

**CONTRIBUTION OF NON-TIMBER FOREST
PRODUCTS (NTFPS) IN RURAL LIVELIHOOD
THROUGH COMMUNITY FOREST**

(A Study of Jhiringhri Community Forest User Group of Namtar VDC
in
Makawanpur)

**A Dissertation Submitted to the
Central Department of Sociology/Anthropology, Faculty of Humanities
and Social Sciences, Partial Fulfillment of
the Requirements for the Degree
Master of Arts In Sociology**

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CHAPTER-ONE

INTRODUCTION

1.1 Background of the Study

Nepal is a landlocked and mountainous country, where people largely depend on forest resources for their sustenance. As a result the forest resources have faced disturbing threat during the last century. The present situation suggests that this trend will continue to be so in the future as well. Many studies have shown and stressed for sustainable management if we have to realize the importance of the forest and forest products. Forest gives us many products under timber and non-timber categories. The contribution subsistence of local population and the macro-economic development differ very much from region to region. The forest products have been categorized in to three major groups those used for subsistence, those used for industrial, inside the country and those that are exported. (Edwards 1996). Products use under farmer group play a vital role to maintain the life and economy of the rural people. It has the direct impact especially upon the tribal society. Non-Timber Forest Products (NTFPs) are major source for off farming employment and income generation and low income household (Baskota and Sharma 1994, Olsen 1997).

In Nepal, non-timber forest products includes products from forest and allied lands, excluding timber, fuel wood, and fodder. It provide us different kinds of vegetables, fruits seeds roots bark honey and herbal medicine, grass and other items. The climatic and biophysical characteristics of the mountains of Nepal make it a reservoir of diverse species of valuable non-timber forest products. Although accurate data is not available, about 700 species of different NTFPs have been identified so far. Out of which 100 plant species are already in the trade and almost 250 species are distributed in all over geographical region of the nation.

Trade and use of non-Timber forest products in the Himalayas can be traced back to Sanskrit legend. Locally these products are used for domestic consumption, construction and income by the poor and landless. Cottage and national level industries also use non-timber forest products. Currently, medicinal and aromatic plants accounts for a large percentage of non-timber forest products exported from

Nepal. These products are exported, primarily in raw form, to India where they are processed before entering regional and international market. Every year in the Himalayan region 1000 to 150000 tones per year of 100 different species of NTFPs are traded to India, which contribute 4% of the total contribution of foresting to the national economy (Edward 1996).

Since the time immemorial, forest has been an integral part of human society supporting its lifestyle, agriculture and livestock system. Due to the over exploitation of forest products, like timber, fuel wood, fodder and Non-Timber Forest Products (NTFPs) has resulted decrease in the site productivity, increase in soil erosion and flood hazards, drastic decline in valuable biodiversity, serious environmental impacts and ecological upsets. In order to fulfill the gaps between demand and supply of forest products, National Forestry Plan (1976) realized that it is not possible only by the government's efforts and recognized the participation of local people. Forest Act (1993) established Forest User Groups (FUGs) as the responsible organization for generating, protecting, harvesting and utilization of local Community Forest (CF).

NTFPs of commercial value are in a state of threat due to deforestation and over harvesting. For this reason conservation, management and sustainable utilization of NTFPs is necessary for Nepal. Threat assessment, cultivation and regularize systems for conservation and management are major activities for sustainable utilization of NTFPs resources. Government of Nepal (GoN) has recently adopted Herbs and NTFPs Development Policy to develop this sector. The Master Plan for Forestry Sector (MPFS, 1989-2010) has recognized the role of NTFPs to uplift the socio-economic condition of the local people. The current Five- Year Plan (2003-2008) has given emphasis to the development of NTFPs as a priority program for alleviating poverty. Rare and high price medicinal herbs are on top priority for domestication, research and cultivation, processing and marketing. The plan has also stipulated to adopt suitable laws that creates enabling environment for the development of this sub-sector.

Forest Act (1993) and Forest Regulation (1995) describe ways by which forest will be managed, resources harvested and exported out of the forests. It also provides mechanism to conserve bio-diversity and NTFPs. In order to conserve and manage wild NTFPs including MAPs in sustainable way, HMG/N has given various modes of

protection. As per the government rule, some plants are totally banned, while others can be harvested, however, they must be processed before export. Some trees are also protected and green felling is not permitted in government-managed forest unless prescribed under forest management plan

The Community Forest (CF) program, one of the priorities program, aims to produce a wide range of forest products for subsistence need, which includes many NTFPs especially the MAPs. Out of the 5856 flowering plants recorded in Nepal (GoN, 2002), 690 species are considered having medicinal properties (Malla and Shakya, 1984), which comprises about 12% of the total number of flowering plants of Nepal. This includes 510 wild species, 120 cultivated species and naturalized and 60 exotic species. The MAP Database of Nepal (MAPDON) has listed 1624 MAPs, which are commonly available in crude market under cultivation and in wild form (Shrestha et. al.2000). A proper documentation of Nepalese medicinal plants is still lacking (Sharma et. al.2004).

It is estimated that only 15% to 20% of the population of Nepal living in around the urban areas have access to the modern medicinal facilities whereas rest of the population depend on traditional medicines mainly MAPs for primary health care. The collection and trade of NTFPs have remained one of the sources of rural livelihood. However, lack of proper management has rendered plants of higher commercial value in a state of threat. This is prevalent throughout the country. Fifty-one medicinal plants have entered into different threats categories such as rare, endangered, and vulnerable and commercially threatened (Bhattarai et. al.2002). For this reason, conservation and sustainable utilization of NTFPs have been identified as the key issues for Nepal. The importance and role of NTFPs in rural as well as the country's economy has been increasing day by day after the realization of their values in terms of livelihoods improvement. Every year, thousands of tons of NTFPs are being collected from the CF, National Forest (NF) and pasturelands that have long been an importance source of livelihood to the rural people of the country.

Apart from taking part in the commercial collection with considerable employment opportunities, the majority of Nepalese lay population use wild plants in a variety of ways, the traditional use being for folk medicine, food, fodder, fuel, and a variety of domestic articles. NTFPs are becoming a major source of income especially for

mountain communities. There is growing pattern of economic aspects of NTFPs production and its marketing but there is also lack of institutionalization for promoting equitable income generation from NTFPs. In Nepal, the expanding CF program adopts innovative mechanisms to improve the livelihood of FUGs. NTFP is central to this process and is gradually being incorporated into FUGs management plan and recognize in national policy. Efforts in the part have not given desired impacts on communities in motivating them in cultivating and conserving NTFPs. Recently CFUGs in selected areas have been targeted to revise the forest operation plan and introduce suitable activities related to NTFPs management and production. User groups have been encouraged to conserve, cultivate and sustainable utilization of NTFPs in their CF.

1.2 Statement of the Problem

The problem of poverty has a big challenge to Nepal. The improvement of livelihood of rural community is one of the major issues in the economy of Nepal. Poor economic status or lack of proper livelihood means creating serious problem. The rural community becomes more dependent on government-managed forest to fulfill their daily needs as forest products. Community people are more or less familiar with NTFPs, especially with the MAPs. Rural users, who have adopted this occupation, have very limited knowledge of propagation, silviculture processes and physiology of such species and their role in ecosystem.

Nature has given us valuable resources but our knowledge is very limited. So far, we are not able to utilize them in proper way. Rural people are showing interest in the cultivation of NTFPs but cultivation has not been seen in large scale. They produce only for domestic use because of limited knowledge and market for trading for those products.

Trading of NTFPs seems to be profitable and easy work to earn money. It may not sustain because of heavy extraction without proper management and propagation that may raise problem in the near future. NTFPs plants growing in the wild state may not mostly survive in the domestic condition. Thus, NTFPs should be managed in natural as well as CF. Many cultivators even including forestry technician are lacking the

skill of propagation of NTFPs. Therefore, the essential task of personnel working in rural development has to think seriously about the problems.

Most of the CFs in Nepal have no sufficient data of NTFPs in their forest in natural way. So, these data in every CF is essential for future planning. If the data are available, there is limited scientific knowledge of new technology of production, processing and marketing. Community people somehow fail at the production and utilization level. Therefore, there is need of new technology and research support for sustaining income to enhance the livelihood upliftment of rural people. So, identification of NTFPs data, expected income from CF through NTFPs, problems and constraints of NTFPs management in selected CF and CFUGs are the main theme of the study. It has been thought that such types of information are essential for the sustainable CF management and to get maximum output from NTFPs cultivation.

However, little is known about NTFPs collection, utilization, and marketing in Nepal despite their great potential to positively effect communities and households. Basic information regarding NTFPs is necessary for communities to make optimal use of their natural resource. Much has been studied of timber productivity; however, NTFPs have not been studied up to this point despite of their apparent high value and diversity. Aspects of NTFP trade must be examined before NTFPs can be developed as a means to economic growth and forest resource conservation (Fox 1994).

Therefore, this research aimed and focused at throwing light in the contribution of NTFPs in rural livelihoods upliftment. The study would be mainly raised the following questions to address the problems seen at the Jhirghari CFUG.

- ❖ What are the socio-economic features of the users of Jhirghari community forest of Namtar VDC in Makawanpur district ?
- ❖ What types of NTFPs are available in the Jhirghari community forest area?
- ❖ How much contributions have been made by the available NTFPs to rural livelihoods improvement?

1.3 Significance of the Study

The Master Plan for Forestry Sector (MPFS) of GoN has recognized the role of NTFPs to uplift the socio economic condition of the rural people. The Tenth Five-

year Plan has also given emphasis to the development of NTFPs as a priority program to alleviate poverty. The CF program is the priority programs aims to produce a wide range of forest products for subsistence needs, which induce many NTFPs. The CF involves local farmers who are also the potential NTFPs growers and produce on commercial scale in CF. The NTFP species is necessary for sustainable CF management. The major forest products take long time to give output. Therefore, FUGs are looking for short-term return and considers the cultivation of NTFPs as one of the short-term income generation activities in CF. But many studies have shown that most of the people have more or less no knowledge and skills on production and utilization of NTFPs with sustainable management practices.

There is a need of new technology and research support for sustaining income generation activities through NTFPs. Hence, this study will be supportive to the users in similar climatic zone to generate income and livelihood enhancement through NTFPs in CF in order to uplift their socio- economic status. It helps to study the potentiality of NTFPs in Jhirghari CF, which enhance the technical knowledge of CFUGs, and creates awareness among them. It will also be helpful to the manager or policy maker to develop micro-level future income generation strategies based on the findings from this study. It provides the general ideas to the forestry or non-forestry professionals and other general people about the NTFPs.

1.4 Objectives of the Study

General objective

The general objective of the study is to assess the contribution of NTFPs in uplifting the livelihoods of rural people. The specific of objective are,

Specific objectives

- To analyze socio- economic characteristics of the study population
- To identify the available NTFPs and their uses in Jhirghari CF in Makawanpur District.
- To find out the contribution of NTFPs in rural livelihoods upliftment.

CHAPTER – TWO

REVIEW OF THE LITERATURES

The relevant literature on community forestry and contribution of NTFPs were reviewed so as to specify and better understand the study problems. Literature review has helped the researcher to clarify the concepts and to formulate new ideas and better ways of looking at the study topic. Published literatures were reviewed to know what has already been done. There are a number of significant studies related to the contribution of NTFPs in rural livelihoods through community forestry management of which some are outlined here.

2.1 Forestry in Nepal

The Forests Division was established in 1942 for the scientific management of forests under state ownership (GoN 1976). During the period from 1942 to the mid 1970s forest management was exclusively protection oriented. Because people live near and are dependent on forests, management must include local people as they fulfill their needs for firewood, fodder and timber.

Before 1957 there were no strict rules and regulation for the protection and use of the forest. The government paid no attention to develop the forest and allowed forest use to continue at higher rate, forest rehabilitation was simply ignored, so rapid deforestation has been seated serious problem e.g. floods, landslides, water security, decreased agriculture and livestock productivity etc. Generally the factors responsible for deforestations increased demand of forest and forest products due to population growth, clearance of the forest to increase the agricultural land and grazing livestock in the forest.

To solve the increasing problem of deforestation, in 1957 the government nationalized all forest to prevent the destruction of national wealth to nationalize private forests for their adequate protection (Regmi, 1978). Unfortunately, the government was not prepared to assume the technical and administrative responsibilities of forest ownership. Villagers reacted negatively to nationalization, believing that their traditional rights of access and use had been curtailed. As a result, local responsibility

for forest protection disappeared whereas previously these had been communal responsibility for managing the forest, but after nationalization, no one took responsibility of managing the forest. Moreover, because there were no land records, villagers had a strong incentive to destroy the forest, so that the land could be claimed as private property after it was cleared and cultivated, as a result of inadequate government control and adverse local reaction to nationalization, Nepal's forests effectively became common property (Dankelman, 1989).

The forestry Act of 1961 and its subsequent amendment and rules became the basic law governing forest administration in Nepal. Likewise the forestry act and the forestry protection Act 1967 attempted to establish empowering community to protect and manage the forest.

Although the forests have been nationalized and forest officials made very powerful, as a result, deforestation continued and forest management was practiced in vain. Forest management as practiced exclusively by the department was not successful. Including local people in forest management and providing an incentive for local management became a crucial issue. The National Forest Plan of 1976 was highly committed to initiate people's participation in forest management and made provisions to hand over a part of government forests to local political units or village councils called "Panchayats."

'The Panchayat Forest and Panchayat Protected Forest Rules 1978' officially initiated the implementation of a community forestry program in Nepal. Forest lands without trees were handed over to local panchayats as "Panchayat forest" and with trees as "Panchayat protected forests."

'The Master Plan for the Forestry Sector' (MPFS 1989) was approved in 1989 providing a 25-year policy and planning framework and remains the main policy and planning document for the continuing development of the forestry sector.

2.2 Community Forestry and Non-Timber Forest Products (NTFPs)

In 1978, the government, recognizing the rapid depletion and deterioration of the country's forest resources and the Forest Department's limited capacity to handle the problem alone, introduced community forestry policy to seek local communities'

cooperation in the sustainable management and use of the country's forest resources. The policy puts control of forests in the hands of the users of the resource, with the role of the Forest Department staff shifting from that of manager and controller of forests (policing) to that of adviser for forest users (GoN 1989).

Community forestry is most accurately and usefully understood as an umbrella 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.

The way community forestry approach used to be defined and interpreted in Nepal up until late 70s, suggests that community forestry implies 'community-resource' relations, commonly known as 'indigenous system of forest management' (Fisher 1989), which was widespread in Nepal's hills. During 80s and beginning of 90s, nevertheless community forestry was further conceptualized and internalized, new policy framework was crafted (GoN, 1988), legal instruments have been in place (GoN 1995), various processes, methods and tools have been developed, modified, re-modified and experience gained. During this period, community forestry was understood and recognized as government's priority programme, for which the role of forest bureaucracy in the hills changed from policing to facilitating leading to the evolution of community-resource relations towards a triangular interface among community, resource and government bureaucracy.

In the late 90s, with the changing political and policy context, community forestry is being understood and conceptualized in terms of stakeholders relationship because there has not only been increasing trend of FUGs, tremendous number and types of stakeholders and service providing agencies and organizations, with diverse interests and influence have emerged and grown.

The present form of Nepal's community forestry is guided by the Forest Act of 1993, Forest Regulations of 1995, and the Operational Guidelines of 1995. These legal instruments have legitimized the concept of Community Forest User Group as an independent, autonomous and self-governing institution responsible to protect,

manage and use any patch of national forest with a defined forest boundary and user group members. CFUGs are to be formed democratically and registered at the District Forest Office with CFUG constitution, which defines rights of the users to a particular forest.

Community forestry has received high priority in the forestry sector program to the government as reflected in both the master plan for the forestry sector GoN, 1988 and the eight five year plan (NPC,1992). The main thrust of the community forestry policy of the government is the phased handover of management and utilizations of community forest to the actual users based on simple operational plans which are prepared and endorsed jointly by the forest user and the assistant ranger from the district forest office. Assistant rangers are supposed to apply the rules, schedule and other institutional arrangements made for forest production management and utilization (Adhikari 2001).

Community and hill leasehold forestry are at present the most important aspect of forestry development in Nepal.

The NTFPs that enter India as raw materials are collected, ported, taxed and traded as a discrete group of products referred to in Nepali as Jaributi. A close definition of Jaributi is “medicinal, aromatic and spice plants”. It also equates to the officially used term “minor forest products”, all of which are taxable if collected from government-managed land and traded from the district of origins. (David M Edwards, 1993)

NTFP is the term used to describe a broader range of goods than those defined as non wood forest products and include small products made of ligneous or woody materials, such as wooden stools, masks, drums, or other hand crafted items which are not industrial timber or pulp etc (FAO, 1995). Subedi (1999), tried to define NTFPs as all biological origin other than timber, fuel wood and fodder from forest, grasslands or any land under similar use. The example of NTFPs includes medicinal aromatic plants, bamboo, and rattans, nuts, fruits, tubers, berries, grasses and leaves, resins, insect and insect providers, wild animals and birds. Wickens (1991) defines NTFPs as “all biological materials (other than industrial round-wood and derived sawn timber, wood chips, wood based panels and pulp) that may be extracted from natural ecosystems, managed plantations etc., and be utilized within the household, be marketed, or have social cultural or religious significance.”

Chandrasekhar an (1998) presented a very similar definition; where she cited NTFPs as all good and services for commercial, industrial, or subsistence use derived forests and allies land uses, other than timber, fuel wood and fodder. She has included the crops grown under the shade of trees, certain agro forestry crops which depends on wild sources for seed or planting stock quality as NTFPs. Non-Timber Forest Products (NTFPs), also sometimes referred to as non-wood forest product (NWFPs) or minor forest products (MFPs) include all goods, other than timber or wood, that are produced in forests, pastures and meadows. Prominent examples of NTFPs are: medicinal and aromatic plants, herbs, roots, barks, leaves, fruits and nuts, grasses, bamboo and canes, resins and saps, lac and Tasar silk, honey, etc., in their raw form (Bhattarai and Croucher 1996).

In the past other than wood products such as bamboo, NTFPs, gums, resins, honey, fodder, fruits, nuts, oil seeds, bark, medicinal plants, mushrooms, wild life and many other materials obtained/harvested from the forests were classified as minor forest products. These products are now grouped as non-wood forest products (NWFPs) or non-timber forest products (NTFPs).

The community forestry user groups can obtain greater economic benefits through improved management of non-timber forest products (NTFPs). It is also expected to generate information useful to policy reform in the forestry sector. Gautam et al. (2002) viewed that current trend of NTFPs management are focused on raw materials, but NTFPs ought to be viewed from the process of ecological processes, cultural heritage, and livelihoods of the local people, economic value and incentive for sustainable forest management.

The government of Nepal is committed, as a part of the community forestry initiatives for transferring the rights of forest management and use through local communities. However, there is still a number of policy and practical issues that need to address the potential of NTFPs as sources of livelihood, economic growth and biodiversity conservation (Chhetri et al 2000; Ojha and Bhattarai 2001).

2.3 Policies on Community Forestry and NTFPs

Different NTFPs are used in Nepal as medicinal herbs since centuries. The issues of NTFPs were addressed in the Forest Act 1961 to some extent. Later, the Forestry

Sector Master Plan (MPFS) of 1988 identified medicinal and aromatic plants and other minor forest products as one of the main programme area for forestry sector development. As a result new legislations, such as: New legislation (1993 and 1995) identified 234 NTFPs and categorized them into 8 groups: roots (43 species), tree bark (20 species), leaves (31 species), flowers and fluff (24 species), fruit and seeds (65 species), plants (12 species), gums, resins and lac (10 species). About 800 species of NTFPs are used locally to provide medicines, food, oils, fibres, dyes, tannins, gums, resins, incense, building materials and agricultural implement. It has been estimated that the production and trade of NTFP in Nepal contributes over 5 % to GDP of the forest sector (CARE- Nepal 1999). NTFPs and Medicinal Aromatic Plants (MAPs) meet basic health care needs and provide critical livelihood support in rural communities in Nepal. Many of these plants have been used for medicinal purposes for thousands of years, or traded both within and outside Nepal. It is estimated that about 750 species are now in use, of which 20% are commercially traded (Kanel, 1999).

Experts estimate that 700 to 1700 species of MAPs occur in Nepal (Tiwari et al 2004); however the Department of Plant Resources (DPR) has recorded just 690 species of MAPs. The Medicinal and Aromatic Plant Data Base of Nepal (MAPDON) has listed 1624 species having ethno botanical importance (Shrestha et al, 2000) thus increasing the number of plant species with ethno botanical values. Edward (1996) has also mentioned about harvesting more than 100 species of NTFPs from mid-hills and high mountains of Nepal that are mostly traded to Indian markets.

However, Nepal has not been able to adequately utilize them. General lack of sustainable production practices, inappropriate harvesting and post-harvest practices, product adulteration, in appropriate value addition, poorly organized marketing information system, and lack of standardized production system has hindered international recognition of Nepali NTFPs as major challenges to maximize equitable economic returns. The existing support services such as communication, storage, organization, transportation, and credit facilities are also the added challenges of NTFPs marketing system in Nepal. Further, NTFPs collectors, traders and other categories of entrepreneurs are discerned to be harassed by the prevailing system of multiple taxes/ levying at local levels, insufficient duration of collection and transport

permits, high royalty rates, cumbersome IEE/EIA provisions, insufficient manpower to identify/certify the products (whether from sustainable managed source, organic, etc), undesignated authority to certify the products as food supplement and so forth. Recently, concerns have been expressed about the erosion and degradation of NTFP resources, un-sustained availability of quality raw materials, high and fluctuating prices, improper marketing, and lack of organized cultivation and secretive nature of trade; but still the share of NTFPs in the export market is significant. Various actions have been attempted both by the government agencies and national and international conservation and development organizations to find solutions so that these resources can be harvested & used sustainably.

Recognizing the need for a comprehensive long term plan to meet the basic needs of the people, Master Plan for Forestry Sector (MPFS) was prepared in 1988 which presents a comprehensive strategy for 21 years for management of forestry sector in Nepal. It has mainly four development imperatives: (a) Satisfaction of basic needs including medicinal herbs (b) Sustainable utilization of forest resources (c) People's participation in decision making and benefit sharing, and (d) Socio-economic growth. Translating this policy into action, it has emphasized on increasing production of forest products including NTFPs through the promotion of agro forestry, community and leasehold forestry and research in NTFPs. Medicinal and aromatic plants and other non-timber forest products are among six primary programs formulated in the plan (MPFS, 1988).

The Master Plan, regarding community forestry programs, highlighted of handed over all the accessible hill forests of Nepal to user groups (not to the *Panchayats*) to the extent that they are willing and capable of managing them and the priority of community forests is to supply forest products to those who depend on them with the adequate involvement of women & the poor in the management of community forests.

The major recommendations of the Master Plan have been incorporated in the Forest Act (1993) and Forest Rules (1995). The act and the rules have given substantial rights to local people in managing their community forests². The codification of these rights in the national legislation is one of the unique features of community forestry in Nepal. Further elaboration of these rules is made in the community forestry directives and guidelines. The focus of this legislation is on institutionalizing CFUG as an

independent and self-governing entity, nationwide expansion of community forestry, providing utilization and management rights to the local community, and creating an accountability forum for community development. It has also limited the role of the district forest office to that of supporter, facilitator, monitor & regulator of community forestry.

'Forest sector Policy 2000' withdraws some of the rights of local forest users in the plains area of Terai, with the intention that the forests would be better managed by the active involvement of the government. The new policy has created antagonism between the Terai users and the government, and the government has not been able to manage the forests better. Presently, the government is trying to pilot an approach called "collaborative forest management" in the three Terai districts with the financial support of the Dutch government. The outcome of this pilot program has yet to be seen in the field. As per this cabinet decision, the government imposed 40% revenue sharing on the sale of Timber from the CF of the Terai and Inner Terai. However, the Supreme Court annulled this decision. The government, then, started to collect this revenue through the promulgation of finance act. The finance act was later revised in the last and this fiscal year. As per the revised finance act, the government collects only 15% of the sales proceeds from the sale of surplus timber of only two commercial species of the Terai.

The 'Tenth Plan (2003-2007)' was prepared in the context of Millennium Development Goals (MDG), and is also considered as the Poverty Reduction Strategy Paper (PRSP). The plan has as its target the reduction of poverty in Nepal from 38% to 30% by the year 2007 and to further reduce the poverty ratio to 10% in about fifteen years' time. It has four pillars for intervention - broad based high economic growth, social sector development, social inclusion/targeted programs, and good governance. The plan also allows farming of NTFP and medicinal plants within community forest areas.

Major policy statements related to NTFPs/NTFPs in the Tenth Five Year Plan are;

-) Research and development of plant resources shall be carried out keeping in view the development of non-timber forest products.
-) NGOs, CBOs and private sector shall be inspired for extensive development of NTFPs.

-) NTFPs development program will be incorporated with community forestry, leasehold forestry and integrated soil and watershed conservation and management and will be implemented.
-) Forest Product Certification shall be carried out for making forest product based business competitive.
-) For sustainable development of medicinal plants, long term planning will be prepared and national development program will be conducted.
-) National Medicinal Plants Development Committee (NMPDC) will be formulated at central level for planning, implementation and co-ordination.

2.4 Contribution of NTFPs in Rural Livelihood Improvement

A livelihood comprises the capabilities, assets (stores, resources, claims and access) and activities required for a means of living: a livelihood is sustainable which can cope with and recover from stress and shocks, maintain or enhance its capabilities and assets, and provide sustainable livelihood opportunities for the next generation: and which contributes net benefits to other livelihoods at the local and global levels in the long and short term.

Community forestry has become a means to increase natural, social, human, financial and to some extent the physical capital of community forest users for the analytical propose the idea if capital assets is borrowed from sustainable livelihoods approach with in which an integrated, holistic approach to rural development is now being explored by a number of donor. The livelihoods framework identifies five types of capitals that determine the ability of users to respond to both exogenous and endogenous pressures, know as the vulnerability context.

A livelihood comprises of assets (natural, social, human, financial and physical) and activities required for the means of living. A livelihood is sustainable when it can cope with a 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 (Chamber and Coway, 1992 cited in Yadav, 2006).

The term ‘sustainable livelihoods’ relates to a wide set of issues which encompass much of the broader debate about the relationships between poverty and environment.

Yet in the existing literature, there is often little clarity about how contradictions are addressed and trade-offs are assessed. Many of the definitions of livelihood security currently in use derive from the work of Chambers & Conway (1992). A livelihood comprises the capabilities assets 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 – DFID Guidance Sheet (2001)

Sustainable livelihood is a way of thinking about the objectives, scope and priority for development with ultimate aim of poverty elimination. It is a holistic approach that tries to capture, and provide means of understanding, the vital causes and the dimensions of poverty without collapsing the focus on to just a few factors (eg. economic issues, food security etc.). It also tries to sketch out the relationship between the different aspects of poverty, allowing for effective prioritization of action at an operational level (DFID, 2000).

Definition of livelihood terms

Livelihood resources: Livelihood resources are often seen as the foundations of people's lives. Resources can be material and social, tangible and intangible. As well as identifying available resources, a livelihoods assessment should understand the different access to resources by vulnerable groups. The five main types of resources are described below:

Natural Resources include forest, land, water, wildlife, biodiversity, and other environmental resources that help households meet their livelihood needs.

Physical Resources amount to basic infrastructure such as roads, schools, health posts and hospitals, energy plants, communications, irrigation and drinking water systems, and productive equipment at the disposal of households.

Financial Resources enable households to pursue their livelihoods and include things like access to markets, wages, savings, credit, remittances, and pensions.

Human Resources consist of the skills, knowledge, and good health, which are important to the pursuit of livelihood strategies.

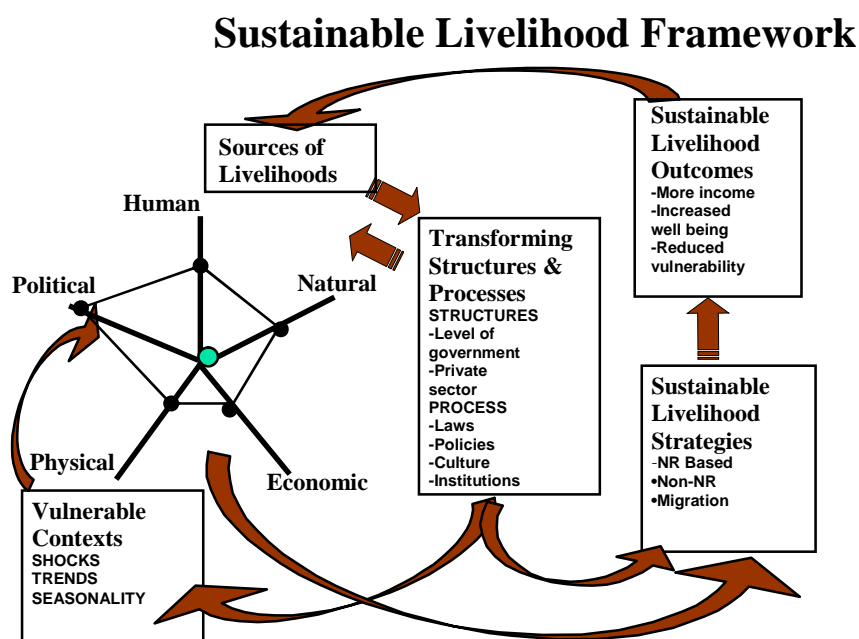
Social and Political Resources are the quantity and quality of social networks, membership in groups, social relations, and access to wider institutions in society that

households rely on to help them reduce risks, access services, protect themselves from deprivation, and to acquire information to lower transaction costs.

Livelihood Strategies: These are defined as 'the things that people do to survive, e.g. migration is a strategy (as well as a coping mechanism), as is pottering or tailoring. Selling land in times of hunger is also a livelihood strategy.

Livelihood Outcomes: these are the effects of the other components of the livelihoods approach, e.g., selling land results in increased financial resource and the ability to buy food – the outcome is increased food security. Outcomes can be both positive and negative, in times of conflict, people migrate, and therefore a livelihood outcome can be a loss of social networks and security.

The following is a sustainable livelihoods framework development by Department for International Development (DFID)



Source: Department for International Development Sustainable Livelihood Guidance Sheets 1999

The important feature of livelihood definition is to direct the links between assets and the option, people possess in practice to pursue alternative activities that can generate the income level required for survival (Ellis, 1999). Assets comprises the numbers of components, these are natural, financial, physical, human and social capitals (Johnson, 1997).

In the functional basis, NTFPs practice can play productive as well as protective role. The productive role of NTFPs in CFUGs is production of commercial NTFPs including MAPs, which are one of the major sources of rural livelihood. The protective role of NTFPs is soil improvement and conservation; improve biodiversity and ecological balance in local and global level. Every year, thousands of tons of NTFPs can be collected from the forests (CF as well as NF) and that can be an important source of livelihood to the rural people. At the policy level, the role of NTFPs has been adequately emphasized especially in poverty alleviation, the national goal of country. Role of NTFPs in community level, mainly for poverty alleviation through increasing income by selling NTFPs, is to provide income generation activities (IGAs) and utilization of MAPs for users' health care at local level.

NTFPs play an important role in addressing poverty issues for marginalized, forest dependant communities. NTFPs contribute to livelihood outcomes, including food security, health and well being, and income (FAO 1995; Falconer 1996). The issues of rural and forest dependant people were understood unanimously by various donor agencies, hence the focused on poverty alleviation was emphasized. The pro-poor focused livelihood approach is to examine or understand individual or household economy to improve their standard of living, as natural resources are only sets of capital assets available to and used by the poor as part of their livelihood strategies (Carney, 1998; 1999; Farrington et al. 1999). Belcher et al (2005) of CIFOR reported that NTFPs are main sources of household income for value of the products and employment opportunities. NTFPs are more important to the low-income people. NTFPs can play a greater role in livelihoods of the poor people if their extraction and sale are manage carefully. Some suggested that community awareness generation, science and technology application for NTFP processing and value addition and capacity building is the key approaches for rural livelihood and income generation (Bhattacharya et al. 2004; Campbell 1998; Alcorn 1993).

Local, regional, national, and international trade of NTFPs can significantly contribute to community and household economies. As a result, marketable NTFPs can provide an important means for economic growth and sustainable forest management in local communities.

CHAPTER –THREE

RESEARCH METHODOLOGY

This research is a descriptive and an exploratory type which presents both qualitative and quantitative data from primary and secondary sources. The research design entails the different type of data and involves assorted method and techniques to collect the required information. It was ensured that findings and analyzed explanations can be subjected to empirical scrutiny and used for comparison.

3.1 Study Area and Its Selection

Based on the availability of different kinds of NTFPs, living maximum number of NTFPs collectors there and conducting IG programs by the CFUG, Jhirghari community forest is purposively selected as a sample case study area. It is located at ward no 1 of Namtar VDC, the Eastern part of Makawanpur district, which represents the mid-hill forests of Nepal. Total 101 households of the ward are primary users of this forest.

The main reasons behind selecting the Jhirgahri community forest for the study were as follows:

1. The study area as well as CFUG consists of various caste/ethnic groups who are divided in to different socio-economic strata.
2. These community forests users have been successfully completed the different IG programs like Laligurash Sarbat, and Dhashingre leaves oil etc.
3. There is direct involvement of local community in collection, harvesting of NTFPs and looking other possible management through processing and marketing linkages for commercial benefits
4. Among 10 community forests at the VDC, the Jhirgahri community forest, which was handed over to 101 local households in 2053 B S, here is found different kinds of NTFPs.
5. The district was selected for the study as it is one of the focal districts supported by the Rural Reconstruction Nepal (RRN), who provided financial support to the researcher

3.2 Research Design

In this study, the researcher applied both exploratory and descriptive research design. The exploratory research design was applied to explore the issues concerned with does Contribute NTFPs to the rural livelihoods of the CFUGs through community forestry management. Descriptive research design was used to describe the socio-cultural and economic characteristics of the studied population.

3.3 Nature and Sources of Data

This study is exploratory as well as descriptive in nature. The study is exploratory in nature because it intends to explore the existing issues/challenges and contribution of NTFPs. It is descriptive in nature because it describes the socio-economic pattern of the users of the Jhirghari CF.

In this study, both the primary and secondary sources of information were used. The primary information was collected from the field works i.e. household survey, key-informant interview, focus group discussion, observation and case study. The survey was designed in such a way that the structured questionnaire and checklists were the basis for formal method used in data generation.

Secondary data were collected from published and unpublished report of Bio-diversity Sector Programme for Siwalik and Terai (BISEP-ST) District Forest Office, District Development Committee (DDC) and books available at libraries of Tribhuvan University. The audit report, minute, operational plan and constitution of Jhirghari CFUG were also used as secondary data

Qualitative data was gathered from field survey and informal interviews (participatory assessment) as it is felt that freedom of respondents to discuss their beliefs would lead to greater understanding by the subject to be studied; Quantitative data was gathered mainly from secondary sources and intermittently crosschecked through field survey.

3.4 Universe and Sampling

The Jhirghari community forest users groups of Namtar VDC of Makawanpur district were the universe for the study, which is located in Ward No one of the VDC. The total population of the universe was 499, of which 247 were male and 255 were

female with 101 households. Out of total 101 universal populations the area, 60 people involve in NTFPs collection (part time and full time) and all of the 60 NTFPs collectors were selected as sample for the study. The method of sample population select was purposive or the basis of the involvement in NTFPs collector

3.5 Techniques and Tools for Primary Data Collection

This study based on both qualitative and quantitative data. Therefore, required data and information were collected from intensive field works such as household survey, observation, focus group discussion, key informants interviews and case studies.

3.5.1 Household Survey

Household survey was conducted to acquire detail information about population characteristics like caste and ethnicities, age and sex composition, marital status, religious, occupation education as well as landholding size, livestock number and their types and availability of NTFPs and its market status and Number of HHs collecting the NTFPs. Beside these, it was helped to select the key informants who were actively involved in the forest management activities. The household survey questionnaire was finalized after incorporating comments from the supervisor and field pretest.

3.5.2 Observation

Observation methods were applied for getting holistic picture about socio-economic condition (housing, dressing, land conditions, natural calamities etc) of the community and available NTFPs and income generation activities lunched by the CFUG. Besides, it was done for field data verification available from other methods and sources. The researcher observed local collection centre of community forests and discussed with local collectors. In order to get qualitative information like importance and process of NTFPs collection and its market area the observation method was used along with a number of informal interactions with the users.

3.5.3 Focused Group Discussion

A focus group discussion was carried out to explore the existing and the potential community based NTFP management practices, potential risk, threats and their

management options. These types of discussion helped to understand the real situation of group management, in-depth understanding of the issues, conflicts concerns of the particular groups of the people and insights of group activities. Group discussion provided the qualitative information on changes in knowledge, practices, and attitudes as these relate to the resource management and practices, information about the knowledge of people to present trading chain, local rate and final price of NTFPs. It was conducted to obtain information about the dependency of people abundance of NTFPs. They also gave the information about the collection of forest, current level of marketing, trading chain, received price and expected price of the major NTFPs.

3.5.4 Key Informants Interviews

Executive committee members, local traders, school teachers and old people were taken as key informants for getting different kinds of information regarding the study. They shared the information about the NTFPs species availability, harvesting season, local storage methods, problems and prospects associated with NTFP marketing. The information obtained from group discussion was further cross-checked.

3.5.5 Case Studies

A case study views a social unit as a whole (Sharma 2003). The case studies are expected to furnish the research exploring the reality and the realization of community forestry at the local level. There is one case study has done in the study area which is posted on a box. The case study helped the researcher to make an in-depth study on how the NTFPs have been contributing to the NTFP collector.

3.5.6 Reliability and Validity of Data

To maintain the reliability of data, cross-question method was applied after collecting information from the field. Unreliable and doubtful information was checked and corrected by the help of key informants and from available literature. Field observation and focus group discussion as well as key informant interview was still made the data reliable. The secondary data was also helpful to check the validity and reliability of empirical data. The collected data and information were classified and analyzed broadly by close consultation with the supervisor.

3.6 Data Analysis and Interpretation

During and after the fieldwork, the first hand information and preliminary finding was discussed with local level stakeholders. Simple data analysis tools such as comparison, trend, percentage and other basic calculations were used to assess the contribution of NTFPs resources on the local livelihoods of CF users. The result of benefit sharing pattern among different socio-economic, castes, ethnic background of the users were presented in tabular form, graphical and diagrams. The qualitative data were analyzed by descriptive measures and also presented in the form of charts and tables. The descriptive language and tables were also used to analyze and were interpreted the obtained data. Qualitative information were carefully recorded in terms of diaries and structure forms, compile and tabulate accordingly and analyzed the nature of the information with collect from participant observation, interviews, and focus group discussions.

3.7 Limitation of the Study

This was a research work mainly conducted for an academic purpose based on the information from primary sources and Because of time, budget, methodology and other facilities, the researcher had some constraints and limitations as follows :

-) Due to the time and resource limitation, the field survey was conducted only at a community forestry user group. Thus, the generalization made in this study may or may not represent the country as a whole.
-) This is only a micro level study on community forestry focusing on contribution made by available NTFPs in the rural livelihoods in a community of Namtar VDC therefore the finding is limited with the location.
-) The calculation and analysis made in this study was based on the simple statistical tool used i.e. percentage, average, range, mean and simple bar and pie chart.
-) Respondent literary level was another main limitation of the study.

CHAPTER – FOUR

AN INTRODUCTION OF THE STUDY AREA

The chapter presents the general information about the people and the place of study area including general introduction of the VDC and the district. It describes the natural resources, physical condition of the study area as well as their economical life.

4.1 General Introduction of Makawanpur District

Makawanpur district is situated between 27°10' - 27°40' North latitude to 84°41' - 85°31' East longitudes, in the Narayani zone of central development region of the country. It covers 2426 square meter (1.65% of the country land) with altitudinal range 166m- 2584m from mean sea level. Comprise 43 VDCs, 1 Municipality and 13 Ilakas. Topographically the district is very steep and slopes with *Siwalik* and middle hills. It's headquarter is at Hetauda. The district is politically bordered with different districts such as Lalitpur, Kavreplanchowk and Sindhuli are the eastern part of the Makawanpur district, Chitwan is the western part of district, Dhading, Kathmandu, Lalitpur, Kavreplanchowk and Chitwan are the Northern part of district and Bara, Parsa and Rautahat are the South part of the district.

Table 1: Climatic data of Makawanpur district

Temperature (°C)		Relative humidity (%)		Rainfall (mm)	
Maximum	Minimum	Maximum	Minimum	Maximum	Minimum
35.4	6.9	94.4	54.2	745.2	0

Source: District Development Profile of Nepal, 2003

According to the DDC profile 2003, the total population of Makawanpur district is 392604 (1.7% of the country population) with 199,144 male and 193460 (49.28%) female. There are 80.6% population are economically active in Makawanpur.

Table 2: Population Characteristic of Makawanpur District

Particulars	Number
Total population	392604
Male	199144

Particulars	Number
Female	193460
Sex ratio	1.034
Total Households	61112
Average Households Size	5.52
Literacy Rate%	63.2%
Population Density Per Sq. km	162

Source: District Development Profile of Nepal, 2003

4.2 Glimpse of Namtar VDC

Namtar VDC is one of the VDC of the Makwanpur Districts at distances of about 45 KM far from headquarter of Hetauda, which is situated from 27 [40' to 27 [45' North latitude and 85 [20' to 85 [30' South. Basamadi VDC of the same district lies in the North-East, Kalikatar VDC in the North–West, Bhaise VDC in East and Daman VDC in the West from the study area. The altitude of this VDC ranges approximately from 1200 to 2500 meters above the mean sea level (msl). The location map of the study area is given in annex IV. The Namtar VDC has been crossed by the Tribhuwan highway.

The total population of the Namtar VDC is 9385 where 4834 male and 4541 are females. Jhirghari CF is situated in ward no. 1 of Namtar VDC.

The Namtar VDC is heterogeneous in terms of ethnic composition such as Brahmin, Chhetri, Tamang, Gurung, Newars, Praja and untouchable caste groups live there. Specially, there are ethnic groups such as Mokatan, Roomba, Sangatan and cast groups like Barminn/Chhetri; Gautam, Bartaula and Bhujel. Likewise, there are untouchable castes such as Kami, Damai in Namtar VDC.

There are 43.5 % population of Namtar VDC are literate and 1.84 % of population have SLC passed but due to different reasons 0.72% of the population are only obtained a higher education. Here is 50.43 % population are illiterate.

The main occupation of the people of Namtar VDC is agriculture as 80.12 percent of people are depended on the on agriculture, 4.38 percent of people are depended on

service, 1.95 percent of people are depended on business and 1.47 percent of people are depended on different sector. 12.09 percent population are unemployed.

4.3 Description of the Selected CFUG

4.3.1 General information

This study was conducted in Namtar VDC-1, Makawanpur district in Nepal. The Jhirghari Community Forest (CF) lies in the northern temperate region (about 2400 m above from mean sea level). Tribhuwan highway run across the CF. 350.75 ha of mixed rhododendron forest was handed over to 101 households in 2053 B.S. NTFPs collection and cultivation are major IGAs in the CF. Rhododendron juice making and gaultheria oil extraction plant have been just introduced in the CFUG.

Jhirghari CF lies at an elevation of 1,560 meters above to 2,460 meters at top of Tare Bhir. Its total area is 560 ha. It is steep in topography and is full of biodiversity. The climate of this forest is sub-tropical to temperate. Its eastern side is linked with Aghor Mahabir, Karunabhumi community forest; while northern side is linked with Hrisheshwor, Bageswori and Karunabhumi community forest. Towards the western sides there is Chyankhola community forest and Khahare Khola at the southern side. Most of its forest area faces towards Western and Northern sides. There are some human settlements inside as well as the periphery of the forest. Dozens of the streams and rivulets namely Basiphant Khola, Tarebhir khola Simbhanjyang khola, Neupane khola Kali khola, Bandeu khola, Thulojhar khola, Chuchchebhir khola Mabhair khola etc. pass through community forest and provide drinking water and water for irrigation for most parts Namtar VDC and other adjoining areas.

This is the area of high-hills of lower temperate forest i.e. Kharsu, Laligurans Jhyau Chirato, Bisphase Banmula, Kawolo, Jhulo and Majitho etc. It covers about 560 hectares of forest area. Jhirghari community forest users group (CFUG) was formed in 2053 after new Forest Act (1993) proclaimed. The research site is located about 100 kilometers from Kathmandu and 60 km far from Hetauda municipality, connected by local bus service. The different types of NTFPs are distributed uniformly in Jhirghari CFUG and other surrounding CFUGs.

The Jhirghari and other CFUGs in Makawanpur are managing NTFP successfully; however they lack adequate technical knowledge and technology in terms of preparing plan and implementation of harvesting, processing, marketing and trading system. Other issues such as equitable benefit sharing are always the burning question for securing livelihoods of the poor under heterogeneous socio-economic setting of common pool resources management. The study about contribution of NTFPs in rural livelihoods is essential for sustainable conservation, cultivation, and utilization of the resources to secure livelihoods of people and contributing towards attaining the Millennium Development Goals through poverty reduction.

4. 3. 2 The Caste/Ethnic Composition of the Users of Jhirghari CF

The CF covers 101 households and 499 populations. There are 225 female population and 247 male population. The average family size is 4.9 people per family, the population demography constituted by Tamang, Brahmin, Chhettri, Dalit and others groups. The FUGs is combined by five different caste/ethnic compositions. These are Chhetri, Brahmin, Tamang, B.K and others.

Table 3: Caste/Ethnic Composition of the Users

Caste\ethnicity	Population	Percentages
Tamang	311	62.32
Brahmin	155	31.06
Chhettri	15	3.01
B.K	14	2.81
Other	4	0.80
Total	499	100

Source: field survey 2007

The table no. 3 shows that Tamang is the highest ethnicity group having 62.32 percent in the study area. Whereas, Brahmin and Chhettri are 34.07 percent, untouchable castes groups are 2.81 percent and other different caste and ethnicity group are 0.80 percent found.

4. 3. 3 Age-wise Population Composition of the Users

The total users of Jhirghari CF were found 499 with 240 males and 259 females. There are different age-groups population stay which is shows in the table no 4 below.

Table 4: Age-wise Population Composition of Users

Age-group	Male	%	Female	%	Total	%
0-4	27	11.25	28	10.81	55	11.02
5-9	13	5.40	20	7.77	41	8.21
10-14	10	4.16	32	12.38	61	12.22
15-19	12	5.00	19	7.33	39	7.81
20-24	9	3.75	20	7.75	36	7.21
25-29	15	6.25	30	11.58	27	5.41
30-34	22	9.16	15	5.79	30	6.01
35-39	21	8.75	25	9.65	28	5.61
40-44	49	2.41	34	13.13	20	4.0
45-49	20	8.35	16	6.19	24	4.80
50-54	16	6.66	8	3.00	17	3.40
55-59	21	4.59	6	2.31	14	2.80
60+	15	6.27	6	2.31	13	2.60
Total	240	100	259	100	499	100

Source: field survey 2007

As shown in table 4, out of total respondents, 57.65 % population is economically active, whereas 42.35 % respondents are considered dependent population who has below 15 years age group and above 60 years age group. However, in the field observation it was found that the age below 15 years old children provide crucial assistance to their parents for domestic task (carrying water, cleaning house, clothing, cooking, gathering fodder, carrying firewood and others).

4. 3. 4 Religions of the Users

Users of Jhirghari consists different types of religion i.e. Hindu and Buddhist christen. The dalit castes groups are basically consist christen because of this religious see people one way, this religious also help to poor groups by give different opportunity like to provide the education for poor people, daily needed things etc. The religion distribution of Jharighari CF is shown in table no. 5.

Table 5: Religion of the Users

Religion	Population	Percent
Hindu	225	45.09
Buddhist	256	51.30
Christen	18	3.61
Total	499	100

Source: field survey 2007

Majority of users were associated with Buddhism (51.30%) followed by Hinduism (45.09%) and Christen (3.61%).

4. 3. 5 Education Statuses of the Users

There are only two education institutions in the study area: one high school and other one is primary school. The educational status of the study area is shown in the table no. 6, which is found comparatively better status of education than the other ward of the VDC.

Table 6: Education status of the users

Level of education	Male	%	Female	%	Total	%
Illiterate	48	16.9	36	16.74	84	33.64
Literate	72	25.35	53	24.65	125	50
Primary	55	19.38	32	14.88	87	34.26
Lower secondary	42	14.78	41	19.08	83	33.86
Secondary	50	17.6	47	21.86	97	39.46
SLC	12	4.22	3	1.39	15	5.61
SLC above	8	1.76	3	1.39	11	3.15
Total	284	100	215	100	499	100

Source: Field survey 2007

As shown in table 6, illiterate users who can not read and write are 33.64%, and literate people they can read and write their name and signature are 50.00%. Here, 5.61% users have got high school level education (up to grade 10. They expressed their interest to take higher education but they could not effort to spend money. Other

hand, there is no higher level school in the study area; they have to go to Hetauda or Kathmandu for this. This is the main reason they could not take higher education.

4.3.6 Occupation of the Users

Occupation is one of the important aspects in determining the status of the people, which can promote their economic condition & standard of living. As Nepal is the agricultural country, most of people engaged in agriculture. But in the study area, agriculture is not only one main occupation while the users are engaged in different occupations like agricultural and non-agricultural which is shown in table no. 7.

Table 7: Occupational Distribution of the Users

Occupation	No. of users	Percentage
Only agricultural	289	57.91
Only business	25	5.01
Farming with business	30	6.01
Only NTFPs collectors	5	1.00
Farming with NTFPs collectors	130	26.06
Wage labor	20	4.00
Total	499	100

Source: Field survey 2007

Table no 7 shows that about 57.91 % people are engaged in agricultural occupation for their livelihoods. They do not have other sources of incomes. Remaining other users involve in other activities like farming with business, business, NTFP collection and wage labor. Though majority of them share farming with other occupation, about 26.06% respondents are living without farming. Among the total population studied, 1.00% users are living with NTFPs collecting and selling and 4.00% are living on wage labor.

CHAPTER –FIVE

SOCIO-ECONOMIC CHARACTERISTICS OF THE RESPONDENTS /NTFPs COLLECTORS

This chapter highlights the socio-economic natures of the respondents. The age and sex composition, caste and ethnicity, education and family size are analyzed here under social characteristics. The economic characteristics of the respondents are dealt with greater emphasis on occupation, land holding size, source of income and food sufficiency level etc.

5.1 Caste/ Ethnicity Distribution of the Respondents /NTFP Collectors

Among the various social characteristics of the society, ethnic composition is an important component, which directly or indirectly affects the development of the society. As almost respondents are from the NTFP collectors, Tamangs are the predominant caste and ethnicity groups followed by Brahmin/Chhetri in the study area who holds 78.34 and 18.33 percentage of the total respondents as shown in table no.8.

Table 8: Caste/Ethnic Composition of the Respondents /NTFP Collectors

Caste\ethnicity	Population	Percentages
Tamang	47	78.34
Brahmin/Chhetri	11	18.33
Bishwo Karma (BK)	2	3.33
Other	0	0
Total	60	100

Source: field survey 2007

5.2 Sex- wise Age of the Respondents/NTFP Collectors

Among the sampled households, the respondents belonging to both sexes of different age groups and from those who are actively involving in the NTFPs collection and selling were selected for the study. The table no 9 refers the age and sex of the respondents.

Table 9: Sex- wise Age Group Distribution of the Respondents

Age group	Male	%	Female	%	Total	%
20-30	11	18.33	3	5.00	14	23.32
31-40	14	23.33	5	8.33	19	31.67
41-50	7	11.67	3	5.00	10	16.67
51-60	10	16.67	3	5.00	13	21.67
Above 60	4	6.67	0	0.00	4	6.67
Total	46	76.67	14	23.33	60	100

Source: Field survey 2007

Table no 9 shows that 23% female respondents and 76.67% male respondents are involving in the NTFPs collection and selling in the local market.

5.3 Educational Status of the Respondents/ NTFP Collectors

Education is one of the component factors for socio-cultural and economic change in a society as it has direct bearing with development process and development outcome. Many literatures suggest that education plays an important role in building confidence, increasing mobility, increasing access to information, employment opportunities and much more. Keeping in mind these facts, that educational status of sampled population is found as shown in table no 10.

Table 10: Education Status of the Respondents

Education Status	Number	Percentage
Literate	21	35.00
Illiterate	9	15.00
Primary	8	13.30
Secondary	12	20.00
High school	6	10.00
S.L.C and Above	4	6.67
Total	60	100

Source: Field survey 2007

According to the population census 2001, 54% of the total population is literate in Nepal. The male literacy rate in national level is 54% of the total male population and 35% is that of females.

Table no 10 shows that among the selected respondents, 79% are literate including just literate to S.L.C and above level of education completed. Only 6.6% respondents have got higher level education. But, nowadays, due to different matters like, lack of educational awareness to the parents and poor economic condition of the family, 21 (35%) respondents are Illiterate. There are only one primary and one higher school is accessible to them. So, majority of them is found literate but most of the literate people are limited only to the pre-primary and primary level of education. Majority of the school age-population from users do not admit in school. Moreover, most of the students quit the school before completing their primary education mainly because of their miserable economic condition of the family.

5.4 Religion of the Respondents /NTFP Collectors

In the study area, majority of Tamangs are followers of Buddhist religion, but some of them are dominating on Hindu religion. Brahmin/Chhetries are followers of Hindu religion and Bishwo Karmas (the untouchable caste groups) are followers of Christian religion.

Table 11: Religion of the Respondents

Religion	Religion			Total	%
	Tamang\Magar	Brahmin\Chhetri	Untouchable caste		
Buddhist	35	0	0	35	58.3
Hindu	7	8	1	16	26.7
Christian	5	3	1	9	15
Total	47	11	2	60	100

Source: field survey 2007

Table no 11 shows that the CF users are obviously dominated by Tamang follows Buddhist religion (58.30%). But some of the Tamang, Magar, Brahmin, Chattri and untouchable cast respondents are followers Christian, who hold 15% of the total respondents.

5.5 Occupational Status of the Respondents/ NTFP Collectors

Occupational status is another factor, which reflects the socio-economic status of a person or family. The main occupation of the study are are agriculture, NTFPs collection, business and wage labour. Table 12 shows the occupational status of the sampled respondents.

Table 12: Occupational Status of the Respondents

Occupation	No. of respondents	Percentage
Only agriculture	7	10.00
Only business	3	5.00
Farming with business	9	15.00
Only NTFPs collection	9	15.00
Farming with NTFPs collection	27	43.33
Wage labor	7	11.67
Total	60	100

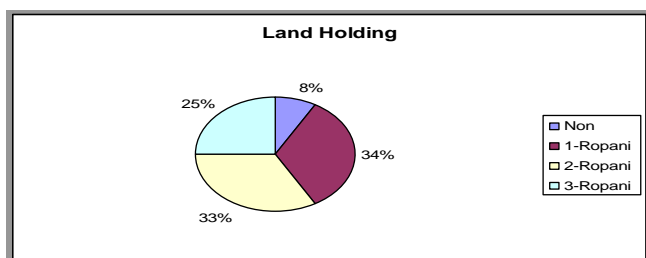
Source: field survey 2007

About 10.00% respondents are engaged in only agricultural occupation for their livelihoods whereas about 58.33% respondents are depending upon either NTFPs collection or farming with NTFP collection and selling. Remaining respondents have been involving in other activities like farming with business, business and wage labor. Though majority of them share farming with other occupation, about 31% respondents are living without farming. Among them, 15% respondents are living with an occupation of NTFPs collection and selling and 11.67% are living on wage labor.

5.6 Landholding Status of the Respondents/ NTFP Collectors

Land is very important natural capital affecting the livelihood of the people in Nepal. But since the study area is completely a hilly area with complex physiography. The land holding size is quite less i.e. 1.75 ropani per household in an average. The importance of land lies not only for securing the food security but also for the overall livelihood enhancement of the households.

Figure 1: Land Holding Size of the Respondents



Source: field survey 2007

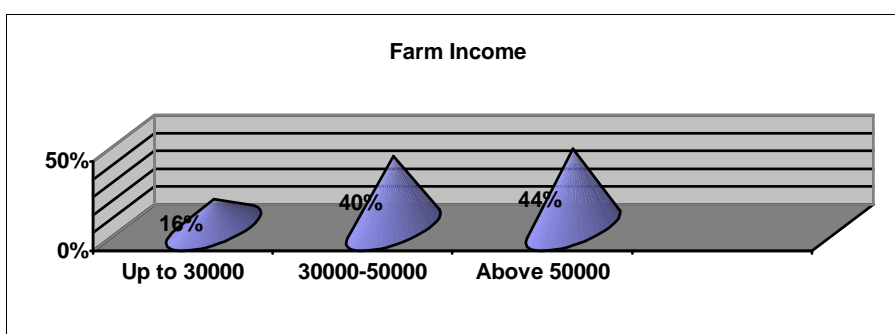
The figure no.1 shows the average land holding size by the sampled households. Out of total respondents' family, 76% have less than 2 ropani of land, whereas, 8% respondents have no land, they have to totally depend upon NTFP collection or labour. Since, the private land holding is very few, the high dependency of the local people on the forest and forest based products is obvious.

5.7 Source of Income

Farm Income

Figure 2 simply represents the actual income level of the respondents which is the main basis for their subsistence. 16% of them have the annual farm income of up to NRs 30,000, 40% have the farm income in between NRs 30000- 50000 and 44% of the respondents have the annual farm income of above NRs 50000. This income figure from the farm shows that the people are in a serious economic hardship and hence various alternative income sources are recognized.

Figure 2: Farm Income Status of the Respondents

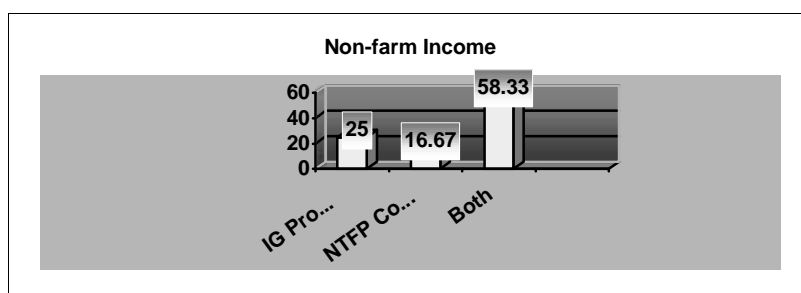


Source: Field survey 2007

Non Farm Income

Since the farm income is very low to carryout their livelihoods, the respondents as a member of Jhirghari CFUG have been involved in various IGAs such as processing of *Laligurans sarbat*, *Dhasingre tel* and NTFPs collection etc.

Figure 3: Non-farm Income Status of the Respondents



Source: Field Survey 2007

The field data shows that 25% of the respondents are involved in processing of *Laligurans sarbat*, *Dhasingre tel* and 16.67% are involved in NTFPs collection and 58.33% of them are involved in both activities.

5.8 Livestock

Livestock is the domestic stock, which can be the major sources of income for local people as like an agro-base country, Nepal. Livestock in this study area includes farming of different domestic cattle like cow, buffalos, goats, poultry, pigs etc. Livestock farming not only uplift the living standards of locals but also increase more pressure to forest. Table no. 13 shows that most people have buffalo and poultry farming whereas lower castes people rear the pigs.

Table 13: Distribution of Livestock among the Respondents

Name of animal	Number	Percentage
Buffalo	45	10.5
Cow	20	4.67
Oxen	6	1.40
Goat	135	31.54
Pig	5	1.16
Poultry	217	50.70
Total	428	100

Source: Field survey, 2007

The villagers gave more priority to the poultry and goat farming than other cattle. It was informed that goats are the staple source of cash. They sold goats in the nearby markets and in the market of Hetauda and Kathmandu; similarly, it was also found that goats are main source of meat and fertilizer of Jhiringahri CFUGs people. Similarly, the villagers also informed the researcher that less fodder was required for goat as compared to cattle and buffalo and the respondents gave more priority to the

buffalos than cows because it gave more milk and produced more manure than cow. There was no use he buffalo because they do not use it in plugging. They took the she buffalo to neighboring community for breeding. The people give less priority to ox because it is not needed throughout the year. During the needed time they hire ox from neighboring community in cash or labor exchange. If a man ploughs his neighbor's field with a pair of oxen then his neighbor will provide him three labors.

Generally, female are responsible for fodder collection. There is no work division for cowshed clearance and caring. However, generally old and junior members of a family take the responsibility for grazing.

5.9 Food Sufficiency Level

Agriculture is the main occupation of the villagers. However, they cannot produce sufficient food due to the small piece of land and lack of irrigation facility. The following table shows the food sufficiency situation of Jhirghari community.

Table 14: Household Food Security Status of the Respondents

Food sufficiency	Total household	%
Less than 3 months	5	8.33
4-6 months	6	10
7-9 months	13	21.67
10-12 months	28	46.67
12+ surplus	8	13.33
Total	60	100

Source: Field Survey, 2007

As shown in table 13, majority of the villagers did not produce sufficient grains to meet their annual food needed whereas very few households were producing sufficient food grains to last them through out the year. Due to the lack of annual food sufficiency most of the villagers are involved in other activities i.e. wage labor, business, NTFPs collection to fulfill their needs of food grains. 46.67 % of respondents have food sufficiency for 10 to 12 months, whereas 13.33 % respondents fulfill more than 12 months i.e. keeps surplus for selling. Only 8.33 % respondents have food sufficient less then 3 months.

CHAPTER – SIX
AVAILABILITY OF NTFPS
AND THEIR USES IN JHIRGHARI CFUG

According to the respondents, more than 100 types of NTFPs are available in the study area but the researcher has only focused on most preferable and important NTFPs like Laligurans(*Rhododendron arboretum*), Banmula (), Jhyau (*Eurya acuminata*), Bisfez (*Polypodium vulgare*), Chiraito (*Swertia chiraita*), Thulo Okhati (*Astilbe Rivularis*), Timur (*Xanthoxylum armatum*), Pakhanbed (*Bergenia ciliate*), Kurilo (*Asparagus racemosus*), Sarpagandha (*Rauwolfia serpentine*), Majitho (*Rabia Corditolia*), Kaulo (), and Dhasingare (*Gaultheria fragmentissima*). A list of NTFP available in the study area is in appendix IV.

6.1 Availability of NTFPs and its Describes

Some details of the NTFPs available in the Jhirghari CF and their using purpose are described as follows.

Laligurans: Laligurans is our national flower. This found at the height of 1500m to 3600m in southern part Nepal. Flowers, leaves, and bark of this plant are used and collected mainly from Magh to Baisakh. The leaves are used as paste over forehead during severe headache. Its leaves and bark is also used in dysentery, and now days the flower are used to make sarbat.

Jhayou: This found at the height from 100m to 3000m. There are 465 types of Jhayou found at different parts of Nepal. All types of Jhayou fall under group lichen. They grew on floor, tree and stone. It can be collected any time and all of its parts i.e. root stem, leaves can be used. It is used in menstrual irregularities, food poisoning and in other different diseases. It can also be used in oil making, color wool and silk. Besides, it can also be used or bio-indicator to measure the quantity of pollutants in environmental pollution.

Chirayito: This found at the height of 1500m to 2700m mainly Dolakha, Sindhupalchowk, Taplegunj, Fhankuta, Bhokpur Baglung, Parwat and Kaski. It is used during fever, abdominas discomfort as anti-helminthes, diarrhea, and malaria. It

is also used in cancer. Nowadays, beer and other alcohol industries are using it as alternative agent to make drinks bitter some of its species has got substances to cure liver disease also.

Pakhanbed: This found at the height of 1200m to 3300m. Its flowers are collected from Jestha to Ashad, and the roots from Bhadra to Kartik. Its root, flower is used in diarrhea, fever, and kidney disease.

Majitho: This found at the height of 600m to 2450m. Its roots, leaves, fruits are used in epilepsy, uses skin diseases. Its stem is used for snakes and scorpion bite and is also used in making red colored dye.

6.2 Availability of NTFPs and Their uses by Different Caste and Ethnic Group:

In the Jhirghari CFUG there are different caste and ethnic groups, they are used different kinds of NTFPs for different proposed. Some NTFPs are use for vegetable likewise (kurilo, mushroom) etc. Likewise the some of NTFPs are using for selling and medicine use likewise Chiraito are using for control high fever and Thoulo-ookhati are used by the pregnant women and for control of heavy menstrual bleeding etc.

Table 15: Availability NTFPs and their uses by the Cast and Ethnicity Groups

Local Name	Use parts	Ethnic group (Tamang/ Magar)	Caste groups (Bramin/ Chhetri)	Dalit (B.K)
Chiraito	All parts	It is used curing fever, tonic and anti-diarrhea.	To control high fever	To control high fever
Kurilo	Root fruit	Vegetable	Vegetable	For selling
Banmula	Roots	For selling	For selling	For selling
Laligursh	Leaf and flower	forehead in the treatment of headaches	Flowers are eaten as pickle and fresh flower are believed to be able to dissolve fish bone stuck in the throat	Headaches problem and using for simply pickled
Jhyau	All parts	Menstrual irregularities	Menstrual irregularities	Menstrual irregularities

Local Name	Use parts	Ethnic group (Tamang/ Magar)	Caste groups (Bramin/ Chhetri)	Dalit (B.K)
Besfej	All parts	For selling	For selling	For selling
Majitho	All parts	Skin problem and snakes and scorpion bite	For snakes and scorpion bite	Snakes and scorpion bite
Kaulo	Bokra	To save evil eye	To save evil eye	To save evil eye
Jhulo	All part	For selling	For selling	For selling

Source: Field Survey, 2007

The above table 15 shows that different caste and ethnicity group have been collecting NTFPs for different propose. Laligursh is collection ethnic groups to forehead in the treatment of headaches and the caste groups are using for worship God and dissolve fish bone stuck in the throat, in the same the dalit are using for the headaches problem. Chiraito is used all of them are to control the high fever. Most of the castes groups ethnic group and dalit are use Kurilo for the vegetable,. Kalo bokra are use for save the evil eye. And last besfej, jhulo and banmula are used for selling.

6.3 Purpose of the NTFPs Collection by Different Caste/ethnic Groups

The different caste and ethnicity group are collecting different NTFPs for different purpose which can be categorized mainly into three purposes: food, medicine vegetable and for sale. Untouchable castes groups (B.K) collect the NTFP only for selling and fulfill their daily needs. Tamang and Mager collects with the purpose of eating, selling and medicine use. But the Brahmin and Chhetris collect the NTFP with three propose as shown below in the table 16.

Table 16: Purpose of NTFPs Collection by Cast and Ethnicity Groups

Caste/ethnic group	Propose the NTFPs collection			Percent
	Domestic (Vegetable etc)	Medicinal	Selling	
Tamang	43	43	30	68.18
Brahman \Chhatri	13	13	10	22.42
Untouchable castes	4	4	4	9.09
Total	60	60	44	100

Source: Field Survey, 2007

The above data shows that different caste and ethnicity group have been collecting NTFPs for different purposes. 68.18 % Tamangs are collecting NTFPs for selling, 100% are using for medicine and foods. 22.42% Brahman/Chhetries are collecting NTFPs for selling, medicine and foods but untouchable caste groups (BK) collect it s selling, medicine and food proposes. They are using as medicine in different diseases. Chiratio is used in high fever, Thoulookhati is use to the delivery women to stop the over bleeding etc. Pakhanbed is used in diarrhea, fever, and kidney disease. Dhasingre can be used at body site pain, sprain or strain.

6.4 Uses of Different NTFPs in Jhirghari CFUG

The use of NTFPs in the CF and their uses were obtained from different sources, such as household survey, key informants survey and secondary data as well. List of NTFPs found in CF and their uses are presented in the table 16

Table 17: NTFPs and their uses in Jhirghari CFUG

S.N	Name	Habit	Use parts	Domestic uses	Market uses
1	Chiraito	Herb	All parts	It is used curing fever, tonic and anti-diarrhea.	For medicine
2	Kurilo	Climber herb	Root fruit	Root is used as gastric, fever, tonic substitute of soap.	For medicine
3	Laligursh	Tree	Leaf and flower	-	Selling flower and juice
4	Banmula	Herb	Roots	Headache problem	For medicine
5	Jhyau	Herb	All parts	-	Raw material for slipper
6	Besfej	Herb	All parts	-	For medicine
7	Majitho	Herb	All parts	Skin problem	For color
8	Kaulo	Tree	Bokra	To save evil eye	Raw material for stick incense
9	Jhulo	Herb	All part	-	For medicine

Source: Field Survey, 2007

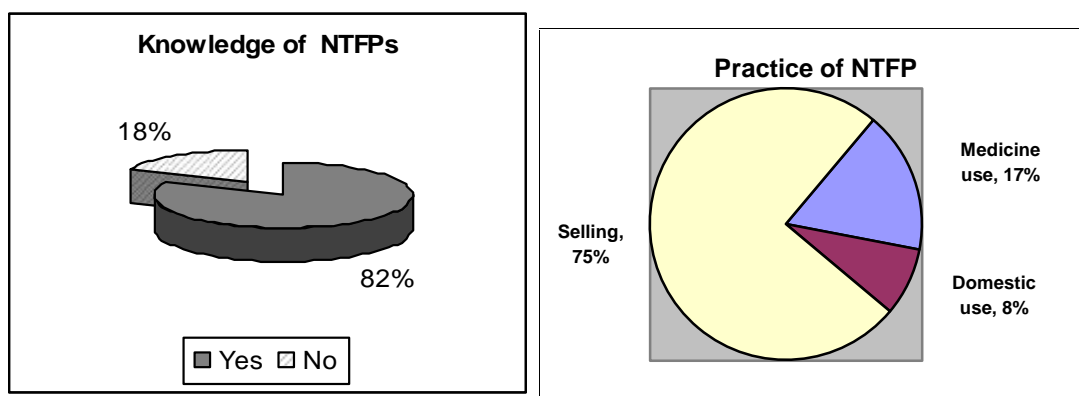
The above table 17 shows that the different NTFPs and their uses in the Jhirghari CFUGs. All of them to collection the selling and domestic propose. Different NTFPs are selling for the different dieses medicine. The Chiratio are used to prepare the sitamol which is used for control high fever. In the same way the laligurash flower

and leaf are use for making juice and the raw material for the different kinds of medicine. Regarding to the Bammula, Jhyau Majitho, Jhulo and Kaulo are using for the raw material of the different kinds of medicine. But Kaulo bokra are the use for the making stick incense.

6.5 Knowledge and Practice of NTFP among the Respondents

The respondents have knowledge about how to collect NTFPs, which part should be collected, which are the suitable time for collection etc. Almost users know about different types of NTFPs easily by observation.

Fig. 4 : Knowledge and Practice of NTFP among the Respondents



Source: Field Survey, 2007

Among the sampled HHs, 82% of the total respondents were having the NTFPs knowledge, only 18% of the respondents having no knowledge on use of NTFPs. 8.3% HHS of the respondents have practice for using vegetables, 16.6% HHs are using it for medicinal use and 75% HHs of the total respondents have no practice and use the NTFPs in to selling and fulfill their daily needs. In this reason there CFUGs member have knowledge and practice to used the NTFPs.

6.6 Prioritization of Most Important NTFPs Species

In the study area there are found different kinds of like Gurash, Kaulo, Jhayau, Bisphase, Banmula, Chiraito and Jhulo etc. Most of the respondents are collecting these NTFPs for different purpose. The Jhayau is maximum available in the study area and it market price also high. So respondents wanted to collect the Jhayau. Bisphase are available same place, so, it is also preferred species of NTFP in the study

area. Chirayito market price is very high but the respondents are not preferred it because of its scarcity in this CF. Gurash flower is seasonal flower and it is collected only for the juice making time, its market value is low. So most preferred species as perceived by the respondents has shown in the table no 16. On the basis of preference order the first, second and third ranking goes to Jhayau, Bisphase and Jhulo, which assist to assess the nine most preferred NTFPs of the study area.

During household survey and key informants interview, questions were asked for prioritizing NTFPs based on the criteria: (1) Market demand. (2) Margin/profit (3) Availability. (4) Amount of time needed to identify and harvest NTFPs (5) Regeneration potential. (6) Contribution to income. (7) Potential for employment creation (8) Uses. On the basis of their responses, the following 9 important NTFPs were selected which are Jhayau, Bisphase, Jhulo, Kaulo, Majito, Banmula, Chiraito, Laligurans and Kurilo.

Table 18: Matrix Preference Ranking of Selected Nine Important NTFPs

Species	Market demand	Margin/profit	Availability	Amount of time needed to find and	Regeneration potential	Contribution to income	Potential for employment creation	Uses	Score	Rank
Kaulo	2	2	3	2	2	3	2	1	17	4 th
Majitho	2	2	3	2	2	3	2	1	16	5 th
Bisphase	3	3	2	2	2	3	3	2	20	2 nd
Kurilo	2	2	1	1	1	1	1	1	10	9 th
Chiraito	3	3	3	3	1	2	2	3	15	6 th
Jhayau	3	3	3	3	2	3	2	2	22	1 st
Liligurash	2	2	1	1	2	2	1	1	12	8 th
Banmula	3	2	2	1	1	2	2	1	15	7 th
Jhulo	3	3	2	1	2	3	2	2	18	3 rd

Source: Field Survey, 2007

Above table no 17 shows that Jhayau has got the highest score and is placed in the first order. Similarly, Kurilo has got the least score and is placed in ninth order. The scores given were 3 for highest, 2 for moderate and 1 for the lowest. These values were summed separately for each individual species and compared with that of each others.

CHAPTER –SEVEN
CONTRIBUTION OF NTFPs
IN RURAL LIVELIHOOD IMPROVEMENT

This chapter provides some facts about contributions of NTFPs in rural economic upliftment of the community people in the study area.

Traditionally, the local people have been using the NTFPs for the fulfillment of their subsistence need. But, nowadays, people have been promoting NTFP not only as medicine or consumption purpose but also as alternative source of income. The contribution and benefits through the NTFPs can be summarized in following points.

As mentioned in the chapter V, 35 % families of the study area are more or less engaged in NTFPs collection and selling that means its collection is also one of the major occupations of the community. Likewise, since about 50% people have less than NRs 50,000 annual income from agricultural activities they have been compelled to involved in various alternatives sources of income i.e non-agricultural activities. Out of them, production of Laligurash Sarbat and Dhasingre oil are some of the major NTFP-based income generation activities locally promoted by Jhirghari CFUG.

7.1 Contribution of NTFPs for the Different Caste/Ethnic Groups

The table no 18 shows the involvement and annual income of different caste/ethnicity groups by NTFP selling. 47 Tamang HHs were involved in different NTFPs for collection with the objective of selling. They earned average Rs. 50, 2500 per year. Likewise, 11 HHs of Bramin/ Chhetries were involved in NTFPs collection and selling and they earned 2, 03,600 per year. But only 2 HHs of B.Ks. were involved in NTFPs collection and selling from which they earned only Rs. 34, 636 per year.

Table 19: Contribution the NTFPS for the different castes groups and ethnicity groups

Caste/ethnicity groups	Involved HHs	Income per year
Bramin/Chhetri	11	203600
Tamang	47	502700
B.K	2	34636
Total	60	740936

Source: Field Survey, 2007

7.2 Increasing Annual Income by NTFPs Selling

It is found that Jhirghari CFUG earns about NRs 740,936 annually only from different kind of NTFPs selling in the community forestry. Table no 19 shows the average annual income from NTFPs.

Table 20: Average Annual Income from different NTFPs and selling

Name of NTFPs	Per Kg	No. of HHs involved	In Average Total income(In Rs)	Average income per household
Laligurans	5-10	45	1,26000	2800
Kaulo	20	30	90,000	3000
Jhayau	130	60	1,29901	2165
Bisphase	80	60	1,24035	2067
Banmula	60	32	1,24000	3875
Chiraito	130	10	65,000	6500
Majitho	120	15	32,000	2133
Jhulo	50	19	50,000	2631
Total			740,936	25,171

Source: Field Survey, 2007

Table 19 shows that the Jhirghari community forest CFUGs users earn about NRs.25,171 per household annually. They earn about Rs.1, 29,901 from selling only Jhyau which is the highest in comparison to other NTFPs. The reason behind this is maximum availability of it and easy for collection and easy for selling. Laligurash and Bisphase are occupying the second and third position as per its annual income. Banmula, Kaulo and Chariot are the most expensive and valuable NTFPs but due to the scarcity in the place only few people collect and sell it.

Similarly, the CFUG had earned Rs. 54,411 from Rhododendron juice production only in the year of 2064 (CFUG record 2064)

7.3 Establishment of Rhododendron Processing Enterprise

All most all the poorest HHs of Jhirghari CFUG and other users of near by CF commercially collect Rhododendron from their community forests. They sell the flower to the Jhirghari Rhododendron Processing Enterprise (JRPE) at the rate of Rs. 5 per Kg for unsieved flower and Rs 10 for sieved. The members of the 12 HHs get employment in the enterprise for the processing of Rhododendron flower to produce the juice as the final product.

Among the involved HHs are identified as the poorest of Jhirghari CFUG, as identified by users which is incorporated in CFUG's operation plan and constitution, at the same time, the people involved in the enterprise were trained initially in the assistance of DFO Makwanpur. They collected 1200 Kg unsieved and 130 kg sieved Rhododendron flower worth NRs 6000 and NRs 1300 respectively from the forest in the year 2064 and prepared 3266 liters of rhododendron juice.

Table 21: Unit Cost and Net Profit from Production of Rhododendron juice

Item	No. of bottle Produced	Unit cost (average) NRs	Total Expenses NRs	Sell price per bottle (average) NRs	Net profit per bottle (average) NRs	Total income
Juice	3266	40.84	133404	57.5	16.66	54,411

Source: Field Survey, 2007

The average unit cost of per bottle is NRs. 40.84 and the average selling rate is NRs 57.5, which shows that the profit is NRs 16.66. Hence, if the production is increased and diversified it will certainly add more income to the involved users to support their livelihood upliftment.

7.4 Creating Local Employment Opportunity

By the collecting, processing and selling of NTFPs, not only provides employment opportunity to the local users but also transfer knowledge and skills for the same. Based on the field study, members of the 12 HHs has got employment in processing of rhododendron flower to produce the juice, more then 8 HHs families are fully engaged in NTFPs collection and selling as their major occupation, it is an important source of income to enable them to purchase essential commodities such as rice, salt, kerosene and cloths etc.

Livelihoods improvement through NTFPs: a case study of Suntali B.K

Suntali B.K is a 35 years old member of Jhirghari CFUG, who is staying in Namtar VDC since her childhood. She has two children with her sick husband. Her family background is very poor, so it was difficulty to her fulfill daily needs of her family.

Now days she has starting to collect the NTFPs, spending her maximum time. Daily early in the morning she goes to collect NTFPs like Kurilo, Mushroom, different kinds of green vegetable and sells it to the local traders from which she earns 100 to 200 Rs .per morning. After meal, she goes to collect other NTFPs like Jhayu, Chirato, Banmula etc and sell to the local from that she earn about 300 per day. Altogether she earns about to5000- 70000 Rs per month. In this way, her daily life spends and her family background is improving her two children is going to school and it has became easily to fulfill their daily life.

Source: Field Survey, 2007

7.5 Contribution to Social Development Activities

From the revenue collected through NTFPs collection, Jhirghari CFUG has lunched social and community development activities annually. Scholarship to the poorest students, foot trail maintenance and the forest management works are some exemplary evidences for which the CFUG has provided financial support as follows.

1. **Scholarship with poor children:** The Jhirghari CFUG has provided Rs 1500 in scholarship to the Dalit poor student in class 6 and 7. It has helped to the poor and low castes students to upgrade their next class which has became one of the supporting factors for those students who want to read higher education.
2. **Foot trail maintenance:** The Jhirghari CFUG has also provided Rs 1400 fund to a social well fare program: foot trail maintenance from Jhirghari tole to Bosi Phant high school having 2 Km long.
3. **Forest management:** Every year this CFUG doing the forest management program like tree cutting, bush cutting, harvesting different kinds of NTFPs etc. This year (2064 BS), they have allocated Rs 3000 for the forest management program.

CHAPTER –EIGHT

SUMMARY AND CONCLUSION

8.1 Summary

Nepal is rich in non-timber forest products (NTFPs) because of its diverse physiographical, altitudinal, and climatologically conditions. Many of these products provide important supplemental livelihood resources for families who can grow only enough crops to feed themselves for a few months of the year. Most of these NTFPs are open access and are over-harvested; as a result, their management is vital to any forest management scheme. NTFPs are important to reduce poverty in rural areas. Increased NTFPs production and sales have been impressive in Nepal and associated income generation has been a significant boost to the local economy.

The study “Contribution of Non-Timber Forest Products (NTFPs) in Rural Livelihood through Community Forest” was conducted in Jhirghari community forest user groups of Namtar VDC of Makawanpur district aiming to develop understanding about contribution of non-timber forest products in rural livelihoods through community forestry linkage in the interface of livelihoods and community forestry in Nepal. The main objective of the study was to attempt to find out the major NTFPs available in study area and contribution to the rural livelihood upliftment. This study also tried to analyze some socio-economic characteristics of the users of Jhirghari community forest.

This research is based on the descriptive and exploratory research design. The researcher along with the executive committee members collected the information through the household survey and facilitated the assessment in every hamlet caste, ethnicity, class and gender groups and individuals. The study was carried out some sequential steps of research methodology such as defining research problems, reviewing literature, designing research, collecting data, analyzing data, interpreting and organizing the report. Required data and information were collected from intensive field works such as household survey, participant observation, focus group discussion, key informants interview and case studies.

There are 101 households having 6.1 persons per HH in Jhirghari CFUG as primary users which was universe of the study. From the universe, representative of 60 user households (60 %) were chosen for the sample by applying purposive sampling technique. There were 46 male respondents and 14 female respondents were selected from the universe. Most of them are NTFP collectors. On ethnic basis, 38.3% respondents were from Tamang/Magar, 26.3% respondents from Brahmin/Chhettri and 15% from Dalit were selected. Regarding the educational status of the respondents, only 35% are literate and 15% are totally illiterate. Likewise, 13.3%, 20% and 10% of respondents have obtained primary, secondary and high school education respectively and only 6.66 % have passed SLC and above. In case of occupational status of respondents in Jhirghari CFUG, 15% respondents were engaged in agriculture activities, 24% are engaged on non-farm activities such as business, NTFPs collection and wage labor etc. 21.6 % users are depended upon farm activities with NTFPs collection as a key occupation. Similarly, 30 (50%) of the respondent have above 5 Ropani of land. Thereby 18 (30%) of the respondents have 2-5 Ropani. 4(6.60%) respondents have only 1-2 Ropani. A few respondents 8 (13%) have below 1 Ropani land. The average land holding size of the respondents is 1.75 ropani per household.

There were different types of NTFPs found in the study area some of them are important to uplift the economic condition of the users by selling and using NTFPs. Most of the respondents collect the Chiraito, Jhayau, Bisphase Banmula and flowers of Laligurans for sale. The NTFPs such as Kurilo, Mushroom, Ban Tarul are collected for vegetable propose.

Production of Laligurash Sarbat and Dhasingre oil are some of major income generation activities locally promoted by the Jhirghari CFUG. The NTFPs available in the CF contributes not only in terms of cash income but also in terms of develop skills, employment opportunity and initiating social development activities towards NTFPs cultivation, processing and selling which ultimately converted into income generation among users and helps to uplift their livelihoods condition. NTFPs have highest contribution in increasing financial assets of the users along with public assets of the community people. Royalty from collection of Jhayau Bisphase, Majitho Kurilo and other NTFPs has been found high in Jhirghari CFUG. NTFPs cultivation has been

recognized as recently practiced IGAs in the study area and noticed as most significant income generating activities in the near future (like laligursh Juice and Dhasingre oil ect). Involvement of poor and women in IGAs has been found significant.

The Jhirghari community forest CF users earn about 1, 29,901 from selling Jhyau which is the highest in comparison to other NTFPs. Similarly, the CFUG has earned Rs. 54,411 from Rhododendron juice production only in the year of 2064.

Members of the 12HHs has got employment in the processing of Rhododendron flower to produce the juice, more then 8 HHs families are fully engaged in NTFPs collection and selling as their major occupation.

It was found that 18 % of the respondents don't have proper knowledge about NTFPs identification, using patterns, harvesting time and techniques etc. Out of 13 important species of NTFPs identified in the study area, Jhayau and Bisphese are the best preferred NTFP species followed by Chirato, Banmula, Kaulo Laligurash, Majitho and Thulo Okhati.

8.2 Conclusion

Jhirghari CF located at Namtar VDC and nearby area (Daman area) is very important and suitable places from the NTFP point of view. Here is available more than 100 species are found there in the Daman area but 13 are use in CFUG. The species having good quantity with market value are Laliguransh, Jhyau, Chiraito, Majitho, Bisphase, Banmula, Kurilo, Tholeokhati, Pakhanbed, Kaulo and Dhasingare. Out of them Jhayau, Bisphase, Jhulo, Kaulo, Majitho are most preferred and important NTFPs from the livelihoods point of view from which more royalty has been collecting for Jhighari CFUG.

CFUGs have also been found involved in rhododendron flower collection for juice making and dhasingare (*Gaultheria fragmentissima*) leaves collection for essential oil extraction. The major source of cash income in the CFUG is sale and distribution of NTFP production. NTFP cultivation has been recognized as recently practiced IGAs in the study area and noticed as most significant income generating activities in the near future. Particularly available NTFPs contributing local users mainly in four ways

such as; i) increasing annual income by selling NTFP species; ii) developing skills by establishing rhododendron processing enterprise; iii) creating local employment opportunities by NTFP cultivating, collecting and selling and iv) contributing to social development activities. Community development activities have been found more in Jhirghari CF. Around 19% of income by Jhirghari CF has been found expended in community development activities annually. Scholarship to the poorest students, forest maintenance and the forest management works are some exemplary evidences for which the CFUG has provided financial support.

Involvement of poor and women in IGAs has been found significant. It seems that protection and sustainable management of the available NTFPs in the study area should be done in order to increase livelihoods opportunity of the local community people. To promote NTFPs concerned GO and NGO should launch supportive programs such as NTFPs nursery, plantation, establishment of demo plot, NTFP based IGA etc. involving all most all the CFUGs and individuals in the Daman area. Since, some of the local users do not have adequate knowledge and skills on NTFPs, it is necessary to enrich their knowledge and skills on NTFPs identification, management and processing. In the same way, market arrangement should be done for NTFPs selling and distribution.

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Appendix-I

SURVEY QUESTIONNAIRE

1. Name of CFUG.....

2. Socio-economic information

Name of the respondent.....

Gender..... Age.....

Address.....

3. Demographic information

No. of male..... No. of female Total population.....

Educational Status:

Gender	Illiterate	Literate	UP to grade 10	SLC	Higher education
Male					
Female					
Total					

4. Occupation/Income source

a. What are the sources of your annual income?

- ❖ Agriculture
- ❖ Business
- ❖ Service
- ❖ Labor
- ❖ NTFPs
- ❖ Others

b. Would you please, estimate your annual incomes from this specified income?

c. Land Holding(In Ropani)

- ❖ Khet.....
- ❖ Bari.....

d. Livestock Holding

- ❖ Cow
- ❖ Goat
- ❖ Buffalo
- ❖ Others

e. Food sufficiency for

- ❖ 4 Months
- 6 Months
- 1 Year

5. Information Based on NTFPs

- i. Do you know about NTFPs? If yes do you think that NTFPs are important in supporting your livelihood?
- ii. Please specify the common NTFPs found in your CF?

S.N.	Name of spp.	Used part	Uses	Remarks

iii. What is your preference over this species? Why?

S.N.	Name of spp.	Preference order	Reason	Remarks

iv. For which purpose you use NTFPs found in your CF?

- ❖ For household purpose
- ❖ For medicinal purpose
- ❖ For selling

v. What is your view towards NTFPs? Do they support your livelihood?

- ❖ Very important
- ❖ Important
- ❖ Less important
- ❖ Don't know

vi. Which species do you think can support the livelihood of local people & why?

- a. Which species do you think is right to cultivate to uplift the livelihood of local people?
- b. What is the best idea for IGAs through NTFPs?
- c. Would you like to share any information on this subject?

Appendix-II

QUESTIONNAIRE FOR KEY INFORMANTS AND TRADERS

1. General Information:

- ❖ Name of the respondent
- ❖ Age
- ❖ Address
- ❖ Gender

2. Would you please specify the condition of NTFPs of your community forest?

3. Please specify the name of the NTFPs found in your community forest?

S.N.	Name of the species	Used part	Uses	Availability	Remarks

4. Do you make any income from NTFPs or just using for household consumption?

5. If you make income from NTFPs, would you please quantify it?

6. Please list the species you used for selling?

7. To whom and where do you sell these NTFPs?

8. Are there any problems in marketing of these NTFPs? Yes/No

9. If yes, what are they?

- ❖ Collection
- ❖ Storage
- ❖ Lack of market
- ❖ Government policy
- ❖ Processing
- ❖ Others

10. Please mention the social works conducted by CFUGs in your community.

11. Is there any conflicts regarding the distribution of NTFPs in your CF?

12. Would you like to share any information on this subject?

Appendix-III

LIST OF AVAILABLE NTFPs IN THE STUDY AREA

S.N	Local name	Scientific name
1	Laligurans	<i>Rhododendron arboretum</i>
2	Banmula	
3	Jhyau	<i>Eurya acuminata</i>
4	Bisfez	<i>Polypodium vulgare</i>
5	Chiraito	<i>Swertia chiraita</i>
6	Thulo Okhati	<i>Astilbe rivularis</i>
7	Timur	<i>Xanthoxylum armatum</i>
8	Pakhanbed	<i>Bergenia ciliate</i>
9	Kurilo	<i>Asparagus racemosus</i>
10	Sarpagandha	<i>Rauwolfia serpentine</i>
11	Majitho	<i>Rubia corditolia</i>
12	Kaulo	
13	Dhasingare	<i>Gaultheria fragmentissima</i>

Source: Field Survey, 2007