causes	Percentage (%)
Resident of priority VDC	76.3
Near by forest	15.0
Village poor	6.3
Village elite	2.5
Total	100.00

Source: Field survey, 2009

In addition, most of the respondents i.e. about 51.2% had become user of CF with their own-decision and 32.5%, 13.8% and 2.5% of respondents had been inspired by their friends, family and HH heads and related forestry officials to be user of CF. It is clearly shown on the figure 13.

Figure 13: Inspiring factor to make user of CF



Source: Field survey, 2009

Based on the field discussion and observation of my study, I found most of the respondents were aware that the people of priority VDC have rights to be user of CF. They were become the user with their own decision and some of them were empowered and motivated by their local villagers and leaders. During the household survey from sample population, 97.7% of the users responded that their membership is continual and the remaining did not respond on this subject.

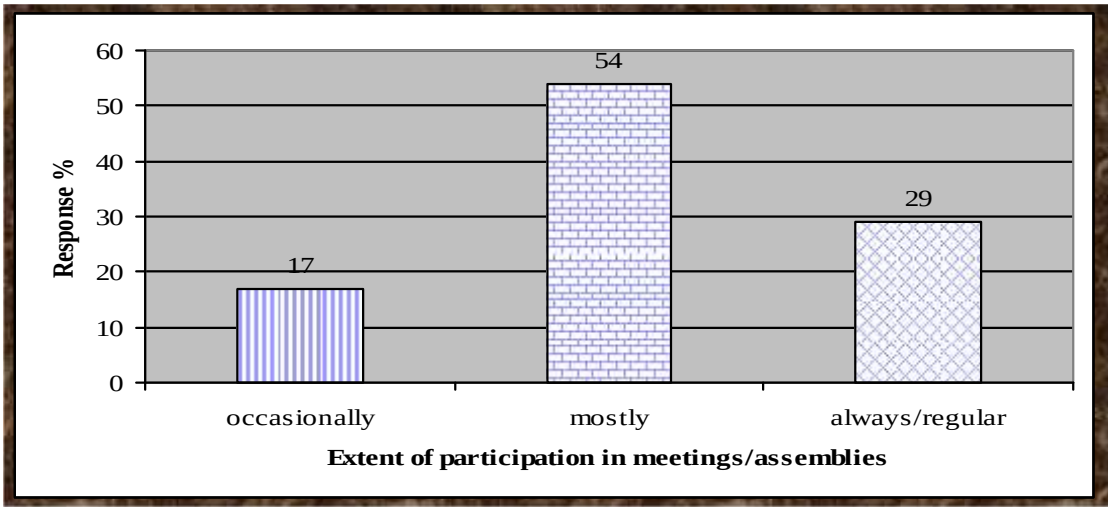
5.2 Participation of Users in Different Forest Management Activities

The participation in forest management activities are basically denoted by the participation of households like CFUG meetings, skill development trainings, benefit sharing, conservation management activities, NTFP management etc.

5.2.1 Participation of users in meetings and assemblies

The CF organizes regular meeting and assemblies to make the members and the users aware about the recent developments in the CF management activities. The participation in such programs indicates their interest in the management of forest related activities. The figure 14 shows the degree of participation in meetings and assemblies by sampled HHs.

Figure 14: Participation of users in meetings and assemblies



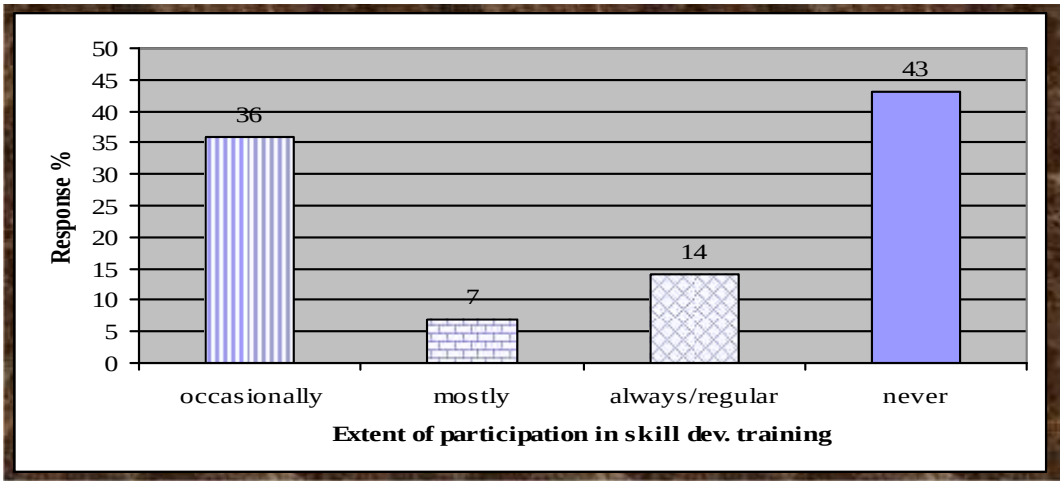
Source: Field survey, 2009

In the participation of users, 29% of users were found always present in meetings and assemblies, 54% of them mostly present and 17% of them were found occasionally present.

5.2.2 Participation of Users in Skill Development Trainings

The CF arranges regular skill development trainings for the capacity enhancement related to forest management activities to the users. The training includes account keeping, goat rising, silvicultural treatment; forest management. It was found the training was mostly participated by male through there is participation of fewer female. The figure 15 presents the participation of users in the skill development trainings.

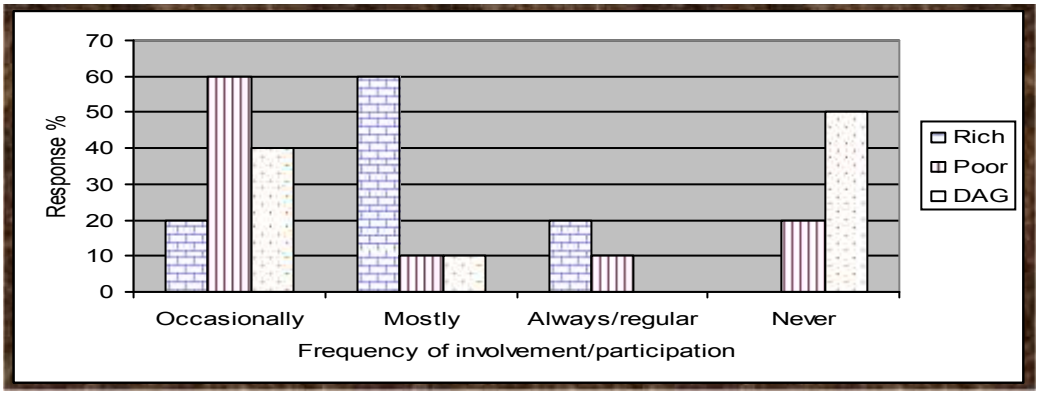
Figure 15: Participation of users in skill development trainings



Source: Field survey, 2009

Participation of users in the skill development trainings was found poorer than in other forest management activities; 43% of users never participated on those trainings, 36% of them occasionally participated, 7% of them mostly and 14% of them always participated in the skill development training conducted for them.

Figure 16: Respondent's involvement in skill-based opportunity by well being ranking



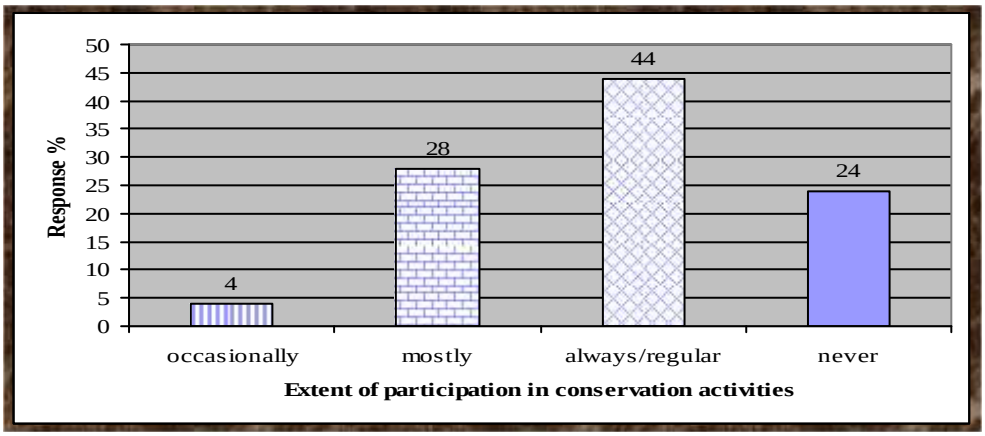
Source: Field survey, 2009

Figure 35 shows that participation extent of the poor and DAG was found to be higher than that of rich in skill based opportunity given by CF.

5.2.3 Participation of Users in Conservation

The regular participation of the users in conservation ensures the sustainable use of the forest and the forest products. The users need to look after the forest in rotational basis in the study area. The figure 17 shows the participation of the users in the forest conservation activities.

Figure 17: Participation of users in conservation activities



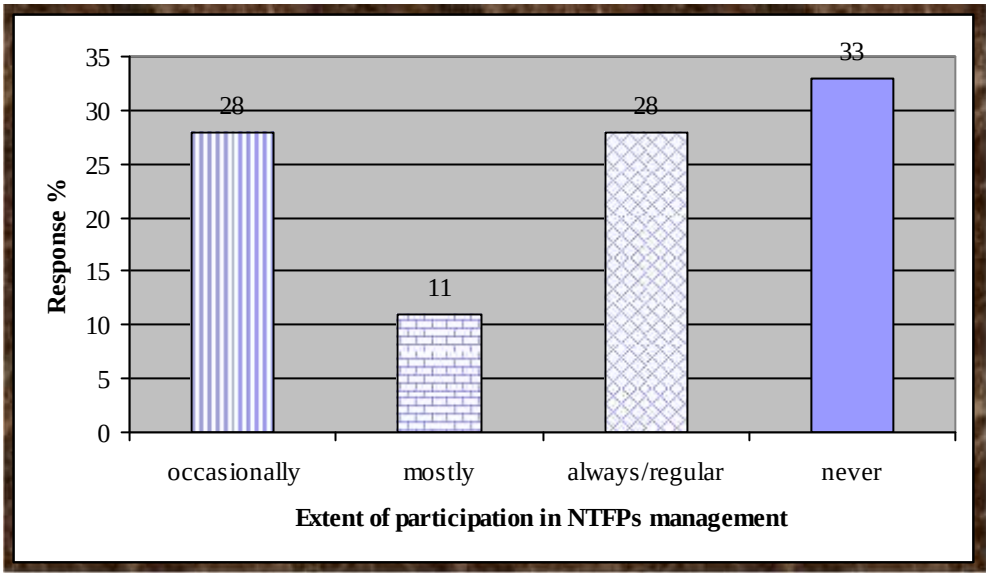
Source: Field survey, 2009

In the conservation of forest 44% of users always participated, 28% of them most of the time, 4% of them participate occasionally and 24% did not participate at all.

5.2.4 Participation of Users in NTFP Management

The users use different kinds of forest products except timber product. Occasionally timber is not considered as NTFP. They use these products for supplementary for cooking food during the scarcity, for treatment of various kinds of diseases, for preparation of household materials, for performing various rituals and so on. Therefore, the users are also conscious about the management of NTFP. The figure 18 shows the participation of users in NTFP management.

Figure 18: Participation of users in NTFP management



Source: Field survey, 2009

In NTFP management and income generation activities such as farming of cash crops and bamboo/nigalo based small handicraft enterprise. 28% of users participated every time, 11% of them participated most of the time, 28% of them participated occasionally and 33% of them used to never participate in those activities.

5.3 Decision-making

Decision-making in CFUGs is crucial for implementation of the activities in an equitable manner with ensuring sustainability. The success or failure of CF would mostly depend upon decision made by user group/ committee whether or not it is socially acceptable, technically feasible and economically viable. There are many stages in CF viz. users' identification, constitution as well as management plan preparation and implementation. In every stage, users have to decide what to do. Forest Act 1993 & succeeding bylaws recognized CFUG as an autonomous organization

where decision made by CFUG & CFUC play crucial role in managing the forest and community development. The decision regarding change in some of the activities in Operation plan is done through general assembly. However other minor decisions are made by CFUGC.

For a sustainable organization, the decision-making should be as democratic as possible. As the mechanism of CFUG solely depends on the self-mobilization of people, proper and effective inclusion and dedication could not be achieved unless they have transparent & democratic as well as accessible decision-making system for all. Hence decision-making is the core of group cohesion to work for common objectives.

5.3.1 Participation of Poor/Women/DAGs in Decision Making Process

To understand the perception of respondents, the above statement was placed to give their views from level[↓] of 'very good' to 'don't know'. The table 2 shows the opinion of respondents' towards involvement of poor/women/DAGs in decision-making process.

Table 2: Opinion of respondents towards involvement of poor/women/DAGs in

Status of respondents		**Response %**				**Weighted Mean**
		Very Good	Good	Not Good	Don't Know	
Sex of Respondents	Male	56.8	32.4	5.4	5.4	1.59
	Female	67.4	23.3	9.3	0	1.42
	Average	62.1	27.85	7.35	2.7	1.5
Economic status	Ultra Poor	73.3	13.3	6.7	6.7	1.47
	Poor	55	25	15	5	1.47
	Medium	62.5	34.4	3.1	0	1.41
	Rich	61.5	30.8	7.7	0	1.46
	Average	63.07	25.87	32.5	2.92	1.51

Source: Field survey, 2009

The table 2 (Follow this trends to other interpretation of the table or not use other table use exact table no) shows, majority of male and female respondents, 56.8% and 67.4 % respectively feel that involvement of poor, women and DAG in decision-making system is very good. Avg. mean of response from male and female is 1.59 and 1.42 towards 2 and 1 respectively. This clarifies that male think participation is good and female perceive as very good.

[↓] Opinion level: 'very good' means that most of the people's opinion was that poor/women/ DAGs participate in the decision making process and 'good' means that some of the people's opinion was that poor/women /DAG participate in decision-making process. Similarly, 'poor' means only few people's opinion was that poor/women/DAG participate in decision-making process and 'very poor' means that none of the people's opinion was that poor/women/DAG participate in decision-making process

Average 62.1% both male and female feel participation is very good followed by 27.85% good and only 7.35 % feel not good, while avg. 2.7 % don't know whether they get involved or not. Similarly, average weighted mean of ultra poor, poor, medium and rich is 1.47, 1.47, 1.41 and 1.46 respectively, which inclines slightly towards 1 i.e. very good. Though they are of different economic status, they all perceived participation of poor/women/DAGs in decision making is very good. Also analyzing mean percentage, opinion of 63.07% respondents was towards very good, followed by 25.87% good, 32.5 % not good and 2.92 % not good.

5.3.2 Consideration of Women/Poor/DAGs Voice While Making Decision on Forestry Activities

Another important part in decision-making system is consideration of voice of all level and types users on decision-making process. During the field observation, I found the different opinion regarding the hearing of women, poor and DAGs voice regarding making decision on forestry activities.

Table 3: Opinion of women/poor/DAG regarding consideration of voice while decision making

Status of respondents		**Response %**				**Weighted Mean**
		Very Good	Good	Not Good	Don't Know	
Sex of Respondents	Male	54.1	32.4	8.1	5.4	1.65
	Female	39.5	48.8	7	4.7	1.77
	Average	46.8	40.6	7.55	5.05	1.71
Economic status	Ultra Poor	40	40	6.7	13.3	1.93
	Poor	40	35	21	5	1.9
	Medium	37.5	56.3	3.1	3.1	1.72
	Rich	84.6	15.4	0	0	1.15
	Average	50.52	36.67	7.45	5.35	1.67

Source: Field survey, 2009

Opinion of both male and female found same on the statement above. According to them, voice consideration is in good state as their weighted mean is 1.65 and 1.77 towards 2 (good). Regarding the economic status of respondents, Ultra poor, poor and medium stated same voice on the statement and their weighted mean is 1.93, 1.9 and 1.72 respectively i.e. inclining towards 2 (good). However, rich perceived very good as mean score of perception of rich status respondents is 1.15 towards very good. Avg. means score i.e.1.67 from all level or economic status of respondent's shows that most of respondents are towards good on the statement.

5.3.3 Opinion of Respondents on User/Beneficiaries Identification Process

Identifying users properly is the major task in community forest user group formation process. And, if users are not properly identified then it results conflict obviously. To understand identification of users, perception of different economic status and sex were analyzed by asking them to place their perception on the statement "users/beneficiaries identification".

Table 4: Opinion of respondents on users/beneficiaries identification

Status of respondents		Response %				Weighted Mean
		Very Good	Good	Not Good	Don't Know	
Sex of Respondents	Male	18.9	51.4	21.6	8.1	2.19
	Female	27.9	55.8	14	2.3	1.91
	Average	23.4	53.6	17.8	5.2	2.05
Economic status	Ultra Poor	20	40	26.7	13.3	2.33
	Poor	20	25	20	5	2.1
	Medium	31.3	56.3	9.4	3.1	1.84
	Rich	15.4	61.5	23.1	0	2.08
	Average	21.68	45.7	19.8	5.35	2.09

Source: Field survey, 2009

The table above clarifies that both male and female have same perception on the statement, as their mean is 2.19 and 1.91. They believed that users/beneficiaries are identified well as their mean is towards 2(good). Considering the vision of ultra poor, poor, medium and rich, all perceived the identification of users/beneficiaries is good as their weighted mean is 2.33, 2.1, 1.84 and 2.08 i.e. near to 2(good).

Here, comparing mean of all economic status, it was found that respondents have somewhat same perception on the statement as their mean is near to each other.

5.3.4 Opinion of Respondents on Contribution of All Users in CF Management

For better and sustainable management of community forest, contribution from all sides is very urgent and necessary. Development of ownership-feelings among the users can increase their contribution for managing forest. Table 5 shows perception of respondents on the statement above.

Table 5: Opinion of respondents towards contribution of all users in CF management

Status of respondents		Response %				Weighted Mean
		Very Good	Good	Not Good	Don't Know	
Sex of Respondents	Male	27	56	13.5	2.7	1.92
	Female	48.8	46.5	4.7	0	1.54
	Average	37.9	51.25	9.1	1.35	1.73
Economic status	Ultra Poor	26.7	66.7	6.7	0	1.8
	Poor	50	30	15	5	1.75
	Medium	40.6	53.1	6.3	0	1.66
	Rich	30.8	61.5	7.7	0	1.77
	Average	37.02	52.82	8.92	1.25	1.74

Source: Field survey, 2009

It is known from table that majority of both male and female respondents (avg. 51.25%) believed that contribution from all level users in CF management is good as their weighted mean is 1.92 and 1.54 respectively towards 2.

And, majority respondents of all economic level perceived contribution is good from all sides. The weighted mean of ultra poor, poor, medium and rich is 1.8, 1.75, 1.66, 1.77 close to 2 is good and avg. mean score is 1.74 which states that the opinion of respondents of all economic status is good towards the statement as contribution of all users in CF management attitude on benefit sharing mechanism satisfying all users

Chi-square test was conducted to know the attitude of respondents by sex and by economic status on the statement "benefit sharing mechanism is satisfying all users".

Table 6: Attitude on " Benefit-sharing mechanism is satisfying all users"

Status of respondents		Response in % (Scaling) St. Agree…….....St. Disagree					Weighted Mean	d.f	Chi-sq.value	Tab. value	S/NS
		1	2	3	4	5					
Sex	M	16.2	45.9	16.2	13.5	8.1	2.51	4	1.67	9.49	NS
	F	27.9	41.9	11.6	11.6	7.0	2.28				
	Avg.	22.05	43.9	13.9	12.55	7.55	2.39				
Economic status	UP	20	40	20	13.3	6.7	2.47	12	18.1	21	NS
	P	25	35	5.0	10.0	25	2.75				
	M	21.9	53.1	9.4	15.6	0	2.19				
	R	23.1	38.5	30.8	7.7	0	2.23				
	Avg.	22.5	41.65	16.3	11.65	7.92	2.41				

Source: Field survey, 2009

Note: *1= Strongly agree, 2= Agree, 3= Neutral, 4= Disagree, 5= Strongly disagree*

[(α) =Significant level (5%), S= Significant difference, NS= No significant difference]

The table 6 shows that average weighted mean from response of male on the statement is 2.51 towards 3 i.e. neutral followed by weighted mean of response from female on the same statement is 2.28 towards agree. Here, attitude differs between male and female. It may be due to active participation of female, which made them to know about the benefit sharing mechanism. However, male were busy in their office work and other outside activities so their active participation was low.

Similarly, overall average weighted mean of response from respondents of all economic status is 2.41 closes towards 2 is agree.

To understand whether voice of male and female, and of ultra poor, poor, medium and rich differ significantly or not, Chi-square test was conducted. From the response of male and female it was found that, Chi-square (calculated) value (1.67) is smaller that tabulated value (9.49) at 5 % of significant level and 4 d.f. Hence, I concluded, the attitude between male and female respondents on the statement “benefit sharing mechanism is satisfying all users” do not differ significantly.

Similarly, calculated value (18.10) is smaller than that of tabulated value i.e. 21 at 5% of significant level and 12 d.f. Hence it is clear that the voice among all economic status respondents do not differ significantly.

5.3.5 Attitude on transparency in Fund Mobilization activities

Average mean score from the response from male is 2.86 and from female is 2.81 which are towards 3 showing neutral on the statement. Avgerage mean score from the response of all economic status respondents is 2.88 showing neutral perception towards the transparency in fund mobilization activities. It shows they were unknown whether the fund mobilization is transparent or not.

Table 7: Attitude on "Transparency in fund mobilization"

Status of respondents		Response in % (Scaling) St. Agree….....St. Disagree					Mean	d.f	Chi-sq.value	Tab. value	S/ NS
		1	2	3	4	5					
Sex	M	5.4	43.2	16.2	29.7	5.4	2.86	4	0.73	9.49	NS
	F	9.3	39.5	18.6	25.6	7.0	2.81				
	Avg	7.35	20.67	17.4	27.65	6.2	2.68				
Economic status	UP	6.7	26.7	40	20	6.7	2.93	12	17.22	21	NS
	P	0.0	40.0	5.0	40	15	3.30				
	M	12.5	46.9	18.8	18.8	3.1	2.53				
	R	7.7	46.2	7.7	38.5	0.0	2.77				
	Avg.	6.72	39.95	17.87	29.3	6.2	2.88				

Source: Field survey, 2009

The calculated value (Chi-sq. value) 0.73 is smaller than tabulated value 9.49 at 4 d.f. and 5% significant level in case of the response from both male and female, indicates that their perception on transparency in fund mobilization activities don not differ significantly.

Similarly, in case of response from all economic status respondents, chi-square value i.e17.22 is smaller than tabulated value i.e.21 at 12 d.f. and 5% of level of significance. Hence, I noted that

all economic status respondents believe that there is transparency in fund mobilization, their voice do not differ significantly. This is because the people are aware about the activities ongoing in the CF and their involvement is also regular in forest related activities.

5.4 Index of Relative Ranking (IRR) Among the Different Management Activities

5.4.1 In Participation

Table 8: IRR in participation of users in different activities

S.N	Activities	Calculated IRR	Result	Rank
1	Meeting and Assemblies	0.80	Active	First
2	Plantation	0.80	Active	First
3	Skill development Activities	0.46	Fair	Fourth
4	Conservation	0.59	Good	Second
5	NTFP management/ IGA	0.48	Fair	Third
6	Others	0.45	Fair	Fifth

The IRR table above reflects that the participation of users in meetings and assemblies and plantation was active and stands in the first order, the participation in conservation activities was found good and stands on second order, and others are fair and stand on third, fourth and fifth order among the different management activities. People participate mostly in meeting and assemblies because the users want to become aware about the activities of CF, they know the importance of forest. However, as CF is not only the primary source of income for most of the users their contribution towards conservation and NTFP management is found to be satisfactory. The users rank fourth regarding their involvement in skill development activities because for as the duration of the training is long and the skills they learnt in the training is only used for forest development activities, most of the rich people they do not attend the skill development trainings.

Test inference of the participation of users in the community forestry works

Wealth class wise

Hypothesis: Wealth class and participation of users are independent i.e. categorization of users in different wealth class does not effect the participation on community forestry activities**.**

Table 9: Chi-square test inference on user's participation-wealth class wise

S.N	Activities	df	Chi-square cal	P-value	Tabulated	Inference
1	Meeting or assemblies	6	99.747	0.000*	12.6	Rejected
2	Skill development trainings	9	115.383	0.000*	16.9	Rejected

*Shows rejection of hypothesis level of significance at 0.05

Inference: Since the calculated value is more than tabulated value, the hypothesis is rejected. It implies that the categorization of users into different wealth classes is effective to increase participation on the CF management activities i.e. group meetings or assemblies and skill development trainings significantly.

Sex wise

Hypothesis: Sex of the users and their participation in CF management activities are independent. Or Sex of the users does not affect the participation of users.

Table 10: Chi square test inference on users' participation- sex wise

S.N	Activities	df	Chi-square cal	P-value	Tabulated	Inference
1	Meeting and Assemblies	2	1.018	0.601	5.99	Accepted
2	Plantation	2	1.499	0.473	5.99	Accepted
3	Skill development Activities	3	17.850	0.000*	7.81	Rejected
4	NTFP management/ IGA	3	13.846	0.003*	7.81	Rejected

*Shows rejection of hypothesis level of significance at 0.05

Inference: Since the calculated value is less than tabulated chi square values of meetings & assemblies and plantation activities, the hypothesis is accepted which implies that the sex of the user does not affect the participation of users in meetings & assemblies and plantation activities

they are independent of each other. While in case of skill development trainings and NTFPs mgt/IGAs, the calculated values of chi-square are greater than tabulated values of each. This implies the sex of the users affects their participation in the skill development trainings and NTFPs mgt/ IGAs.

5.5 Status of Social Capital

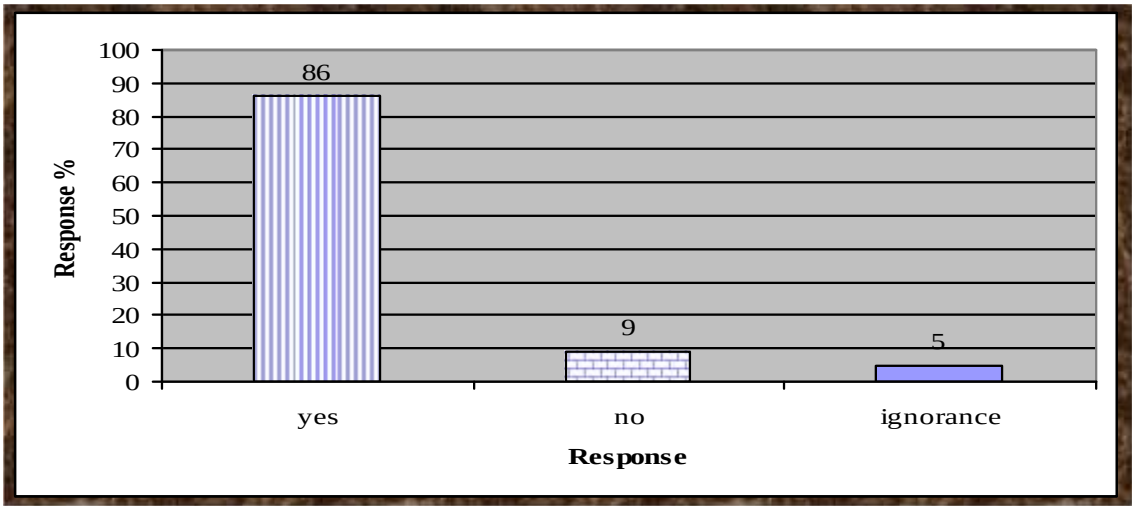
The term social capital attempts to capture community and wider social claims on which individuals and households can draw by virtue of their belonging to social groups of varying degrees of inclusiveness in society at large (Ellis, 2000). There is much debate about what exactly is meant by the term 'social capital'. In the context of the sustainable livelihoods framework it is taken to mean the social resources upon which people draw in pursuit of their livelihood objectives (DFID, 1999). This study displays the average status of the various elements of social capital of CFUG in the study area as follows:

5.5.1 [2]Awareness

5.5.1.1 Awareness on Rules and Social Norms

The awareness level of the users in the community is one of the social capitals. The measurement of awareness level has been conducted through users know how about the rules and social norms of users in the community. The figure 5.7 shows the people's level of awareness about rules and regulation among the sampled HHs.

Figure 19: Users' know-how about rules



Source: Field survey, 2009

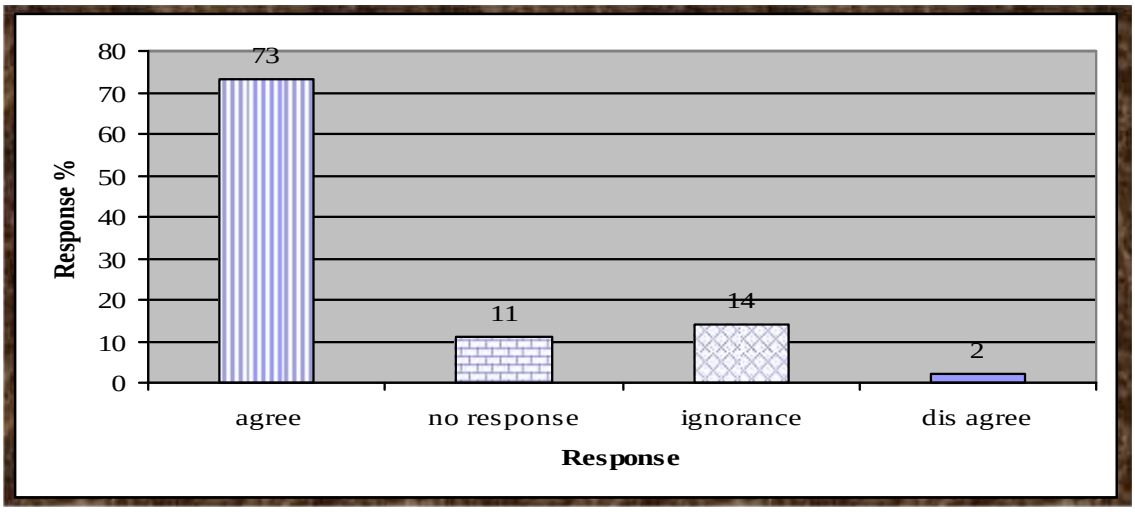
[2] Awareness: Level of understanding of the community users on different aspects such as CF rules and norms, role of CF in development of social capital, role of CF in development of natural capital.

The figure clearly shows that the eighty six percent of the users were well informed about the rules and regulation 9% were not informed and the remaining did not respond on this matter.

5.5.1.2 Users Perception about the Role of CF on the Development of Social Capital

The CF plays an important role for the development of social capitals like networks and connectedness among the users as well as stakeholders through the information channel, participation and interaction. The figure 5.8 shows the users perception about the role of CF on development social capital in the study area.

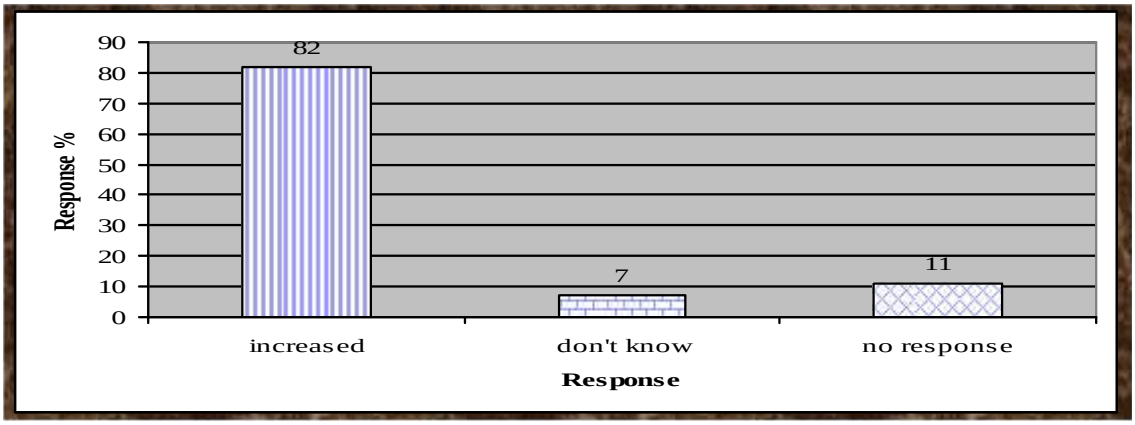
Figure 20: Users perception about the role of CF on development of social capital



Source: Field survey, 2009

The assessment of the perception of users about the role of community forest on the of social capital shows that 73% of them agreed upon positive role on the development of social capital, 14% of them expressed their ignorance, 11% of them did not respond and 2% of them disagreed up on it. Since there has been various awareness related activities conducted by district office and NGOs regarding community forest. Therefore users know the organizations and institutions. The figure 5.9 shows the relation of CF with forest related organizations and institutions.

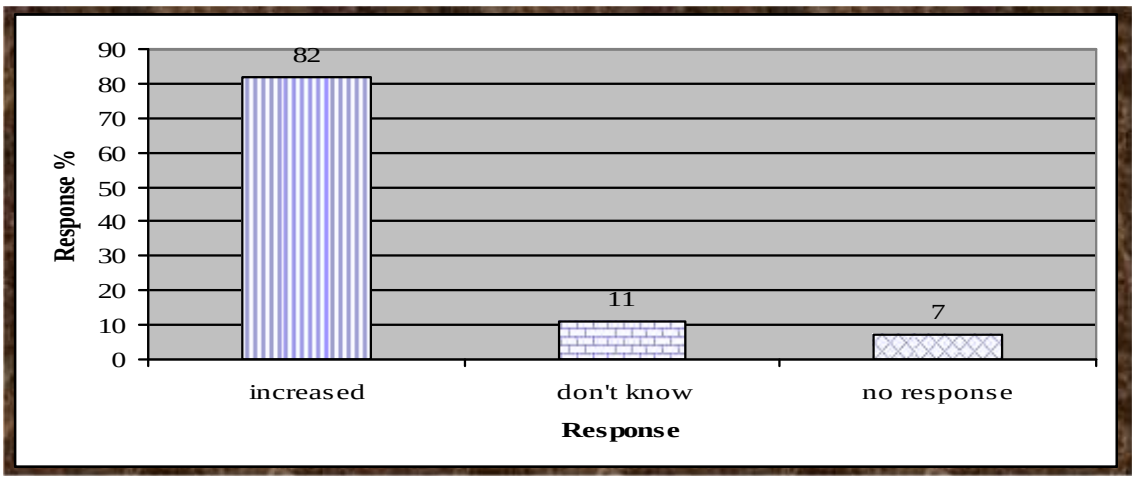
Figure 21: Status of coordination and relation among the institutions



Source: Field survey, 2009

About the network and connectedness of the community to various organizations, 82% of users viewed that it has increased, after CF management, 7% of them showed their ignorance and 11% of them did not respond on this matter. In the study area, the respondent informed that the there is a close relationship between the CF and DFO than other organizations. The following figure shows the above-mentioned relationship between CF and DFO.

Figure 22: Relation between FUGC & DFO

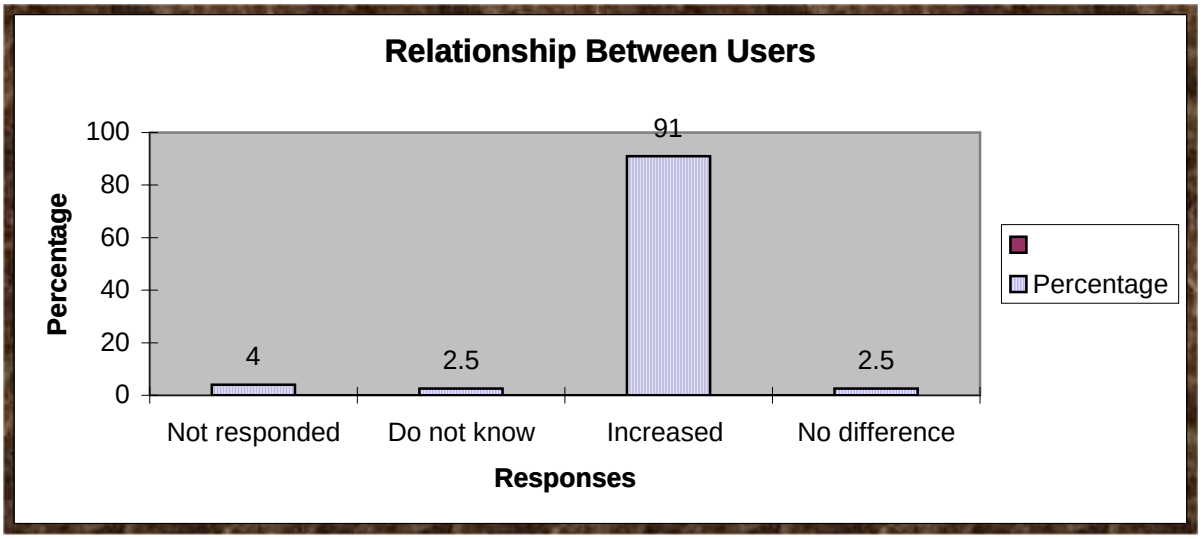


Source: Field survey, 2009

On the working style of organization, 82% of the respondents viewed that the working style of FUGC and DFO has improved after CF management, 11% of them showed their ignorance and 7% of them did not respond on this query. The majority of the respondents' response towards improvement of CF management means that priorly FUG and DFO staffs were commanding type and they did not consult with them before making any decision. But now they agree on the decision of the FUGs.

The cohesiveness of forest users within the community has been measured from the relationship between the users after formation of the CF in the study area. The figure below shows the relation between the users in the study area.

Figure 23: Relation between Users



Source: Field survey, 2009

The figure above shows that the ninety one percent of the users view that the relationship between the users has increased after CF management due to the regular meetings of CGUG and assemblies as well as other different activities carried out by the CF. Majority of the respondents said that the trust among the users also has increased after CF formation.

5.5.2 Test Inference on the Factors of Social Capital

Hypothesis: Wealth class and sex of the users are independent of the various factors of social capitals i.e. wealth class and sex of the users do not affect the development of various factors of social capitals.

Table 11: Chi-square test inference on the factors of social capital

Independent Variable		**Wealth Class**			**Sex**		
S.N	Dependent Variable	Chi-square cal	df	P-value	Chi-square cal	df	P-value
1	Attendance on group meeting and assemblies	19.805	9	0.019*	11.304	3	0.010*
2	Role of Users in decision making	29.327	6	0.000*	1.579	2	0.454
3	Major role of individuals	17.100	9	0.047*	48.614	3	0.000*
4	Relationship between users	29.961	9	0.000*	20.326	3	0.000*
5	Capacity of local resource management	18.132	6	0.006*	9.233	2	0.010*
6	Working style of FUGC and DFO	46.449	6	0.000*	2.546	2	0.280
7	Co-ordination and relationship with GOs/NGOs	27.493	6	0.000*	4.4882	2	0.087
8	FUGs membership status	25.037	12	0.015*	43.739	4	0.000*
9	Trustfulness of Users	46.017	9	0.000*	3.167	3	0.367

***** Shows rejection o f hypothesis level of significance 0.05

Inference: (a) since all the p-values are less than 0.05 in the wealth class column of table above, the hypothesis is rejected which implies that the categorization of users in different wealth class is effective in the development of various factors of social capitals.

(b) In the sex column of table above, the p-values are less than 0.05, in the rows of attendance in group meetings and assemblies, major roles of individuals, relationship between users, capacity on local resource management and FUG membership status, the hypothesis is rejected which means the involvement of both sex is effective in the development of different factors of social capital.

While in case of roles of users in decision-making, working style of FUG&DFO, coordination, and trust among the users, as the p values are more than 0.05, the hypothesis is accepted, therefore, the sex is not effective in the development of those factors of social capital.

Test inferences on the factors of natural capital

Hypothesis: the perception of users of different wealth class and sex is independent of the factors of natural capital- water quality and availability, faunal diversity and quality of air. Or the perception of users of different wealth class and sex is not effective on the improvement of water quality and availability, faunal diversity and quality of air.

Table 12: Chi-square test inference on the factors on natural capital

Independent Variable		**Wealth Class**			**Sex**		
S.N	Dependent Variable	Chi-square cal	df	P-value	Chi-square cal	df	P-value
1	Water quality and availability	6.635	3	0.084	3.054	1	0.081
2	Faunal Diversity	75.000	6	0.000*	3.056	2	0.217
3	Quality of air	6.164	3	0.104	3.739	1	0.053

***** Shows rejection o f hypothesis level of significance 0.05

Inference: Since the p-values for all the factors higher than 0.05, except faunal diversity in wealth column, the hypothesis is accepted. It implies that the perception of users of various wealth class and sex is not effective in the improvement of the factors of natural capitals.

While in case of faunal diversity in wealth class column, the p value is less than 0.05, which rejects the hypothesis and implies that the perception of users of different wealth class is effective in the improvement of faunal diversity.

CHAPTER 6

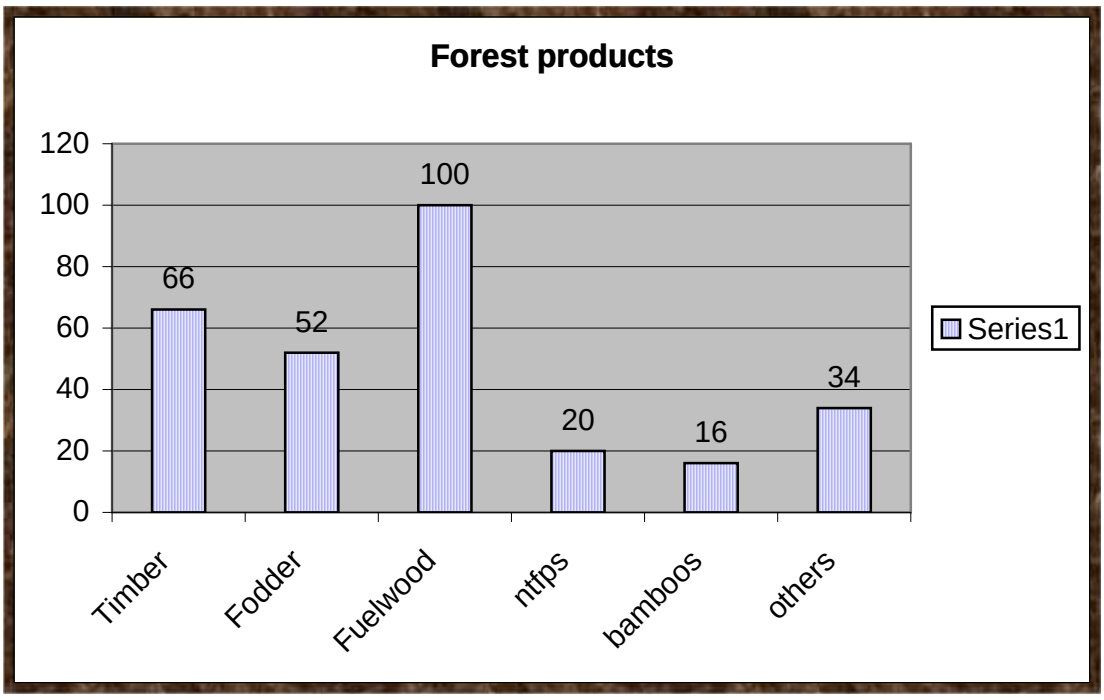
PERCEPTION OF PEOPLE TOWARDS THE FOREST PRODUCTS AND THEIR ROLES ON LIVELIHOODS

This chapter presents the perception of people's towards the availability of various forest products like timber, fodder, fuel wood, NTFPs and bamboos. Similarly, it also discusses the role of forest product on the livelihood of the users at TCFUG.

6.1 Use of Forest Products

The major products available in the forest are timber, fodder, fuelwood, NTFPs and bamboos. Households use these products for different purposes including the construction of the houses, fuel for cooking, feeding livestock and so on. The following figures present the use of different forest products by sampled households in the study area.

Figure 24: Use of different forest products



Source: Field survey, 2009

The contribution of community forests to the rural livelihood was peeped from the spectacles of use of different forest products by the users from the forest. All of the users bring fuel wood from the forest. 66% are depend on forest for timber, 52% for fodder, 20% for NTFPs, 16% for bamboos and 34% for other products including litters, vegetables, fruits, mushrooms, etc.

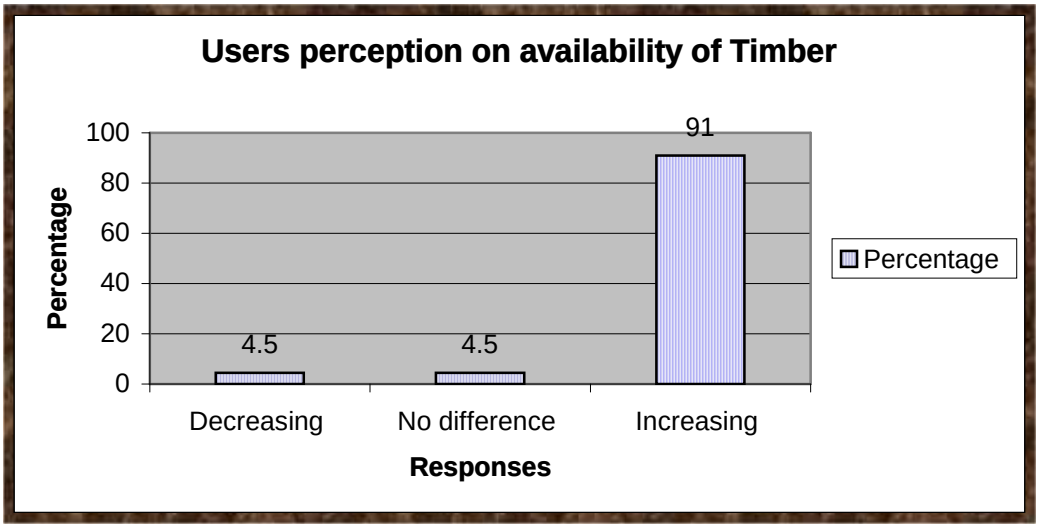
6.2 Users' Perception on Availability of Forest Products

The perception of users on the availability of forest products after CF management was found to be different the result of which are shown below:

6.2.1 Users' Perception on Availability of Timber

The perception of users on the availability of timber products after CF management was found to be different. Some of the respondent informed that it was increased and some said decreasing and rest informed that there were no differences. The figure 6.2 shows the users' perception on availability of timber in the study area.

Figure 25: Users' perception on availability of timber



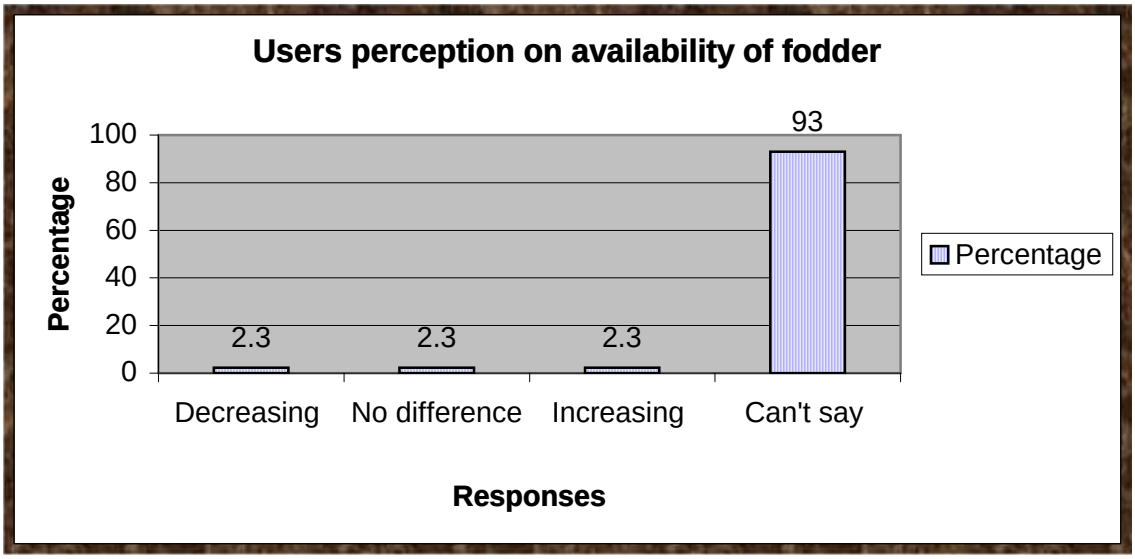
Source: Field survey, 2009

The experience of users on the availability of forest products after community forest showed that 91% users expressed that the forest products have been increased after community forest management, 4.5 % of them expressed no difference on their experience and 4.5 % of them did not respond on this matter.

6.2.2 Users' Perception on Availability of Fodder

There was no similar opinion regarding the availability of fodder in after CF formation. The perception of users on the availability of fodder after CF management showed in the figure 6.3.

Figure 26: Users' perception on availability of fodder



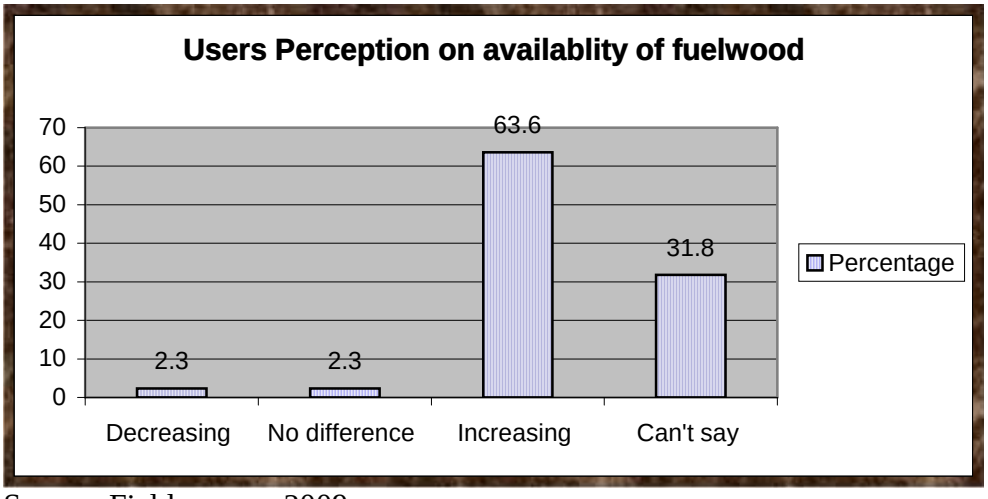
Source: Field survey, 2009

The figure clearly shows that of the respondents informed said that fodder was gradually increasing after handing over the forest to the local people for its management.

6.2.3 Users' Perception on Availability of Fuel Wood

The perception of users on the availability of firewood after CF management was found to be different. Some of the respondent informed that it was increased and some said decreasing and rest informed that there were no differences. The figure 6.4 shows the users' perception on availability of fuel wood in the study area.

Figure 27: Users' perception on availability of fuel wood



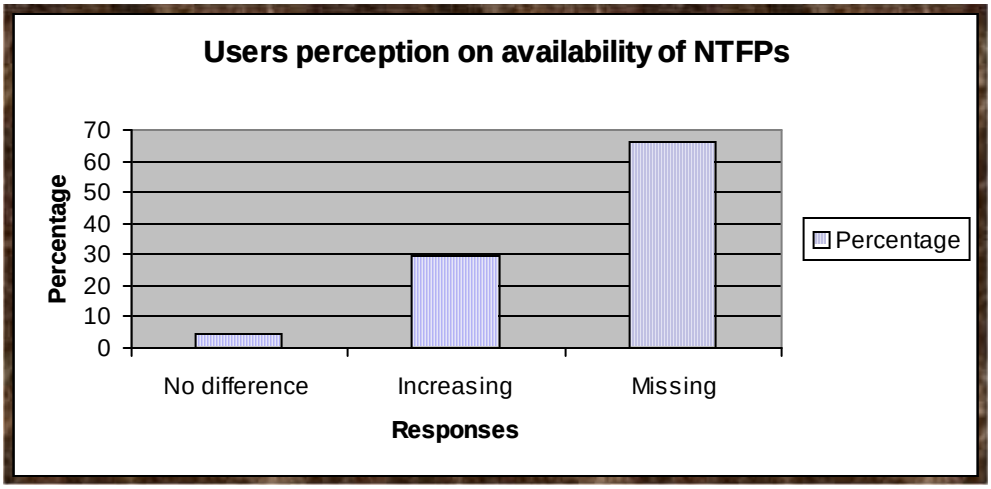
Source: Field survey, 2009

After CF management, 93.25 of users expressed that availability of fuel wood has been increased, 2.3% of them experienced no difference, 2.3% of them experienced decrease and 2.3 % did not respond on the availability of this matter. Majority of the forest users expresses about the increased availability of fuelwood in the Community forest because the protection of the forest has been strict and the CFUG have kept heralu (watchman) to take care of the forest, which restricts the illegal cutting of firewood. While on the other hand the CFUG opens the CF for firewood collection only once in a year and the distribution of the products is done systematically based upon the request from the tole committee.

6.2.4 **Users Perception on Availability of NTFPs**

There was no similar opinion regarding the availability of fodder in after CF formation. The perception of users on the availability of NTFPs after CF management showed in the figure 6.3.

Figure 28: Users attitude on availability of NTFPs



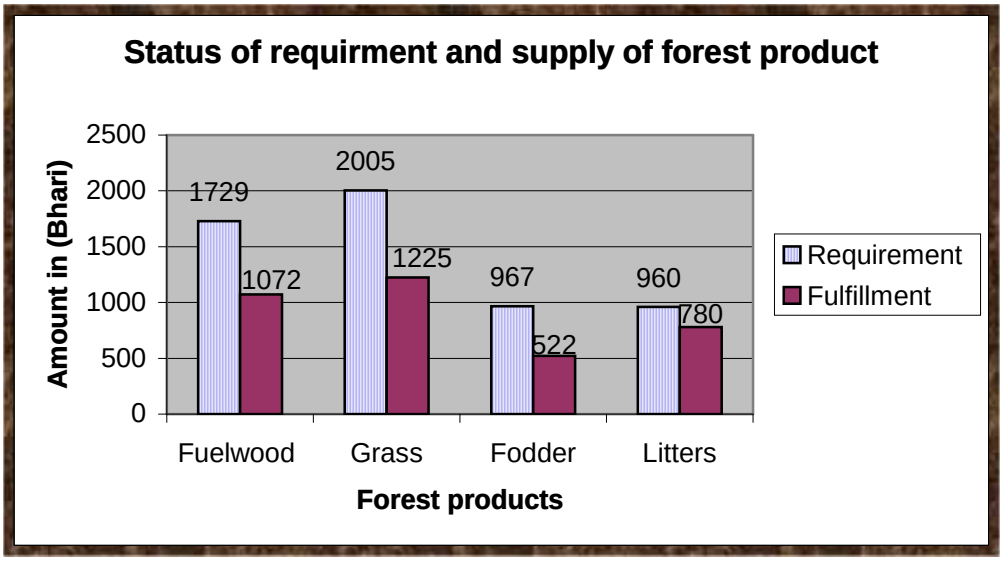
Source: Field survey, 2009

After CF management, 63.6% of users stated that the availability NTFPs have been increased, 2.3% of them expressed that they did not know, 2.35 of them expressed that the NTFPs have decreased and 31.8% of them did not respond on this matter. Among the other NTFPs, bamboo was widely used by the forest users for different purposes like construction of houses, basket preparation, and leaf-raincoat making and so on. Especially those users who are involved directly or indirectly in the bamboo related work expressed that the bamboo's availability has been increased.

6.3 Status of Requirement and Supply of Forest Products

The status of the requirement and supply of forest products from community forest shows that fulfillment of all forest products from the community forest is in deficit situation. It is due to the young stage, low productivity and small area of forest in comparison to household numbers. This situation has opened the door for use and search of existing as well as new alternatives in order to harmonize the requirement and supply of forest products. The figure 6.6 presents the Status of requirement and fulfillment of forest products in the study area.

Figure 29: Status of requirement and fulfillment of forest products

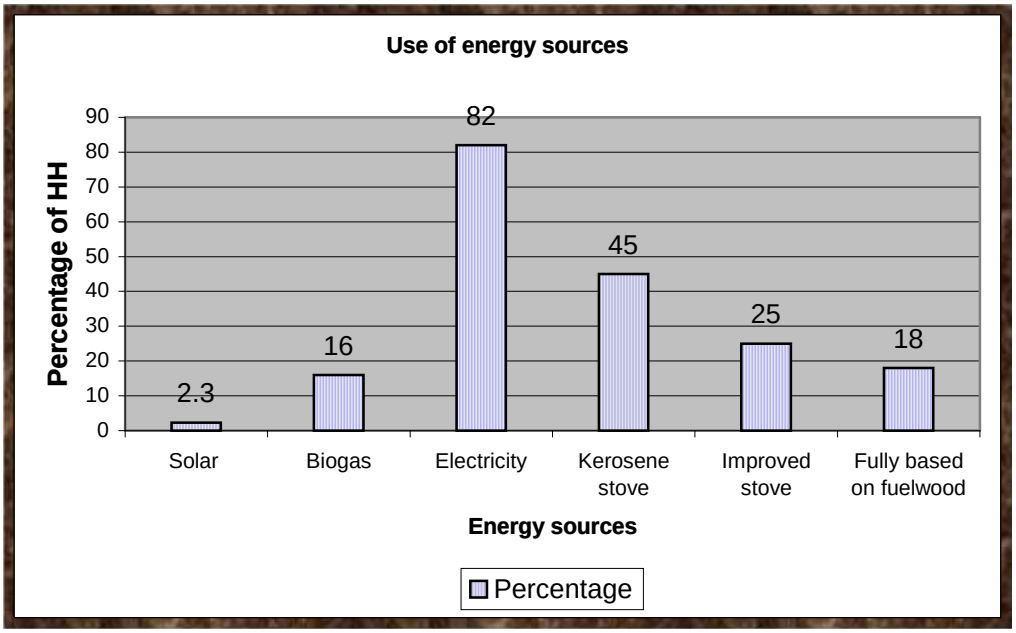


Source: Field survey, 2009

6.4 Alternative Energy Use

The use of various energy sources was found in the study area where 82% of the households used electricity, 45% of them used kerosene stoves, 18% of them were fully dependant on fuel wood, 16% of them used biogas, 2.3% of them used solar energy and none of them used improved stoves. Solar energy and electricity have been used mainly for lighting purposes and others are for heating or cooking purposes. The figure 6.7 Shows the use of various energy sources in the study area**.**

Figure 30: Use of energy by sampled HHs



Source: Field survey, 2009

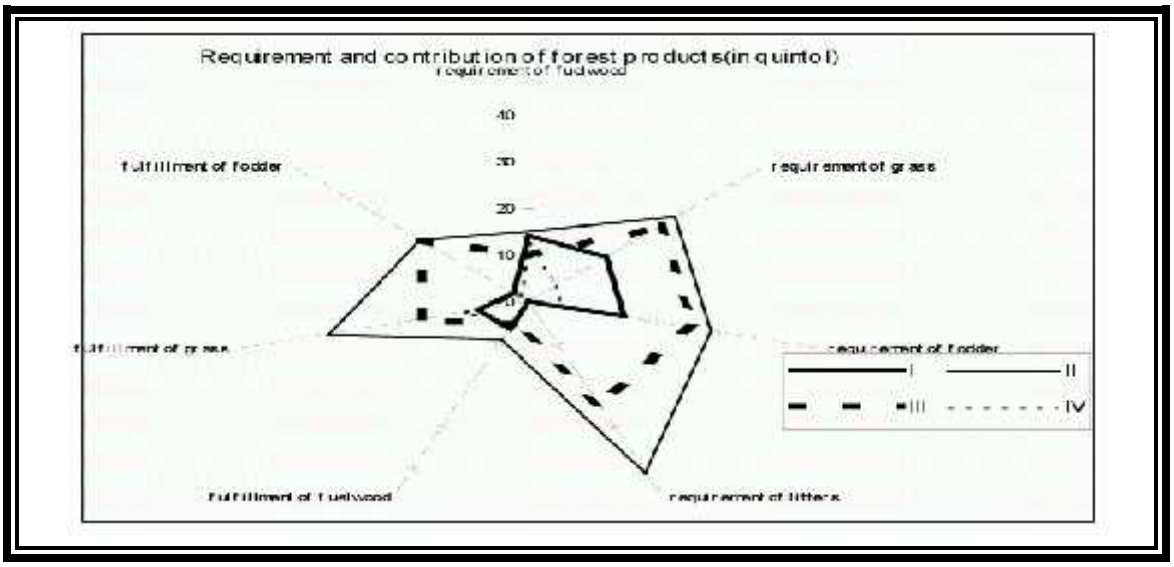
Basically, user's households have been using more than one sources of energy in the study area. It was found that 18% of them were solely dependent on fuel wood for cooking and heating purposes. They have been using kerosene or wood based light sticks (diyalo) for lighting, they have not been using other sources of energy as others have adopted. In the field observation, I found that the people living in the market area use electricity and kerosene. Some of the market dwellers use bio gas. And the people who like nearby the community forest uses fuelwood as primary source of energy.

6.5 Analysis of Livelihoods Capitals

6.5.1 Comparative Analysis of Requirement and Contribution of Forest Products from the CF

The requirement and contribution of different income classes and occupation of the users differs. For example, the requirement of the forest product by the users with larger number of livestock is relatively higher than others and collect larger amount of fodder. The figure 6.8 shows the comparative analysis of the requirement and contribution of forest products among the sample households in the study area.

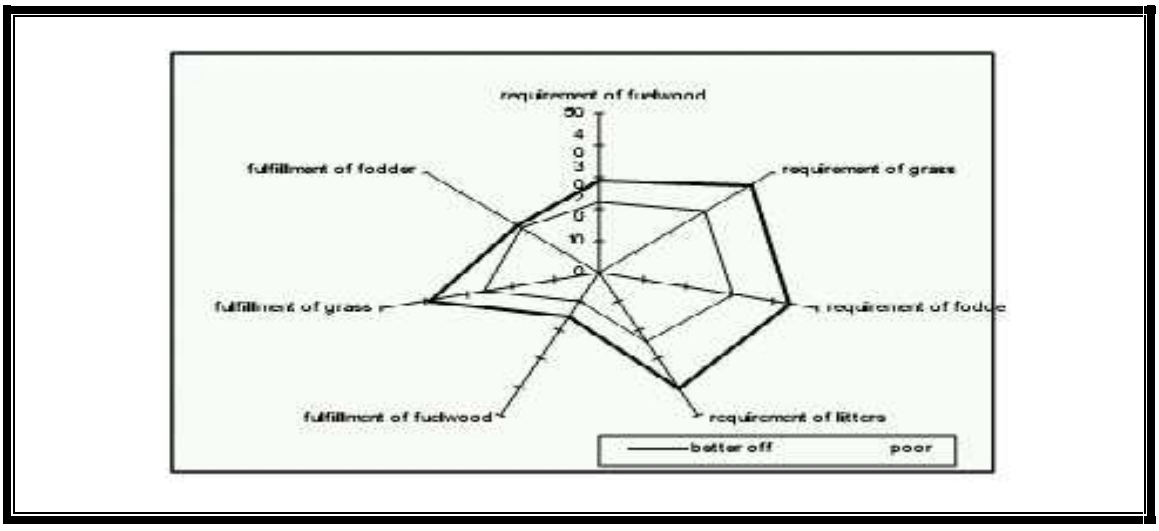
Figure 31: Comparative analysis of the requirement and contribution of forest products



Source: Field survey, 2009

The figure above reveals the requirement and fulfillment of forest products. The users of medium economic class i.e. II and III use varieties of forest products from the community forests more than other users because these people are fully dependent on the agriculture system; either they farm their own farmland or are tenants. The rich users fulfill their needs from their private lands and the poor have no or few cattle and have no time to collect the forest products, as they have to go for daily wages to solve their daily problems of bread and butter. The figure 6.9 shows the access of poor and better off to forest products among the sampled household in the study area.

Figure 32: Access of poor and better off



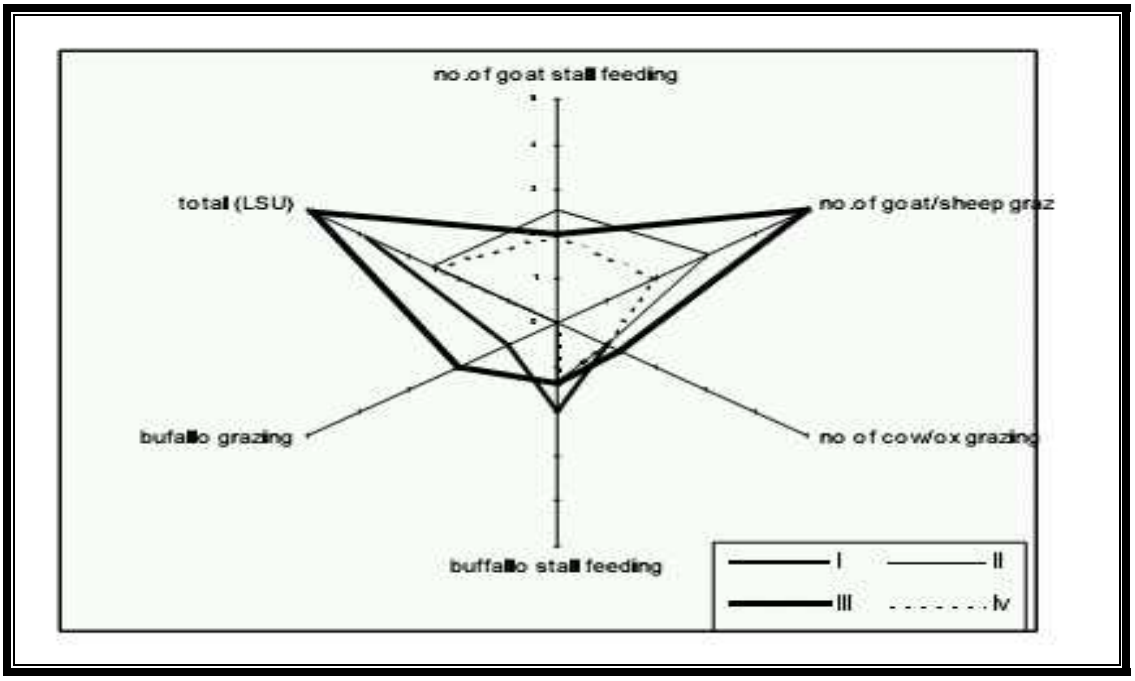
Source: Field survey, 2009

Above figure compares the access of poor and better off users to the forest to fulfill their requirement of forest products from the community forest. The poor users have still lower access to the various items of forest products than the better off users. Even though, the poor have less requirements, their needs have not been fulfilled yet.

6.5.2 Comparative Analysis of Livestock-feeding Patterns among the Different Economic Classes

The requirement and contribution of different income classes and occupation have different livestock feeding patterns. For example, the requirement of the forest product by the users with larger number of livestock is relatively higher than others and collect larger amount of fodder. The figure 6.10 shows the comparative analysis of the requirement and contribution of forest products among the sample households in the study area.

Figure 33: Comparative analysis of feeding pattern of Livestock



Source: Field survey, 2009

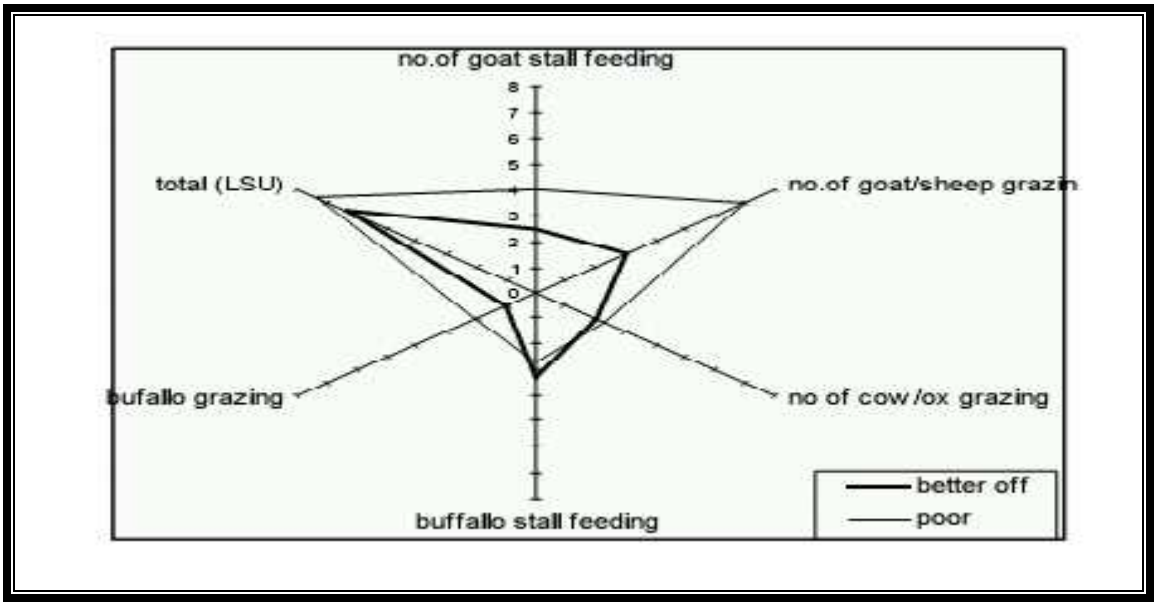
The figure above reveals the comparative feeding patterns of cattle among the different economic classes. The users of medium economic classes WRIII and WRII keep higher varieties of livestock in numbers too, than other economic classes. It is due to their agriculture -based economy. The rich users use to keep small numbers of livestock for stall-feeding because they use highbred varieties, as it is economically viable for keeping for dairy products. The number of

goat and sheep for grazing is higher than others' because of the feeding trends and behavior of the community. On an average, the total numbers of cattle is higher in economic class IV, because of greater number of goats and sheep rather than cow and buffalo and local bred, as poor people do not have enough money to buy high bred cattle.

The poor households have agriculture based economy whereas the better off households bear different other occupation other than agriculture, i.e. business, services foreign employment, etc. The number of buffalo for stall-feeding is bigger in better off households than that of poor due to adoption of livestock feeds from the private sources. The better off families bring the fodder and grass from their private lands to feed their cattle instead grazing in the public fields. High breeds of small numbers are kept instead of large no of local breeds.

The dependency on forest and forest product is found to be varied according to the types of livestock as well as economic backgrounds of the sample households. For example, those people who do not have or have less land holding are relatively more dependent on forest resources for feeding their livestock. The figure 6.11 shows the dependency of sample households on forest and forest products in the study area.

Figure 6.11: Dependency of sample HHs on livestock feeding.



Source: Field survey, 2009

The figure above reveals that, on an average, the poor house holds have greater number of Livestock, even in the grazing pattern too, in comparison to that of better off households except the number of buffalo for stall feeding. The feeding pattern of livestock of poor households is

highly dependent on the grazing in the public lands. As the poor households either do not have or have few acres of private land that cannot support their cattle for grazing and feeding too, they depend on forest resources more than that of better -off family.

6.6 Effects of CF on Rural Livelihoods

6.6.1 Reduction in Vulnerability Context

Reduction in the vulnerability context has been experienced because of the increased condition of soil fertility and productivity as well as through the reduction in the events of floods. IRR 0.97 revealed that the fertility and soil productivity have been increased and IRR 0.30 of flood explored its reduced condition. It was found through focus group discussion and KII .

6.6.2 CF Contribution on Livelihood

Community forest has been, basically, contributing to the rural livelihoods by the fulfillment of basic needs of forest products, i.e. fuel wood fodder and timber. About 100% of the forest users are dependent on the forest for fuel wood, 52% for fodder and 66% for timber.

6.6.3 Contribution to Build up Natural Capital

The contribution of community forests in building up natural capital has been explored from the improved situation of water resources, biodiversity and condition of air quality. The IRRs 0.91, 0.88, 0.95, 0.93, and 0.95 of various natural factors revealed about the increased condition of quality and availability of drinking water, irrigation water, floral diversity, faunal diversity, and quality of air, respectively.

6.6.4 Social Capital Formation

Awareness level of forest users has been improved through the formation of community forest users group. Eighty six percent of the forest users were well informed about the social norms and rules made by the community and 70% of them were well known about the institutions working in their community. And 73% of them were agreed about the positive role played by the community forest in the development of social capital.

About networks and connectedness of the community to the various organizations, 82% of the users viewed that it has been increased after the formation of community forest including the relationship to the District Forest Office too.

Trust and cohesiveness among the users have been found in developed situation, the views and perception of users on this matter were 91% and 79% respectively.

Membership in the formal organization has been improved after the formation of community forest, 97.7% of the users responded their continual status of membership in the FUG. And the FUG has become a member of national federation (FECOFUN).

Most of the users were found conscious about the status of migration in the community, 61% of them viewed that the causes of migration were other than poverty.

6.6.5 Participation of Users in CF Management

The participation of users in different forest management activities was found very good, especially in meetings& assemblies and plantation activities, good in conservation and fair in skill development trainings, IGAs/NTFPs mgt and other activities.

The IRR of 0.80 of meetings & assemblies and plantation of each reflects very good participation and 0.59 of conservation reflects good participation in conservation.

CHAPTER 7

CONCLUSION

7.1 Conclusion

7.1.1 Level of participation on community forestry activities

Resident of priority VDC was the major cause to be the users of the CF. Participation of poor, women and DAG in overall decision-making process is found to be good. All level of users perceive that identification of users/beneficiaries is good. All level users believe that contribution of the users in CF management is good. There is a not significantly different response among the male and female users and each economic class users on the statement that "contribution of the users in CF management is good".

Likewise, attitude between male and female users and all economic status users on the statement “benefit sharing mechanism is satisfying all users” do not differ significantly. All level of users have neutral perception on CF fund mobilization and its transparency, they have same perception on the statement that "fund mobilization is transparence"

User's involvement in collecting fuel wood is higher than collecting other forest products. Due to the existence of CF in the area and good participation of the users towards CF management, availability of timber, fodder, fuelwood and all forest products are increasing in order. But demand of the users of getting forest products is not fulfillment because of young stage, low productivity and small area of forest in comparison to HH member. Only 18% users depend upon the fuelwood as a source of energy (for coking and heating). Thirty-six percentage of the user show their attendance in group meetings and assemblies every time.

Categorization of users in different wealth class and sex category of users is found effective in the development of various factors of social capitals. Participation of users in the skill development trainings is found poorer than in other forest management activities. User's participation is higher in meetings/assemblies and plantation activities followed by forest conservation works, NTFPs management, skill development activities and other forest management activites.

Involvement of rich in the different activities is the most except in conservation and skill development trainings. It is because the rich have less time to invest in the conservation and do not or seldom depend on the group for skill development as they do not need such trainings or are capable to develop their skills by other means. On contrary, the poorest has least involvement in the activities other than conservation and skill development trainings. It is due to the need based- skill development training and high dependency on forest products and abeyance of social norms- conservation.

7.1.2 Contribution of community forestry in rural livelihoods

Development of community forest users groups in the rural areas has been contributing varieties of forest products for the fulfillment of livelihood needs of the rural people. People of rich economic class to the poor households are benefited from the community forests. Forest users of medium economic class, i.e. WRII&WRIII, are more benefited from the community forest management than the rich class and the poor.

The requirement and supply of forest products is still not adequately fulfilled; the gap is higher in fulfillment of grass and fuel wood than other forest products. Positive effects on the elements of natural capital have been perceived from the increased situation of soil fertility and productivity, availability of irrigation and drinking water, floral and faunal diversity in the forest and improvement of air quality in and around the areas the forest users groups. This consequently has reduced the events of flood has decreased the vulnerability of land.

Formation of forest users group in the rural community has developed the social networking among the institutions and at individual levels. The awareness level of users, relationships and connectedness with in the community, trust and cohesiveness among the users, involvement of users in-group activities have been increased. This situation has built up the relationship among the formal organizations at institutional level too. It has also increased the membership in the organization.

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Annex: 1 Questionnaire Format for Household Survey

General information

Respondent's Name: No of family member:

District /VDC: Sex: age:

Education: Occupation:

Caste: W.R. category:

Users group committee Post:

.....

Household Information

Natural Capital

Sex	Age group/year				Educational status			
	<5	6-15	16-45	>45	Illiterate	Literate	<s.l.c.	>s.l.c
Male								
Female								

Number of domestic animals

Domestic animals	1995			2004			Remarks
	Nos	Stall feeding	Grazing	Nos	Stall feeding	Grazing	
Buffalo							
Sheep/Goat							
Cow/Ox							

Contribution of forest on rural livelihoods:

1. What do you bring from your community forest?

a.) Timber ( )
b.) Fodder ( )
c.) Fuel wood ( )
d.) NTFPs ( )
e.) Food/fruits ( )
f.) Vegetables ( )
g.) Bamboos ( )
h.) Others ( )

2. What do you experience about the availability of forest products after community forest management?

S.N	Name of forest products	Condition of availability				Remarks
		Increased	Decreased	No change	Don't know	
1	Timber					
2	Folder /grass					
3	Fuel wood					
4	NTFPs					
5	Food/fruits					
6 7	Vegetables Bamboos					
8	Others					

If others, please specify.

Requirement of forest products and strategies for Fulfillment

1. How much and which forest products were required during last one year and used?

SN	Types	Unit	Required	From CF	Deficit	Surplus
1	Fuel wood	Bhari				
2	timber	Cft				
3	Billets	No				
4	Grass	Bhari				
5	Fodder	Bhari				
6	Leaflitter	Bhari				
7	*NTFPs*					
8	*Other*					

2. If deficit, what are the strategies to fulfill the deficit?

1

2

3

4

5

3. What are the other alternative sources? if there are alternative scurces please mention the

Yes	No	Types	From When	Assistance organization	Own sources	Remarks
		Solar				
		Bio gas				
		Electricity				
		Kerosene stove				
		Improved stove				
		Others				

source of assistance and time of adaptation.

4. What do you expect from your community forest other than above mentioned major forest products?

5. What do you know about IGAs? Please name the IGAs introduced in your community forest

1

2

3

4

5

6. If, there are other potentialities of IGAs in your community, please, mention

a
b.
c
d.
e

7. After the formation of community forest, what you have experience on the following items?, please mention.

Items	Increased	Decreased	No difference	Do not know
Soil productivity & fertility				
Erosion/landslides				
Quality and availability of water • Drinking • Irrigational				
Genetic resources • Flora • Fauna				
Quality of air				

2. Have you /your family membership?

Yes No

Membership	FUG		FUG committee		Remarks
	Male	Female	Male	Female	
Continuous					
Renewable					
Left					
Post					

3. Do you attain meetings?

Yes No

If no, why?

If yes, how many times?

a. always b. frequently c. often d. rarely e. Never

Social Capital

1. Do you know about forest user group /committee in your community?

Yes No

2. Have you /your family membership?

Yes No

Membership	FUG		FUG committee		Remarks
	Male	Female	Male	Female	
Continuous					
Renewable					
Left					
Post					

3. Do you attain meetings?

Yes No

If no, why?

If yes, how many times?

a. always b. frequently c. often d. rarely e. Never

4. What role do you play during the decision making in meeting?

a. active b. passive c. only present / no interfere

5. In which of the following activities do you have role for decision making?

a. forest product distribution b. group fund mobilization

c. social activity d. other

6. How do you feel about your group members?

a. trustful b. doubtful c. believable d. jealous e. indifference

7. Do you know about rules and regulations for social activities in your group?

Yes No

8. After community formation, what do you experience on the following points?

Points	increased	decreased	No change	Don't know
Relationship among the users				
The capacity to influence the decision over the management of local resources				
Functioning and working style of CFUG and DFO's staffs				
Social linkages, networks betn. DFO<FUG,project				
The extent of membership of FUG				
The extent of trust in the group				

9. Are there any other GOs, NGOs and INGOs working in your area?

a) Yes b) No c)don't know

If yes, please mention

10. Is there any emigration /immigration before and after formation of CF?

a) Yes b) No c) don't know

If, yes, why?

11. Please mention your profession

12. Have you changed your profession after CF?

a) Yes b) No c) don't know

If yes, Why and what profession? Mention please.

13. Do you think CF can contribute in the social capital development?

a) Yes b) No c) don't know

If yes, how? Mention please

14. Have you/your family member participated for awareness program?

Yes No

If Yes,

Activities	Nos	Duration		Participants		Remarks
		Days	Months	Male	Female	
Study tour						
Workshop/seminar						
Leadership						
Account training						
Forest mgt.						
Cooperative mgt.						
Other						

Participation of users in community forestry activities:

1. What do you know about community forest/forestry?
2. What are the roles of women in CF management?
3. Please mention the welfare program for disadvantaged group (poor, women, lower caste etc.) in your community, if any.

4. How do you participate in the CF management activity ?(forms of participation)

   a. Contract basis
   b. Labor basis
   c. Both

If (a) or (c), why?

If (b). then use the following:

S.N.	CF mgmt. activity	Average frequency in last 5 years
1	Plantation	
2	Weeding	
3	Cleaning /climber cutting	
4	Thinning	
5	Pruning	
6	Fencing /demarcation	
7	Watching the forest(protection)	
8	Extraction of forest products	
9	Attaining users' assembly/committee meeting	
10	Others 1 2 3	

5. To what extent you participate in the following activities? score,1,2,3,4 where :

4 = every time

3 = most of the time

2 – some time

1 – never

a. assembly, meeting and discussion. ( )

b. plantation ( )

c. skill promotion training , ( )

d. protection ( )

e. NTFPs' mgnt./IGAs ( )

f. Others ( )

.....

If not, why?

i you were not informed

ii you were busy

iii. you were not interested

iv. others.....

6. What are the problems regarding the participation of users in CF's activities?

a.

b.

c.

d.

e.

7. Which of the following benefit sharing process has been followed by your FUG?

a. Equity b. equality c .bias

If bias, why / how? Please mention

If equity, mention the criteria.

8. What is the status of availability of forest products in terms of users' need?

a. Deficit b. balance c. surplus

If 'a', what are the causes?

- Productivity of forest is poor (condition)
- Large number of users with less forest area
- Plantation forest (young forest)

If other causes, please state out

Annex 1-Checklist for observation

1. Observation at home and homestead

Energy source (type, quality, quantity, source)

Use of forest products in house and household goods

Fodder and bedding materials (type, quality, quantity, source)

No/type of livestock, farming pattern

Livestock products

Preparation and use of compost

Household members engaged in forest product collection

2. Observation on farming lands

Crop varieties, cropping pattern, intensity of cropping

Use of manure or compost

Soil fertility

Private trees on farm

3. Observation on forests

Availability of forest products

Harvesting and utilization activities

Forestry development works (nursery, plantation)

Participation in forest management works

4. Observation of meetings/assembly

Participation of poor, women and DAG (number, sitting arrangements)

Discussion and decision making process

Minuting/recording process

Information sharing process

5. Others

Annex-2 Checklist for focus-group discussion and committee meeting

1. For focus group discussion

Forest products collection time

Pricing of forest products

Income generation activities

Employment opportunities

Participation in meeting and assembly

Decisions making process

Product distribution system

FUG fund collection system

Fund mobilization process

Access to poor, women and DAG

Major problems

Nomination in training/workshop etc.

Others

2. For committee meeting

Harvesting time for forest products

Income generation activities

FUG fund and expenditure mechanisms

Loan facilities and schemes

Pricing of forest products

Future activities

Penalty system for violating the rules and regulations

Forest products distribution system

Conflicts/causes and resolution

Involvement of poor, DAG and women in meeting and assembly

Training and empowerment

Decision making in meeting and assembly

Information sharing mechanisms