MARKET ANALYSIS OF MAJOR PRODUCTS FROM COMMUNITY MANAGED FORESTS: A STUDY FROM THE FOOTHILL WATERSHEDS OF NEPAL

by

Bhim Nath Acharya

A thesis submitted in partial fulfillment of the requirements for the degree of Master of Science

Examination Committee:	Dr. Soparth Pongquan (Chairman) Dr. Michael A. Zoebisch Dr. Rajendra Shrestha
Nationality:	Nepalese
Previous Degree:	Bachelor of Science in Agriculture Tribhuvan University Institute of Agriculture and Animal Science, Rampur, Chitwan, Nepal
Scholarship Donor:	Danida – AIT Fellowship

Asian Institute of Technology
School of Environment, Resources and Development
Thailand
August 2004

Acknowledgements

It is a great pleasure to the author to extend his profound gratitude to his thesis advisor Dr. Soparth Pongquan for her strong recommendation for research grant and her continued supervision, guidance, encouragement, regular inspiration and individual support through out the entire period of thesis preparation including her editorial assistance on this thesis draft.

With the most appreciation, sincere thanks are given to his thesis examination committee members, Dr. Micheal A. Zoebisch and Dr. Rajendra Shrestha for their critical review, guidance, comments and suggestions in the preparation of this thesis, without the help of them, the thesis would not have been complete and presentable in this shape.

Sincere gratitude is extended both to Asian Institute of Technology (AIT), Thailand and Danish International Development Cooperation (DANIDA) for providing scholarship support. The author is grateful to International Tropical Timber Organization (ITTO), Japan for supporting research grant and supplementing the scholarship. Special thanks are given to Dr. Gopal B. Thapa for his support and encouragement to study at AIT.

The author is indebted to the respondents of this research for their invaluable time in sharing information during field survey. Thanks are due to the Forest Users Groups including Sundari, Chautari, Janapragati and Deujar for their time and sharing their experiences. Sincere thanks goes to his colleagues Kedar, Leela and Salil for their support in field survey.

His sincere thanks and appreciation are given to friends, Anjana, Kannawee, Trang and Bhoj for their assistance and cooperation. Acknowledgements are also due to his friend Prapaporn Srisathidtham for her encouragement and assistance in final report preparation. Special thanks go to Mr.Vitoon Nil-Ubol for his helpful advice on the application of SPSS and to secretariat staffs of SERD Office 2 consisting of Jitra, Wantana, Rachada and Nikorn for their support and assistance during his study at AIT.

The author wishes to dedicate his achievement to his parents where there are no words to express gratitude to them for their blessing, inspiration, affection and encouragement. Acknowledgement is due to his younger sister Saraswoti and younger brothers Dilli Raj and Chiranjivi whose support had always remained instrumental for his academic excellence. Deep sincere gratitude and acknowledgement is due to his grandmother for her innocent love and encouragement to his study. The other acknowledges the support of other family members, relatives and neighbors who pray for his success for the study.

Finally, the author owes a heartfelt gratitude to his beloved life partner Vindu Neupane for her prayer, sacrifice and kind support throughout his study period. The last but not least, this is also extended to his lovely son, Ashot who came to this world during his study at AIT.

Abstract

The study is about the market analysis of major products from community-managed forest in Nepal. Main objectives of the study were to assess major traded products, market centers and their accessibility, existing marketing system and channels, people's feedback regarding existing practice, price variation and marketing margin of the forest products. The study also analyzed various social, economic and institutional factors associated with price and income from the forest products.

The market analysis in this study concerned about the market centers, accessibility, marketing systems, marketing channels and price differences between different markets of the forest products from CFs. The research analyzed how the individual users got benefits from the CFs and income earning from it.

The research was conducted in the two districts Nawalparasi and Chitwan from inner Terai region of Nepal from the two watersheds. Using structured questionnaire, 142 households from four CFs were interviewed along with group discussions, field visit and key informants survey with the various stakeholders. The research was applied both qualitative and quantitative data analysis.

The study confirms that the marketing of products from the CFs were still in a development stage. There was limited harvesting and trading rights of the products to the individual users and established system of marketing is lacking for the benefits of individual users. Harvesting of the products by the FUGs and sold to their own users were the most common practice. The users of CFs traded very selected NTFPs. For the trading of both products formal marketing channel was popular. The group traded timber products to the local users collectively and NTFPs were traded mostly through cooperatives to the herbal medicinal industries. There was still a certain role of intermediaries found to the marketing of NTFPs. Various social economic and institutional factors were associated with marketing of timber and NTFPs. The institutional factors were the key determinants for the benefit from the marketing.

Policy related aspect was the major problem of product marketing and benefits from CFs. No provision of individual benefits because of inappropriate policy guidelines and impractical operational plan were the key constraints. The poor and marginalized people were not getting any sort of direct benefits from the CFs. Duration of accessibility to the forest and less information and knowledge about marketing were additional problems associated with the market development.

There is a need to improve institutional arrangement system and the provision of policies for individual benefits and income from CFs. The provision of clear policy guidelines for marketing of products, incorporation of marketing component in the operational plan to get direct benefit to the users and price information to the collectors for higher profits was recommended. Existing cooperative marketing approach should continue with the uses of local knowledge for processing that will be beneficial to get more income from the products.

Table of Contents

List of Tables

List of Figures

List of Maps

Abbreviations

ANOVA	Analysis of Variance
APO	Asian Productivity Organization
CBOs	Community Based Organizations
CBS	Central Bureau of Statistics
CF	Community Forest
CFP	Community Forestry Program
DF	Department of Forest
DFO	District Forest Office
DFRS	Department of Forest Research and Survey
DSCO	District Soil Conservation Office
EC	Executive Committee
FAO	Food and Agriculture Organization
FUGs	Forest User Groups
GDP	Gross Domestic Product
GOs	Governmental Organizations
HH	House Hold
HMG/N	His Majesty's Government of Nepal
INGO	International Non Governmental Organization
JW	Jharahikhola Watershed
KW	Kayarkhola Watershed
MAPs	Medicinal Aromatic Plants
MFPs	Minor Forest Products
MFSC	Ministry of Forest and Soil Conservation
MPFS	Master Plan of Forestry Sector
NFC	Nepal Fuel wood Cooperation
NGO	Non Governmental Organization
NRs.	Nepalese Rupees
NTFPs	Non Timber Forest Products
SPSS	Statistical Package for Social Science
SWOT	Strength, Weakness, Opportunities and Threats
TCN	Timber Cooperation of Nepal
UK	United Kingdom
VDC	Village Development Committee
WAI	Weighted Average Index

Chapter 1

Introduction

1.1 Community Forestry, Marketing and Watershed

The forests of Nepal are the second largest natural resource after water. The area under forest is 4.27 million hectare that is 29% of the country's total area (DFRS 2002). Because of altitude variation, Nepal has a diversity of forest types ranging from subtropical forest in the lowland called Terai to the alpine medows in the mountains.

As of 2001 census, the total population of Nepal was 23.11 million and increasing at the annual growth rate of 2.27 percent (CBS, 2002). About 80% of the total population of Nepal is directly depending on farming. Agriculture, animal husbandry and forest tree utilization are the integral components of its farming system. The majority of Nepalese households collect their forest requirement by themselves from the nearby public forest and the trees grown on their own farms. It is estimated that about 70% of the total household energy is derived from fuel wood and the rest from agricultural residue and dung cake (Kanel, 1999).

Most of the farming operations in Nepal are done manually or using animal power. Livestock are also the source of wealth and can be sold during the time of economic disasters. Mostly cattle are freely grazed on the forest and cause considerable damage to their regenerative capacity. It is estimated that 40% of the total feed of livestock is obtained from forest or trees planted or protected on farms.

However, from last two decades community forestry program has been adopted as one of the major strategy for managing country's forests. The program aims to fulfill the basic need of the people and also increase their capabilities in managing the resources. It encourages people to get involved in the forest management for their own benefits. Community forestry is seen as a successful program in many parts of the country, particularly in regenerating forest resources, which has contributed directly or indirectly to the advantage/disadvantaged dependent people (Roy, 2000).

Timbers as well as non-timber are the major products from the community-managed forests. The country comprises about 7,000 plant species of which more than 800 species are reported to be medicinal value, about 100 species for fodder, 70 for fiber and 450 species for food have been utilized by the rural population and about 70 – 80% of rural population in the mountain region depend on traditional medicine for health care (Manandhar, 1980). Both timber and non-timber forest products (NTFPs) are important for the economic point of view but previously, only timber products were taken as an economic product. Nowadays, NTFPs have attracted considerable global interest due to an increasing recognition of their contribution to the household income, food security and national income as well (Pandit, 2003).

The harvesting and marketing of timber and NTFPs has played a key role in the economic development of the country. Economic opportunities are severely constrained by poor socioeconomic condition and poor infrastructure, such as communication, transportation, information etc. The economic conditions of community forest user (member of community forestry user group) are heavily depends upon the timber and NTFPs and their proper marketing. Thus, proper marketing is the key determinants for the well off of community forestry user. People can earn cash income from the sale of NTFPs without

inflicting damage upon forest resources. Properly manage community forest and their product offer gainful employment opportunities to especially landless and near landless people who are struggling to secure just two meals every day. This also promote to the user for sustainable management of community forest.

About one million hectare of national forests has already been handed over to about 13,000 forest user groups (FUGs). Out of the total potential community forest area of 3.3 million hectare that is about 30 percent of the total potential community forest area are now under community forest (Himal, August 2003). The impact of community forestry can be assessed in the terms of better forest management, socio-economic welfare and institutional improvement.

By community forestry, the numbers of trees in the forest are increased. Increased trees covers protect the watershed areas. Trees reduce the kinetic energy of rainwater; leaf litter assists in the infiltration of water and the forest cover reduces the erosion of soil. Thus community forestry substantially reduces soil erosion in a watershed.

1.2 Statement of the Problem

In Nepal there is no proper and strong institution for the marketing of forest products. To some extent there is a formal marketing organization of timber, but for NTFPs there is no any marketing organization for trading the product systematically.

There are remarkable variation through out the country in the way and extent to which timber and NTFPs are harvested, processed and marketed. In the same community forestry product collectors and traders are from the same user group, which increases the likelihood between collectors and traders (Bown, 1993). The sustainable development of community forestry is not a concern solely protection and harvesting within its regeneration capacity. Sound management requires improvements of economic incentives for each of the players in the marketing process. Thus, for this only well protected and managed forest is not providing the economic benefits to the users. For economic benefits there should be an established system of marketing, which is lacking in many community forestry form Nepal.

Forest products have the potential to become sustainable sources of revenue, but the market system mechanisms are not well established and formalized. People are trying to make considerable use of product but their commercial value is not known. Market intermediaries are controlling the market price. The markets of NTFPs are relatively complex as compare to the timber and other traditional agricultural products. Collectors do not know the price of their harvest at large scale trading centers as outsider controls the market information systems.

Other problems in market sectors are distorted price of forest products, road accessibility, some restriction on the sale of forest products and marketing institutions. The real traders and experts in this sector are very limited. The marketing system in the community forestry is not well established and canalized. Where there is some trade started is also exploited by the middleman and trader. Marketing is mostly limited with in the user group, local traders, and to some institutions in the community. The producers are not actually marketing their products. They are selling the products to the buyers depending upon their interest, criteria, and price. So, the collectors are not getting justifiable share of income generated by the community forests. Therefore, it is not possible to manage community forests sustainable way until and unless the real collectors get equitable share of their contribution (Khatri, 1994).

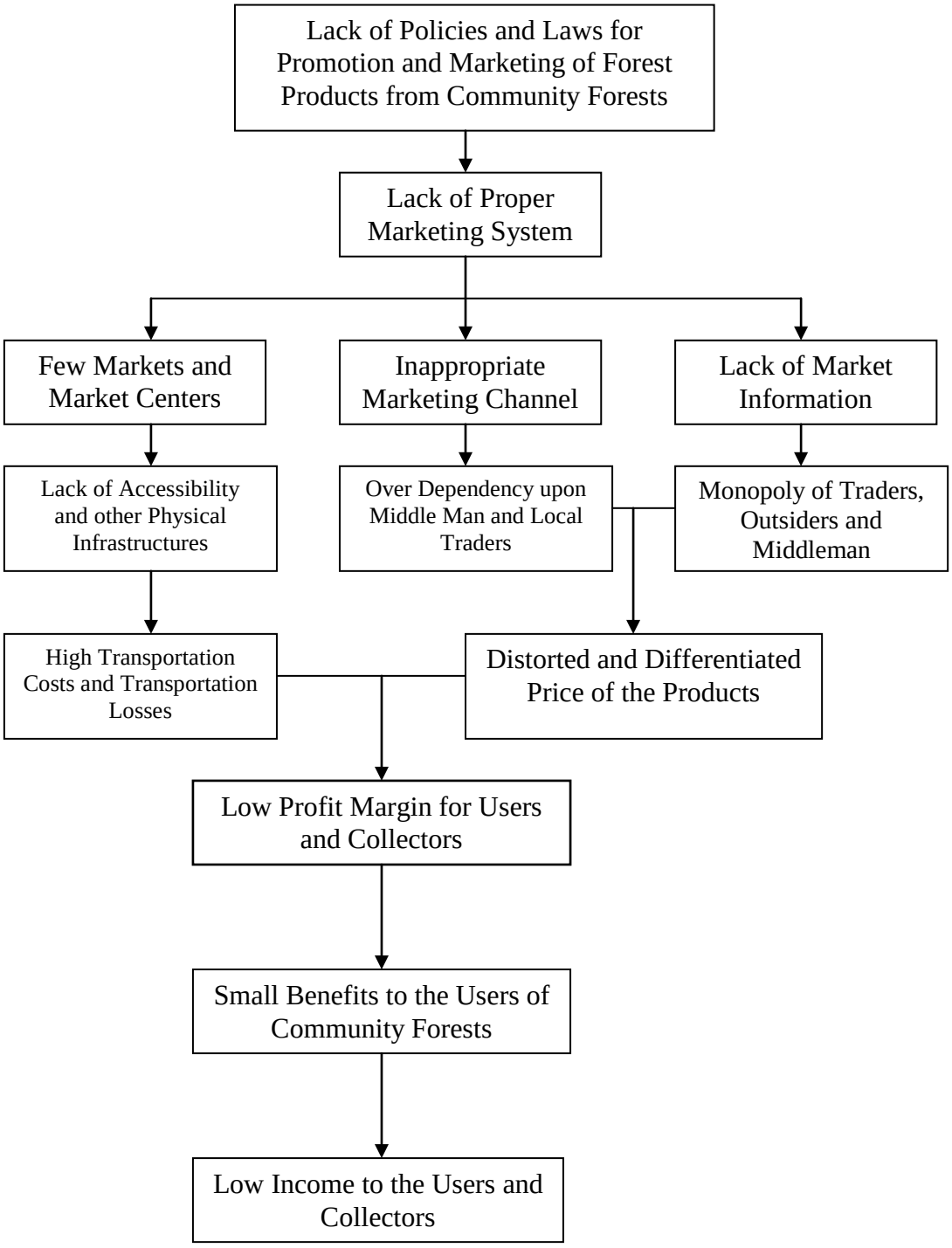


Figure 1.1: Problems Related to Marketing of Timber and NTFPs

Based on the stated problems, the fundamental questions of the research could be formulated hear under.

- What are the major products traded from the community forests to get economic incentives for the users?
- What are the marketing systems and what is the perceptions regarding existing marketing practices?
- What should be the proper channel of marketing so that the producers can get appropriate share of the net profit from the forest products?

- What are the factors affecting the price of timber and NTFPs and what should be the marketing system so that producer get maximum economic returns?
- How many traders competing at the road head and the degree of cooperation between them i.e. the extent to which the prices are kept competitive?
- What should be the government policy in order to promote proper marketing system of timber and NTFPs from the community managed forests and its contribution to the national economy?
- How the price of same product is different from place to place and time to time?

These are the very important and fundamental research questions to know for the sustainable development and management of community forest and watershed, which are also guided by the forestry sector master plan (1989), revised forestry sector policy (2000) and 10^{th} five years plan. (2002 - 2007)

1.3 Rationale of the Study

The stock of the handed over forest to the community has been substantially increasing with the implementation of community forestry program. There are various positive impacts on the forest conservation and management because of community forestry program. The incidence of forest fire has virtually stopped. Forest user groups are diverging their own forest protection system; livestock grazing is controlled which facilitate the natural regeneration of the forests (Kanel, 1997). Some economic changes is brought by the community forestry program. If we pay sincere attention for the better management and marketing of forest products it will have great contribution for the national GDP and poverty alleviation.

For the sustainable management of community forestry, there should be provision of direct incentives to those engaged in forest management. With changing socioeconomic situation, simply allowing members to collect fuel wood and fodder and pursuing community development activities using group saving may not be adequate to ensure continuous strong public participation. Provision of distributing certain percentage of income accruing from forest to the concern individuals by the proper marketing systems with secure their strong participation and generate employment opportunities is the key aspect for its sustainability.

The outcome of the study is applicable to the other community-managed forests having similar socio-economic and biophysical conditions. The outcomes are mainly useful for the forest user groups of community-managed forests to get the proper price of their products by using proper system and channel of marketing. Since the collectors are not getting justifiable share of income generated from the forest because of various social, economic and institutional factors, this study will identify the various causes of price differentiation, proper ways of marketing and places having higher product price. This helps the collectors to sell their products to appropriate market centers in acceptable price by proper system of marketing. If the harvested products from community forests are marketed properly then it helps to get high income to the user group from which individual members also get justifiable share of income. In addition to this, certain products can harvested and sell by the member individually according to their laws and regulations. Therefore, collectors/forest user group member will get equitable share of benefit from the community forest by proper marketing of their produce.

The outcomes are particularly useful for producer to get high profit by proper system of marketing, planner and policy makers to make good plan and policy, researchers to get

good idea for further research and students to expand their vision on products marketing on community forests.

Various research and study had conducted regarding the impacts, protection and various issues related community forestry. Nevertheless, there is very limited research on the marketing aspect of products form the community managed forests particularly in the prospect of unjustifiable share of income of FUGs leading to their low household income and poverty situation. Therefore, it demands a high comprehensive research in these areas for the sustainable development and management of community forestry in Nepal. These are the reasons why this study has been designed.

1.4 Objectives of the Study

The general objective of this study is to analyze comparative marketing systems of timber and non-timber forest products (NTFPs) for the better watershed condition from improving the marketing system in future.

The specific objectives are:

- To assess the major timber and non-timber forest products (NTFPs) traded from the districts and identify major market centers and their accessibility;
- To analyze the existing marketing system, marketing channels and identify the people's feedbacks on marketing of timber and NTFPs;
- To assess price variation and analyze marketing margins of major NTFPs;
- To analyze the factors affecting pricing of timber and NTFPs and income from the products; and
- To identify problems, constraints and potentials and suggest recommendations, to strengthen marketing system of timber and NTFPs.

1.5 Hypotheses of the Study

The hypotheses of the study could be formulated as follows:

a) Hypothesis I: The effectiveness of marketing of products depends on many key factors. Theses include market information, availability of market places, market distance, accessibility and means of transportation and appropriate marketing channels.

The users need market information because this can provide them a good source for their decision making when and where is the best place and period to sale their product. This also helps to decide them at which price is profitable and reasonable for them to get higher margins.

The availability of market and market places and centers enhance the sale of products become more convenient and the markets could bring producers and consumers together, where they realize the farm gate price and real consumer price. This helps to reduce the number of intermediaries. The two parties, producers and consumers get their mutual benefit by selling in a higher rate by the producers and buying in a cheaper price by the consumers.

The market distance, accessibility and means of transportation have an influence on the price of the products. This could determine a profit margin of the products due to any transportation cost incurred. If an appropriate marketing channel is taken place with less

complication procedure and proper interventions with authorities concerned, this facilitates an effective flow of products from producers to consumers or vice versa with the optimization of price and profits.

b) Hypothesis II: Formal and institutional marketing channel is more beneficial to the users.Formal and institutional marketing channel is a chain of product flows from the producer to the consumer, which is carried out by a formal system and organizations. These could be governmental institutions or some registered semi-governmental organizations. In the formal marketing, there are some rules, norms and regulations of buying and selling of the products. Moreover, they have to rationalize the buying and selling price and its differences which mostly they pay a reasonable price to the produces and charges the same price with the consumers. This will not happen in case of the occurrence of informal or private marketing chain. The prices are charged based on individual interest and availability of other competitors. If there is any other alternate place to use by the producer or some competition then they pay more reasonable price. They try to get more benefit and greater margins in case of a monopolistic market situation.

c) Hypothesis III: Economic factors play a major role to determine price and income from the forest products. The economic factors include the direct economic cost incurred in the products in harvesting and trading activities. These could be the cost of materials, cost of processing, transportation, grading and processing costs including local and other taxes etc. These factors are the determinants of price of the products as well as income earning from the products of forest users.

d) Hypothesis IV: There is no difference in a marketing system of timber and NTFPs in terms of marketing channels and market intermediaries. A marketing channel refers to the ways of product flows from the producers or collectors to the ultimate consumer or to the processing industries. Market intermediaries refers to the individuals or institutions that they intermediate between the primary producers to the primary level traders to the higher-level traders and finally to the consumers.

Community forestry has the same constitutions and laws to manage timber products and NTFPs. The FUG as well as individual users harvest both the products from the forest. Moreover, the District Forest Office provides technical support and facilitation for both products. Therefore, there should have the same system of marketing and intermediaries in the marketing system of both products.

1.6 Scope and Limitations and Difficulties of the Study

This research study was covered the marketing aspects of timber and NTFPs from the community managed forests. Marketing aspects covered in this research included marketing system, markets and market centers, marketing channel and market information. The timber product included hard wood timber products, fuel wood, fodders and others products from the hard wood trees, where as NTFPs included all bamboo and its products, broom grass, medicinal herbs, grasses, vines and mushrooms.

Marketing channel in this research included the flows of products from the producers/collectors to local or village market, road head market, city or town market and regional market. National and international markets are beyond the scope of this research. This study identified the different intermediaries through which the forest products were marketed and determined the best possible and profitable way to the producers. In this research study, producers referred to the community forestry user group members who collected and harvested the products and sell to the market. This study did not identify the

consumers of the produces directly. However, for the purpose of consumer price, different level of retail price of the product was taken.

This study also analyzed the various social, economic and institutional factors caused price variation of timber and NTFPs. The key factors of price variation include social structure, religious belief, elite group dominance, composition of forest user group, level of cooperation between members, harvesting techniques, market accessibility, means of transportation, cost of processing, market competition, laws and constitutions, presence or absence of marketing institutions and promotion and support by the government. Based on these factors the best way to get maximum benefit from the forest product trading was identified and recommended.

This study was also covered the different markets like producer's market, formal government supported market, cooperative market, informal market (individual or some group perform marketing options), consumer market etc, which include the different market from the village to the regional level.

The outcomes of this study are particularly useful for the policy markers regarding the marketing policy from the community-managed forest. The producer or collectors or whole FUG could be used this outcomes for the better planning in marketing aspects of the products from their forest and can incorporate this in their operational plan. They could get high profit by proper system of marketing, planner and policy makers to make good plan and policy, researchers to get good idea for further research and students to expand their vision on products marketing system from community forests.

The marketing aspects of this research were limited to some selected products (highly traded) and only the prospective of producers or collector. This could not generalize to all the community forest products. Since, there no free right to the users for harvesting and marketing of forest products, this aspect include only some major traded products. Because of the country's geographic situation, extreme biodiversity and unbalanced development, the outcome of this study is applicable only to the similar areas and situation.

The major problems faced during this research study in the field were limited time. Because of the remoteness and inaccessibility of the site need more time needed to meet the respondent. Because of the political situation, internal struggle and various kinds of movements, the transportation systems always remain closed, which affect the planned schedule of research and ultimately affect the amount of available data for analysis. Respondent felt not comfortable to give answer of the asked questions especially with the new people outside their village. Mostly they denied to present income related data. The reason is present sociopolitical problem and security situation. People did not feel free to respond because they are not confident about the use of data they were not convinced with the research objectives. It is difficult to meet respondent and find their time because mostly they were in work or outside home.

There was a problem in conduction of group discussion too. Most of the time users were busy and have no time for the group discussion. Moreover, they were not interested to participate in the discussion because they were not getting any direct benefit from that. So in-group discussion less users were participated and had to conduct in many places. Users did not feel free to provide information related to collection of NTFPs because some products were collecting and trading illegally, which information was collected through the key informant's interview but no information from household survey. Since this study was conducted to the uses of community forest and in the name of users, it is to put the household head's name. Because of the male dominated social structure, almost all

household head are male. Due to the reason, there is very little number of female respondents in this research study.

1.7 Conceptual Framework

The market analysis of timber and NTFPs in this research was based on institutional and legal aspects employed by the users committee and the government. This includes both demand and supply side analysis of both the products. Marketing system, markets and market centers, marketing channel and market information are the key aspects for market analysis in this research. These determine the participation in marketing of products and profit margin.

Several influential factors for the price of timber and NTFPs was include social, economic, economic, institutional and legal. The key social aspects are religious and cultural barrier, dominance of elite group and level of cooperation. The major economic aspects in this research were transportation cost, means of transportation, processing cost and storage cost and institutional and legal aspect include market competition, marketing institutions, government policies and local tax.

The research was examined some feedback and perception from the forest user group members, local leaders, government officials and NGO/INGO personnel. Based on which several problems, constraints and potentials related to timber and NTFPs marketing was identified. Recommendation was drawn on the basis of these suggestions.

The overall conceptual framework of this research is illustrated in Fig. 1.2

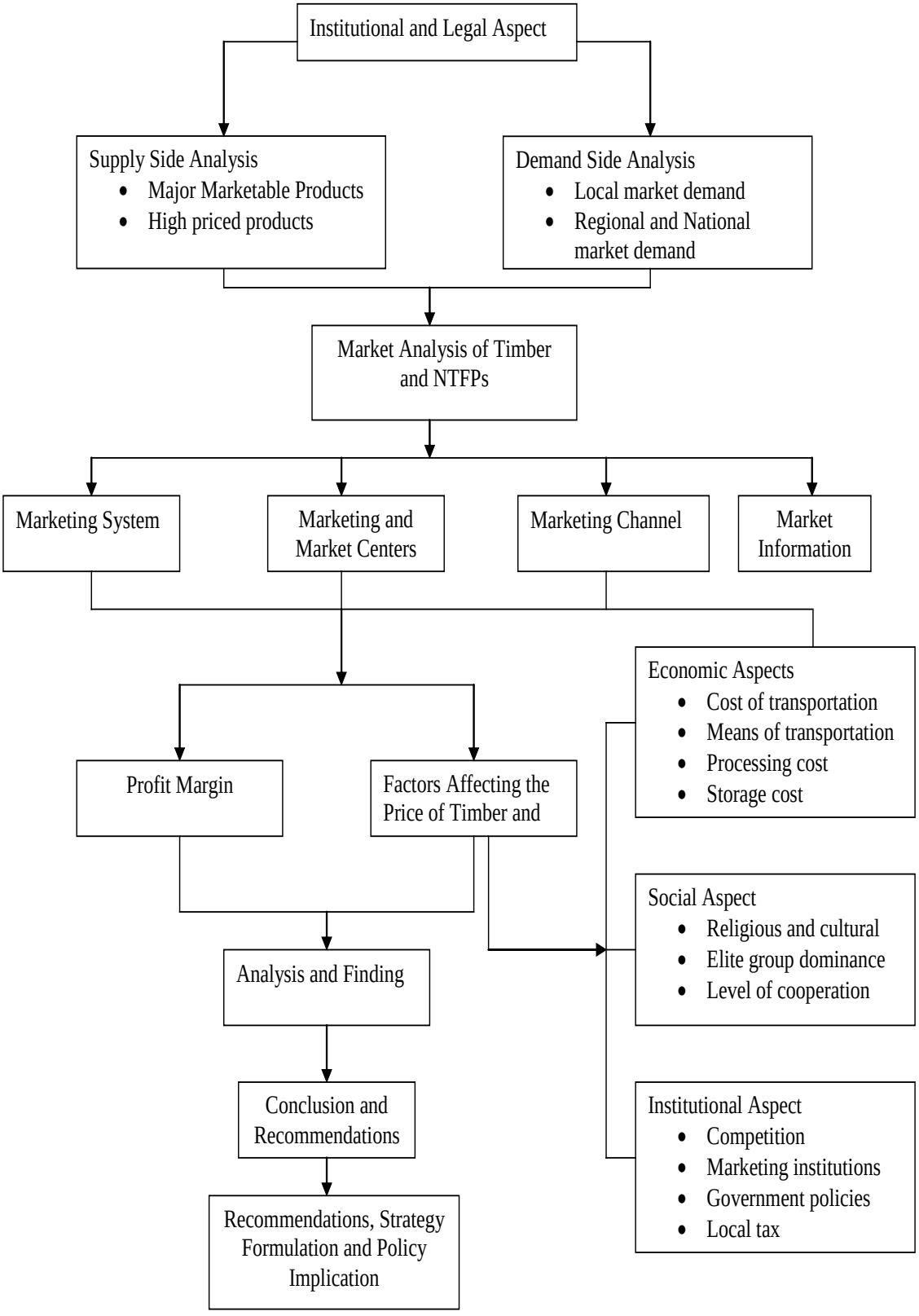


Figure 1.2: Conceptual Framework of Research

Chapter 2

Literature Review

2.1 Markets and Marketing System

The 'market', in ordinary way, denotes a particular place where commodities are bought and sold while the 'marketing', the business of distributing a product either from its place of production or from the port at which it was imported to the people (Hanson, 1982). However, economists use market and marketing for different meaning. Literally, ‘market’ refers to the purchase and sale transactions of a commodity and the formation of its price and thus to the decisions made by producers and consumers of a commodity which taken together determine the price level of the commodity (Ellis, 1996). A ‘competitive market’ describes a situation where buyers and sellers are in numerous numbers and each is too small to influence the market price. 'Imperfect market' or 'market failure' describes absence of competitive situation. Monopoly, oligopoly, monopsony and oligopsony describe imperfect market situations respectively under single producer, a few producers, single consumer and a few consumers (Hanson, 1982). A market may be either 'primary' where transaction occurs between 'producer and trader' or 'terminal' where market receive major portion of the commodity supply from the primary markets. A 'fragmented market' denotes to the situation of poor transport and communication.

Marketing is the way of market action. Marketing refers to the ways the producers and consumers are brought to their decisions. Marketing is a system, and the system has to carry out certain operation (marketing function).

Marketing system(s) refers to the channel through which commodity passes through a sequence of stages or events (Ellis, 1996). The channel or the sequence of stages or events of commodity movement consist of primary procurement (i.e. assembly or collection of commodity from farmers/collectors to local stores or mills), processing (i.e. transmission in the form of commodity) wholesale or the fob-export (i.e. collection in bulk) and retail (i.e. the disposal of commodity to the consumers). The marketing channel varies with commodity, distance, infrastructure and producer's awareness and consists of a few or many market functionaries designated as collector, assembler, contractor, commission agent, wholesaler, supermarket, hypermarket, exporter, retailer and jobber (APO, 2001 and APO, 1997a). Marketing function is the role played by market functionaries. Marketing involves basically two types of functions, 'transmission of price signal between consumers and producers' and 'physical transmission of the commodities from points of production by producers to points of purchase by consumers'. Market works in different ways according to number and size of participants, information flow between consumers and producers and the physical infrastructure (Ellis, 1996).

The physical transmission function of marketing can further be differentiated in terms of time, space and form dimensions. The time dimension function refers to inter-seasonal/ year storage and transaction of commodity over time from its harvest and sale by farmers. The space dimension refers to the various modes of transportation of the commodity from location of sale to location of final purchase. The 'form dimension' function refers to the changes in the physical attributes of the commodity brought about by the operation like cleaning, sorting/grading, labeling, packaging and processing. All sorts of marketing functions add to the cost of marketing incurred due to the factors like interest, physical losses, capital investment, services transportation taxes, premium and others.

2.2 Marketing Margin

Market price of a commodity refers to the value of the commodity in terms of money at a point of time and space agreed by buyers and sellers. Marketing functions add costs to the value of commodity to increase the price of commodity. Therefore, commodity price is variable as per variation in time, space and form dimensions. In other words, prices of commodities vary as they pass from producers through different levels of functionaries up to the final consumers. The overall difference between the purchase price of a commodity by consumers and its sale price by producers is called the marketing margin (Ellis, 1996). It is the actual amount received by different market functionaries for the services rendered by them (Sidhu, 1997). Marketing cost, however, refers to the actual expenses (fixed and variable) incurred in the marketing process by different intermediaries. 'Price spread' is the distribution of the marketing margin among different market functionaries. Marketing margin is the price charged by market intermediaries for their services like buying, packing, transportation, storage and processing.

Studying marketing system is the judgment of its performance. Marketing efficiency measures marketing performance. It is the 'ratio of benefit to cost'. Any marketing change that reduces the costs of function without compromising in marketing utilities or enhances the utilities without increasing marketing costs is an improvement in marketing efficiency. Marketing system is said efficient if it provides benefits to consumers without increasing the cost or it increases the level of satisfaction to the consumers with same or lower level of marketing cost (Sidhu, 1997 and Shin, 2001).

There are to types of marketing efficiency. Operational efficiency refers to the situations where costs of marketing are reduced without affecting consumer's satisfaction. Pricing efficiency is concerned with the ability of the marketing system to efficiently allocate resources and coordinate the entire agriculture production and marketing system in accordance with consumers' interests (Sidhu, 1997 and Shin, 2001). Small-scale production, poor infrastructure and inadequate post harvest technology and facilities hamper operational efficiency. The pricing efficiency is hampered by several problems and constraints related to fruit grading, marketing channel and market information. Grades and standards simplify marketing process and reduce marketing cost, provide ethical basis for buying and selling and contribute to operational and pricing efficiency by lowering search and transaction costs, facilitating price discovery process and encouraging competitiveness (Shin, 2001).

A large marketing margin or a declining producer's share in commodity price is not necessarily indicative of poor marketing efficiency. It rather reflects in many cases the complexity of the job that must be done in marketing the product (Sidhu, 1997). Therefore, marketing efficiency cannot be judged merely based on marketing margin. Input/output or cost/ benefit ratio should also be examined (APO, 2001).

2.3 General Forestry Situation of the Country

Nepal is a diverse country in terms of the availability of natural resources. There are some of the most spectacular natural areas in the world, manifested by the immense contrast in altitude and ecology within a small landmass in Nepal. The country includes a territory of great biodiversity extending from humid tropics to alpine temperate ecosystems consisting more than 35 forest types and over 5400 species of vascular plants including 700 species of medicinal aromatic plants (MAPs) (Edwards, 1996). The major forest types of Nepal are subtropical, deciduous, coniferous, alpine and tundra. Out of 14.7 million hectares of total

land area of Nepal, 29 percent are designated as forest area, 10.6 percent are shrub land. Cultivated land occupy only 20% of the total land area and the rest are uncultivated grazing lands (HMG/N, 1999). Out of the total 4.27 million hectares of the forest area, 59 percent are hard wood, 24 percent mixed, and 17 percent conifers species. Hard woods are dominant in the Tarai and lower Hills, while conifers are dominant in higher elevations.

If Nepal's forests were uniformly accessible, they could fulfill the basic needs of people for forest products on a sustained yield basis. Nevertheless, the distribution patterns of forest and population do not match each other. Accessible forests are already over used and destroyed. Because of the lack of sustainable supply of forest products people have difficulty in collecting fuel wood and fodder including other forest products like fruits, barks, nuts, roots, and leaves, to meet their basic requirements. People are using hundreds of forest products other than wood.

2.4 Community Forestry and Forest Products

The Food and Agriculture Organization (FAO) of the United Nations defines community forestry as “any situation, which intimately involves local people in a forestry activity. It embraces a spectrum of situation ranging form woodlot in areas which are short of wood and other forest products for local needs through the growing of trees at the farm level to provide cash crops and the processing of forest products at the household, artisan or small industry level to generate income to the activities of forest dwelling communities” (FAO 1978). This definition includes the forestry related activities performed by individual household, farmers and communities and community forestry. However, in Nepalese context, the concept of community forestry includes the management of a particular area of forest by a defined group of people called a user group. Thus, community forestry is the user group managed forestry based on common property resource management (Kanel, 1997).

A Master Plan of Forestry Sector (MPFS) was being prepared under the auspices of Ministry of Forest and Soil Conservation (MFSC). Decision makers in the forestry sector and local leaders were convinced that further liberalization was essential to expand the scope of community forestry in Nepal. The master plan for the forestry sector in1988 recommend that there should be no area limitation to hand over, women and poor should be involved, all forest products should be accrue to the users, community forestry should be the priority program and forestry staffs should play the role of extension worker and advisor.

Although the basic objectives of community forestry program is to fulfill the subsistence needs for forest products of local people, the new policy allows forest user group to cultivate non timber forest products, any other perennial cash crops as well as the commercialization of wood and non wood products and their processing. Forest user groups are also free to spend the income generated from the community forest on the development of their community forest and other community development activities. Therefore the timber and NTFPs are the main outputs from the community forestry. These also describe as timber and wood products, minor forest products, non-timber forest products and non-wood forest products are the key products from the community forest (Maraseni, 2002). In existing literature, timber, fuel wood and NTFPs are traded mainly (Chandrasekhar, 1998).

In early times the term for forest produce was defined as " all material yielded by a forest estate". These produces were further classified into major forest produces and minor forest

produces. Timber and firewood were termed as major forest products while other items received from forests were called minor forest products, which gives the impression of low importance (Tewari, 1993 and Khatri 1994). With the time, the value of these non-wood products has become increased. Many authors have defined NTFPs in different ways. Both Hammett (1993:2) and De Beer and McDermott (1996:24) agreed, "NTFPs are all biological material other than timber which are extracted from forests for human use". These products include foods, medicines, spices, essential oils, regins, gums, latexes, tannins, dyes, ornamental plants, wild life products (bones and skin), fuel wood and raw materials notably bamboo, broom grass, rattan and small wood and fibbers. This definition is very broad and covers a lot of things. Hammett (1993) proposes a narrower definition ofNTFP appropriate for Nepal, where he includes all biological materials, other than timber and also excluding fodder and fuel wood as their importance warrants separate consideration. Where as Kanel (2000: 1) focuses more on the socio-economic value of NTFPs which include products like bamboo canes, medicinal and aromatic plants (MAPs) and their produce. He further mentioned that NTFPs have got commercial, socio-economic and economic values. These products provide livelihood to many poor people.

Similarly, Subedi (1999), tried to define NTFP as all goods of biological origin other than timber, fuel wood and fodder, forest, grassland or any land under similar use. The examples of NTFPs include medicinal aromatic plants (MAPs), bamboo, and rattans, nuts, fruits, tubers, berries, grasses and leaves, insect and insect providers, wild animals and birds. Chandrasekharan (1998:6) presented a very similar definition, where she cited NTFP as all good and services for commercial, industrial, or subsistence use derived from forests and allied land uses, other than timber, fuelwood and fodder. She has included the crops grown under the shade of trees, certain agroforestry crops, crops which depend on wild sources for seeds or planting stock qualify as NTFPs.

Sharan (2000) has defined NTFPs as Minor Forest Products (MFPs) in any of the acts or ordinances relating to forest. He further noted that NTFPs are the products other than timber, harvestable on a destructable basis. In this definition he has given more emphasis on environmental consideration. Examples of NTFPs cited in his article are lac, gums, honey, *kendu* leaf, *kusum, imli,* several species of grasses like *sabai* grass, broom grass, *Khaskhas,* which are apart from thousands of medicinal plants.

2.5 Non – Timber Forest Products, Its Status and Uses

After World War II, the focus of forestry was on the production capabilities of forests for commercial timber, particularly in tropical forests. For 3 decades, the actual and potential roles of the multiple products and environmental services offered by forests were ignored (Perez and Byron, 1999).

A broad definition of Non – timber forest products (NTFPs) includes all biological materials, other than timber, removed from forested land, and also encompasses services rendered by forest land. Thus products include fuel wood, charcoal, honey, resin, spices, handicrafts from rattan and vines, grasses for paper production, and wildlife products such as bones and skins for rituals and decoration. Service functions cover grazing, watershed protection, the provision and management of wildlife habitats, and the development of ecotourism. A narrower definition of Non Timber Forest Products appropriate for Nepal includes all biological materials, other than timber, and also excluding fodder and fuel wood as their importance warrants separate consideration (Hammett, 1993).

Non – timber forest product uses can be categorized as consumptive or non-consumptive. Consumptive uses are those where the product is utilized at the personal or household level. Examples are foodstuffs, medicines and domestic necessities such as baskets, fencing, rope and cloth. They also embrace products sold in the market place: resins, chemical extracts, foodstuffs and construction materials, as well as wild animals, manufactured goods, heating and cooking fuels. Non-consumptive uses of NTFPs relate to the indirect benefits of sound forest management. These involve watershed protection, maintenance of air quality, religious values, shade for agriculture, wildlife protection, buffer zones for protected area and ecotourism. Non-timber products in Nepal can be categorized by end use into one of four groups:

- Subsistence, e.g. medicinal, foodstuff, construction materials
- Village-based enterprises, e.g. bamboos, lokta, allo
- Raw materials for industries within Nepal, e.g. pine resin for rosin and turpentine, Acacia catechu wood for katha, sabai grass for modern paper production
- Jaributi – raw materials for Indian industry

Nepal is one of the world's poorest countries with a GDP per capita of approximately US $ 210 and a large part of the rural population depends on non-timber forest products (NTFPs) as part of their livelihood strategy (Larsen et.al., 2000). During 1993 to 1994, the value of NTFPs traded was estimated to be equivalent to US$ 8.6 million, which is approximately 6 times the value obtained from timber exports to India (Pandit, 2000). Revenue through trade in NTFPs doubled from a current price of US$ 0.4 million in 1985 to US$ 0.8 million in 1997 (UNEP, 2001). Five out of over 100 plant species used in the trade include bojho (Acorus calamus), kutki (Picrorhiza kurrora), padamchal (Rheumemodi), chiraito (Swentia chiratiya) and sugandawal (Valeriana kurroa). Olsen estimates that the annual income to commercial medicinal plant collectors is 11-35 million US$, and that approximately 470000 households (representing some 2.6 people) are involved in the collection which contributes from 8 to 25 % of households' annual income with almost 100% of the harvested products are exported unprocessed to India; this makes medicinal plants the third largest export article form Nepal (Larsen et.al., 2000). Revenue through trade in NTFPs doubled from a current price of US$ 0.4 million in 1985 to US$ 0.8 million in 1997 (UNEP, 2001).

2.6 Major Problem For The Economic Use of The Forest Resource

2.6.1. Forest Depletion

The causes of forest degradation and loss are complex and vary widely from place to place. A distinction is made between direct and underlying causes. Major direct causes include insect pests and diseases; fire; over harvesting of industrial wood, fuel wood and other forest products; mismanagement of production forests, including poor harvesting practices; overgrazing; air pollution; and extreme climatic events such as storms. Habitat degradation caused by these factors and the over harvesting of wildlife are major factors contributing to local depletion of forest-based wildlife populations. Underlying causes include poverty, population growth, and markets and trade in forest products, and macroeconomic policies. In the context of Nepal, the major causes of forest depletion are rapidly growing population rate, increasing fuel wood consumption, increasing number of livestock which requires increased grazing land, migration of hill people to the terai region (UNEP, 2001). Another factor in degradation of the Terai forest all along the Indo-Nepal border is transboundary smuggling of logs into India. The activity intensifies when the price of the product is higher in India than in the border districts of Nepal and wrongly designed

government forest policy is itself another factor that has contributed to reduction of forests. The 'Private Forest Nationalisation Act 1957' though implemented to protect the dwindling forest resources, conversely, rather led to degradation of the national forests by providing uncontrolled local access to them. Likewise, the Land Tax Act 1977 defined lands with forests as government lands which encouraged local inhabitants to cut down trees standing around their farms (UNEP, 2001). The depletion and degradation ultimately reduces the availability and accessibility of the Non Timber Forest Products.

2.6.2. Lack of Research in Non-Timber Forest Products

Non-timber forest products have emerged as a complex set of issues reflecting changes in society and how natural resources are regarded. These issues range from the sustainability of forest management practices to the relationship of diverse cultures and communities to public land and their resources. Research and its relationship to this set of issues is a relatively unknown aspect of NTFP. In the last fifteen years, a growing interest in multiple uses of forests has brought the issue of NTFP to the forefront of the research and development agenda (Perez et.al., 1997).The importance of NTFPs as a topic for natural resources research in Nepal has only recently been realized (FRSC, 1993). Previously, the focus in research and development work in the forestry sector was almost entirely on the traditionally recognized major forest products: timber, firewood and fodder. Models describing the linkages between the forest, agriculture and people, and investigation of the use of forest precuts, usually ignored or overlooked NTFPs. The limited number of past studies of NTFPs in Nepal focused on subsistence uses, mainly traditional knowledge of medicinal plant and botanical classification. Despite the increasing number of on-going research projects and the growing number of publication since 1993 , there is a severe lack of studies on NTFPs in all main areas from subsistence uses to characterization of overseas markets and final consumption pattern (Olsen, 1997).

2.6.3. Inappropriate NTFP Policy Process in Nepal

The interest in non-timber forestry in Nepal has increased tremendously in the past 10 years(Edwards and Bowen, 1993). Previous publications have focused mainly on listing non- timber species, e.g. medicinal and aromatic plants; however, publications are increasingly focusing on in-depth analysis of aspects of utilization and conservation, e.g. the importance and nature of trade. However, in Nepal, as elsewhere in south Asia, there are very few studies of forest policies and legislation and only a few of these are concerned with non-timber forestry. Furthermore, existing studies are not concerned with the dynamics of forest policy formation and implementation. The focus is on description of existing policies, the problems and what is to be done, without consideration of the practical political economy; often policy failure is attributed to 'lack of political will' with no further analysis of that phenomenon.

Non-timber forest policy formation is dominated by high level politicians, the central government bureaucracy and conservation oriented institutions; the implementation is dominated by lower level government staff; and field reality by rural collectors. The approach to non-timber forestry today in Nepal is product (species) oriented and revenue-focused, furthermore, conservation issues is more pronounced than concerns for improved utilization. As demonstrated in the Forest Act of 1993 and the Forest Regulations of 1995, high level politicians, the central government bureaucracy and conservation institutions all believe in controls and regulation; the first two in order to raise revenues and maintain the patron-client relationship (e.g. renting forest personnel power to extract rents from

collectors); the latter to save the resource base from a perceived but undocumented negative impact of the trade on the resource base (Larsen et.al., 2000). There has been no open debate in Nepal on the potential of NTFPs to contribute to development goals.

A study on **'***Contribution of the local domesticated non-timber forest products (NTFPs) to local economy in mountain watersheds of Nepal'* was carried in Dhading disrict of Nepal in the year 1999 with the objectives of investigating the most important NTFP resources that is domesticated and assessing the contribution of domesticated NTFP to local economy of the study area.The Dhading district is located due west of country capital Kathmandu of Nepal with altitude ranging from 418 to 1900 meters. The area is primarily agricultural and the produces grown in these area are brought daily to the Gajuri bazaar, a road ahead point from where they are transported to urban markets in Kathmandu and Narayangarh, district headquarter in Dhading and even to Pokhara, western Nepal.

Majority farmers have cultivated large bamboo at lower watershed and small bamboo and broom grass at upper watershed. The middle watershed is the home for mixture of species, where all of these species mentioned above including chiuri, Kafal, and timur are domesticated on marginal lands. The other cultivated NTFPs include flowers and leaves of some ornamental plants, called sayapatri.

NTFP collectors obtain higher profit by operating NTFP business in this district. Almost 10 million Nepali rupees have been collected in the last 5 years period from Dhading district, alone which shows that there is a great scope of NTFP promotion in these area.

2.7 Forest Product Marketing in Nepal

Since the economy of Nepal is dominated by subsistence farming, mainly forest products are used to meet subsistence needs. The data based on FUGs compiled for Koshi hills also describe the pattern of forest product used by different forest user groups. Other products collected from community forest include the collection of leaf litter for livestock bedding, poles/timbers for house and shade construction and repair and NTFPs. (Kanel, 1997) There are no regular data on the actual level of forest products harvested from the various types of forests. Bosma (1996) presented the types and amount of forest product (fuel wood, timber, plough, litter, grasses etc.) harvested from six community forests of Nepal. This study indicates that users have developed use right and control system of harvesting these products based on season and amount of products.

Some timber and NTFPs are now increasingly being sold in the market. Some of the important NTFPs, such as resin from the pine and chiraito, now being commercially harvested and marketed in the Koshi hills. (Maharjan, 1995) In Myagdi district users are increased in cultivating and marketing 'Lokta' from the community forests. About 55% of the FUGs of Koshi hills appear to be extracting some sorts of NTFPs from their community forests.

Themselves use subsistence amount forest products harvested by FUGs members. A nominal user fees, substantially below market price is charged to each user based on the quantity of products harvested or collected. It appears that the major emphasis of the tree management in the community forest is to retain trees of better quality and dimension. In other words the focus of forest management seems to be on timber production (Kanel, 1997). The Nepal UK Community Forest Project is providing assistance in the cultivation, utilization and sale of NTFPs in the community forest (Nepal UK CFP, 1998).

Except some timber and NTFPs, almost all the other forest products are being collected and used by the use themselves. Because of the limited supply of fuel wood, although even

it has a market value in the urban bazaar and adjacent to road is being mainly used for household purpose. The community forestry policy has not only established users right to utilize and manage community forests, it has also provided assurance of private property right to private tree grower. Thus farmers are increasingly selling their trees and their products to the local merchants along the roads. Private Utis (*Alnus nepalensis*) trees are increasingly being marketed in Dhankuta district. This has also provided an incentive for some of the user groups to manage their Utis forest for the prospective market.

Increased accessibility due to road construction and the concentration of people in the bazaar area has created opportunities for marketing both wood and NTFPs. Even the more bulky products, such as fuel wood and other semi finished wood products can be sold in distant locations due to the construction of the reads. However, there still is a potential to increase the supply of both wood and NTFPs, as the demand of these products exists (Banko Jankari DFRS 2002).

Marketing of NTFPs is essential for putting money in farmers' pocket. Access to market center is one of the determining factors for commercialization of NTFP enterprise, but it should be harvested with in regeneration capacity. Since the people living close to market center would be extracting more forest resources, it is difficult to conserve resources for future. There are lots of studies done in marketing of NTFPs but the gaps in these studies are particularly related to equity of benefit sharing between actors. It has been observed that private sector has playing a vital role in marketing ofNTFPs. Public sector's involvement is often found to be dominating in driving down producer's prices. Many authors argued that NTFP markets are most unorganized part of the economy in which the primary producers are at the mercy of the traders or contractors (Khatri, 1994:74; De Beer and Mcdermott; 1996; Edwards, 1996 and Chadrasekharan, 1998: 7). They argued that the price paid to the producers has no relation to the wholesale price at the terminal market. The share of the primary producers is only as little as 25% of the wholesale price, although in most cases only transport costs are included and there is no additional processing.

The demand for timber products have often over shadowed the contribution of NTFPs to the rural communities (De Beer and Mcdermott, 1996; Chandrasekharan, 1998:5). "The objectives of supplying firewood and fodder to communities and income generation from NTFP do not have to be mutually exclusive". The viability of doing so has been questioned from both resource carrying capacity perspective and also from cost benefit perspective. An improved monitoring system of government agency is lacking in Nepal, which could ensure a more equitable price to the primary producers. Appropriate development plans with good agencies dealing with NTFPs is either lacking or not in a coordinated way. Various agencies of the government seem to be unaware of the dilemma of the primary producers or collectors (Khatri, 1994: 79). Collectors get Rs. 30 per Kg of *Chiraita* plant bio-mass for an example, while the contractors in Kathmandu (100-300 KM away), receiveslO times as much comparing with the figure of India and other countries, the prices are even higher. Investigation on this issue is very important.

There appears to be a substantial demand for NTFPS. The users are now testing and adopting the cultivation and disposal of NTFPs. Thirty five forest users, including 7 low caste women, are involved in resin tapping. Each labor is estimated to make an income of NRs 6000 from resin tapping (Maharjan, 1995). Similarly, increase in the supply and production of ginger, chiraito and cardamom cultivation in community forest will provide productive employment opportunity to the users. The problem with the marketing of these NTFPs is that, only few brokers are controlling the major market share of these products. For example the price of resin on stump is NRs. 3/kg where as its price in Kathmandu

(capital city) is NRs 26/kg. Therefore opportunities exist for networking these users groups in order to improve their bargaining and marketing skills and can improve the marketing system.

2.7.1. NTFPs Traded From Nepal

The NTFPs that enter India as raw materials are collected, portered, taxed and traded as a discrete group of products referred to in Nepal as *jaributi*. A close definition of *jaributi* is a 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 origin.

With all traded NTFPs, the viability of collection appears to be a function of the walking distance to the market. As the road network pushes further north throughout the country, collection becomes viable from currently less accessible sources. Products with the highest value can be collected from the remotest locations. In Nepal, remoteness is related to altitude. The majority of products fall into two contrasting groups: high-value products from high altitudes, and low- value products from lower altitudes (below 2000 m).

The main high-value products are herbs collected from vast areas of government-owned land used as common pasture in the summer months. In the Koshi Hills the collection of herbs is often an incidental activity for agro-pastoralists alongside tbe essentia1 job of watching livestock. In other areas collecting forays are discrete activities that can last days of weeks, for example herb collection in the Annapuma region, central Nepal, provides an income for migrant Tamang. In general, there is no management: plants are uprooted and access to them is open to a1l.

Markets for the high-value products are normally the nearest road head settlement. According to traders in Hile and Basantpur, the most important commodities leaving the Koshi Hills are chiraita and large cardamom *(Amomum subulatum*). Cardamo is traded alongside NTFPs throughout East Nepal and shares the processing and marketing constraints faced by true NTFPs. Excluding cardamom, chiraita comprises around 75% of the total cash value and 60% of the total volume of trade from the Koshi Hills (Edward 1998).

2.7.2. Marketing Channels in Nepal

Throughout the Himalayan region the trade in NTFPs comprises the flow of raw material fromnorthern high altitudes to the Indian plains in the south. After harvesting, NTFPs are portered to collection points where they pass through a series of middlemen who handle progressively larger volumes of trade. Often the products join long-established trade routes between Tibet and India. Important collection points are located at road head the northernmost points on the road network. From there, products are transported by truck to India via a series of trading towns spaced at regular intervals along or near the east-west highway in the southern lowlands of Nepal (the Terai).

Nepal's largest NTFP wholesalers reside in these towns and manage their collection operations over large catchments areas that funnel northwards from roadheads, often to beyond the Tibetan border. The Terai-based wholesalers are the smallest and most powerful group of middlemen. They are often "Marawaris", a cultural group linked closely with India. They each have favored buyers in India, with whom they are in regular telephone contact for the latest market information. Throughout Nepal, these individuals carefully control the access to knowledge of Indian markets.

From portering through to marketing men control the trade in NTFPs. Middle man refers as Terai wholesalers, road head traders and village traders were handling the product from eastern Nepal. At each road head they worked closely with one or more commission agents to whom they will advance working capital. Some road head traders appear to have more independence, but still tend to form specific trading links with trusted individuals in Terai. Hence real competition is between the road head traders (Edward 1993)

Throughout the Koshi Hills there is a network of village traders. The network decentralises the task of marketing products to the roadhead making it more efficient. Village traders have valuable local knowledge of sources. They often have close relations with collectors and can perform marketing functions that improve the economic viability of collection and hence increase the volume of trade. A roadhead trader can increase his control over the village trader network, and hence increase the proportion of trade sold to him, by distributing advances, which, in turn, are given to collectors. However, some village traders are independent and can choose whom to sell to the road head.

2.8 Policies and Plans Related to Marketing of Forest Products

The Master Plan for Forestry Sector-1988 (MPFS) of Nepal recognized the importance of forest management to supply the forest products for increased population. A 25-year forestry sector Master Plan was implemented in 1988 with the commencement of community forestry program. This master plan has also recognized the importance of marketing of forest products and thus recommended to promote the production of medicinal and aromatic plants and forest based industries, but the policies and laws related marketing aspects are still not promulgated. The master plan gives emphasis on the trade of medicinal and aromatic plants by conserving a resource base. It focuses on propagation of medicinal and aromatic plant species in plantation manage natural forests and farm. It also gives emphasis on harvesting and collection techniques and processing of medicinal and aromatic plants.

Similarly the forestry sector master plan also gives emphasis on forest-based industries. It recognized that there is limited scope for large scale processing of forest products in view of difficulty in securing raw materials, the limited domestic market and the landlocked ness of the country, which makes transportation and marketing aboard difficult. But it gives emphasis in self-sufficiency and minimizes import. Some wood products like furniture are high valued enough to be marketed aboard competitively to earn foreign currency. The master plan focus on the marketing capabilities of those industries by providing training, advertising on trade policies, setting up market intelligence and providing marketing services especially for small scale community enterprises.

The forest sector policy 2000, also mention about the growth of local and national economy and thereby to improve the quality of life of people by developing forest based industries and creating opportunities for income generation and employment. This also explains about the supply of forest products especially wood to urban areas, in the cash economy will intensify by promoting the production of these products in national forests on farm and commercial plantation. Especially in suitable parts of the Terai, the production, processing and marketing of non-wood forest products will be encouraged.

According to Forest Regulations 1995, HMG " by publishing a notification in the Nepal.Gazette may impose a ban on the collection, use, sale and distribution and transportation of any specified category of Forest products". A similar rule holds for

banning the export of any specified category of Forest Products. For example farmers are not allowed to harvest *Michelia Champaca* and *Acaccia catachu,* which they have included in the Agroforestry system (Forest rules and regulations of Nepal, 1995). There is no justification given regarding these bans. The government information on the trade of NTFPs does not reflect the actual level of trade.

The taxes imposed for these products are very ad hoc. Some times, it does not cover the cost of product they receive from the sale. These rules also delay collectors interested in marketing their products out side the districts. Given the limited human resources, District Forest Offices do not wish to entertain requests made by collectors. Also the mode of transportation for these products presents additional constraints to effective monitoring of what is being traded. Many issues can be generated from the review of the policy documents. There is lots of information regarding marketing of NTFPs. However, the information required for the development of sustainable business plan is lacking. An analytical market review of NTFPs is necessary at this junction for better promotion of NTFPs in the country.

Chapter 3

Research Design

3.1 Type of Research and Research Design

This is an exploratory research aiming to investigate a marketing system and mechanism in community managed forests. This will also guide the policy related issue for the promotion of an effective marketing system. This study followed a series of activities to collect the information on amount supplied and demanded, market channel, pricing mechanism and spatial price variation of the selected products. Both qualitative and quantitative information was collected and analyzed.

This is a survey design in which sample respondent from community forestry users group were selected and interviewed by using structured questionnaire. This study tried to assess a proportional fact related to forest product marketing and pricing mechanism in the community managed forest. This helped to dig out the best possible channel for product marketing and ways to get the maximum benefit from the forest products. This design focused on the key factors that influence in the price of forest products. Finding from this survey is used to suggest the appropriate mechanisms for marketing and implication of policies in forest product marketing system.

3.2 Selection of Study Area

Criteria for selection of the study area are:

- Districts having successfully managed community forests so that there are surplus products for marketing and income generation
- Having both the timber and NTFPs
- Having high biodiversity of forest species for both timber and NTFPs
- Covers hills as well as plain areas
- Covers local to regional market (wide market coverage)
- Accessible for field study and also area with security

Based on above-mentioned criteria, two districts Nawalparasi and Chitwan were selected. The main reason for selecting two districts was for the market coverage and tried to identify some differences to justify the reason for the market and products coverage. These two districts cover both district and regional markets as well and both timber and NTFPs. Moreover, these also have the wide representation of information as compared to one district. Nawalparasi district lies in the western development region of Nepal and its coverage ranges form plain Terai to middle hills. The district consists of different types of forests and has wide ethnic diversity such as terai people, hill migrants, disadvantaged group and tribal people. This district covers two major market centers. The regional market center, Narayangarh lies toward the eastern part of Nawalparsi district and this is the adjoining market too. The next regional market; Hetuinda lies towards Eastern part and it is about 85 kilometers from its Eastern boarder.

Likewise, Chitwan district lies in the central development region of Nepal and its coverage ranges from inner Terai to mountains. Most famous national park also lies in this district. People are migrated and settled in this district from various parts of the country during last 50 years. Heterogeneous and mixed type of community as well as one most backward tribal cast is also found in the district. This covers two major markets Hetuinda and

Narayangarh. Narayangarh is lies in the district and Hetuinda lies towards its east about 25 km form its eastern point. So, this study covered three geographical regions; inner terai, lower hills and mountain, there regional markets; Narayangarh, Hetuinda and Butwal and wide ethnic representation.

3.3 Sampling Design

3.3.1. Sampling Procedures

In the first stage, two districts, Nawalparasi and Chitwan was selected purposively. Similarly, from each district, one watershed containing at least two community forests was selected by purposive sampling. The selected watershed from Nawalparasi district is Jharahikhola watershed and Kayarkhola watershed from Chitwan district. In the second stage, two community forests were also selected based on accessibility, connection with market centers and connection with main highway, by using purposive sampling procedure again. The selected forests are Sudari and Chautari from Nawalparasi distrtict of Jharahikhola watershed and Janapragati and Deujar from Chitwan district of Kayarkhola watershed. In the third stage, users list was prepared for each forests and household number was taken for the members of two forests from one watershed. Households for questionnaire survey were selected by using simple random sampling procedure based on one watershed. Every sampled household was interviewed by using structured questionnaire. The sampling procedures and methods are illustrated in Figure 3.1

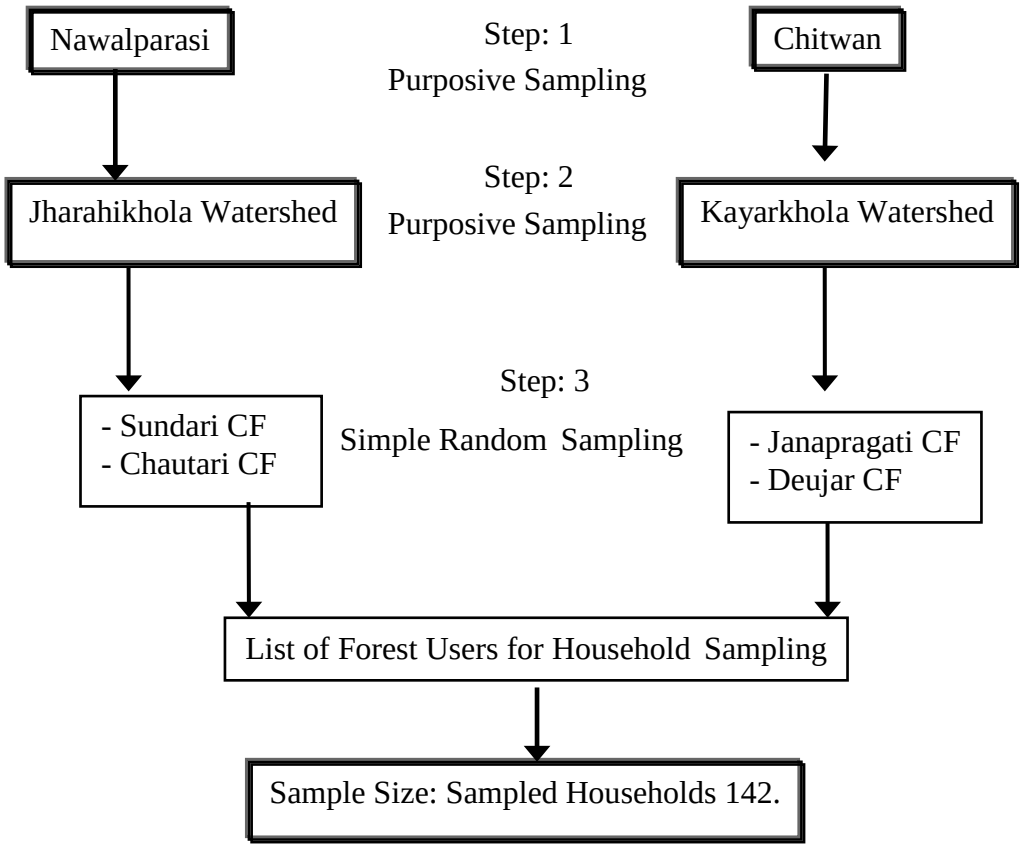


Figure 3.1: Sampling Design and Procedures

3.3.2. Sample Size

From the list of all community forest users prepared on the watershed basis, the household for survey was selected randomly. The size of respondent for household survey was determined at 8% level of precision and 95% confidence level using Miah (1993) equation as follows.

$$n = NZ^2p.q / Nd^2 + Z^2.p.q$$

Where,

n = Sample size
N = Total population
Z = Statistics value corresponding to confidence level
d = Precision level
p = Proportion of sample population
q = Proportion of sample population

In this case p value is equal with q value and p = q = 0.5 was taken. At 95 % confidence interval, have z = 1.96. In the study area the total household is 2,100. Therefore at the precision level of 8% the total sample size will become 140.5 and for the even number and for safety 142 households were sampled for the questionnaire survey. The 142 households were taken almost equally from all the sampled community forests. The total user households and sample households were presented in the table 3.1 below.

Table 3.1: Distribution of sampled HHs by districts, watersheds, VDCs and CFs.

Districts	Watersheds	VDCs	CF	Total HH	Sample size	%
Nawalparasi	Jharahikhola	Amarapuri	Sundari	1,192	36	3
		Rajahar	Chautari	664	36	5.4
Chitwan	Kayarkhola	Shaktikhor	Janapragati	164	35	21.3
		Siddi	Deujar	50	35	70
Total				2,100	142	6.7

The interviewed household for this survey was142. The sample design and procedure of this research is presented in Figure 3.1

3.4 Target informants

Members of the community forestry user group are the main target informants. Data from local/village level traders, merchant, middleman, road head traders and wholesalers was collected. Some data related to basic information of village, market and marketing was collected from key informants. The key informants are local leader, village headman, schoolteacher, local social mobilizers, and officials from the District forest office, NGO/INGOs etc. the informants and their number are presented in the Table 3.2

Table 3.2: Target Informants

Respondent	Number
Forest user group members	142
Local traders	6
Middle man	4
Wholesalers	2
Retailers	2
School teacher	8
Village head man	2
Local leader	4
Local social mobilizers	2
Officials form DFO and DSCO	4
NGO/INGO personnel	2

3.5 Data Collection Sources and Methods

Both quantitative and qualitative data were collected for this research study from the both primary and secondary sources of data.

3.5.1. Secondary Data

The secondary data are the important part of this research. By visiting different offices and reviewing documents collected the secondary data.

Different offices for supplementary data and information

In addition, with primary data, the data on marketing, market channel, and price differentiation was collected from different organizations and NGOs working in the forestry sector and marketing. The organizations for this purpose were; District Forest Office, District Soil Conservation Office, District Development Committee Office, Timber Corporation of Nepal, Nepal Agro forestry Foundation, Federation of Community Forest User Group of Nepal etc. More information from the secondary data source is presented in Table 3.2

Table 3.3: Secondary Source of Information

Key information	Method	Source of Information
List of Community forestry in the watershed	Office visit	District Forest Office, District Soil Conservation Office and District Development Committee etc.
List of Forest user group household in community forest	Office visit	Community forest association, community forest user group and Village Development Committee office.
Buying price of the various timber and NTFPs at different markets and also the market channel (to verify the primary data).	Market visit	Local, city/town and regional market
Major traded forest products from the district to identify the important	Office visit and document review	District Forest Office, Timber Corporation of Nepal etc.

Key information	Method	Source of Information
product for community forests.		
Community Forestry Policies, laws, rules regulations and plans	Document review	Master Plan for Forestry Sector (1988), Revised Forest Sector Policies (2000), Tenth Five Years Plan (2002-2007)

Document Reviews

Documents were reviewed to gather information related to biophysical condition of the study area and study of forest policies, laws, regulations and plans. Especially, community forestry policies, marketing and share of benefit system, ground for trading timber and NTFPs from community managed forests and gaps for promotion and marketing was identified. The major focus was given on pricing policies, user group right of trading, tax and royalty by the government, subsidy and banned species.

3.5.2. Primary Data Collection

Reconnaissance Survey

Initially, to collect the primary information about the study site, reconnaissance survey was conducted. The information about watershed, community forestry, forest user group members and household members was gathered. In addition, several administrative arrangements, boundaries marketing practiced was assessed by discussing with the committee members and personnel involved in the marketing activities. The existing practiced of marketing, accessibility, market centers, forest users group were the key issues discussed.

Household Survey

A structured questionnaire (Appendix:2.) was prepared for the community forestry user group members' household in the study area. The questionnaire was developed on the basis already prepared of coordination schema. Its original English version was first translated in Nepali. The household survey questionnaire was pre tested and modified before the actual field survey started.

All household heads were interviewed using the standardized questionnaire. Information include were demographic data like household size, education, land area owned and cultivated, livestock number, source of income etc. and other market and marketing, accessibility, marketing channel, factors affecting price and so on. Respondents were asked about their version related to pricing of timber and NTFPs.

Market Survey

A market survey conducted to the different market centers from village level to the regional markets to collect the information related to demand in that particular market, major traded forest products, destination to sell or export, sources of raw materials or products and area coverage by that particular market etc. Since there were very few shops and traders related to forest products, this study could not assessed the market demand and supply situation of the forest product for that particular market.

Field Observation

Field observations were done as a part of data collection procedure through out the data collection period. From this general perception regarding geographical area, socio economic conditions, infrastructures and facility conditions, means of transportations of timber and NTFPs were observed. During field visit and data collection, a participant

observation in the regular meeting of forest user group was done and from this issue related to marketing and priority by the users was observed.

Key Informants Interview

The key informants were village head man, executive committee members, business man in the village and in the market, processing industry personnel, middle man, school teachers the officials of agencies like District Forest Office, District Soil Conservation Office and NGO/INGO personnel for this research study. Few key informants without any post and levels were also interviewed for the study.

Another set of checklist (Appendix: 3- 6) was prepared for the local traders, village level intermediary, traders and wholesalers to know the opinion on problems, constraints for marketing of forests products. Government policy and its implication to their business assessed. Two research assistants were haired for the collection of information from household head and few key informants. They were trained for information collection and rapport building for the complex sociopolitical situations and instability.

Group Discussion

Group discussions were conducted to acquired the information related to existing marketing conditions, price, different market centers, government policy and status of forest user group especially with the executive body of forest user group and members involved in marketing and sells of their products.

3.6 Data Analysis

3.6.1. Quantitative Analysis

The Statistical Package for Social Sciences (SPSS) computer software was used to analyze various data like biophysical, institutional, socio-economic, marketing channel, factor affecting pricing, and major traded products etc.

Descriptive Statistics

Descriptive statistics includes frequency, percentage, means, chi-square test and cross tabulation were used to analyze a profile of respondents especially their socio economic characteristics. Graphical presentation like bar diagram, pie chart and line diagram were used. For this representation SPSS computer program was the key software.

Analytical Statistics

The following statistical package was used to analyze the primary data collected from the various ways.

- T- test and chi-square test

  T test was applied to compare the marketing system of timber and NTFPs, their price variations in to different markets. This was applied to test the statistical difference of socio economic characteristics of forest users' group member including their age, income, occupation and its effect on marketing.

  Chi square test was used to test the statistical difference of gender, level of education and occupation. This test was used to measure the perception of marketing problems.

- ANOVA

  Analysis of variance was used to analyze the difference aspects of timber and NTFPs in different watersheds as well as in different districts. To compare the

mean price of different products at different district, the ANOVA was the key tool used for this research.

- Correlation Coefficient

  Correlation coefficient was applied to find out the most influencing factors that affect the price variation of timber and NTFPs. The correlation coefficient of different factors was calculated first and on the basis of coefficient value, the most influencing factors were identified. In the correlation coefficient, the price of both products is dependent variable Y and the various social, economic, institutional, and legal factors are independent variables X.

  Multiple regression analysis was used to find out the determinant factors for price variation of timer and NTFPs. Certain economic, institutional and social factors were found out and determine their interrelations. In multiple regression analysis the dependent variable (Y) is the price of timber and NTFPs and independent variables (X_1 … X_n) are various socio economic and institutional factors like elite group influence, economic conditions, education, caste, social structure, means of transportation etc. The equation for this model for this analysis is as follows:

  $Y = a + b_1X_1 + b_2X_2, \ldots, + b_nX_n$

Where,

Y	=	Price and Income from timber and NTFPs (Dependent)
a	=	Constant
b1 – bn	=	coefficient
Y	=	Price of timber and NTFPs
X1 – Xn	=	Different economic, social and institutional factors
X1	=	Elite's influence
X2	=	Duration of accessibility in to the forests
X3	=	Religious belief
X4	=	Distance to Regional Market
X5	=	No. of in household members
X6	=	Cost of transportation
X7	=	Means of transportation
X8	=	Size of land holdings
X8	=	Type of Ethnic group
X9	=	Main occupation
X10	=	Perception on FUG rules on marketing
X11	=	Local tax
X12	=	Gender
X13	=	Perception on knowledge about marketing
X14	=	Experiences in other organizations
X15	=	Perception on market information accessibility

3.6.2. Qualitative Analysis

This was applied to analyze the qualitative statement of respondents on their views and perception. This was used to substantiate the findings from the quantitative analysis mentioned before. Data from the forest users group members, key informants as well as from self assessment through observation and interview were used to identify the marketing system, its chain and potentials of timber and NTFPs marketing.

Moreover, marketing margin was analyzed through their investment/collection cost and relative benefits. This analysis was carried out with primary traders (village level traders) and regional market traders. From the analysis, strengths, and weakness of the existing marketing system was accessed and identified.

Qualitative analysis like SWOT was applied to analyze strengths, weaknesses, opportunities and constraints of existing marketing system and policy, factor loops to explain influencing factors, qualitative statements and mapping for market network were the major qualitative tools used for the qualitative information.

Lastly, the effect of marketing on community forestry and its impact on the better watershed conditions were identified and recommend accordingly.

The overall research design for this study is presented in Figure 3.2 below

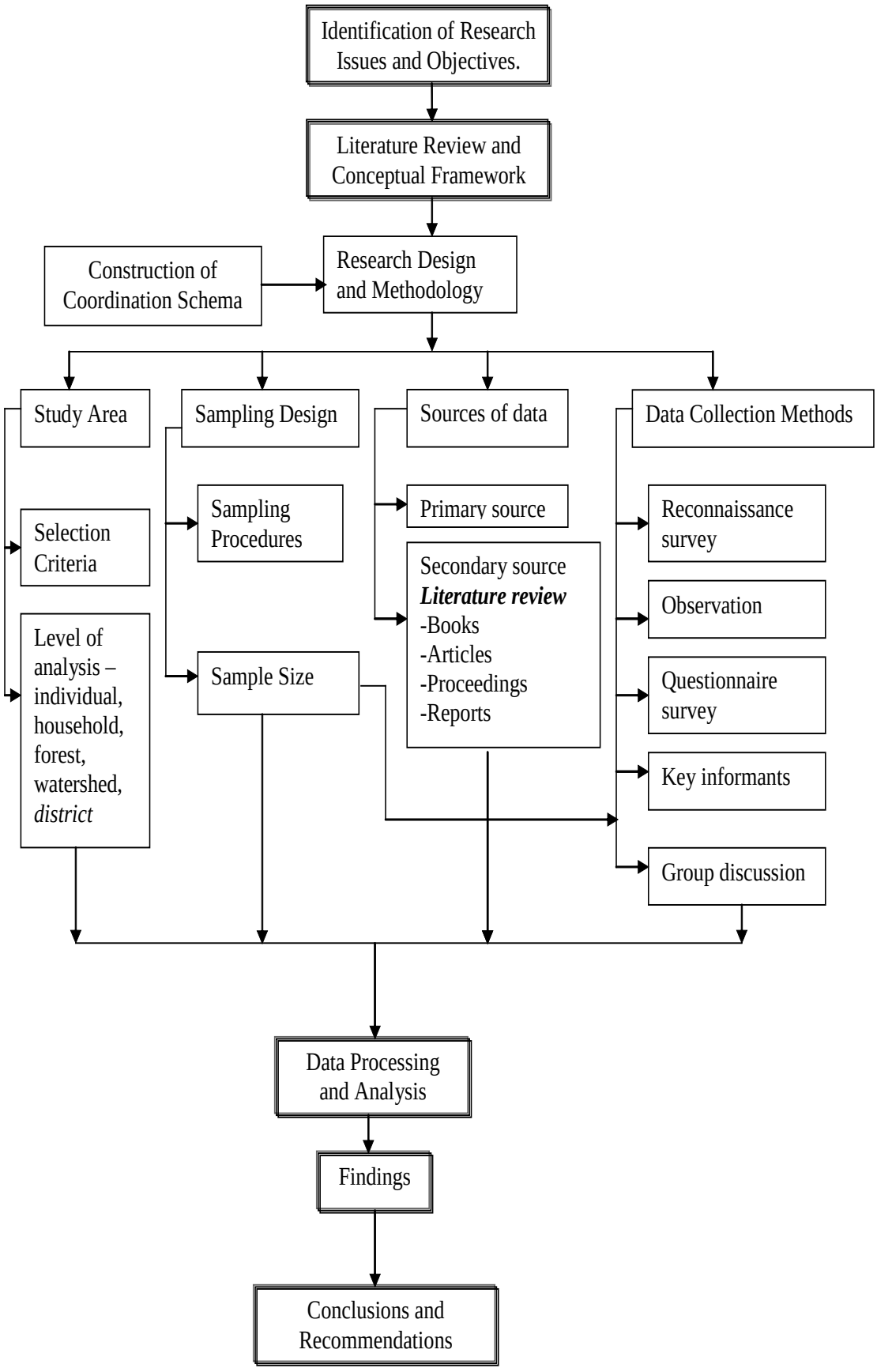


Figure 3.2: Research Design

Chapter 4

Profile Of The Study Area and Respondents

4.1 District Overview

4.1.1. Nawalparasi District

The Nawalparsi district lies in the Lumbini zone of western development region of Nepal. The district is located approximately 146 km west of Kathmandu valley and lies in inner Terai and Terai regions of Nepal. It is located between 27^0 12' –27^0 47' north latitude and $86^0$36' – $84^0$35' east longitudes. It shares a boarder with Chitwan district in the east, Rupendehi district in the west, Palpa and Tanahun district in the north and Bihar and Utter Pradesh of India in the south. The elevation ranges from 100 m to 1936 meter from mean sea level. The Mahendra Highway, which is one and only one highway in Nepal connecting eastern and western parts of the nation bisect this district. The district is elongated from east to west with maximum ground distance of about 90 km. Most parts of the district are accessible by roads excluding 17 hilly VDCs.

Narayani is the Main River and Turia, Girubari, Jharahi, Binayi, Arunkhola, Bungdi are the secondary river in the district. The district is mostly falls under tropical and sub tropical climate; where as some hilly VDCs are under mild temprate region.

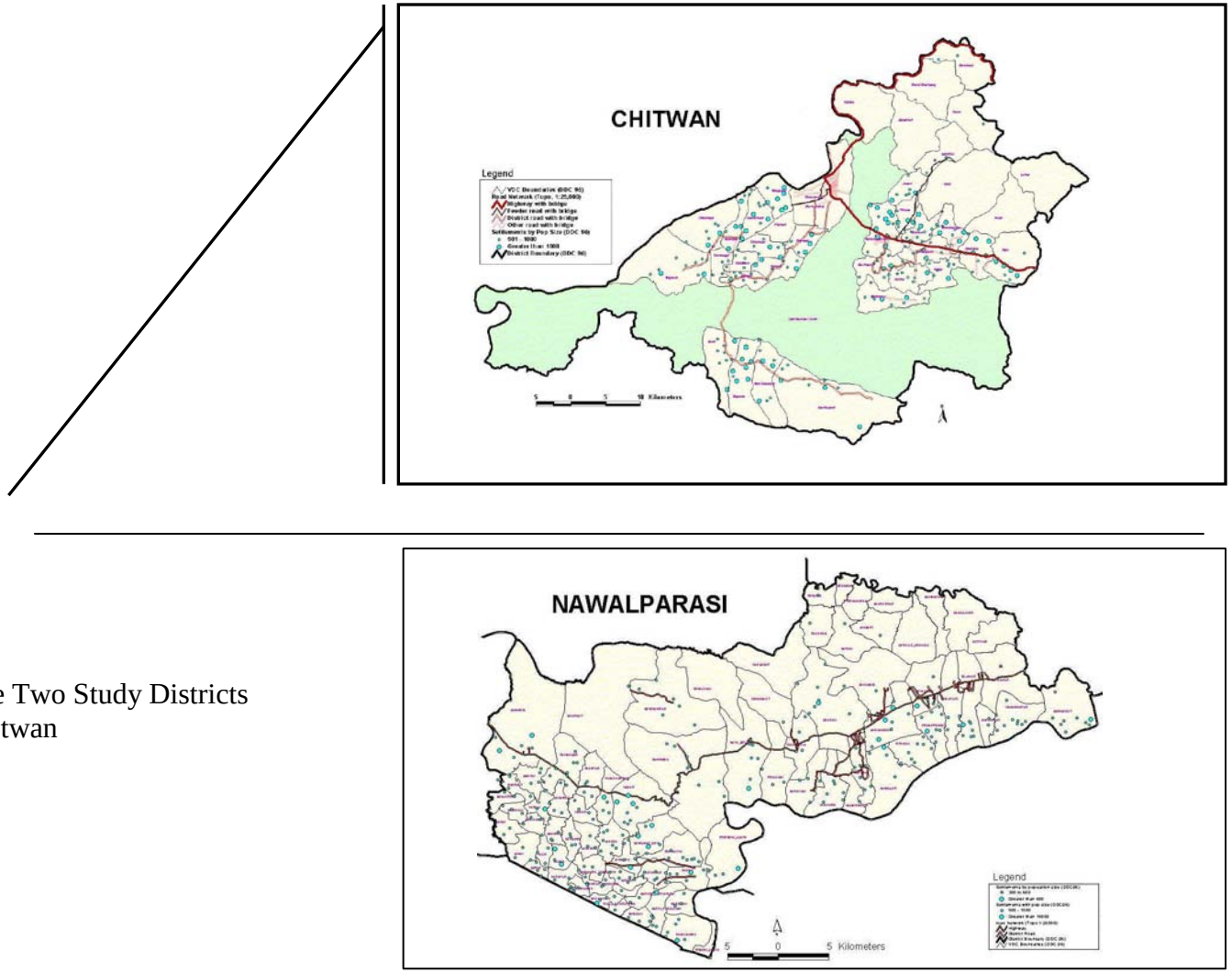
4.1.2. Chitwan District

Chitwan district is located in Narayani zone under central development region. The Chitwan district is located approximately 100 km west of Kathmandu valley and lies in the inner Terai region of Nepal. It is situated between 27^0 21′ – 27^0 52′ north latitude and 83^0 54′ – 84^0 48′ east longitude ranging from 141 meter to 1,100 meter elevation from the mean sea level. The topography of the district is diverse and covers a range of Churia hills, parts Mahabharata and Bhabar region with the plain area. Total geographical area of the district is 2,205.90 sq. km. This district is elongated from east to west with the maximum ground distance of 88 km. Most parts of district are accessible by road excluding nine hilly VDCs. Mahendra Highway and Mugling – Narayangadh highway pass through this district. Narayani, Rapti and Lother are the major rivers in the district.

Chitawan district is surrounded by Parsa and Makawanpur, Nawalparasi, Dhading, Tanahun and Gorkha districts and Bihar state of India from the east, west, north and south respectively. The district falls under the sub tropical and sub temperate mixed climatic zones.

4.2 Administrative Divisions, Demography and Education

Nawalparasi district is divided into 4 election constituencies, 15 administrative areas called Ilaka, 1 municipality and 73 village development committees for the administrative purpose. The district is highly populated. The total population of the district is 562,088 with the population density of 279 people per square kilometer. The total households are 97,144 with the average family members per household of



Map 4.1: Nepal Showing the Two Study Districts Nawalparasi and Chitwan

5.8. Multi-linguistic and multi-ethnic inhabitants are the special feature of the district. In the inner Terai and some parts of the Terai region, people immigrated from difference parts of the country especially from the hilly areas. The overall literacy rate of the district is 54% where male literacy rate is more than the female literacy rate. The male literacy rate is 77% where as the female literacy rate is only 30%.

Likewise, Chitawan district is also divided into 4 election constituencies, 13 administrative Ilakas, 2 minicipalities and 36 village development committees (VDC). The total population of the district is 470,713 with the population density of 210 people per square kilometer. The total household of the district is 94,319 with the average family member of 4.99 per household. In this district there are 14 ethnic communities speaking their own language.

Mostly people immigrated to this district from different parts of the country as well as from India. Mainly three categories of the people who have immigrated to this district are migrants from hills, workforce migration from Bihar and Uttarpradesh of India and migrants from rural areas in search of a job. Due to the diverse feature of the district, it is called 76th district of Nepal where as the country have only 75 districts. The major occupation of the people in the district is agriculture. The overall literacy rate is 58.75% and even in this district male literacy rate is higher than that of females.

4.3 Land Use

Until 1950, most parts of Nawalparasi and Chitwan district were covered by virgin forest. After the eradication of malaria, people started to migrate from the hill districts of Nepal and began to clear the forest. Settlement program and forest allocation for developmental activities were the main reasons for the decline of forest area. Encroachment on forestland for housing and agricultural purpose has also led to the decline of forestland.

Land use survey in 1985 - 1986 recognized five categories of land uses: agricultural; grass; forest: shrub and uncultivated inclusion. These districts area is mostly dominated by agricultural and forest use. The land use of the district is shown in Table 4.1

Table 4.1: Land Use of the District

Land Use	Nawalparasi		Chitwan	
	Area in ha.	%	Area in ha.	%
Forest Area	114,900	57.00	128,500	58.94
Agricultural Land	70,149	34.80	57,353	26.31
Grazing Land	2,305	1.14	10,137	4.65
Other	14,233	7.06	22,010	10.10
Total Area	201,587	100.00	218,000	100.00

Source: District Profile, Nawalparasi and Chitwan, 2003

4.3.1. Cropping Pattern

Since both of the districts lie in Terai and inner Terai region, mainly three crops per year is practiced by the farmers in the irrigated land. Rice, wheat, maize, potato, and vegetables are the major crops for all ecological zones of both districts. The cropping pattern differs accordingly with the land type and the irrigation facility available. However, rice, wheat and maize remain the dominant crops. Now farmers are realizing that they have difficulty in sustaining their livelihood only from cereal crop cultivation. Hence, they have adjusted cropping system to generate more cash income from the limited land resource.

It is observed that farmers of both the districts have adopted vegetable farming from age-old practice of growing cereals and other cash regeneration works. The farmers residing along the highway and having transportation facility are growing vegetables extensively for sale to the capital and near by markets. While the people of remote and inaccessible places still follow the cereal crop base farming systems, vegetables are grown for household consumption. The major cropping pattern of both the districts were found to be almost same.The cropping pattern according to the land type is shown below Table 4.2.

Table 4.2: Cropping Pattern in Nawalparasi and Chitwan District

Land Type	Cropping Pattern
1. Unirrigated Upland	1.1 Maize-Mustard+Lentil-Fallow 1.2 Maize-Mustard-Fallow 1.3 Maize-Wheat-Fallow 1.4 Upland Rice-Whet-Fallow 1.5 Millet-Mustard-Fallow 1.6 Maize-Vegetable-Fallow
2. Irrigated Upland + Lowland	2.1 Rice-Wheat-Rice 2.2 Rice-Wheat-Maize 2.3 Rice-Lentil-Rice 2.4 Rice-Vegetable-Vegetable 2.5 Rice-Vegetable-Maize 2.6 Rice-Mustard-Maize 2.7 Rice-Mustard Lentil-Maize
3. Partially Irrigated	3.1 Rice-Wheat-Fallow 3.2 Rice-Mustard-Fallow 3.3 Rice-Sugarcane 3.4 Rice-Lentil-Fallow 3.5 Rice-Vegetable

Source: DADO, Nawalparasi and Chitwan, 2003

4.4 Overview of the Selected Watershed and Study Site

Jharahikhola and Kayarkhola watersheds from Nawalparasi and Chitwan districts are the area under study. Amarapuri and Rajahar VDCs are from the Jharahikhola Watershed (JW) and Shaktikhor and Siddi VDCs are from Kayarkhola Watershed (KW). The literacy percentage of Amarapuri, Rajahar, Shaktikhor and Siddi VDCs are 78, 71, 72 and 27 percent respectively. The lowest literacy percent is from Siddi VDC. The populations, households and literacy percentages of respectives VDCs are presented in the Table 4.3 below.

Table 4.3: Demography and literacy situation of VDCs under Study

District	Watershed	VDC	No of House Holds	No of Population			Literacy %
				Male	Female	Total	
Nawalparasi	JW	Amarapuri	1,192	3,393	3,719	6,812	78.2
		Rajahar	1,523	4,757	4,777	9,539	71.1
Chitwan	KW	Shaktikhor	1,383	3,769	3,705	7,474	72.0
		Shiddi	542	1,685	1,703	3,380	27.55

Source: District Profile of Nawalparasi and Chitwan Districts, 2003

Note: JW = Jharahikhola Watershed
KW = Kayarkhola Watershed

4.4.1. Biographical Conditions of Jharahikhola Watershed

The Jharahikhlola watershed is situated in Nawalparasi district of western Nepal. This watershed falls almost within the inner Terai region of the district. The Jharahikhola forms the watershed, which is a very small part of bigger watershed formed by Narayani River. It is 164 kilometer away from Kathmandu and 18 kilometer away from Narayanpora regional market. Mahendra highway passes though the lower region of this watershed. The Eastern part is bordered by Mukandapur village development committee (VDC), the Western part is bordered with Dibyapuri VDC, the Southern part is delinated by Narayani river with Chitwan district and Northern part overlaps with Rantanpur VDC of Nawal parasi district. Two community forests Sundari FUG and Chautari FUG from Amarapuri and Kajahar VDC respectively are the study sites. Both FUGs are about 1 kilometer away from the road head.

4.4.2. Biophysical Condition of Kayarkhola Watershed

The Kayarkhola watershed is situated in Chitwan district of central Nepal. This watershed falls almost hilly area and foothill part of the district. The Kayarkhola watershed consists of three small sub watershed formed by Shaktikhola, Kayarkhola and Somphrangkhola. Kayarkhola watershed is a part of the bigger watershed called Raptikhola watershed. It is about 174 kilometers away from the capital city of Kathmandu and 38 kilometers from a regional market of Narayongadh. A gravel link road to Mahendra highway connects the watershed. The watershed contains Shaktikhor and Siddi VDCs on its top portion, where the study was conducted. The Northern part is bordered with Kaule and Chandibhanjyang VDCs. The Eastern part is delineated with Lother and Korak VDCs. The Western part is bordered with Dahakhani and parts of Jutpani VDCs, while Southern part is overlapped with Pithuwa, Chainpur and Birendranagar VDCs.

Two community forests Janapragati and Deujar from Shaktikhor and Siddi VDCs respectively are the studied FUGs. Janapragati FUG is about 21 kilometers from the road head market where as Tandi and Deujar FUG is situated in the hilly region, which is about 33 kilometers from the same road head market.

4.4.3. Climatic Condition of the two study watersheds

The climate of both the watershed is humid and subtropical marked by sharp seasonal variation in rainfall and temperature. The temperature and the rainfall are recorded in National Maize Research station located in Rampur, which is about 20 kilometers away from the study area. The mean temperature is recorded to be 30.1 degree Celsius and the rainfall as 1,599 mm, which is more than 90% of the total annual rain within a short period starting from May to September. The monsoon starts from April/May and continuous until September. The average annual rainfall ranges from 1,800 mm to 2,500 mm.

4.4.4. Overview of the Study Community Forests

Out of the four sampled community forests, Sundari and Chutari are from the Eastern part of Nawalparasi district whereas Janapragati and Deujar are from North Eastern part of Chitwan district. All of these CFs lie along the foothills of Mahabharata range. Sundari is the largest CF in the Nawalparasi district as well as among the studied four CFs. The whole population of VDC is the users of this CF. Where as other CF represents 36, 14 and 9 percent of total VDC population (Table 4.4). Brief introduction of these community forests are given individually here under.

Table 4.4: Forest Area and Number of Population and Households under Sampled FUGs

Community FUG	No. of House Holds	No of Population			Forest Area in ha.	% of Total VDC Population under FUG
		Male	Female	Total		
Sundari	1,192	3,385	3,426	6,812	384.75	100
Chautari	664	1,751	1,760	3,511	354.6	36
Jana Pragati	194	538	541	1,079	129.5	14
Deujar	50	158	153	312	28	9

Source: Field Survey, 2004

Sundari CF

Sundari is one of the model community forests in Nawalparasi district, which was handed over to the community in 1998. This CF is under Amarapuri VDC and covers all households in the VDC from each ward. The area of the CF is 384.75 hectar and has 1,192 user households.

Until three decades ago the forestry situation used to be satisfactory. However, because of the migration and settlement programme implemented by the government in 1985, the forest had been cleared and encroached. Excessive smuggling of timbers, forest fire, flooding, erosion and drought has also aggravated the problem. The successful implementation of community forestry program in the hilly district motivated the people to form FUG. Hence, users started to manage and protect the forest since 1996.

Major activities by the users are plantation, forest fire protection, promotion of NTFP plantation, thinning, singling and felling, fire line and forest road construction etc. Besides that, they are conducting various social and community development activities by providing soft loans, support services, technical trainings etc. They have constructed their own office building and provide various supports to the poor and disadvantaged users.

In the future, they are planning to mobilize local resources in their full capability for income generation, skill development and constructive works. The main aim of CF is poverty reduction so the users are well aware regarding the program and benefit to the ultimate user. They are providing training to 10% of the users annually for effective management and conservation of the forest.

Chautari CF

Chautari CF was handed over to the FUG by the government in 1997. The forest is located towards the Eastern part of the district on the foothill of Mahabharata range under Rajahar VDC. Only the people from ward no. 3, 4, 5, 6 and 8 of that VDC are using this forest. The area of the forest is 354.7 hectar and 3,511 persons from 634 are getting benefits from this forest.

The forest is about 1.5 kilometers from the main highway and heavily suffered from timber smugglers and firewood collectors in the past especially during the period of political instability in 1980. Later users are becoming aware of the forest protection, hence they formed a local group and started protection, which ultimately develop as Chautari FUG.

Selective felling, thinning and singling were the common activities carried out in the forest. In addition to this, FUGs are trying to identify the appropriate NTFPs and promote income generation programme for the minority and disadvantaged users.

Janapragati CF

Janapragati CF was handed over to the FUG in 2002. The forest is located in the Northern part of Shaktikhor VDC in the undulating slope of Mahabharata range. Only the people from ward nos.1 and 5 of that VDC are using this forest. The total populations of 1,079 from 194 households are receiving benefits from the forest.

The forest is about 25 kilometers far from the highway. Previously the forest was densely vegetated but during the course of time due to increase in migration and population growth, the forest came under heavy pressure for the timber as well as NTFP because of higher demand to satisfy the needs of increasing population. Similarly, open grazing and the perception that the forestland is a common land are the other reasons for forest depletion. The reason for this is that, everybody enjoys the forest products without any responsibility in managing the forest. Local ethnic minority people are called Praja (Chepang) are the main users of this forest. Previously they were not aware of conservation but later the users realized to protect it and start conservation.

The forest is still growing and users are more interested in promoting and planting NTFPs for income generation as well as environmental protection.

Deujar CF

Deujar is one of the typical CFs managed by Praja community (Ethnic minority people in Nepal). It was handed over to the users in 2002. This CF lies in Siddi, one of remote and hilly VDC of Chitwan. Only the people from ward no.5 of that VDC are using this forest. The total area of the forest is only 28 hectar and 312 persons from 50 households are the users of this forest.

This forest is about 33 kilometers far from the highway and located in the hilly area. Before they start to manage the forest, the community was using this forest openly without any conservation and protection measures. Moreover, the Chepang community mostly depends on forest for their livelihood even for foods. They collect the fruits and tuber for their foods and NTFPs for their income without thinking of its regeneration capacity. Due to which the forest is depleted very fast. Later the user realized the importance of conservation and started protecting the forest collectively by planting different species and managing them. For this activity, a national NGO Forum for Rural Welfare and Agricultural Reform for Development (FORWARD) and government Praja Vikas Program supported them.

Major Problems and Potentials of the Study Area

Since both the study districts lie in the inner Terai region and have plain physiographic condition, the both districts come under the accessible and relatively developed districts as compared with the other district. Even the situation, there are many problems found in the area, which are as follows.

Main Problems:

- Flooding and landslides;
- Low technological accessibility;
- Over growing population and high rate migration; and
- Less access to communication and information.

Main Potentials

- Good market access;
- Good road network;
- Irrigation facility and productive soil for farming;

- Tourism;
- Centrality in geographical location easy access to go either Eastern or Western part of the country;
- Peoples are relatively well educated and aware from the changing technologies; and
- Good environment for farming as well as other all kinds of activities.

4.5 Socio-economic Characteristics of Respondents

Socio economic characteristics of household respondents is the important component for determination of resource level, assessment of economic efficiency, sources and ways of income generations and perceptions of peoples towards new invention or existing practice. This section attempts to provide a general picture of respondent household regarding demographic and socio economic aspects of respondents as gender, age, marital status, level of education, ethnic group, household size, landholdings, occupations and income.

4.5.1. Demographic Aspects

This aspect includes age, gender, marital status and level of education of respondents.

Age

The age of the respondents ranges from 20 years old to 87 years old. The age of the respondent is divided in to five groups, which is presented in Table 4.5. Among all respondents, 30 percent are in the age group of 31 to 42 followed by 19 percent of 41 to 50. The oldest people of age more than 60 years contributing 10 percent, which is the least number among the total respondents.

Among the four-studied CFs., there is a slight difference in the representation of respondents from different age groups. In Sundari CF, the respondents of age between 41 to 50 are the highest (27%) followed by 31 to 40 and 51 to 60 of equal percentage of 22 years. There is exactly the same distribution for age group of 20 to 30 and more than 60 years of age about 14 percent.

Table 4.5: Distribution of Respondents by Age

Age Group	Jharahikhola Watershed (JW)				Kayarkhola Watershed (KW)				Total	
	Sundari CF		Chautari CF		Janapragati CF		Deujar CF			
	N	%	N	%	N	%	N	%	N	%
20 - 30	5	13.9	4	11.1	5	14.3	9	25.7	23	16.2
31 - 40	8	22.2	10	27.8	11	31.4	14	40.0	43	30.3
41 - 50	10	27.8	7	19.4	9	25.7	7	20.0	33	23.2
51 - 60	8	22.2	10	27.8	6	17.1	4	11.4	28	19.7
>60	5	13.9	5	13.9	4	11.4	1	2.9	15	10.6
Total	36	100.0	36	100.0	35	100.0	35	100.0	142	100.0
Average	46.89		45.92		43.20		38.23		43.60	
F-test	*Sig. = .014 , df = 3									

Source: Field Survey, 2004

* Significant at 95% confident interval.

Similarly in Chautari CF, respondents between the age of 31 to 40 and 51 to 60 are the highest percentage of 27. There are only 11 percent of respondents from age group 20 to 30 and which is the least. Age group between 31 to 40 are highest from Janapragati CF

followed by the group of 41 to 50 years. Highest representations of youngest respondents are from Deujar CF, which is 40 percent of age group between 31 to 40. From there, the least representation is the oldest people, which is 2 percent.

The F – test in the Table 4.5 shows that there is a statistical difference in the average age group of household heads among four community FUGs in the two districts at 95 percent level of confidence. It shows that there are variations in age of the respondents from different CFs.

Gender

Most of the respondents interviewed for the survey were male. The respondents for household survey were the users of CF. Mostly household head are the members of FUG. As the head of most households is male in Patriarchal society, male also dominated the numbers of respondents interviewed. Of the 142 households sampled more than 89 percent of respondent were males. Only one tenth of the household respondents were female. (Table: 4.6)

The proportion of female respondents from Sundari, Chautari and Janapragati CFs are 14, 11 and 15 percent respectively. Where as this percent is only 3 from Deujar CF. Due to the high level of education and accessibility, the proportions of female respondents from respective CFs are high. Moreover, the female respondents from higher caste such as Brahmin and Kshetri are 2 times higher than other caste. Generally, the eldest son, if sufficient age would quickly assume the role of head of the household. It was apparent that the women, particularly of Chepang ethnic group were very shy and did not respond properly while interviewed with their husband or household head. There was only one Chepang women from the Deujar FUG. While in case of other ethnic group, women responded relatively higher as compared with Chepang community.

Table 4.6: Distribution of Households by gender

Gender	Jharahikhola Watershed (JW)				Kayarkhola Watershed (KW)				Total	
	Sundari CF		Chautari CF		Janapragati CF		Deujar CF			
	N	%	N	%	N	%	N	%	N	%
Male	31	86	32	89	30	85	34	97	127	89
Female	5	14	4	11	5	15	1	3	15	11
Total	36	100	36	100	35	100	35	100	142	100
χ^2 - test df = 1 , sig. = .446										

Source: Field Survey, 2004

The chi- square test shows that there is no statistical difference in gender representation from two districts Nawalparasi and Chitwan.

Marital Status

Most of the respondents in this survey were married. About 93 percent household heads out of 142 were married. Only 2 and 4 percent were single and widow respectively. Since the married and responsible male can only be the household head according to the prevailing patriarchal system, most of the respondents were married.

In addition, married percentage is higher in Janapragati and Deujar CFs than the others. The proportion is 97 percent for the both. In Sundari and Chautari CFs, the married household heads are 91 and 88 percent respectively (Table 4.7).

Table 4.7: Distribution of Respondents by Marital Status

Marital Status	Jharahikhola Watershed (JW)				Kayarkhola Watershed (KW)				Total	
	Sundari CF		Chautari CF		Janapragati CF		Deujar CF			
	N	%	N	%	N	%	N	%	N	%
Single	1	2.8	2	5.6	0	0	0	0	3	2.1
Married	33	91.7	32	88.9	34	97.1	34	97.1	133	93.7
Widow	2	5.6	2	5.6	1	2.9	1	2.9	6	4.2
Total	36	100.0	36	100.0	35	100.0	35	100.0	142	100.0

Source: Field Survey, 2004

In Janapragati and Deujar CFs the proportion of married respondents are higher because of the community and lack of education as well. These both CFs composed of a backward ethnic minority group called Chepang, and they have the tradition of early marriage and polygonal system.

Level of Education

About 77 percent of the household heads were literate and 23 percent were cannot read and write at all. Among the total, about 43 percent were complete only their primary education followed by 22 percent of those finished secondary education.

Table 4.8: Distribution of Respondents by Education Level

Educational Level	Jharahikhola Watershed (JW)				Kayarkhola Watershed (KW)				Total	
	Sundari CF		Chautari CF		Janapragati CF		Deujar CF			
	N	%	N	%	N	%	N	%	N	%
Illiterate	4	11.1	8	22.2	6	17.1	15	42.9	33	23.2
Primary	13	36.1	14	38.9	16	45.7	18	51.4	61	43
Secondary	13	36.1	8	22.2	9	25.7	2	5.7	32	22.5
Higher	6	16.7	6	16.7	4	11.4	0	0	16	11.3
Total	36	100.0	36	100.0	35	100.0	35	100.0	142	100.0
$\chi 2$ test sig. = .016* df = 3 ,										

Source: Field Survey, 2004

* Significance at 95% level of confidence

The highest percentage of illiterate respondents was from Deujar CF, which is about 42 percent, and the rest also completed only their primary education (Table 4.8). The reason behind this is the remoteness of the area, long distance to walk of the educational institutions and also lack of awareness to the residing people.Similarly, the highest percent of literate people are from Sundari CF followed by Janpragati that is 96 and 94 percent respectively.

The chi-square test in the Table 4.8 shows that there is a statistical difference in the level of education among the respondents between JW and KW at 95 percent confidence level.

4.5.1. Social Aspect

Social Structure

Several ethnic groups inhibit the study area. As shown in the table 4.5, they have been categorized into five major groups. Brahmin, Newar, Magar, Chepang and Artisans. Brahmin and Kshetri are combined into one group. Similarly, Magar, Gurung, Tamang and

all other Mongolian origin groups are put together and Damai (Tailors), Kami (blacksmith) and Sarki (Shoemaker) are combined into an artisan group. Magar are distributed in all CFs. Bramins are highly populated in accessible and developed CFs area. Chepangs live in hilly remote areas. These ethnic group have has adopted diverse type of social and cultural system. In the prevailing Hindu social system, Brahmin caste is considered the most superior. On the contrary, artisans are considered to be very deprived and inferior followed by Chepangs. Artisans have traditionally low social status. Newars come after Brahmins and Magars belong to the middle category in terms of social status.

In three CFs Brahmins are the single largest ethnic groups consisting of 66 percent among three and in overall this entire ethnic group consists 49 percent. Where as the rest were 51 percent. Chepangs are the dominant community in Deuzar CF comprising of 88 percent and in the total respondents they consists 24 percent (Table 4.9). In Deujar CF, there were no any respondents from Brahmin and Newar community and in Sundari and Chautari CFs there were no Chepangs. Previously they lived in caves and practiced shifting cultivation together with hunting and gathering food from forests.

Table 4.9: Distribution of Households by Ethnic Group

Ethnic group	Jharahikhola Watershed (JW)				Kayarkhola Watershed (KW)				Total	
	Sundari CF		Chautari CF		Janapragati CF		Deujar CF			
	N	%	N	%	N	%	N	%	N	%
Brahmin	32	89	23	63.8	15	42.9	0	0	70	49.2
Newar	0	0	1	2.8	5	14.3	0	0	6	4.3
Magar	2	5.5	11	30.6	4	11.4	4	11.4	21	14.8
Chepang	0	0	0	0	5	14.3	31	88.6	36	25.4
Artisans	2	5.5	1	2.8	6	17.1	0	0	9	6.3
Total	36	100.0	36	100.0	35	100.0	35	100.0	142	100.0

Source: Field Survey, 2004

As the forest area gradually shrunk due to the increasing population pressure and the government imposed restriction on the encroachment of the forest, they had to shift from shifting cultivation to permanent farming practices. In some areas of the other villages, partial shifting cultivation is still being practiced.

Household Size

The average household size of the study area is 5.7 members, which is very close to the national average of 5.5.

Table 4.10: Distribution of Households by size of family member

Members per Household	JW				KW				Total	
	Sundari CF		Chautari CF		Janapragati CF		Deujar CF			
	N	%	N	%	N	%	N	%	N	%
≤ 4	13	36.1	9	25	8	22.9	6	7.1	36	25.4
5 - 6	16	44.4	17	47.2	20	57.1	16	45.7	69	48.6
> 6	7	19.5	10	27.8	7	20.0	13	37.1	37	26.0
Total	36	100.0	36	100.0	35	100.0	35	100.0	142	100.0
Average	5.33		6.25		5.40		5.86		5.70	
Average	5.80				5.60					
F-test	Sig. = .171 df = 3									

Source: Field Survey, 2004

The range of household size varies from 1 member to 10 members. About 48 percent of the total respondents have household size between 5 to 6. About 44, 47, 57 and 45 percent of the respondents from Sundari, Chautari, Janapragati and Deujar CFs were fall under this category respectively

The distribution of households by size of family members is presented in Table 4.10.
The F- test shows that there is no statistical difference in the average size of household among the four CFs and between two watersheds at 95% level of confidence.

4.5.2. Economic Aspects

Main Occupation

Agriculture and farming is the main occupation for most of the respondents. Out of the total, 72.5% of them from all the four CF had agriculture as their main occupation. Moreover, additional 8% of the respondents have agriculture as their primary occupation along with business and services as their secondary occupation (Table 4.11). Since the existing farming system is labor intensive, most of the active labour forces are partially or fully engaged in agricultural activities. In Dewzar CF almost all the respondents were farmers except one who is a schoolteacher.

Table 4.11: Distribution of Households by Occupation

Occupation	Jharahikhola Watershed (JW)				Kayarkhola Watershed (KW)				Total	
	Sundari CF		Chautari CF		Janapragati CF		Deujar CF			
	N	%	N	%	N	%	N	%	N	%
Agriculture	24	66.7	25	69.2	20	57.1	37	97.0	108	72.5
Agriculture and Service	0	0	1	2.8	1	2.9	0	0	2	1.4
Agriculture and Business	3	8.3	3	8.3	4	11.4	0	0	10	7.0
Business	3	8.3	4	11.1	6	17.1	0	0	13	9.2
Service	4	11.1	2	5.8	3	8.6	1	3	10	7.0
Cottage industry	1	2.8	0	0	1	2.9	0	0	2	1.4
Students	1	2.8	1	2.8	0	0	0	0	2	1.4
Total	36	100.0	36	100.0	35	100.0	35	100.0	142	100.0

Source: Field Survey, 2004

Farming is the primary source of income for their livelihood. Among the total respondents, 57 percent meet their food requirement from their own production. 19 percent had surplus production, which is also being sold, in the market. Out of the total 43 percent of them lived in food deficit situation. Those who are in deficit meet their food requirements by selling their labor, services and are involved in small business and cottage industry. Besides these, they are largely dependent on the forest.

Income

The average gross annual income of the respondents was about NRs 57,000 or about US$ 775.00 Overall, 33 percent respondents have annual income more than 60 thousands followed by 32 percent between 21 to 40 thousands. The average annual income of the members of Sundari CF is highest followed by Janapragati and Chautari CFs. Average income of the people from Deujar CF is the least (Table 4.12). About 47, 33 and 48 percent of the respondents from Sundari, Chautari and Janapragati CFs had average the average annual income more than 60 thousands.

Table 4.12: Distribution of Respondent by Income

(In 000 NRs.)

Income in thousand	Jharahikhola Watershed (JW)				Kayarkhola Watershed (KW)				Total	
	Sundari CF		Chautari CF		Janapragati CF		Deujar CF			
	N	%	N	%	N	%	N	%	N	%
4 - 20	7	19.4	9	25	4	11.4	14	40	34	23.9
21 - 40	7	19.4	11	30.6	10	28.6	18	51.4	46	32.4
41 - 60	5	13.9	4	11.1	4	11.4	1	2.9	14	9.9
> 60	17	47.2	12	33.3	17	48.6	2	5.7	48	33.8
Total	36	100.0	36	100.0	35	100.0	35	100.0	142	100.0
Average Income	82.4		51.62		71.02		25.81		57.8	
F-test	Sig. = .000** , df = 3									

Source: Field Survey, 2004

** Highly significance among groups at 99% level of significance.

The F-test in the Table 4.12 shows that there is a statistical difference in the average annual income of the households from the four different CFs at 99 percent level of confidence.

Land Holding

Farmlands are the primary source of livelihood for the farmers. In terms of the land under cultivation, the farmland falls under two broad categories, in inner Terai as well as the hills. In inner Terai the land land is categorized as lowland (irrigated land) and upland (rain fed). Similarly in hills, it is categorized as Khet (paddy terraces) and Bari (upland crop terraces). However, attempts have been made to record the total land holdings of the FUG members.

The average land holding in all the study area is 16.6 kattha from the range of half kattha to hundred kattha. The average land holding of the farmers from Sundari, Chautari, Janapragati and Deujar CF is 11.1, 21.1, 13.4 and 18.8 kattha respectively. Overall, 43 percent of the farmers have land between 0 to 10 kattha followed by 35 percent between 11 to 20 and 18 percent between 21 to 40. Only 3 percent farmers have land more than 40 katthas.

Table 4.13: Distribution of Households by Landholdings

Landholding in Kattha	Jharahikhola Watershed (JW)				Kayarkhola Watershed (KW)				Total	
	Sundari CF		Chautari CF		Janapragati CF		Deujar CF			
	N	%	N	%	N	%	N	%	N	%
0 - 10	22	61.1	18	50	15	42.9	6	17.1	61	43
11 - 20	9	25	8	22.2	13	37.1	20	57.1	50	35.2
21 - 40	4	11.1	6	16.7	7	20	9	25.7	26	18.3
> 40	1	2.8	4	11.1	0	0	0	0	5	3.5
Total	36	100	36	100.0	35	100.0	35	100.0	142	100.0
Average	12.95		21.12		13.48		18.88		16.6	
Average	17.1				16.2					
F-test	Sig. = .047* , df = 3									

Source: Field Survey, 2004

***** Significance at 95% confidence interval.

30 Kattha = 1 ha. and 1 Kattha = 333 m^2

From the Sundari CF, 61 percent farmers have land between0 to 10 kattha and only 2 percent have more than 40. Similarly, 50 and 42 percent of the respondents from Chautari and Janapragati CFs have holdings 0 to 10 katthas. Where as in Deujar CF 57 percent holding between 11 to 20 (Table 4.13). Farmers grow field crops on cereal based farming system. The major crops grown by the farmers in the inner Terai and the foothill areas are rice, wheat, maize, pulses, vegetables and oil seeds whereas in the hilly area maize, millet and potatoes are prominently grown.

Even though the average landholding of Chepang community is higher than that of other communities their land is unproductive and has lesser market value compared to others. They own sloppy and less productive terraces. The disparity of land holding amongst Magar ethnic community is highest. The average land holding is also the highest for them.

The F-test from the Table 4.13 shows that that is a statistical difference at 95 percent confidence level in average landholdings among the four CFs from the two watersheds.

4.6 Chapter Summary

Nawalparasi and Chitwan are the districts for this research study. From Jharohikhola Watershed (JW) of Nawalparasi district, two community forests Sundari, Chautari were under the study. Similarly from Kayarkhola Watershed (KW), Janapragati and Deujar were the studied CFs. Both of the watersheds lies in the foothills of Mahabharata range in inner Terai region of Nepal. Most of the populations from the watersheds were farmers. Three types of major land uses, farmland, forestland and grazing land were practiced.

The cereal-based rain fed farming system was the common practice for both the area. Both watersheds are near by a national road and a regional market. The climatic conditions of the area are hot and humid and suitable for tropical timbers and tropical NTFPs. Frequent flooding, landslide, low technological accessibility, over growing population by migration and high birth rate and less access to information were the common problems. Good market accessibility, tourism, good environment for farm and forestry were the potentials of the area.

Most of the respondents were middle aged of 40 – 50 years. Male always become the household head only for few cases exceptional. The women participation from the accessible area and high caste people were higher than the remote and minority people. About 89 percent of the surveyed samples were male. Almost respondents from the area were married. About 80 percent of respondents were literate, but most of them were only up to primary level. The highest numbers of illiterate respondents were from Deujar CF of Chepang community.

Several ethnic groups such as Brahmin, Newar, Magar, Chepangs and Artisans inhibit in the watersheds. The majority was high caste Brahmin of about the half of total respondents. The average household size is 5.7 and large was from the ethnic minority Chepangs. Farming is the main occupation and about three fourth of the total were farmers. The average annual gross income of the respondents was NRs. 57,800.00 and the highest was from Sundari and lowest from Deujar CFs. The average farmland holding per household was about 16.5 Katha. The respondents have diversity in many aspects.

Chapter 5

Forest Product Traded From the Districts and Market Centers

5.1 Forest Product Trading Practices

In sustainable forest utilization and sustainable forest management, marketing provides a means for maximizing the values and distributing it among the users in the forestry activities. It creates a good linkage between resource managers, processors and the market. FAO (1995a) describes the marketing and trading factors especially concerned with non wood forest products, which refers here as NTFPs in general, the wide range of marketing possibilities and how to improve producers access to essential marketing information. Marketing is the process of identifying, stimulating and satisfying customer's demand, which connects the consumer with the producer and supplies the product at a profit. The forest product represents one of the challenging product groups from the marketing point of view due to their number, volume, versatility, end use variation and resource richness (Lintus, 1995).

Forest sector plays a significant role in the natural economy of Nepal. More than 10% GDP and 70% of energy needs integrate part of farming system. It also contributes to the revenue generation for the government. More than 2.5 million people engaged in the collection, harvesting and hunting of fuel wood, fodder and timber and in forest plantation and free farm operation.

Systematic marketing practice of forest product was started in Nepal since four decades after the establishment of Timber Corporation of Nepal (TCN) in 1960; this was originated in the saw-milling project to supply construction timbers. The major objectives of this institution is to provide sawn timber to general customers through organized and systematic tree felling operations in the Terai, provide timber logs and to promote and conserve forest resources from unsystematic logging and plant new trees. The TCN harvest and extracted the round wood from the forest, process and sale it to the various private and government organizations and individuals. It also sold the products to private sawmills, traders and industries.

The Nepal Fuel Wood Corporation (NFC) in 1965 was another organization for marketing of timber products. The major objectives of this institution was to make fuel wood easily available for general customers where it is scarce and to provide fuel wood at a fair price in these areas before this organization, supplies of fuel wood especially to the urban areas depend on back loads carrier from the surrounding areas. The NFC was wholly dependent on the Forest Department for the supply of wood. NFC can supply only a limited portion of the total demand for fuel wood, as there is a flourishing private market. The private market prices were higher than the price of NFC.

NFC marketing efforts are constrained by the very small number of retail outlets it operates. For the household level, it is difficult and expensive to transport heavy loads of woods over a long distance.

Other institutions such as the Forest Product Development Board in 1976 and Fuel Wood and Timber Sale and Distribution Project 1987 were the additional institutions established for the supply and marketing of timber products.

Similarly marketing of NTFP is heavily dominated by private sectors. Every year between 10 – 15 thousands tons of NTFPs are harvested from forest of Nepal and traded to India (Edward, 1995). Almost all products leave Nepal as raw materials. The principle markets are the ayurvedic medicine and other essential oil industries in India. NTFPs trade is ancient and the earliest reference is over 2000 years old in Sanskrit legend. Nowadays, NTFPs contribution to the national economy is significant. In some rural areas the cash obtained from the harvest of NTFPs is the only income obtained from forestland but may still contribute over 50 percent of the annual average household income (Edward, 1996).

Herbal medicine industries are the major markets for NTFPs in Nepal. Principal buyers of Nepal NTFPs are the ayurvedic medicine industries and essential oil industries in the country and in India. There is a considerable overlap with many products supplied to both the industries. Overseas buyers are few and the international market is minimal. Seven hundred species listed in the Indian pharmacopoeia as being used in traditional medicine are found in Nepal (HMG/N 1998). Around 90 percent of the NTFPs traded from Nepal are used in ayurvedic medicines, although this industry is not always the main market. A popular ayurvedic medicine sold in Nepal is ashukarista. It contains equal weight of 12 species, among them 9 are grown in Nepal. For another famous ayurvedic product chawanparash, the major herbs are found in Nepal.

5.2 Major Products Traded from the Districts

Since both of the districts lie in Terai and inner Terai region of Nepal and have similar kinds of vegetation, the products are dominant for both of the districts.

Timber products are dominated both in volume and in price. The major timber products traded from Nawalparashi district are timber, fuel wood and poles. In case of NTFPs, data is not available.

There was no appropriate data and information regarding the forest product traded from the Nawalparasi district. Because of the country's current problem the record was lost. However, following are the products traded from the district after such incidences. There was no record of NTFP trading from the district.

Table 5.1: Major Forest Products Traded from the District

SN	Products	Quantity
1	Timber cft	112,862
2	Fuel wood (in 100 kg)	144,451
3	Poles (No.)	14,560

Source: DFO Nawalparasi, 2002
SN = Serial Number

These products sell mostly, to the local industries, sawmills and furniture industries. Sometimes some big traders and some politically influential persons also involved in the marketing of the products.

Table 5.2 indicates the major traded from the Chitwan district during 2000 to 2002 are timber and fuel wood. The figure indicates that the traded amount is increasing annually. The harvested and traded both amounts timber and fuel wood both are low in the year 2001 as compare to 2000 and 2002.

Table 5.2: Major Timber Products Traded from the Chitwan District 2002.

Year	Institutions	Amount		Sold Amount		Total Revenue in NRs
		Timber cft	FW Tons	Timber cft	FW Tons	
2000	Timber Corporation of Nepal (TCN)	124,081.63	6.15	10,317.48	615.00	62,645,091.33
	Supply Committee SC)	58,708.31	7,485.00	13,336.77	7,463.00	
	District Forest Office (DFO)	766,061.39	26,827.50	689,136.50	26,827.50	
2001	Timber Corporation of Nepal (TCN)	151,455.60	720	5,589.34	-	922,667.00
	Supply Committee(SC)	26,801.49	2,002.50	17,632.01	1,702.50	3,259,314.95
	District Forest Office (DFO)	154,271.56	2,167.50	59,893.34	1,980.00	15,381,090.43
2002	Timber Corporation of Nepal (TCN)	214,094.70	1,293.75	78,587.21	187.50	1,002,046.30
	Supply Committee(SC)	18,893.33	124,192.5	579,707.16	24,315.00	5,889,692.63
	District Forest Office (DFO)	144,021.69	2,268.75	87,980.80	1,657.50	22,148,829.68

Source: DFO Chitwan, 2003.
FW = Fuel Wood
cft = Cubic feet
NRs. = Nepalese Rupees

The figure also indicates the harvested amount is less than traded amount because of selling very old stocks timber and fuel wood. The general trends for trade of timber and fuel wood from the district are presented in the Fig. 5.1.

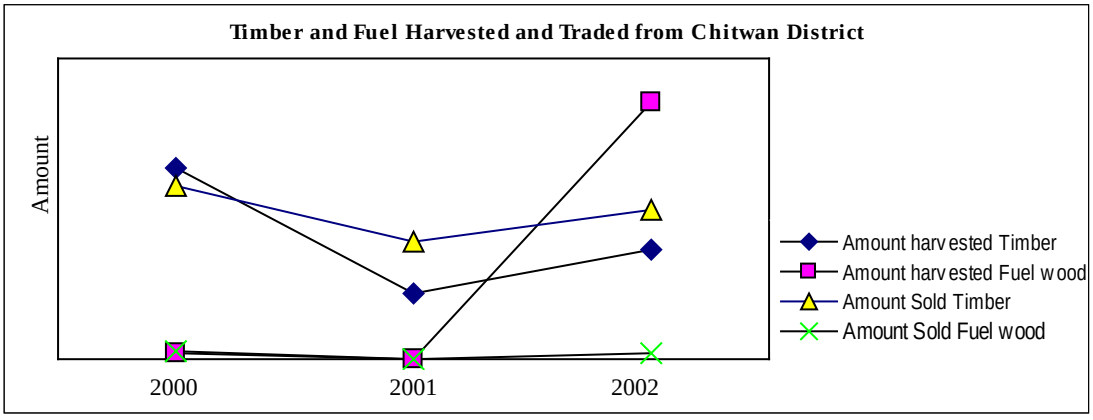


Fig. 5.1: Trend of Timber and Fuel Wood Harvested and Traded from Chitwan District

Mainly eight major NTFPs are harvested and traded from the district (Table 5.3) in remarkable volume according to the royalty list of DFO Chitwan. The major NTFPS are mostly medicinal and aromatic plants MAP). Since, bamboo and its products, broom and other minor products are also included under NTFPs in this study, but the record form the office is on the basis of royalty and this is not included the products that is not necessary to

pay royalty. The highly traded product based on its volume is Kurilo and Pawan Bark followed by Jibanti.

Table 5.3: Major NTFPs Traded from the Chitwan District

SN	Types	Amount in Kg	
		2002	2003
1	Amala (*Phyllanthus embilica)*	339	12
2	Harro (*Terminalia chebula)*	1,262	1,150
3	Barro *(Terminalia balerica)*	3,523	1,750
4	Kurilo *(Asparagus racemosus)*	12,450	4,300
5	Gurjo *(Tinospora cordifolia)*	3,765	4,250
6	Jibanti	10,400	1,008
7	Sikkai	5,000	810
8	Dalchini Bark *(Cinnamoum tamala)*	4,500	17,000
Total Amount Kg		41,230	30,280
Revenue Generated		52,878	121,878

Source: DFO Chitwan, 2003.

5.3 Major Product Harvested and Traded from the CF.

Forests are inseparable parts of rural livelihoods. The concept of people's participation in the protection and management of forest resource started from 1976. An attempt was made to take the community forestry concept forward by the implementation of the Panchyat Forest and the Panchyat forest protection regulations 1978. This concept has taken moment only since 1989 after the master plan for forestry sector came into effect. The main objective of the master plan were to improve the condition of the forest by appropriate protection and development and to fulfill the users needs of the forest product in an easy way. In order to achieve the objective of master plan, the practice of handing over national forest areas as community forests to the local people, who had traditionally used the forest, by organizing them into groups was started.

Community forestry is a process where the management of forest resources fulfills the basic forest products needs of the local users and support their socio-economic improvement. The needs of the forest users are diverse and dynamic in nature according to address the changing needs of forest users. The best way for this to happen is to empower the forest users to enable them to identify their needs and make their own decision. The participation of the forest users, especially the women, the disadvantaged groups and poor play a key role to the success of the community forestry process. To achieve the object of community forestry, different government as well as non-governmental organizations and donors are involved. The Forest Act 1991 and Forest bylaws 1993, have given legal status to community forestry and have defined clear guidelines in this regard, since the forests, especially in the hills districts have substantially been protected and managed. By April 2004 approximately 1 million hectare of national forests were handed over as community forest to 1.3 million households.

Community forestry is oriented towards production of major forest products, especially fuel wood and fodder. However, forest products occupy such a diverse range of ecological niches that they cannot be treated or managed as a single entity. Different forest products are often collected from different areas of land by different groups of people. Therefore, the products are different for Deujar CF, which is located in hilly region than the others. The product harvested from other CFs are quite similar and mostly dominated by timber

products than NTFPs. Sal tree is the dominant tree species and fuel wood and fodder are the dominant products from the forest. In this time, users are also aware regarding NTFPs and its collection and management. Some marginal farmers who are not the users of CF also used to collect NTFPs. Nevertheless, such cases may not be considered a priority for handling over to the community because they are not important source of fuel wood and fodder. Thus, the process to identify community forests and the users of those forests – may marginalize NTFPs and NTFP harvesters if the emphasis is placed solely on fuel wood and fodder.

Since the community forestry has three major component i.e. bureaucracy community and forest resource, it is not so simple and easy to harvest the product from the forest and sold it. Government organizations (GOs) and community based organizations (CBOs) represent two set of institutions within which bureaucrats and community members operate. In some cases, the elite and bureaucrats from the CBOs also suppress the marginal and disadvantaged group users. Community forestry is the means that bring bureaucrats from GOs and community members from CBOs at the interface.

There are no restrictions on the size of quantity of community forests in Nepal and FUG has the authority to set their own prices for forest products. Cases from many community forests, it shows that the FUG allows collecting only dead and dying materials. Similarly in some CFs they allows up to some grasses, few NTFPs and fodder to some extent under the permission of forest protection committee. This was insufficient for the poorer households and they may not satisfy from the practice.

Table 5.4: Major forest Products Harvested and Traded from the Study CFs.

Major products	Amount harvested		Amount traded	
	Jharahikhola Watershed (JW)	Kayarkhola Watershed (KW)	Jharahikhola Watershed (JW)	Kayarkhola Watershed (KW)
Timber Products				
Poles (no)	949	1,093	949	1,022
Timber (cft.)	7,443	2,327	5,526	1,457
Ready materials (cft.)	3,456	-	3,400	-
Finished products (cft.)	-	-	-	-
NTFPs (From Bamboo –*Dedrpcalamus sps., Arundinaria intermediata* and Broom – *Thysanolaena maxima)*				
Doko (no)ö	350	1,280	350	1,052
Dalo (no)ψ	144	470	144	338
Nanglo (no)♣	135	243	135	243
Choya (no)♦	547	750	547	650
Broom (no)	959	1,080	959	810
Kurilo (kg.)	377	870	377	870

Source: Field Survey, 2004.

Remarks :

ö *Doko* = A basket like processed product from bamboo especially used for carrying grasses and leaves.

ψ *Dalo* = A basket like product from bamboo used to keep grain and seds.

♣ *Nanglo* = A lat basket type bamboo product.

♦ *Choya* = Made from bamboo bark to tight some material. In bamboo product preparation, Choya should be prepared first.

The major products harvested and traded from the studied CFs are presented in Table 5.4. The major products from the CFs are timber and fuel wood. According to their constitution and laws, individual users cannot go and harvest independently the products from the forest based on their needs. Therefore, the users harvested only the products FUG allows to harvest in the certain period. The other NTFPs are also not major high value products and not MAPs except Kurilo. These are the bamboo, broom grasses and its locally processed products. Nevertheless, in the present situation, they are well aware regarding the importance of NTPFs and had started plantation of them. The CFs under JW are more resourceful and have more timbers as compared to the CFs in KW. Therefore, these forests harvested and sold more timber related products and ready materials. Whereas the NTFPs and other processed products are dominated from KW CFs. Since, the data was obtained from FUG office and not from the individual household, therefore it does not include any statistical test.

The product that harvested and traded from the CF also depends upon the material (products) available within their forest and their approved operational plan. The District Forest Office (DFO) is responsible for technical, administrative and judicial services concerned with all forest products (timber, NTFPs) available in the national forest area. For collection or harvesting of products, one has to apply with FUGs to collect products from their forest area. Most FUGs they allow only their FUG members and much-selected products up to limited quantity and periods. However, the FUGs cannot issue collection license and harvest unless it is mentioned in their operational plans. Though the regulations require collectors to apply for collection permit, NTFP collection license is issued to trader for the practical purpose. Traders holding these licenses are able to strongly influence prices, since harvesters can only sell some products (NTFPs) to one of them. A transport permit know as “Release Order” is required to transport NTFPs from one district to any other. The permit is valid only fore 15 days and can be extended for 7 more days at a time, is issued by DFD after checking a collection license and a royalty payment receipt to export the product, a recommendation letter of DFD and certificate of origin are required. Product certification and export permission must be obtained from the Department of Plant Resources for the NTFPs that are prohibited from export in crude form. Nowadays, local authorities also charge local taxes for the products.

5.4 Forest Management System in Jharamihkhola and Kayarkhola Watersheds

The concept of community forestry was initiated by the decentralization policy 1978 by giving more rights and responsibility to the people in managing, protecting and utilizing the resources. The community forestry policy mainly focuses on handover all accessible forests to the local communities irresponsive of political boundaries to the extent that they are willing to manage. The group can properly develop, conserve, use and manage such forest and get income by selling products where they fixed their price independently by themselves and reorientation the officials in the forestry sector by changing their role to be the facilitator.

Based on the community forestry policy, a group of people within the forest vicinity provided rights for management and utilization. According to the guideline of the community forestry, there are four phases of user group formation. In the first, identification phase includes identification of users in the area, assessment of their needs and manage option for the same. The second negotiation phase includes the formation of FUG, discussion and resolution of forest management issue to reach a consensus on approaches to management as well as the preparation and approval of an operational plan. The handing over process from the concern authority is also comes under this phase. The

third phase is the implementation where activities are carried out according to the approved operational plan. Appraisal, revision and renegotiation on the operational plan with the FUGs come under the post review phase.

According to Forest Act 1993 and Forest By Laws 1995, DFO can handed over the forest to community and FUGs are free to spent funds raised from community forest in any development activities. However, in 2003, government issues an order for 40% tax from their income, which is not practical and opposing by almost FUGs. According to the acts and laws, FUGs can manage, use and exploit resources based on their operational plan.

Since all the four forests under this research are CFs, the management pattern is the same to all of them according to the community forestry policies, forest act and bylaws. They operate according to their operational plan by the technical supervision and facilitation from concern government institutions. DFO Nawalparasi technically supports to manage the CFs in Jharahikhola Watershade. Sundari and Chaudari CF was started their operation in the same time and they are the biggest and resourceful CF in the district (DFO Nawalparasi, 2003). Both CFs in JW are operated now according to their second five-year operational plan. Fire protection, regulation on collection and grazing, replantation of trees and NTFPs are the key activities. Mostly the forest is managed and protected by the groups of users. However, they also have some security guards for protection of illegal actions beyond their constitution. They allow their users to collect fuel woods and timber from dry and dying materials. Some grasses and fodders and some NTFPs like bamboo, broom and few medicinal and aromatic plants (MAP) are allowed to harvest and sell up to certain amount. Because of their constitution and even from the policies by the government, there is no individual right to collect and sold the products independently. Every conflicts and issues are decided by FUG participation. However, the Executive Committee (EC) decided most of the issues and only few and some special cases were put on the general assembly. The FUG income invested in various social and community development activities like education, rural road construction, income generation and so on.

Forest management system in Kayakhola Watershed (KW) is also similar like JW because both are under the same policies and laws. The CFs in KW is not as resourceful as in JW, but concerns more NTFPs than JW. Previous years before CFs come to in to action, the forest was not belongs to anyone and have open access to all. The dominant community in this area is Chepangs, where they were fully depend upon the forest before affect the forest situation a lot. Because of this situation, they harvested a lot of timber as well as NTFPs to meet their household needs as well as to get some income. Therefore, the forest situation is not as resourceful as in JW. Now, they are also managing their CF according to their operational plan on the direct technical support from DFO, Chitwan. Most of decisions they made were participatory approach and by the EC.

5.5 Market Types and Accessibility

There are mainly three types of markets for the forest products from the studied watersheds. Village market or local market, road head market and regional markets are the main markets to the users of studied CFs for their forest as well as their agricultural products and trading. Village market or local market is the market place within the community where local traders, buyers and shopkeepers sales and buys their products to and from the uses. The major products traded in these types of market are based on the local production and local demand of consumption. Village traders, local intermediary and local businesspersons are the key actors of trading in this market category. In this study,

there are many local market places mostly more then one from each CFs user coverage area.

Road head markets are the main centers of activity in forest product as well as agricultural products trade and situated along or very near to the East West highway. They are the major bottlenecks in the trade, and are the interfaces between portage and road transport, tricycle and bullocks drawn cart carrying to road transports and the place where all the players in the trade with in Nepal can be found. Independent harvesters and village traders especially from the north sell to the road head traders who in turn deal with the regional traders. Often read head are also a remarkable market with in a district. Sometimes it is also a district headquarter. This is also the main point competition between traders. Shoranumber and Rajahar are the read head markets for Sundari and Chautari CFs. Similarly, Tandi is the only a road head market for Janapragati and Deujar CFs users.

Table 5.5: Distance from Respondents' Houses to Different Market Places and Road Network

Markets	Distance (km)	JW				KW				Total	
		Sundari CF		Chautari CF		Janapragati CF		Deujar CF			
		N	%	N	%	N	%	N	%	N	%
Village or Local Market	0-1	28	77.8	7	19.4	17	48.6	1	2.9	53	37.3
	1-2	7	19.4	8	22.2	12	34.3	1	2.9	28	19.7
	>2	1	2.8	21	58.4	6	17.1	33	94.3	61	43
	Average	1.2		3.2		1.7		5.1		2.8	
	F- test	sig. = .000**			df = 3						
Road Head Market	1-5	34	94.4	31	86.1	0	0	0	0	65	45.8
	5-10	2	5.6	5	13.9	0	0	0	0	7	4.9
	>10	0	0	0	0	35	100.0	35	100.0	70	49.3
	Average	4.3		3.9		19.3		24.9		12.9	
	F-test	sig. = .000**			df = 3						
Regional Market	10-20	32	88.9	17	47.2	0	0	0	0	49	34.5
	20-30	4	11.1	19	52.8	1	2.9	0	0	24	19.9
	>30	0	0	0	0	34	97.1	35	100.0	69	48.6
	Average	17.3		19.8		37.7		41.7		28.9	
	F-test	sig. = .000**			df = 3						
Central Market	25-50	0	0	0	0	0	0	0	0	0	0
	50-100	0	0	0	0	0	0	0	0	0	0
	>100	36	100.0	36	100.0	35	100.0	35	100.0	142	100.0
	Average	163.6		170.9		180.3		184.2		174.6	
	F-test	sig. = .000**			df = 3						
Nearest Road Network	0 -2	13	36.1	8	22.2	29	82.9	1	2.9	51	35.9
	3 -6	23	63.9	26	72.2	6	17.1	16	45.7	71	50.0
	>6	0	0	2	5.6	0	0	18	51.4	20	14.1
	Average	3.4		4.2		1.8		6.0		3.8	
	F-test	sig. = .000**			df = 3						
Average		37.9		40.4		48.2		52.4		44.6	
F-test		sig. = .000**			df = 3						

Source: Field Survey, 2004

** = Significance difference at 99% level of confidence.

df = Degree of freedom

Regional market is a town market, which covers more then one districts. This is the junction between the road networks. Often regional markets are also the district headquarter and site of different government offices. This place is the main point of competition and from where a trader exports the products are equipped with many facilities

like telephone, internet and price information of different market centers as well as for export. Narayangadh is the main regional market for both the districts; Nawalparasi and Chitwan. This is also a district headquarters of Chitwan district and central part of the country to go any places.

Table 5.5 shows the distances of different market places from the respondent home. This is the approximate distance from their home. The average distance of local market from their home is 2.8 km. Likewise, the average distance of road head and regional market for the users is 12.9 and 28.9 km respectively. The average distance of nearest road network from the respondents home is about 3.8 km.

There is a statistically difference between the distances of markets from different CFs for every market from the local to the central level at and 99% confidence level. So the market distances from each CFs for its every market is significantly difference.

From the viewpoint of respondents, regional market is the most preferred market place for buying and selling their products. About 85.9 percent of total respondents preferred regional market is their first choice followed by road head market of 81.7 percent. They preferred less for local and central markets. In local market, the selling prices of their harvest is low but at the same time the buying price of other products are more expensive. For the national market, they preferred less because of the long distance. The market preference between the users from JW and KW is statistically different at 99 percent level of confidence. The reason behind difference is the distance of markets. Because of long distance of road head market, respondents from KW preferred local market then road head market where as respondent from JW preferred road head market much more than the local market (Table 5.6)

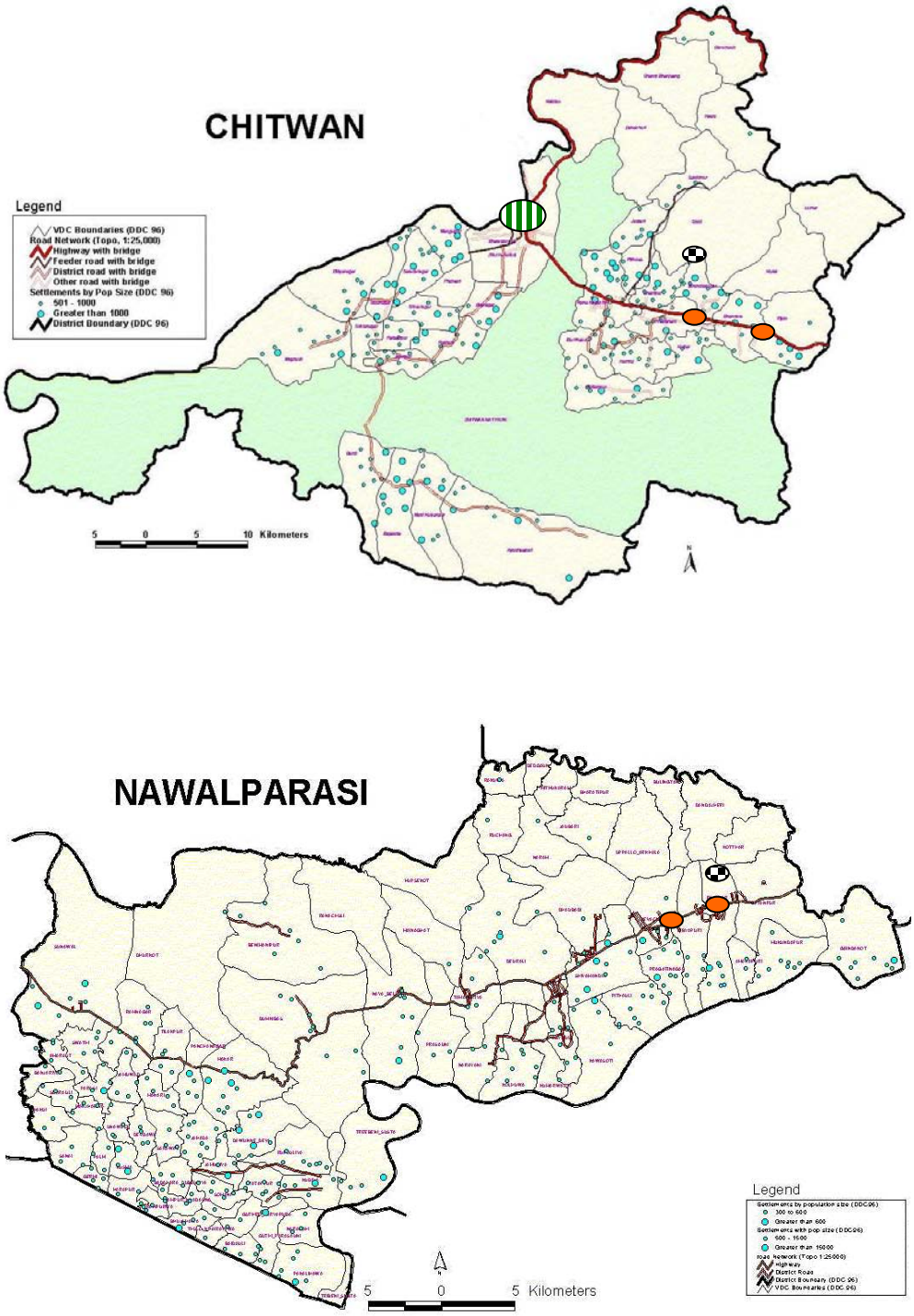
Table 5.6: Respondents' Choices of Market Places

Market Place	JW				KW				Total	
	Sundari CF		Chautari CF		Janapragati CF		Deujar CF			
	N	%	N	%	N	%	N	%	N	%
Local or Village Market	11	30.6	2	5.6	34	97.1	33	94.3	80	56.3
Road Head Market	32	88.9	30	83.3	26	74.3	28	80.0	116	81.7
Regional Market	30	83.3	36	100.0	28	80.0	28	80.0	122	85.9
Central Market	10	27.8	15	41.7	1	2.9	2	5.7	28	19.7
Total	36	25.4	36	25.4	35	24.6	35	24.6	142	100.0
χ2-test	sig. = .000** df = 3									

Source: Field Survey, 2004

** = Significance difference at 99% level of confidence.

df = Degree of freedom



Map 5.1 : Map of Chitwan and Nawalparasi District Showing Local and Road Head and Regional Markets

Legend

- Village or Local Market
- Road Head Market
- Regional Market

Bicycle, tricycles, buffalo/bullocks drawn carts and tractors are the key means of transport for their forest product. Mostly, tricycle and animal power drawn carts are the common means of transport up to road head market except in some cases of tractors. For regional market, tractors and trucks are the main means of transport. Table 5.7 shows the means of transport for different market places.

Table 5.7: Market Center and Accessibility

Watershed	Market types	Distance in km	Means of transportation	Frequency of visit
JW	Local	2.2	Bicycles, Tricycles	Most frequently
	Road head	4.1	Bicycles, Tricycles, bullock drawn carts and tractors	Most frequently
	Regional	18.5	Tractors and trucks	Frequently
	Central	167.2	Trucks	Rarely
KW	Local	3.4	Carrying in backs, tricycles.	Most frequently
	Road head	22.1	Cats, Tractors and Trucks	Frequently
	Regional	39.7	Tractors and trucks	Rarely
	Central	182.2	Trucks	Rarely

Source: Field Survey, 2004

Most Frequently = Once in a day
Frequently = Once in a week
Rarely = Once in a month

5.6 Major Market Centers for the Products

Mostly timber products are traded locally to the FUG members, local industries and neighboring FUG. So there is no complex and competitive marketing system and chain for the timber products from the community managed forests. Normally, the products harvested collectively by the FUG and store in their office. Then application will be invited from the users for their demand of the timber products. Based on priority and limit the product is sold to the users in subsidized rate. The stock will be kept until next year and priority will be given to the users after that if the amount is still left then only sell to the outside users or industries in normal market rate. Therefore, the market centers and system is still not so competitive and complex for timber product for the studied CFs.

In case of NTFPs, there is no sufficient harvesting and trading practice from the CFs of JW. They just started to plant NTFPs and trained people regarding this issue. They harvested some MAPs from the forest collectively and sold to the regional market. Where as the harvesting and marketing of NTFPs from the CFs of KW is common. They even have marketing cooperative for NTFPs marketing and price information. Where as this CFs have almost no practice in harvesting and trade of timber products.

In case of NTFPs and some selected agricultural products, the cooperative run by the users, buy the products from the collectors and sold to the regional market. The price given by the cooperative is higher then the local price and tried to promote the local people for sustainable collection and trading. It also provides the market price information for the different products of different markets. Some products which have to export to India or outside country and collect small in volume by the cooperatives, sold to the local or road head trader by the cooperatives as well. Local market, road head market, regional market and central processing industries are the major places to sold their collected and harvested NTFPs.

5.7 Chapter Summary

Marketing of forest products was the common practice started since 1960 in Nepal. Since before to till the date, the marketing was mostly focused on timber and its products. However, marketing of NTFPs also started recently. The trading of products from the CFs was just started and in growing stages.

The major traded timber products were fuel wood and timber and in NTFPs eight different medicinal and aromatic plants (MAPs) and some processed products of bamboo and broom grasses were common. But from the studied CFs in case of NTFPs processed bamboo products were traded in majority. Timber and fuel wood were the common traded timber products. Most of the users collect only fuel wood and fodders from their CFs for household needs. Very few respondents were really engaged in trading and business activity.

Four tires of market places were common for the user for trading of their farm products. The markets are local or village markets, road head market, regional market and central market. The most preferred market was regional for them. Village and road head market was very close to their home and forest and visit most frequently (daily). Regional market was somewhat far but highly accessible and visits once in a week. In overall, the accessibility and transportation of their products to the market and even back home again was one-day job. The nearest road network for them was about 3.6 Km. and 6.0 Km. for users from Deujar CF.

Chapter 6

Marketing System and Marketing Channel of Forest Products

6.1 Product Marketing System under Community FUGs.

The "National vision of Community Forestry 1998" has identified four thematic areas of CF. The thematic areas are, institutional capacity, forest environment and biodiversity, community resource management and social political and cultural aspects for participation and accountability.

Institutional capacity covers policy formulation process, sustainability, democratization of power, delegation, transparency, accountability, monitoring, information management communication, etc. Forest environment and bio-diversity covers forest management, soil and water conservation etc. Community resource management covers, human/ financial planning, development and mobilization of financial and human resources, gender balance equity etc and, finally social political and cultural aspects covers rights and authorities of people of different classes, caste, ethnic groups, sex, etc; power balance, leadership, gender, equity social justice and empowerment.

In above all areas, it does not include the marketing and trade aspects of products from the CF., which is the key aspect for income generation and employment for the rural poor minorities and disadvantaged group people. Even the forest is well managed, resource are well conserved and bio-diversity is well maintained, unless and until the rural landless marginalized poor people do not get direct benefit of their livelihood, its sustainability will be questioned.

The third national workshop on the vision of CF in 27 – 29 October 1998, Kathmandu Nepal was identified on action related to marketing for the improvement of forest, environment and bio-diversity. It identified a major action for income generation and market management, which focused on identification and make necessary arrangements for the marketing of forest products that are in excess of the needs of FUGs. It emphasized on systematized distribution of forest products from the CF among all users, Large scale plantation of various species that are climatically suitable and can be used for generation income and conduct programs that can create local employment opportunities, income generation medicinal plants and eco-tourism.

It also identified some major obstacles related to marketing and income generation aspect. The key obstacle identified were, lack of technical knowledge in forest management, medicinal herbs and NTFPs, lack of technical supports, research and quality seeds, lack of knowledge and still in operation industries, disadvantaged users lack knowledge on CF, CF controlled by elite groups and transportation difficulty and infrastructures.

This vision also gives some ways and means to address the issues related to marketing and income generation. For this it recommended to organize training and workshops to help run industries. It suggest to carry out research activities and coordinate with stakeholders for marketing, plantation of useful and income generating plants in deforested areas and barren land, organize training on "FUG fund mobilization" and monitor and evaluate the progress and establish non-timer forest products and forest based industries. The vision assumed that these actions would help to create demand for the forest products and also promote farmers for planting some income generating NTFPs in their private land as well.

After identified the issues related to marketing aspects FUGS tried to incorporate this aspect in their constitution. They started harvesting and marketing as well. From his FUG become resourceful and can spent its money for official building, social works and religious activities. Even after this also, the poor marginalized users did not get any direct benefits for their livelihood.

6.6.1. Harvested Major Products

The major forest products harvested from the studied CF are fuel wood, timber, poles, grasses and fodder, bamboo, broom grass and some MAPs, etc. Overall, the dominated timber product was fuel wood followed by timber. Out of 114 respondents, 94 percent were harvested fuel wood as their main timber product followed by 45 percent for timber. Only 8 percent respondents took poles and ready materials from their CF as seen from Table 6.1.

Table 6.1: Major Products Harvested from the Studied CFs

Forest Products	Jharahikhola Watershed (JW)				Kayarkhola Watershed (KW)				Total	
	Sundari CF		Chautari CF		Janapragati CF		Deujar CF			
	N	%	N	%	N	%	N	%	N	%
TP										
Timber	23	63.9	23	74.2	11	31.4	5	14.3	62	45.3
Poles	7	19.4	5	16.1	0	0	0	0	12	8.8
Ready Materials	3	8.3	9	29.0	0	0	0	0	12	8.8
Fuel wood	33	91.7	29	93.5	34	97.1	34	97.1	130	94.9
NTFPs										
Bamboo	10	27.8	0	0	3	8.8	35	100.0	50	43.9
Broom grass	13	36.1	0	0	0	0	3	8.6	51	44.7
Kurilo	1	2.8	0	0	0	0	1	2.9	4	3.5
Harro/Barro	1	2.8	0	0	0	0			2	1.8
Grasses and fodders	33	91.7	9	100.0	34	100.0	33	94.3	109	95.6
Other MAPs	2	5.6	0	0	0	0	0	0	2	1.8
Total	36	100.0	9	100.0	34	100.0	35	100.0	114	100.0

Source: Field Survey, 2004

Regarding NTFPs, grasses and fodder, bamboo and broom grass were the most dominant products for them out of 114 respondents, 95 percent took grass and fodder from their CF as their main product followed by 44 and 43 percent of broom grass and bamboo respectively. Very least users, i.e. only 1 percent, harvested a medicinal fruit called Harro/Barro and other MAPs.

The varieties of products harvested from the different CFs are also varied. In Sundari CF, the dominant timber products were fuel wood, timber by 91 percent and 63 percent, respectively. The dominant NTFPs for this forests were grasses and fodder, broom grass and bamboo represented by 91, 36 and 27 percent respectively. Likewise in Chautari CF, the users of 93 and 74 percent took fuel wood and timber as their timber products. Regarding the NTFPs they only took grasses and fodder as the major only 25 % respondent were harvested grasses and fodder from their forest.

The users of Janapragat CF also took fuel wood as their main timber product and grasses and fodder as the NTFPs, Very few respondents were aware regarding the other products

and its importance. Fuelwood is the major timber product for the users of Duejar CF. Bamboo is the most demanded NTFPs for them. Almost all users from the CF harvested bamboo for various purposes. Grasses and fodder and broom grass were the other NTFPs harvested by 94 and 8 percent respondents.

Due to the location, product situation and socio-economic conditions, the products were differentiated with the different CFs. Since most of the respondents are farmers are from rural areas. Fuel wood and grasses/ fodder were the common products for all.

6.1.2. Processing

Some of the users processed their products for their own consumption as well to sell in the market. Out of 140 respondents 55 percent were processed the timber as well as NTFPs after they harvested from the CFs. About 44 respondents did not process the product.

Respondent from KW were the major product processor represented by 71 percent out of 70 respondents. Only 40% users out of 70 respondents were processed their product from JW (Table 6.2)

Table 6.2: Processing of Forest Products by the Users

Responses	Jharahikhola Watershed (JW)		Kayarkhola Watershed (KW)		Total	
	N	%	N	%	N	%
Yes	28	40.0	50	71.4	78	55.7
No	42	60.0	20	28.6	62	44.3
Total	70	100.0	70	100.0	140	100.0
No response	2					
χ2-test	Sig. = 0.000**			df = 1,		

Source: Field Survey, 2004
Remark: ** Significance at 99% level of confidence.

The χ^2- test in table 6.2 shows that there is a statistical difference in the processing of forest product between two watersheds at 99 percent level of confidence.

Regarding specific processed products, furniture and finished products are the key outputs from timber. Out of 38 respondents, 78 percent made furniture and finished product from timbers. In case of NTFPs; Doko, broom, Dalo, Nanglo and Choya are the major processed products. Out of 60 respondents, 86, 83, 66, 50, and 45 percent prepared Doko, broom, Dalo, Nanglo and Choya, respectively.

Majority of the respondents from Sundari and Chautari CFs processed timber products. Users of Sundari CF also processed NTFPs but the users of Chautari CF did not process any NTFP at all. Respondents from Janapragati and Deujar CFs processed both the products but NTFPs were the dominant for them (Table 6.3)

Table 6.3: Processing of Timber and NTFPs

Processing of Products	JW				KW				Total	
	Sundari CF		Chautari CF		Janapragati CF		Deujar CF			
	N	%	N	%	N	%	N	%	N	%
Timber Products										
Furniture	9	81.8	14	82.4	4	66.7	3	75.0	30	78.9
Finished Products	7	63.6	13	76.5	6	100.0	4	100.0	30	78.9
Fuel Wood	5	45.5	12	70.6	2	33.3	0	0	19	50.0
Other Products	1	9.1	2	11.8	3	50.0	0	0	6	15.8
Total	11	29.9	17	44.7	6	15.8	4	10.5	38	100.0
NTFPs										
Doko ö	10	100.0	0	0	15	78.9	27	87.1	52	86.7
Dalo ψ	1	10.0	0	0	13	68.4	26	83.9	40	66.7
Nanglo ♣	1	10.0	0	0	8	42.1	21	67.7	30	50.0
Choya ♦	8	80.0	0	0	8	42.1	11	35.5	27	45.0
Bhakari ♥	0	0	0	0	9	47.4	6	19.4	15	25.0
Broom	7	70.0	0	0	13	68.4	30	96.8	50	83.3
Dry Product	3	30.0	0	0	0	0	1	3.2	4	6.7
Medicine	0	0	0	0	1	5.3	0	0	1	1.7
Total	10	16.7	0	0	19	31.7	31	51.7	60	100.0

Source : Field Survey, 2004

Remarks :

ö Doko	=	A basket like processed product from bamboo especially used for carrying grasses and leaves.
ψ Dalo	=	A basket like product from bamboo used to keep grain and seds.
♣ Nanglo	=	A lat basket type bamboo product.
♦ Choya	=	Made from bamboo bark to tight some material. In bamboo product preparation, Choya should be prepared first.
♥ Bhakari	=	Bamboo product used to store food grain in large scale for long time

6.2 Existing Marketing Practice under Studied FUGs.

There is a collective marketing system under studied CFs. The products were harvested from the forest jointly by the users and keep in to their offices. Every user should contribute for the collection and harvesting. After harvesting, the demand was collected from the users specifying the products and quantity. Based on priority and necessity the product was sold to the users in highly subsidized rate. However, users got certain amount of timber free, if he/she is constructing new home like that activities. After the own users demand saturated the products were still kept in stocks for some period, for some urgent need. After that the rest product was sold to the outsiders, traders or local industries based on competitive bidding. In case of NTFPs, FUG was contacted with some traders, wholesalers or medicinal industries and sold the products in bulk. The income went to the FUGs account and user for various social and development works. Sometimes, the money was spent for some program related to income generation for the poor. However, few timbers, some NTFPs were harvested by the users to some extent, processed them, and sold individually to get income for them. However, this case is too few and for very limited products.

6.2.1. Major Markets

Own use group members, neighboring users group members local organizations and local industries are the buyers of timber products from the studied CFs. Out of 35 respondents, 82 percent sold their timber products to same users group members followed by 51% to the local industries to their local as well as neighboring areas. About 42 percent products were sold to local organizations like local NGOs, CBOs, schools, religious institutions and etc.

Almost all respondents from Sundari CFs sold their timber products to the other members of their own FUGs. Out of 13 respondents, about 46% sold to the neighbor users group and local organizations. Only 38 percent of respondents sold to the local industries. There was the similar trend for Chautari CFs, where they sold 78 percent out of 19 respondents, to their own FUG members followed by 42 percent to local organizations and 36 percent to neighbor user groups.Very few respondents (only 3) from Janapragati CFs sold their timber products and none of the respondent from Deujar CF sold the timber products.

Local market at village level, Road head market near the village and along the highway and regional markets were the main markets for NTFPs. Out of 38 about 97 percent of the sampled households sold their NTFPs to the local market. This local market includes local buyers, local sho0keepers, local traders and local cooperatives. About 76 percent sold to the road head market followed by 31 percent to regional market, only one respondent sold his product to the central market.

Local market was the most popular places for selling their NTFPs to all 3 FUGs. Almost all respondents from Janapragati and Deujar FUGs sold their products to the local market place whereas 88 percent out ouf 9 respondent from Sundari CFs were sold to the same market places. About 84 percent out of 25 households from Deujars CFs sold their NTFPs to road head market and followed by 28 percent to the regional market. There was a similar trend for NTFP market to the households of Jnanpragati and Sundari CFs. There was no sale of single NTFPs from the households to Chautari CF.

Table 6.4: Markets of Timber and NTFPs from the Studided CFs

Processing of Products	JW				KW				Total	
	Sundari CF		Chautari CF		Janapragati CF		Deujar CF			
	N	%	N	%	N	%	N	%	N	%
Timbers										
User Group Members	13	100.0	15	78.9	1	33.3	0	0	29	82.2
Neighbor User Group	6	46.2	7	36.8	0	0	0	0	13	3731
Local Organization	6	46.2	8	42.1	1	33.3	0	0	15	42.9
Local Industries	5	38.5	11	11.0	2	66.7	0	0	18	51.8
Total	13	37.1	19	54.3	3	8.6	0	0	35	100.0
NTFPs										
Local Market	8	88.9	0	0	4	100.0	25	100.0	37	97.4
Road Head Market	4	44.4	0	0	4	100.0	21	84.0	29	76.3
Regional Market	4	44.4	0	0	1	25.0	7	28.0	12	31.6
Central Market	1	11.1	0	0	0	0	0	0	1	2.6
Total	9	23.7	0	0	4	10.5	25	65.8	38	100.0

Source: Field Survey, 2004

Households from Janapragati and Deujar CFs were preferred to sell their NTFPs to the local market because of locational advantage. For them even the road head market is far

(more than 21 Km) to carry their products. Moreover, they have their own cooperative for marketing, which is managed by the users themselves, and assure reasonable price as well.

6.3 Marketing Channels

Marketing of timber produces from the studied CFs were very few by volume and they mostly sold to their own users group members in highly subsidized rate. Since the forests under the studied CFs are still in growing phase and were very few volume of product harvested. There was no complex system of marketing in the case of timber product. Normally limited quantities of timber product were harvested and that was just sufficient to meet their own users demands. Rest of the quantity was sold to the neighboring user group in relatively higher rate than their own users. Until the period of study, rests of the timber products were mostly consumed locally by the local organizations and local industries.

Among four-studied CFs, only Sundari and Chautari CFs were harvested and sold their timber products. Rests of two FUGs were harvested to meet their requirement only. The marketing system of timber products under the studied area is presented in Figure 6.1.

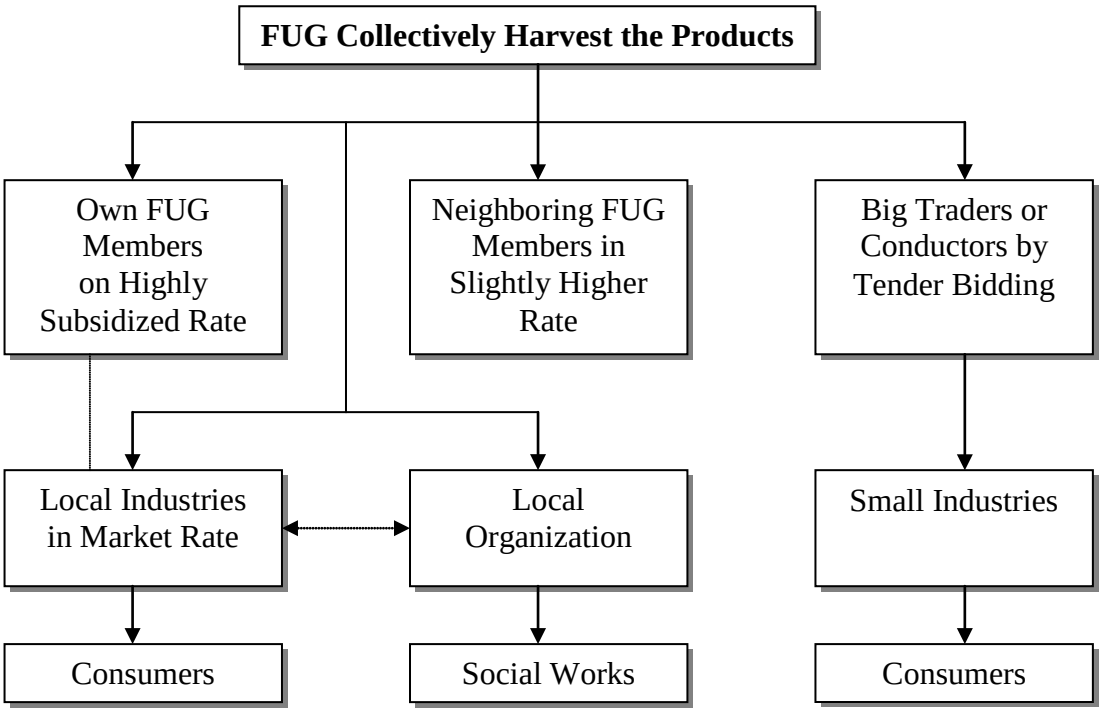


Figure 6.1: Marketing of Timber from Community Managed FUGs

FUGs members were collected the timber products from the forest by voluntary contribution. Sometimes, they hired some skill labor to cut and make the prices for easy handling. The own users group members were the major buyers of timber product from all FUGs. They could get the product in highly subsidized rate only to meet their household demand. But it was found but that sometimes they bought it, saying that it is own used and sold to the local industries or sawmills later with secrecy. On request they also sold some quantity to the neighboring user group member in relatively a higher rate. After meeting their own demand and requirements, the product then sold to the local industries or traders or national buyers. The price was relatively higher and based on competition. If they have large sum of product, they invite bidding and sold the product on a competitive basis. From

the study CFs. till to date of the survey, there was no a single problem related to marketing of timber products as the system has been set out in shape.

The market and trade channels of most of the NTFPs normally follow a general pattern from village to road head or trade centers, then on to larger trade centers (Edward 1996 and Subedi, 2003). Most of these NTFPs, processed or unprocessed are exported both formally and informally to India with a small percentage directly going to Europe, America and other Asian countries (Subedi, 2003). After harvesting, NTFPs are portered to collection points where they pass through a series of middle man, who handle progressively larger volume of trade, often the product join long established trade routes between Tibet and India (Edward, 1996). Important collection points are located at road head from where the products are transported by trucks to place of processing or export.

As elsewhere (Karki, 2001; Subedi, 2003 and Edward, 1996), NTFPs collected by the villagers in the study area marketed through a four-tier channel comprising, village or local traders, small scale wholesale traders in the road head market of Manari, Tandi and Rajahar, medium scale regional traders in the regional markets of Narayangarh and Hetuinda and large scale national traders in Kathmandu. However, it differs with the products that for export outside the country.

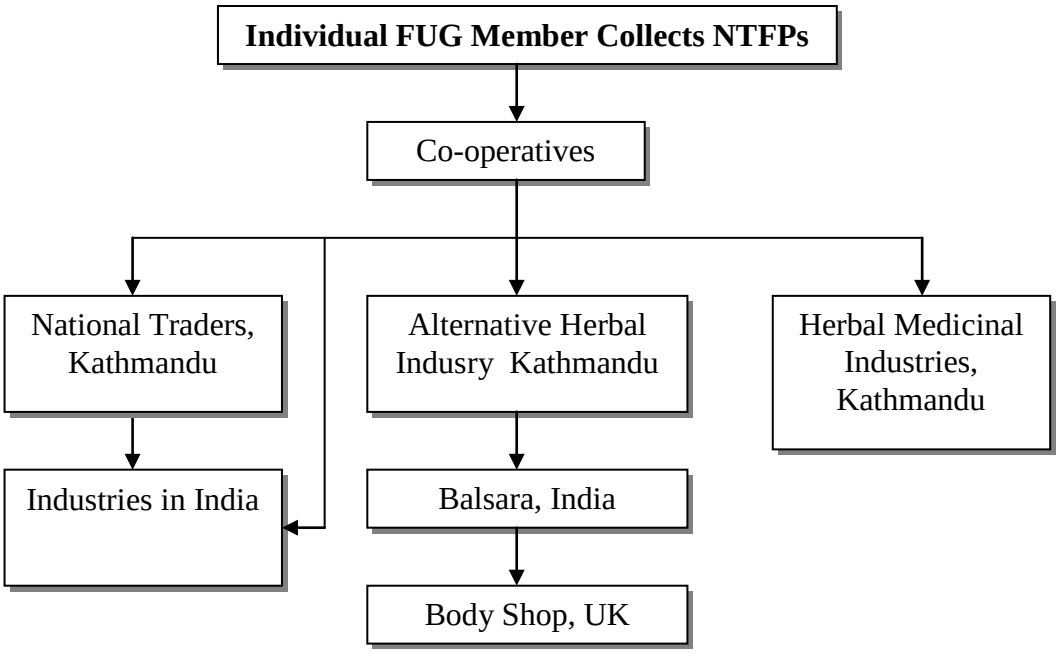


Figure 6.2: Formal Marketing Channel of NTFPs

From the survey as well as interactions with the different stake holders in the study area, it is found that there were two types of marketing channels prevail one is formal marketing channel and another is informal marketing channel. Formal marketing was took place through formal channels like government institution, or registered marketing cooperatives and so on. Figure 6.2 mentioned of the formal channel of marketing of NTFPs from the study area.

Individual members of FUG were sold their harvested or collected NTFPs to the Praja co-operative which the collectors themselves established. Most of the collected NTFPs were sold to the Alternative Herbal Industry (AHI), Kathmandu by the cooperative. The AHI then exports the products to Body Shop, UK via Balsara, India. In this way the formal

system of trading was working in the study area of Chitwan. Few products were sold to the national traders as well as herbal medicinal industries in Kathmandu by the cooperative. The national traders at Kathmandu sold their products to the domestic medicine industry as well as export to India.

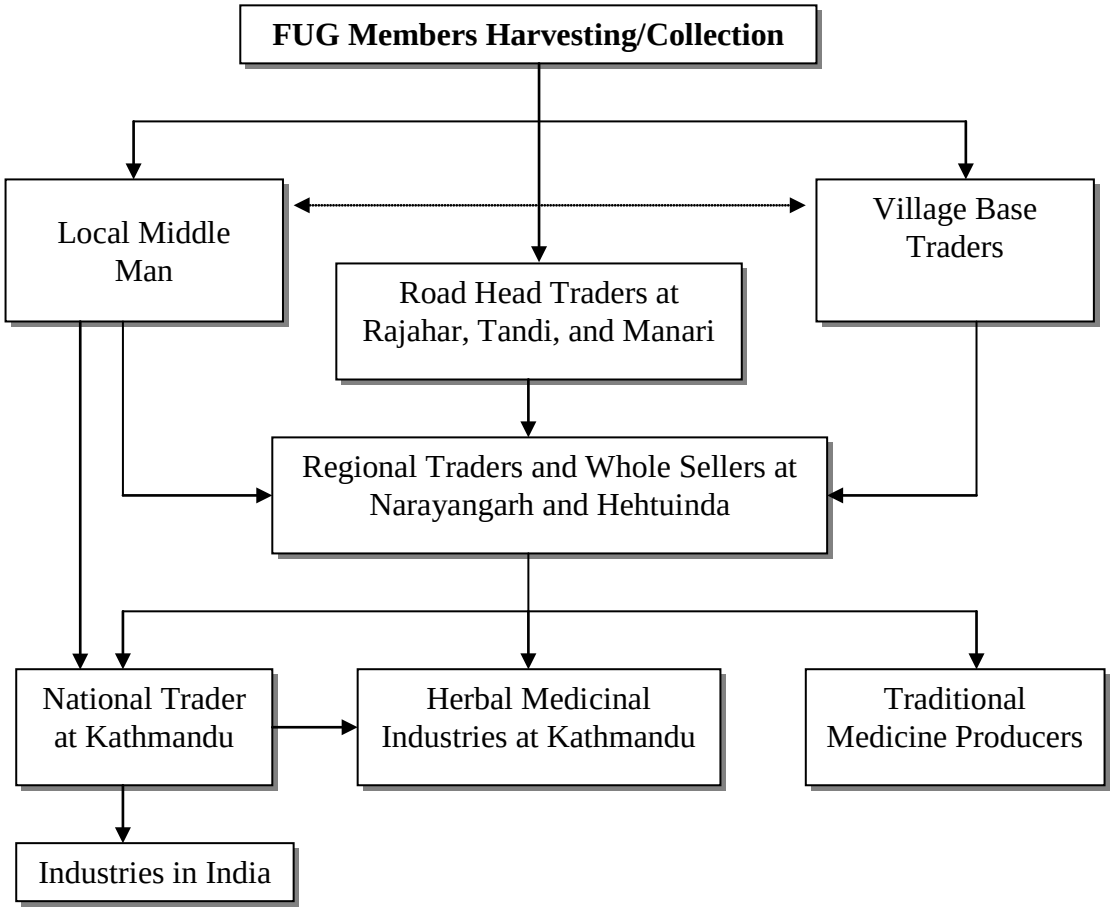


Figure 6.3: Informal Marketing Chain of NTFPs

Due to the small quantities of NTFPs collected, unavailability of transportation facilities, limited species of product bought by the co-operative and lack of awareness of market prices, some collectors sell NTFPs to the village base local traders i.e. they use informal marketing channel (Fig. 6.3). A small number of collectors, however, sell NTFPs to road head traders at Manari and Tandi. Most of the village traders supply NTFPs bought from local FUG members to the regional traders and very few sold to the road head traders. The road head as well as regional traders have well-established contacts with national traders in Kathmandu. Therefore, they sold their products directly to the national traders at Kathmandu.

Some traders in Kathmandu supply NTFPs to domestic industries while others export to India. Some process products from bamboo like *Doko, Dalo, Nanglo, Choya, Bhakari* and *Broom*, they sold both to the local traders as well as to the consumers. Most of the sampled respondents found to work for bamboo products and sold to the different tires of market. This is because there is some regulation and complexity regarding other NTFPs recently.

6.4 People's Perceptions Regarding Existing Marketing System

6.4.1. Perception towards Benefits

Changing circumstances and opportunities sometime influence farmers' perception. Farmers have their own objectives and judgment criteria, which are varied by socio-economic characteristics and subject to multiple criteria ranging from economic benefits to resource conservations. Even they get the benefit from existing system of marketing, they are not so satisfied and seeking for more efficient process of marketing for greater benefits.

With a view on above, farmers were asked how they perceived the existing marketing practices adopted by their CFs or prevail to the locality to get benefit from trading (Table 6.5). It is shown from the table that more than half of the total households were satisfied with the existing marketing practices where as 29 percent had a neutral opinion about the system. Only 17 percent were not agreed with the existing systems of marketing.

From the Sundari CF, 44 percent out of 36 were satisfied followed by equal percent (27) of being unsatisfied and neutral including no reaction. In Chautari CF, less than half the respondents, about 41 percent out of 36 were unsatisfied with the system followed by 36 percent were satisfied. In Janapragati CF 58 percent and in Deujar 74 percent households were satisfied with the present system of marketing from which they were benefited.

Table 6.5: Farmers Agreement to the Statement, "Existing marketing practices are suitable and helps to get benefit"

Occupation	Jharahikhola Watershed (JW)				Kayarkhola Watershed (KW)				Total	
	Sundari CF		Chautari CF		Janapragati CF		Deujar CF			
	N	%	N	%	N	%	N	%	N	%
Yes confirmed	16	44.4	13	36.1	20	58.8	26	74.3	75	53.2
No rejected	10	27.8	15	41.7	0	0	0	0	25	17.7
Don't know, indifferent	10	27.8	8	22.2	14	41.2	9	25.7	41	29.1
Total	36	100.0	36	100.0	34	100.0	35	100.0	141	100.0
χ2-test	Sig. 0.000**				df = 6					

Source: Field Survey, 2004
Remark: ** Significance at 99% level of confidence.

6.4.2. Perception on Marketing Practices

Farmers were agreed with the existing marketing practices from the profitable point of view. However, certain marketing related issues they were strongly agreed or disagreed. Overall, users were strongly agreed with the existing marketing related issues as certain limit on collection and sell, co-operative marketing approach and marketing by own CF (WAIs = 1.47, 1.31 and 1.23 respectively) as presented in Table 6.6. To conserve resource and utilization on its allowable limit, they even were strongly agreed on the issue of limit on collection and sale the products from the forest other issues individual marketing and marketing by the intermediaries.

The households from JW were strongly agreed on marketing by own CF, co-operative marketing and certain limit on collection on sale (WAIs = 1.83, 1.36 and 1.31). They were strongly disagreed on individual marketing and marketing by the intermediaries and local traders (WAIs = -1.59 and -0.19) because of the less profit and exploitation by the

Table 6.6: People's Perception on Existing Marketing Practice

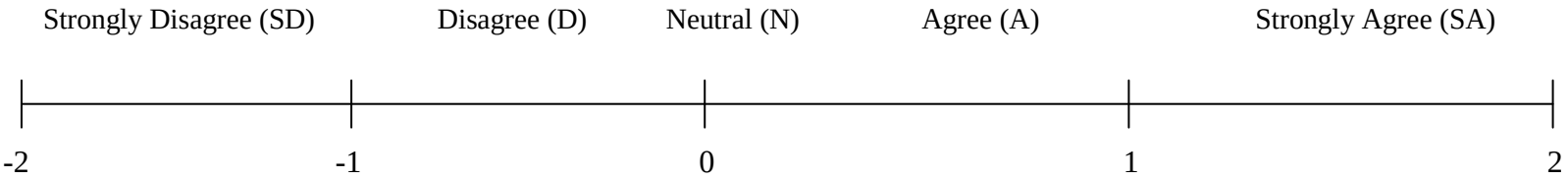
Type of Existing Marketing Issues	Jharahikhola Watershed (JW)									Kayarkhola Watershed (JW)								OWAI	t- test sig.
	SA	A	N		D	SD	Total	WAI	OA	SA	A	N	D	SD	Total	WAI	OA		
Limited collection and sell	32	31	9		0	0	72	1.31	SA	45	25	0	0	0	70	1.64	SA	1.47	.000**
Individual marketing	0	26	17		18	11	72	-0.19	SD	34	24	0	0	12	70	0.97	A	0.39	.000**
Cooperative marketing	26	46	0		0	0	72	1.36	SA	60	10	0	0	0	70	1.86	SA	1.31	.000**
Marketing by own CF.	60	12	0		0	0	72	1.83	SA	5	35	30	0	0	70	0.64	A	1.23	.000**
Marketing by the intermediary and local traders.	0	0	0		29	43	72	-1.59	SD	0	16	40	14	0	70	0.03	A	0.81	.000**

Source: Field Survey, 2004

Remarks: SA = Strongly Agree. A = Agree, N = Neutral, D = Disagree, SD = Strongly Disagree, OA = Overall Assessment, WAI = Weighted Average Index and OWAI = Overall Weighted Average Index

** = t-test significant at 99% confidence level.

Criteria for Assessment of Agreement Level



intermediaries and brokers, they preferred least the individual as well as local trader marketing.

Similarly, the households from KW were strongly agreed on co-operative marketing and certain limit on collection and sale (WAIs = 1.84 and 1.64). Others statements were just agree by the users. They preferred co-operative marketing because they are practicing such system and found it is profitable. Small-scale and collectors were also benefited from the marketing by cooperatives.

The t-test from the table 6.6 shows that there is a statistical difference in the degree of agreement of individual issues in marketing between the households of two households at 99% level of confidence. Each issue was perceived differently between the users of two watersheds because of geographical location, market distance as well as the types of products collected. Overall the degrees of agreement between two watersheds also have a statistical difference [WAIs = 0.54 (agree) for JW and 1.02 (strongly agree) for KW] at 99 percent level of confidence.

6.5 Performing Role of Marketing to Promote CF

Efficient marketing is the key for the successful management and utilization of forest resources. It helps to conserve resources and maintaining the system intact. Efficient marketing promote CF and helps to protect resources, income generation, employment, social benefits and crop productivity enhancement.

From the Table 6.7 the respondents agreed that proper marketing of forest products had very good perfomance on social benefits like road construction , financial supports to the social institution such as schools, temples , etc. and community development related works (WAI = 0.81). They also agreed that there is a “good” role of marketing on resource conservation and employment generation (WAIs = 0.66 and 0.65). They perceived that less role on crop productivity and employment generation as compared to others.

Households from JW agreed that there were very good performance of marketing on social benefits (WAI = 0.84). They agreed on its “good” contribute on resource conservation (WAI = 0.78 and 0.63). It has “moderate” role on crop productivity and “poor” performance especially on employment generation (WAI = 0.44 and 0.34). The similar trend of perceptions was found from the respondents of KW.

There is no statistical difference in the degree of agreements regarding the performing role of marketing between the two studies watersheds. There is no statistically significance in the degree of agreement between the respondents of two study watersheds in each role.

Table 6.7: People's Perception on Performing Role of Marketing for Promotion of CFs

Performing Role	Jharahikhola Watershed (JW)								Kayarkhola Watershed (JW)								Average WAI	t- test sig.
	VG	G	M	P	VP	Total	WAI	OA	VG	G	M	P	VP	Total	WAI	OA		
Protect resources	20	20	20	2	0	72	0.78	G	16	32	20	2	0	70	0.77	G	0.78	0.66
Income generation	0	29	25	18	0	72	0.63	G	0	25	22	23	0	70	0.60	M	0.61	0.36
Employment	0	0	9	34	29	72	0.34	P	0	0	7	33	30	70	0.33	P	0.33	0.65
Other social benefits	31	28	12	1	0	72	0.84	VG	27	23	18	2	0	70	0.81	VG	0.83	0.23
Field crop productivity and water availability.	0	0	30	27	15	72	0.44	M	0	0	25	25	20	70	0.41	M	0.42	0.30

Source: Field Survey, 2004

Remarks:

VG = Very Good, G = Good, M = Moderate, P = Poor, VP = Very Poor, WAI = Weighted Average Index and OA = Overall Assessment

Criteria for Assessment of Agreement Level

Very Poor (VP)	Poor (P)	Moderate (M)	Good (G)	Very Good (VG)
0.01 – 0.20	0.21 – 0.40	0.41 – 0.60	0.61 – 0.80	0.81 – 1.00

6.6 Chapter Summary

The major harvested products from the CFs were timbers, poles, fuel woods, bamboo, broom grass, *Kurilo, Harro, Barro,* grasses and fodders. Very the few users marketed few products. The dominant timber product was fuel wood and NTFPs were grasses and fodder. Rest was harvested and traded by the nominal users. About half of the respondents, those harvested bamboo were processed themselves and made different products.

The timber products harvested by FUG were traded collectively and incomes go to the committee. The users themselves sold very few timber products and most of the NTFPs. The major buyers of timber products were their own members, neighboring FUG, local industries and local organizations. In case of NTFPs, the products were traded through co-operative. A co-operative was working there and bought the products from the collectors and sold to different industries and traders. The major buyers of NTFPs were co-operatives, local shopkeepers, middlemen, road head traders etc.

Mostly formal channel of marketing was found in practice. Both major timber and NTFPs were traded through FUG groups itself and co-operatives. Some NTFPs were marketed through informal channel using middleman and intermediaries. The four tires of informal channel comprising village or local trader, small scale wholesale traders, regional traders and national traders. About half of the respondents were agreed that present marketing system is okay for benefit earning. Among the existing system of marketing people prefer cooperative system the most. They also liked some restriction by FUG to collect and sale the products from their forest. Respondents perceived that the existing community forestry system and marketing was provided social benefits and help to protect resources.

Chapter 7

Profit Margin Analysis of Major NTFPs

7.1 Major Buyers of the Products

In the study area, there was no problem of timber product marketing up to the period of this field survey conducted. The main reason behind this is the volume of products, since the handed over forest is still in growing stage, there was not much excess timber product which may create market problem. Their own FUG members consumed most of the timber products harvested from the studied CFs. Rests were sold to the neighboring user group members, local organization and local industries.

The timber products were only traded from the JW and major buyers were local user group members. Overall 87 percent out of 32 respondents, own user group members were the main buyer of timber products followed by 56 percent for local industries (Table 7.1). About 34 of respondents prefer via local organization and local industries as their buyers. Almost all out of 13 respondents from Sundari CF sold the timber products to their own user group members followed by 61 percent to the local industries. Likewise about 78 percent respondents from Chautari CF sold to their own FUG members followed by 59 percent to the local industries. None of the members from Janapragati and Deujar CFs were involved in the timber product processing and marketing.

Table 7.1: Major Buyers of Timber and NTFPs

(Multiple Response)

Major Buyers	JW				KW				Total	
	Sundari CF (N = 36)		Chautari CF (N = 36)		Janapragati CF (N = 35)		Deujar CF (N= 35)			
	N=13	%	N	%	N	%	N	%	N	%
I. Timbers										
User Group Members	13	100.0	15	78.9	0	0	0	0	28	87.5
Neighbor User Group	4	30.8	7	36.8	0	0	0	0	11	34.4
Local Organization	3	23.1	8	42.1	0	0	0	0	11	34.4
Local Industries	8	61.5	10	52.6	0	0	0	0	18	56.5
II. NTFPs										
Local Shopkeeper	7	100.0	0	0	4	100.0	24	100.0	35	100.0
Middle Man	3	42.9	0	0	2	50.0	18	75.0	23	65.7
National Traders	2	28.6	0	0	1	25.0	0	0	3	8.6
Cooperatives	-	-	0	0	4	100.0	21	87.5	25	71.4
Medicinal Industries	4	57.1	0	0	0	0	0	0	4	11.4
Whole Sellers	1	14.3	0	0	1	25.0	1	4.2	3	8.3
Ratailers	1	14.3	0	0	0	0	11	45.8	12	34.6

Source: Field Survey, 2004

In case of NTFPs, almost all respondents sold their product to the local shopkeepers. About 71 percent out of 35 respondents were preferred to sell their NTFPs to cooperative followed by 65 percent of the middlemen. They were favorable least to the whole sellers since the sampled respondents were mostly engaged in processing of bamboo and making different products, which were not buy by the cooperative. Then, they preferred to sell to the local shopkeepers and middlemen.

7.2 Marketing Intermediaries

Mainly three tires of intermediaries were found in the marketing of NTFPs from the study area, which were also identified by Karki, 2001. Based on the study jointly conducted by Forum for Rural Welfare and Agricultural Reform for Development (FORWARD) and Industrial Enterprise Development Institute (IEDI, 2001), this research was also tried to explore the intermediaries. The interaction between different stakeholders and organizations, there were three types of intermediaries working for the NTFPs marketing

7.2.1. Trader Linkages

The local traders and the road head traders were the key actors having linkages with both the primary collectors and national level traders. These intermediaries have equally good relation with the collectors and buyers at the national level. Mostly the primary collectors sold their products to the road head traders and to some extent to village level traders. In one hand these intermediaries encourage to the local collectors to collect high quality, high value and mostly demanded products in sustainable manner. In the other hand, they deal with the national traders and buyers for high price, more demand and preferences. These have the both backward and forward linkages. This helps to the primary level collectors/processors get higher price and higher demand to some extent. But mostly they were trying to get more benefits by themselves then the primary level farmers.

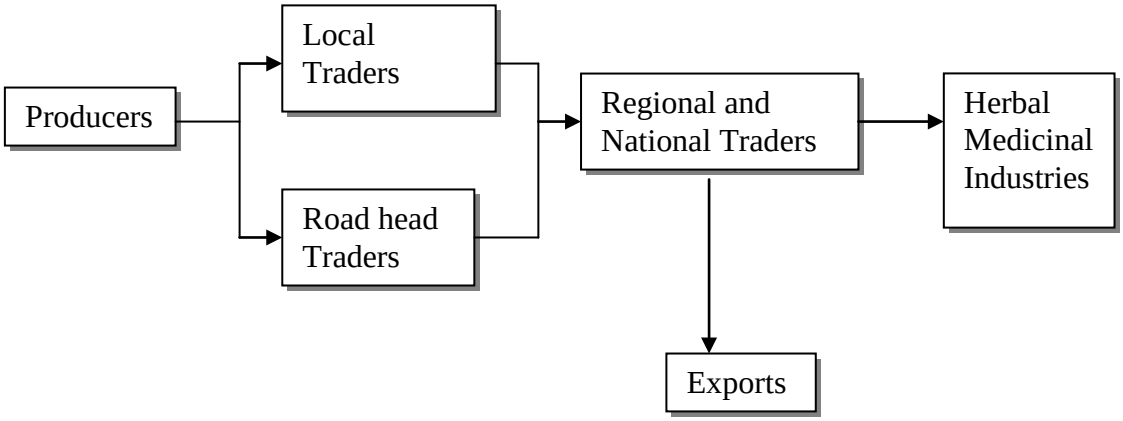


Figure 7.1: Backward and Forward Linkages of Intermediaries

7.2.2. Local Traders

A local trader of NTFPs from the study area is Mr. *Hira Lal Puri*i, inhabitant of Shaktikhor - 5, has been running NTFPs trade for more than a decade. He basically purchases NTFPs from primary collectors. Out of his total NTFPs collectors, many of them are from Chepang community. As per the Mr. Puri, he collected many NTFPs and had quite experienced in NTFP trade and shown keen interest to support the Cooperative marketing from community managed resources for trading at the local level. He dealt with N'ITPs business in cash by receiving an advance from Indian traders and also thinks that the Cooperative might have benefit of advance if approached to them in business manner. Lack of market information has become the main issue in NTFPs trade that has not yet been addressed explicitly.

These traders are the key contact agents for both parties of collectors and other traders. They have very good forward and backward linkages with primary collectors to the traders

as well. Most of the other outside traders who wants to come and collect products directly from primary collectors, first contact with these people and then only make linkages with them. These are the key people at the local level and mostly exploits to the local collectors. The key roles of these collectors are:

- Major buyer or facilitator of the local products to sell.
- Best intermediaries between local collectors and other traders from regional to national level.
- Provide a linkage between primary collectors as well.
- Key informants about the resource availability and other aspects related to NTFPs.

7.2.3. Road Head Traders

During the discussions with different stakeholders, there are about 7 road head traders involved in NTFPs marketing from the study area. Most of them sold their collected products to the regional markets and some sold to the Kathmandu market as well as directly to herbal medicinal industries in Kathmandu. They mostly buy their products from the local collectors. These all road head collectors traded about 150 metric ton of NTFPs from the study area during the year 2000 (Karki, 2001)

They sold their collected products based on its category. Some products they sold to the regional market, some to the national traders, most of them to the herbal medicinal industries in Kathmandu and few they exports to the Indian traders.

Role of road head traders: These traders are the main buyers of NTFPs from the collectors of KW. They have some sorts of linkages with the local collectors from the study area. These traders role is very important for market information and selling their primary products. They can flow the information related to market demand, most demanded "hot cake" products, consumer preferences, ways of grading and packaging for higher market price etc. they also provide some fund in advance to some collectors. Their key role could be list out as follows.

- They are the main buyers of collected products from the watershed.
- Provide market price information (product price at regional market).
- Inform market demand and let them know about most demanded products in the market.
- Provide some funds or soft loans to the collectors.
- Controls products price with the producers.

7.2.4. Regional Traders

Around five regional traders were met during this study, they were involved in the buying and selling business of the NTFPs and some processed products in the regional markets. Some regional market traders also worked for both road head traders and regional market traders. Some NTFPs collected by the road head traders is very few in quantity and cannot sell to the national markets. Then the road head traders to the regional market sold these products.

Sometimes the same road head traders become the regional traders to cover and collect more NTFPs from the large area. Mostly they deal with the road head traders and local traders. From the study area the road head traders prefer to sell their collected products directly to the national traders and even exports some times. So their role is crucial for this particular case of the study region. But they are collecting the items, which are not sufficient volume to sell or exports by the road head traders. These types of products they

bought from many road head traders and make large volume. Which ultimately sold to the national herbal industries or exports.

7.2.5. National Traders

One national trader was interviewed who was involved directly to the village level and supply the products to the national medicinal industries as well as export to India and other countries.

7.3 Markets

The ultimate domestic markets of NTFPs are the national herbal and medicinal industries. Most of these markets are located in the capital city Kathmandu about 160 km far from the study area. Some industries are also outside the capital and with in 200 km. The major industries involved in purchasing of products from the study area are as follows.

a) *Singh Darabar Baidyakhana (SDB)*
SDB is a government owned medicinal industry located in Kathmandu city. It is one of the known NTFP processors in Nepal, which claims more than 250 medicinal plants being used in producing medicine. It has not yet initiated NTFPs cultivation rather buys items from NTFPs suppliers. SDB has introduced a policy *for* buying NTFPs through tender biding from last year. According to a senior official, previously it had a practice of buying NTFPs *from* different retailers and suppliers but that mode of buying turned out to be failure because of irregular supply and hidden interest of few suppliers. There are four major suppliers of the products (NTFPs) to this industry. Private parties bought the products with the collectors and they supplied to the SDB.

b) Dabar, Nepal
The industry lies in Pawanipur Bara district of Nepal and about 120 km far from the study area. Dabar Nepal produces various NTFP based items that are mostly being exported to various Asian and other countries. It has already initiated NTFP cultivation practices within the country however, a major share of products is bought from traders and collectors. This industry has the demand of 12,000 tons of different NTFPs and only few percent was supplied from Nepal. Rest of the other is imported from India. It buy every things in cash and no compromise with the quality.

c) *Herbal Production and Processing Company Ltd. (HPPCL)*
HPPCL a government owned company produces only aromatic items through its central office Kathamandu and few branch offices. HPPCL has been extending its services through transferring technology on oil extracted from Mentha and Lemon Grass on the one hand, on the other it has become a major buyer of these oils.

d) Kunhten
Dr. Dorjee, owner of the processing unit, has been running his clinic in Chetrapati, Kathmandu for couple of years. Kunphen is renowned both in terms of clinical service and producing herbal-based medicine. This shop has annual demand around 4.00 tons. This industry is mainly buy medicinal plants from the local traders but the volume of buying is too low but the payment system is in cash.

e) Gorkha Alirbedic Company (GAC)
The GAC was established as a public company having 51% public shares. In the present situation the company has been under capacity because of poor management in the GAC.

The external consultancey has provided a staff to look after the management of the GAC. The situation of the industry is improving day by day and the present context it is able to meet berak even point. It was reported that the company has been facing severe financial crunch and at the door of closing the business. The total demand of the raw materials to this company is about 78.00 tons per annum, which could be one of the most potential buyers of NTFPs. It usually purchase in cash. It also buys local honey of best quality up to 10.00 tons per year. The company purchases NTPFs from Gorkha that is only 15% of the total requirement. So, rest 85% materials come from Kathmandu and India.

7.4 Profit and Marketing Margin Analysis

Taking advantage of CFs villagers enter into their forests according to the time and conditions provided by the committee and collect NTFPs within the allowable limits with the payment of nominal cost for entrance card. With some exception of some primary processing, NTFPs collectors do not incur other direct or indirect economic cost. However, most of the respondents in this study were found that they mostly prepared to process materials from bamboo and broom grass, which is the most labor-intensive job, and have low market demand. Therefore the profit margin of such products seems low. But the profit margin of other NTFPs and MAPs found higher from the group discussion with different stakeholders. Pandit, 2003, also found that the collectors receive highest profit margin from some MAPs. There is a sort of trend in the profit margins of traders at different levels of marketing channel. The product in which collectors get highest profit margin, different level of traders also getting the higher profit form the same products.

Table 7.2: Profit Margins of Processed NTFPs

		Selected NTFPs and their Finished Products					
		Doko	*Dalo*	*Nanglo*	*Choya*	*Bhakari*	*Broom*
Collectors or Farmers	Sale price (NRs)	51.3	57.6	48.8	19.7	232.9	9.8
	Total cost[1] (NRs)	46.5	52.4	46.2	12.6	192.8	5.5
	Net profit (NRs)	4.8	5.2	2.6	7.1	40.1	4.3
	Profit margin (%)	9	9	5	36	17	44
Local Traders	Sale price (NRs)	58.9	65.0	55.6	24.7	252.2	14.3
	Total cost[2] (NRs)	54.5	59.8	52.4	20.5	235.8	10.5
	Net profit (NRs)	4.4	5.2	3.2	4.2	16.4	3.8
	Profit margin (%)	7	8	6	17	7	27
Regional Traders	Sale price (NRs)	65.3	72.8	59.4	0	0	20.0
	Total cost[3] (NRs)	60.1	66.9	55.1	0	0	14.2
	Net profit (NRs)	5.2	5.9	4.3	0	0	5.8
	Profit margin (%)	8	8	7	0	0	29

Source: Field survey, 2004

Total cost calculation for the above table:

[1] Total cost: cost of transportation + cost of labor for processing + materials cost at farm level.

[2] Total cost: cost of transportation from villagers home + storage cost + purchase price.

[3] Total cost: transportation cost + storage cost + other materials cost like communication and rental cost + purchase price.

From the Table 7.2 the profit margin of most of process product in this study was highest for the primary level processors than the traders and middlemen. The profit margin of

broom is the highest among all to the farmers of 44% followed by 36% *Choya* and 9% for both *Doko* and *Dalo*. The profit margin of broom is the highest because its demand is greatest in the local market. This is also because of small price per unit and could be sold easily to the local market in the villages.

The same reason is applied to the case of *Choya* as well. For the local traders also broom has the highest profit margin followed by *Choya* of 27% and 17%, respectively. The same product has the highest profit margin to the regional traders also. Despite of high cost of processing and small net benefit, villagers continued to process bamboo to make different products and broom since most of the processing cost reflects the cost of their own labor, and there no opportunity cost for their labor, which cash earning to them.

Table 7.3: Marketing Margin Analysis and Price Variation of the Products in Different Market Places

Products	Average price at different markets in NRs.				Marketing margin	Marketing margin %	t- test
	Farm gate	Local market	Road head market	Retail price			
Doko	51.3	52.8	58.9	65.0	13.7	21.1	Sig. = .000**
Dalo	57.6	59.2	65.0	74.5	16.9	22.7	Sig. = .000**
Nanglo	48.8	53.9	55.6	65.4	16.6	25.4	Sig. = .000**
Choya	19.7	23.0	24.7	28.2	8.5	30.1	Sig. = .000**
Bhakari	232.9	235.0	250.1	275.0	42.1	15.3	Sig. = .000**
Broom	9.8	10.5	15	18.1	8.3	45.9	Sig. = .000**
Harro	14.6	15.0	15.0	19.5	4.9	25.1	NA
Kurilo	110.5	112.5	112.0	-	1.5	1.3	NA

Source: Field Survey, 2004.
** Significant different at 99% level of confidence

There is a similar trend in the marketing margin of the processed products. There is highest marketing margin of 45% in broom followed by 30% in *Choya* (Table 7.3). About 25% marketing margin in *Nanglo* and *Harro* on the basis of an average farm gate price and average retail price of the product in the market. In broom even there is minimum transportation cost and less transportation loss, there is a high marketing margin. Therefore, if producers could not sell it to the consumer market, they will get a higher profit. Another reason behind this is lack of market information to the real grassroots level villagers.

The t-test from Table 7.3 shows a statistical difference among the prices at the farm and local market at 99% level of confidence. The price of all products is significantly different from farm gate to different types of markets.

The above profit margin and marketing margin provided only some insights into the performance of NTFP marketing. Since, major NTFPs and MAPs does not come in this study. This will not represent their marketing situation and conditions. Karki (2001) found that *Amala*, *Harro* and *Barro* were the major traded NTFPs from the study area. Since the respondents selected randomly from the users of CFs, even there is a practice of harvesting and trading of NTFPs and MAPs, these major traded products did not come under this study. However, Pandit (2003) and Maraseni (2002) found from Dhading and Makawanpur that the profit margins of most NTFPs and MAPs were higher than these processed bamboo and broom products.

7.5 Perception on the Influence on Market Information

Market information is the key aspects for getting higher profit. Lack of this affected many market intermediaries that were involved in the marketing chain and exploit the producers or collectors. The overwhelming majority of respondents (65%) in the JW and nearly one-third of the respondents (32%) from KW are unaware of price of NTFPs at different market centers. Even that Praja cooperative in KW has the facility of price information board and displayed the prices of different markets and collection point.

Table 7.4: People's Perception on Degree of Influence of Market Information to Profit Margin

Statements	Jharahikhola Watershed (JK)				Kayarkhola Watershed (KW)				Total	
	Sundari CF		Chautari CF		Janapragati Cf		Deujar CF			
	N	%	N	%	N	%	N	%	N	%
Very Strong Influence	6	16.7	3	8.3	15	42.9	15	42.9	39	27.4
Strong Influence	17	47.2	7	19.4	16	45.7	8	22.9	48	33.8
Some Influence	10	27.8	8	22.2	4	11.4	11	31.4	33	23.2
Weak Influence	2	5.6	9	25.0	0	0	0	0	11	7.7
Very Weak Influence	1	2.8	9	25.0			1	2.9	11	7.7
Total	36	100.0	36	100.0	35	100.0	35	100.0	142	100.0
WAI	0.73		0.52		0.86		0.80		0.73	
F- test	Sig = 0.000** df = 3									

Source: Field Survey, 2004.

Remarks:

VS = Very strong, S = Strong, Sm = Some, W = Weak. VW = Very Weak and WAI = Weighted average index and

** = F- test significant at 99% confidence level.

Criteria for Assessment of Agreement Level

Very Weak (VW)	Weak (W)	Some (SM)	Strong (S)	Very Strong (VL)
0.01 – 0.20	0.21 – 0.40	0.41 – 0.60	0.61 – 0.80	0.81 – 1.0

However, nearly 61 percent out of total respondents were agreed that market information had some importance for higher profit (Table 7.4). Among them 27 percent out of total agreed that the market information had a very strong influence and about 34 percent agreed that it had high influence on profit margin. About 23 percent agreed on some influence. Only 77 percent were perceived that it has weak and very weak influence on the higher profit.

Regarding individual CFs, about 43 percent of respondents out of total from Deujar CF were agreed that it had a very strong influence on profit and 22 and 31 percent were agreed on strong and some influence, respectively. About 43 percent from Janpragati CF were in favor of very high importance and 45 percent were perceived that it has high role. There was no one have low and very low importance for this case. Whereas 50 percent respondents from Chautari CF were perceive that it has low and very low influence on profit margin. About 47 percent respondents from Sundari CF agreed that market information has high importance followed by 27 percent moderate and 16.7 percent very high importance in profit making, respectively.

The respondents from KW perceived that market information have very strong influence in profit margin. The respondents from Janapragati and Deujar CFs also perceived on the same level (WAIs = 0.86 and 0.80) respectively. The people from this area getting the information from different sources like cooperative, local traders and some media which help them to decide for sale as well as getting higher income. Whereas the respondents from JW perceived that it has strong influence in profit. The uses for Chautari CFs have perceive the this has some influence in the profit but the users from Sundari CF perceive that it has strong influence in price. In overall the users from four CFs and two watershed agreed on the influence of market information is positive on profit margin. The overall rating regarding this factor is strong influence (WAI = 0.73).

The F- test from Table 7.4 shows that there is a statistical difference in agreement of market information regarding higher profit between four CFs at 99 percent level of confidence. The overall judgment regarding the role of market information is strong for the higher profits. People from the study area are aware regarding market information and they are seeking for the access of market information for higher profit.

7.6 Recommended System of Marketing

The overwhelming majority of respondents from study area recommended that a cooperative marketing system is the best approach. About 86 percent respondents out of total were in favor of cooperative marketing. About 60 percent of them recommended that the government should be taken into account for the marketing of NTFPs and 51 percent demanded for storage and processing facilities from the government (Table 7.5). Since two CFs Deujar and Janapragati have already had the marketing cooperative in their area, they then got advantages from that and were in favor of the cooperative marketing system.

Table 7.5: Recommend Marketing System for Higher Profit Margin

(Multiple Response)

Recommend Marketing Systems	Jharahikhola Watershed (JW)				Kayarkhola Watershed (KW)				Total	
	Sundari CF		Chautari CF		Janapragati CF		Deujar CF			
	N=36	%	N=34	%	N=34	%	N=34	%	N=138	%
Cooperative Marketing	28	77.8	32	94.1	26	76.5	33	97.1	119	86.2
Government Facilitating Marketing	27	75.0	29	85.3	20	58.8	16	47.1	92	66.7
Storage and Processing Facility from the Government	11	30.6	5	14.7	28	82.4	27	79.4	71	51.4
Total	36	26.1	34	24.6	34	24.6	34	24.6	138	100.0

Source: Field Survey, 2004.

About 97% from Deujar and 76 perecent from Janapragati recommended the cooperative approach as the best system of marketing. Even the respondents from Chautari and Sundari CFs were in favor of cooperative marketing by 94 and 77 percent, respectively. Similarly about 85 and 75 percents of respondents from the same CFs recommended the government to facilitate in marketing, respectively.

7.7 Chapter Summary

The timber products were sold locally and the main buyers were own FUG members. In case of NTFPs, the main buyers were local shopkeepers and cooperative formed by the users for marketing. Local and road head traders were the main intermediaries for NTFPs marketing from KW. These people have both forward and backward linkages with farmers and national traders as well as processing industries. The main market for NTFPs and its processed products from the study area were herbal medicinal industries in capital as well as over the country. Few quantities of NTFPs were exported to India. The demand of national industries shows that there is a great scope of promotion and domestication of NTFPs.

In this study marketing margin of NTFPs only cover some processed bamboo products. The products in which the collectors/ processors get highest profit margin, in the same products, different level of traders getting higher margin. There will be higher profit if one could be sold their processed products to the regional market than the local and road head markets. Regional and higher markets have more marketing margin than the local and road head level.

Respondents were aware that market information plays a significant role for the profits. They were seeking to access for information. Information access was provided more profits and helped on decision-making. Information accessed people got more profit from the same products just altering the time of sale and kinds of product processed. Cooperative marketing is the most preferred marketing system from people of KW. They had already practiced that system and found most beneficial and help to organize the rural peoples for joint marketing. Even without experiences of cooperative marketing respondents from JW also preferred the same system. However, some people from JW also seeking the support from government for marketing.

Chapter 8

Factors Affecting Price Variation and Income From the Forest Products

8.1 Existing Pricing Mechanism

The user group sold the timber products from the studied CFs themselves. The price is different according to individual market arrangements. The users committee fixes the price of the various products based on their availability and to whom they sold it. Normally, the price is very cheap to the users of their own CF as compared to than market price. The price is relatively higher to the users of neighboring CF. They fix the relatively cheaper price than the market to local industries and local markets. The price for big traders and big markets are based on the competition or bidding. Since the price is determined based on the equilibrium of demand and supply, it does not directly apply to the timber products. It depends on the FUG rules, their approved work plan and the availability of the materials in the forest. It does not follow the normal market behaviors like normal consumer goods.

Most of the timber products from the studied CFs were consumed locally and mostly by the own FUG members. Very few as compared with the total are sold to outside people and traders. Till now, they did not find a severe problem of markets and marketing of timbers. However, the discussion with individual users they responded that there should be some mechanism to get individual benefits from those products and some direct income generation activities.

In case of NTFPs, there is an established system of marketing by the cooperative. The cooperative fixed the price of the different products based on the market price of different market centers. Normally, the cooperative try to provide as high price as possible to the users or collectors. They just add some cost of processing, storage and tax. But the cooperative cannot buy all the NTFPs collected by the users from that area. Even some of the users are still aware regarding the cooperative marketing, however, they depended on an informal market and marketing system for their products. For this case the price is determined on the basis of demand and supply and as well as the degree of competition between the producers and the buyers.

8.2 People's Perception on Factors Affecting Price Variation of the Product

Various social, economic and institutional/legal factors affect the price of the timber product and NTFPs. On this aspect, respondents from both watershed areas were asked to rate their level of agreement among various factors from the prospects of their own judgment. Religious belief like worship some trees, cannot harvest and cut and also the belief that natural resources are a free gift from the nature so they cannot sell them, which were some, issues which affected prices from local to the regional level. Influence and dominance by the elite class people to the innocent and poor collectors is another reason that affects the product's price. There were many other social factors, which the respondents were not aware of but also affect to the price. They rated certain other economic factors like direct cost of transportation and grading, losses because of perishable nature and local tax. Similarly, the identified institutional factors consist of the FUG rules, degree of competition and harvesting season.

From Table 8.1, it is found that transportation cost had a very high influence in the price (WAI = 0.91). Respondents themselves perceived that their own FUG rules regarding

collection and trading had a very high influence in the market price. Form the studied CFs, it was found that only few products from the forest can take and sell individually. Their constitution and operational plan did not allow them to harvest and sell individually. This is the most disagreed point from individual users, whereas they responded that community forestry is fine in the group discussion. According to their perception social factors like religious beliefs and elite class influence in the harvesting and trading have had a very low influence in the price of forest products (WAIs = 0.35 and 0.40 respectively). Other economic and institutional factors had a moderate to high influence in the price of the products.

Exactly, same trends of perception were found in each watershed area even their focused products are different totally. In JW people perceived that perishable nature of the products had a very low influence in price (WAI = 0.32). Whereas, the respondents from KW perceived the same factor perceived in moderate degree (WAI = 0.43). Social factors religions belief and elite's influence were perceived low influence by the respondents from KW, which were at moderate level in JW.

8.2.1. Social Factors

Social factors like social structure, level of education, ethnicity, culture and religion played an important role in the price of the products. While asking with the respondents regarding these factors, they only agreed that the religious belief on cutting and sold some products and influence of the elite class people directly or indirectly affect to some extent in the price. Respondents from JW said that even they knew some forest products had a high value in the market but they cannot harvest and sell because of their religious belief. This created a sort of short supply in the market and caused a price variation. In overall circumstance, these factors were not found important for the price variation.

8.2.2. Economic Factors

Economic factors are the key determinants of the price. Factors like transportation cost, harvesting, processing, and grading cost, local taxes, storage cost, handling and packaging costs etc. are few important economic factors for the forest products. From the survey it is found that transportation cost, grading cost, local tax and loss due to perishable nature are important ones.

Among them the respondents perceived that the transportation cost had a very high influence followed by local tax and grading cost (WAIs = 0.91, 0.66 and 0.61). The respondents from the both watersheds perceived in similar degrees regarding economic factors. These economic factors can manage and reduce by the better institutional and legal arrangements.

8.2.3. Institutional and Legal Factors

Institutional aspects like the composition of FUG, numbers of users and coherence, constitution, by laws and operational plan, presence of marketing institution, degree of competition, FUG rules and regulations and season and duration of harvesting had some direct or indirect influence in the price of the products.

Table 8.1: People's Perception on Factors Affecting the Price of the Products

Associated Factors	Jharahikhola Watershed (JW)								Kayarkhola Watershed (JW)								Over all WAI	OA	t-test sig.
	VH	H	M	L	VL	Total	WAI	OA	VH	H	M	L	VL	Total	WAI	OA			
Religious belief for harvesting and trading	24	20	13	8	5	70	0.45	M	52	18	0	0	0	70	0.25	L	0.35	L	0.000**
Elite group influence for collection and trading	31	14	11	7	6	69	0.43	M	33	13	24	0	0	70	0.37	L	0.40	L	0.121
Transportation cost	0	0	6	22	40	68	0.90	VH	0	0	0	24	46	70	0.93	VH	0.91	VH	0.110
Grading cost	1	23	36	8	1	69	0.55	M	0	0	42	28	0	70	0.68	H	0.61	H	0.000**
Perishable products	32	13	7	2	0	54	0.32	L	24	0	31	9	6	70	0.52	M	0.43	M	0.000**
Degree of competition in the market	1	4	13	40	1	59	0.72	H	0	0	19	51	0	70	0.74	H	0.73	H	0.257
FUG rule regarding collection and trading	0	1	7	19	50	70	0.93	VH	0	0	9	24	37	70	0.88	VH	0.90	VH	0.009**
Local tax for the products	0	2	47	17	2	68	0.65	H	0	0	42	28	0	70	0.68	H	0.66	H	0.185
Seasons for harvesting	11	31	7	4	2	55	0.43	M	0	13	37	9	0	70	0.55	M	0.50	M	0.000**

Source: Field Survey, 2004

Remarks:

VH = Very High, H = High, M = Moderate, L = Low. VL = Very Low WAI = Weighted average index and and OA = Overall Assessment

** = t- test significant at 99% confidence level.

Criteria for Assessment of Agreement Level

Very Low (VL)	Low (L)	Moderate (M)	High (H)	Very High (VH)
0.01 – 0.20	0.21 – 0.40	0.41 – 0.60	0.61 – 0.80	0.81 – 1.0

Among these various factors people realized some factors like FUG rules, degree of competition and harvesting season have some influences. Respondents from both watersheds perceived that the FUG rules on harvesting and trading is the most important factor for them to get higher profits and they believed that it had a very high influence in the price which is represented by WAI = 0.90 in Table 8.1. Similarly other institutional factors consist of degree of competition in the market and harvesting season had a high and moderate degree of influence in the price.

From Table 8.1 the t-test shows that there is a statistical difference in degree of agreement between the respondents from JW and KW in the various factors consist of religious belief, elite class influence, perishable nature of the products and harvesting season at 99% level of confidence. The main reason for these different perceptions are the nature of products, distance to the market, social composition and ethnicity etc. The comparison between the two watershed areas also reflects the pricing behavior because the respondents from both watersheds using the same regional market.

8.3 Factors Associating with Price of the Forest Products

A bivariate correlation tool was used to identify associating factors of the price of forest products with various socio-economic and institutional factors. To determine the associated factors for the price variation of timber products and NTFPs various social, economic and institution/legal factors were explored.

8.3.1. Factors Associating with Timber Products

The analysis of correlation among the various factors with a regional market price of timber products reveals that five factors are statistically significant. Variables from Table 8.3 shows that distance of regional market in km. and duration of accessibility into the forest in months per annum were statistically significant at 99% confidence level. Whereas, the factors on number of household members, size of land holding by the respondents and income earning from the forest products are significant at 95% confidence level.

Table 8.2: Factors Associating with Price of Timber Products

S.N.	Factors	Correlation Coefficient
1.	Distance of Regional Market	0.455**
2.	Duration of accessibility in to the forest	0.356**
3.	No. of in household members	0.295*
4.	Size of land holdings	0.292*
5.	Transportation cost per trip to regional market	-0.221
6.	Ethnic group of the respondent[1]	-0.216
7.	Perception on influence by the elite class people[2]	-0.192
8.	Local buyers of the timber products[1]	0.177
9.	Perception on knowledge about marketing[2]	0.165
10.	Presence of marketing intuitions[1]	0.162
11.	Food sufficiency from own farm production[1]	-0.141
12.	Frequency of visit to the regional market[1]	0.123
13.	Main occupation (Agriculture)[1]	0.114

Notes: * = Significant at 95% confidence level,** = Significance at 99% confidence level

[1] = The variables were used as dummy variables by giving value 1 for the majority and 0 for the rest

[2] = The value of WAI were used based on perception of the respondents.

Assessment criteria for Correlation Coefficient (CC)

0.01 – 0.29	=	Low
0.30 – 0.70	=	Medium
0.71 – 1.00	=	High

Details of the associating factors with the regional market price could be explained hereunder.

Distance of Regional Market

Mostly the users and the FUG sold their timber products locally, especially to their own user group members. The price for the own user group members was too low. But the regional market price was 4 to 5 times higher than the local price. This shows that even the distance increased, which also add the more transportation cost, had more profit and get higher price than sold it locally. Thus the distance with the regional market has a positive and at a medium level correlation (0.455) with the price. The user of the Jharahikhola watershed who sold their timber products locally had a good road and transportation network facility. Moreover the market price at the regional market (Narayangarh) was much higher than the local market price, which was fixed based on competitions. The cost of transportation, loading and unloading and local taxes caused a high price variation.

Duration of Accessibility into the Forest

Duration of accessibility encourages people to go to the forest and collect the products that allows by the FUG rules. Longer the duration, high amount as well as better quality products could harvest from the forest, which helps to get better price. From JW of CFs Sundari and Chautari, the committee decided the duration of entry into the forest based on the resource availability and users need. Mostly they responded that if they had a longer duration, they could collect more and market demanded products on the basis of permissible FUG rule help to get a more reasonable price from the market.

Number of Household Members

This has a positive correlation at a low level of association (0.295) with the price variation more household members mean more available labor force, which could use for the collection, processing and trading of timber products. The average family size in JW is 5.8 members per household and it is 6.25 for Chautari CF. The findings shows that households having more members collect more and sell more products. While forest was opened for certain periods, they could harvest and collect more products because of available labor force. Because of this they had more products to sell to the market and caused a price variation.

Size of Land Holding

This factor has a low level correlation (0.292) with price variation in the regional market. The average land holding of people from JW is 17.1 Kattha. Those having a larger land holding size also earned more from the forest products. The respondents having big land could produce sufficient food from their own farm and were not worry about their daily need of food. This helps them to spend more time for forest product collection and trading activities. On the other hand, those respondents having small size land holding were worried about their daily food requirement and less time for these kinds of activities.

Other factors, which are not statistically significant, are also found having some associations with the price variation of timber products in the regional market. These consisted of transportation cost, ethnic group, elite class influence, buyers of the timber

products, knowledge about marketing presence of marketing institutions, food sufficiency to the users from their own farm land, frequency of visit to the regional market and occupation of the respondents that had a low level correlation with the price variation. These mean that those factors did have certain relationship but are not enough to generate statistically significant to the price variation.

8.3.2. Factors Associating with NTFP and Its Determinants

The analysis of correlation among prices of NTFPs in the regional market and various concern factors reveals that eight factors are statistically significant for the price. The other factors are also associated with some extent but are not statistically significant. The significantly influencing variables are duration of accessibility in to the forest in months per year, distance of regional market, ethnic group of respondents, occupation, means of transportation, grading cost, FUG rules on harvesting and trading and gender of the respondents. These factors are significant at 99% level of confidence and have low to high level of correlation coefficient with the price variation.

Duration of Accessibility

Duration of accessibility in to the forest has significant correlation at a high value (0.966) with the price the users have of NTFPs as presented in Table 8.3. This could be explained that a longer the duration, they can go to the forest for a long time to find quality materials and processed based on consumer's demands and preferences. Due to this reason, there is no over and short supply of the products and price can be stabilized. Because of the long duration, people had passions to go and harvest the product as well as to processing. Due to the less competition in the market to get high price, the CF users from KW who were the major collectors and traders of NTFPs got a high price because of the longer duration of these accessibility. The respective CFs has 5 months and 3 months per year of accessibility per year. This is why, it shows a significant difference in volume of collection, availability of resources in the forest and quality of collected products.

Table 8.3: Factors Associating with Price of the NTFPs (Processed Bamboo Products)

S.N.	Factors	Correlation Coefficient
1.	Duration of accessibility in to the forest	0.966**
2.	Distance to the regional market	-0.639**
3.	Type of Ethnic group [1]	0.513**
4.	Main occupation of the respondent[1]	-0.431**
5.	Means of transportation[1]	0.391**
6.	Grading cost of the NTFPs	0.355**
7.	Perception on FUG rules on marketing[2]	0.300**
8.	Gender	-0.265**
9.	Frequency of visit to the regional market[1]	0.214
10.	Food sufficiency for their own farms[1]	-0.193
11.	Age	0.177
12.	Number of members in the HH	0.167
13.	Varieties of products sold	0.160
14.	Perception on access to market information[2]	0.149
10	Perception on knowledge about marketing[2]	0.140

Notes: * = Significant at 95% confidence level, ** = Significance at 99% confidence level

[1] = The variables were used as dummy variables by giving value 1 for the

majority and 0 for the rest

[2] = The value of WAI were used based on perception of the respondents.

Assessment criteria for Correlation Coefficient (CC)

0.01 – 0.29	=	Low
0.30 – 0.70	=	Medium
0.71 – 1.00	=	High

Distance to Regional Market

The distance to the regional market has a negative and at a medium level of correlation (-0.693) with the price. The longer distance, the lesser the price will be. The users of Deujar CF had to carry their products in their back up to a local market, from where they can transport it by using transportation means. The cost of carrying in the back is to expensive and labor consuming. This increases the cost of their products and got less benefits. Even the physical distance was not so far, because of the remoteness and lack of transportation facility, it increased the cost of production. The main causes for this were the transportation cost and related taxes. The long distance transportation has to pay a higher cost as compared with a shorter distance market.

Type of Ethnic Group

Similarly, ethnic group of the respondent has a medium level of correlation (0.513). It shows that if minority ethnic people sold NTFPs got a lower price than the high caste people. The reasons for this are their cleverness and had a higher bargaining power as compared to other minority caste people. There were very few high caste populations in the NTFPs profound area of Deujar and Janapragati CFs but they could sell their processed products in a higher price than the minority Chepang caste people. Less education and less exposure may be the reason to the ethnic minority people for getting the lower prices. These also caused the price variation in the market.

Main Occupation

Main occupation of the respondents has a medium level and a negative correlation (-0.431) with the price. From the NTFPs trading area of Deujar and Janapragati CFs, people who were engaged in agriculture had less time to collect and process of NTFPs than the other occupational groups. This cause less collection and less income generating to them.

Means of Transportation

Means of transportation has a medium level of correlation (0.391). From NTFPs area of KW, people had to carry their products on their back up to the local road head and transported by tractor. If the means of transportation was tractor, the profit would be high for them because of the cheaper transport than carrying on their back.

Grading Cost

It has a medium level and positive correlation (0.355). Processing of NTFPs from the Deujar CFs is the most common product. Especially, they prepared different products from bamboo and also processed other medicinal plant and herbs. Before dispatching to the market, they graded their products based on size, quality and market demand. This also includes some costs and in overall the cost of is raised. But because of grading the product received a higher price than the non-graded one and an average price will become higher. This helps to get a higher income to the producer and caused some variation.

FUG Rules on Harvesting and Trading

The FUG rules have also a medium level of correlation with the price. Normally from the study area, the users group prepared their rules about use, management and trading of forest products. They prepared their rules in technical supervision of DFO. All the studied

CFs had their rules on this aspect and they were not concerned much with individual benefits and trading rights except some NTFPs. Some NTFPs can only harvest by certain people who had recent technical harvesting skill. From this many users, who were collecting before, were not satisfied. Most of the users are not satisfied with the rules, which restricts on open access and over controlled harvesting. Flexible and widely accepted FUG rules usually promote sustainable harvest and trade, which stabilized the market price by constant supply. All these things govern by a their own constitution and rules. Therefore, it should be acceptable for all and should contribute to the increase income of the poor minority. Lack of it may have over or under supply during off and on season.

Gender

Gender has a low level and negative correlation of 0.265 with the price. From KW, women were normally engaged in household activities and men were mostly engaged in collection and trading of NTFPs. Women cannot participate much for these activities because the forest is also far from their home and in addition they have to take care their children. In very few cases from Deujar CFs where women were engaged in NTFP collection did excellent job, which also got a higher price in the market. If women can include in the trading activities, the price may be higher.

Other factors, which are not statistically significant, are also found some associations in the price variation of NTFPs. These comprised of frequency of visit to the regional market, which has positive correlation with the regional market price. This makes producers aware about the quality, market demand and consumer preferences. This also helps to update market information. Food sufficiency from their farm has a negative correlation of -0.193. People who had sufficient food production from their own farm were not concerned much with NTFPs collection and trading. Similarly, age, household members, varieties of products, access to market information and knowledge about marketing all have positive correlations with the price. Mature respondents are aware of the processing and quality, which helps to produce the products of consumer preferences. Higher the number of family members is the available labor force and use for NTFPs activity could sustain.

Product diversifications helps to less competition in price of the same products provide higher returns. Access to market information and knowledge about marketing directly help to get a higher benefit to the producers. Hence, these factors have some association with the price.

Based on the associated factors on the price of the timber products, a stepwise multiple regression model was applied to find out its determinants. The model consists of the following factors.

$$Y = a + b_1X_1 + b_2X_{2+} b_3X_3 + b_4X_4 + b_5X_{5+} b_6X_6 + b_7X_7 + b_8X_8$$

Where,

Y	=	Price of the NTFPs (Processed bamboo products NRs.)
a	=	Constant
b1 – b8	=	coefficients
X1	=	Duration of accessibility to the forest months per year
X2	=	Distance of regional market in km
X3	=	Type of Ethnic group of the respondents
X4	=	Main occupation (Agriculture)
X5	=	Means of transportation to the regional market
X6	=	Grading cost of the products NRs.

X7 = Perception on FUG rule regarding marketing
X8 = Gender

Out of the listed variables above in Table 8.3, only two variables: duration of accessibility by the users per annum and gender of the respondents are found as the determinants that are significantly related to the price of the NTFPs to the users of Kayarkhola watershed. The determinants of the price of NTFPs can put in to the equation as follows.

Y (Price of the NTFPs) = - 58.261 + 27.27* (Duration of accessibility to the forest Per year) – 7.27* (Gender)

R^2 = 0.937 and Adjusted R^2 = 0.935 … … … … … … … … … … … (1)

Based on the stepwise multiple regression analysis, it is revealed that the determinants for the price variation in regional market are duration of accessibility to the forest per annum and gender of the respondents.

The high R^2 value (0.93) shows that two factors could explain about 93% of the total variation in price of NTFPs.

Table 8.4: Regression Coefficient of Determinants of Price of NTFPs

Factor	Coefficient	t – value	Significance
Constant	-58.261	-11.328	0.000
Duration of accessibility	27.270	30.441	0.000
Gender	-7.272	-2.272	0.000

In Deujar and Janapragetі CFs of KW, the collection of NTFPs were heavily depends upon the duration of accessibility to the forest. FUG made their constitution and based on that they manage their forest. There is a sort of restriction to enter in to the forest and harvest the products. Only selected products can harvest during specified period of time. If duration of collection from the forest is increased, it helps to produce more items, more varieties and high quality products as well. More people could participate in collection and produce high quality finished products, which ultimately got a higher price. The duration of opening to the forest had a high importance for the collectors of NTFPs.

Gender aspect also an important factor in this model, which has a negative influence. Mostly, male is participated in the collection, processing, grading and trading of NTFPs. Women were basically engaged in daily household activities and animal husbandry. Since the forest is far, they also not feel comfortable to go to the forest for the collection. But few women help men process and grade of the products. Where they participate, they got a high return and price. There should be an involvement of women for higher price in the market.

8.4 Factors Influencing Earnings from Timber Products and NTFPs

The community forestry program is one of the most successful programs in Nepal. But its success could be verified by the improved quality of life of the rural users. Unless and until the users get direct benefits and motivate to do it, its sustainability is questioned. Farmers from the study CFs were getting little income from the collection and sale of forest products. The income variation is too high, hence this analysis tried to find the associating factors for income earnings from the timber as well as NTFPs.

8.4.1. Income from Timber Products

A bivariate correlation analysis from the various social, economic and institutional (independent variable) factors found the following correlation coefficients for the income earnings from timber product (dependent variable). Eight variables composing of duration of accessibility to the forest, distance to the regional market, transportation cost, regional market price, land holding, number of members in household, religious beliefs and elite group influence in harvesting and trading were found significant (Table 8.5). Except religious beliefs, all variables are significant at 99% level of confidence. Among eight significant variables, none of them was found have high correlation coefficients. Two social factors have low correlation and rest have medium levels of correlation coefficient.

Table 8.5: Factors Associating with Income Earning from Timber Products

S.N.	Factors	Correlation Coefficient
1.	Duration of accessibility to forests	0.664**
2.	Distance to the regional market	-0.655**
3.	Transportation cost per trip	-0.550**
4.	Regional market price of timber	0.485**
5.	Respondent's own land holding in Kattha	0.353**
6.	Number of members in the HH	0.340**
7.	Perception of religious belief on trading[2]	-0.324**
8.	Perception on elite's influence in trading[2]	-0.308*
9.	Frequency of visit to the regional market[1]	0.187
10.	Type of Ethnic group [1]	0.181
11.	Varieties of products sold	0.168
12.	Food sufficiency from their own farm[1]	0.158

Notes: * = Significant at 95% confidence level, ** = Significance at 99% confidence level

[1] = The variables were used as dummy variables by giving value 1 for the majority and 0 for the rest

[2] = The value of WAI were used based on perception of the respondents.

Assessment criteria for Correlation Coefficient (CC)

0.01 – 0.29	=	Low
0.30 – 0.70	=	Medium
0.71 – 1.00	=	High

Based on the associated factors to the income earning from timber products, the following explanations of each factor could be given below:

Duration of Accessibility

Duration of accessibility has a moderate level of correlation (0.664) with the income earning from timber product. A Longer time accessibility definitely helps to collect and harvest more products, which ultimately contributes to the factors the higher income. It encourages people to go to the forest and collect the products that allows by the FUG rules. The longer the duration, high amount as well as better quality products could harvest from the forest, helps to get a better price. From JW of CFs Sundari and Chautari, the committee decides the duration of entry into the forest based on the resource availability and users needs. Mostly they responded that if they had a longer duration, they could collect more and market demanded products on the basis of permissible FUG rule help to get reasonable price from the market.

Distance of Regional Market

Similarly, distance of the regional market has a medium level but a negative correlation (-0.655). The FUG from JW sold their timber products. Mostly the users and the FUG sold their timber products locally, especially to their own user group members. Factors affecting price variation also found that the price and profit margin is high in the regional market. The transportation cost adds the value in the products and it is increases with the distance. Thus, the income reduced when the distance increases because of transportation cost as well as other administrative procedures. The user of the Jharahikhola watershed who sold their timber products locally had good road and transportation network facility. Even the market price at the regional market (Narayangarh) is much higher than the local market price, which was fixed based on competitions, users sell it locally due to the administrative complexity and drudgery in loading and unloading. The cost of transportation, loading and unloading and local taxes were affected negatively in income.

Transportation Cost

Higher the distances, higher become the transportation cost and lesser the income earning. Thus, this transportation cost affects negatively to the income from timber product. The transportation cost has a medium level with a negative correlation (-0.55). The distance of the regional market is not so far but due to the higher loading, unloading and other interlinked factors users prefers to sell their products locally. Transportation cost affects negatively in the income from forest products.

Regional Market Price of Timber

Regional market price of timber has a positive correlation with the income (0.48). If the price of the timber products is higher in regional market (Narayangarh) than the price received by the users for the JW also was increased by selling in higher rate. Higher the price of the product in the regional market, higher the income received by the users, the higher will be income earning from the timber products.

Size of Land Holding

Similarly, size of land holdings also has positive correlation with the income (0.35). Some farmers from JW owned a big farm size and also had some trees in their marginal land. The trees, fuel wood and other timber products contributed additively to income, earning from the forest products.

Number of Household Members

Numbers of family members have a medium level with a positive correlation (0.34). At Big family size had more members for the collection and trading of the products. Labor force is available for the harvesting, processing and trading. More household members generated more available labor force for households, which could be used for the collection, processing and trading of timber products. The average family size in JW was 5.8 members per household and it was 6.25 for Chautari CF. The findings shows that households having more members collected and sold more products. While forest was opened for certain periods, they could harvest and collected more products because of available labor force. Because of this they had more products to sell in to the market and cause price variation.

Religious Belief and Elite Group Influence in Harvesting and Trading

Religious belief regarding harvesting and trading and elite group influences has medium level with a negative correlations (-0.324 and –0.308). The social structure of JW was complex and all castes, classes and ethnic group of people were found. Some people believed that some species of tress could not harvest and sell, which also had a little influence in the price variation. The users having more land or rich or from elite classes,

tried to influence local marginal users to sell the products to them in a cheap local rate to reduced the income.

Other factors, which are not statistically significant, are also found some associations in the income from timber products from JW. The frequency of visit to the regional market, type of ethnic group of respondents, varieties of products sole to the markets and food sufficiency from their own farm had positive correlations with the income earning from timber products. The regional market from the watershed is very closes. High frequency of visit to the market makes producers aware about the quality, market demand and consumer preferences. This also helps to update market information. Form that they can sell their product in a higher price and get more income. High caste and clever people have the capacity to bargain and get higher prices. More the number of varieties then there is less competition among the products and received more reasonable prices. Those people had sufficient food production from their own farm need and spent their earnings for food also which had sufficient time for trading and business.

Based on the associated factors on the income earning from the timber products, a stepwise multiple regression model was applied to find out its determinants. The model consists of the following factors.

$$Y = a + b_1X_1 + b_2X_{2+} b_3X_3 + b_4X_4 + b_5X_{5+} b_6X_6 + b_7X_7 + b_8X_8$$

Where,

Y	=	Income from timber products
a	=	Constant
b1 – b8	=	coefficients
X1	=	Duration of accessibility to the forest (months per year)
X2	=	Distance of regional market (in km)
X3	=	Transportation cost to the regional market (per trip)
X4	=	Regional market price of timber
X5	=	Respondent's own land holding
X6	=	Number of members in the household
X7	=	Perception of religious belief on harvesting and trading
X8	=	Perception on elite's influence in the society

Out of the listed variables above in Table 8.6, only three variables: duration of accessibility to the forest by the users per annum, distance of the most preferred regional market and elite group's influence in the society for harvesting and trade are found significantly related to the income earning from timber products. The determinants of income from timber products can be put in to the equation as follows.

Y (Income from timber sale) = 6720.919 + 615.848* (Duration of accessibility to the forest per year) - 224.368* (Distance of the most preferred regional market) - 1194.416* (Perception on elite's influence)

$R^2 = 0.623$ and Adjusted $R^2 = 0.605$ … … … … … … … … … … … (2)

Table 8.7: Regression Coefficient of Determinants of Income Earning from Timber Products

Factor	Coefficient	T – value	Significance
Constant	6720.919	-6.163	0.000
Duration of accessibility to forest	615.848	5.784	0.000
Distance to the regional market	-224.368	4.986	0.001
Perception on elite group influence in the society	-1194.416	2.134	0.021

In CFs, the harvesting of timber products is time consuming and labor intensive job. The quantity of harvested products is heavily depended on the duration of accessibility to the forest. FUG made their constitution and based on the way they managed their forest. There is a sort of restriction to enter into the forest and harvest the products. Only selected dry and died products can harvested during specified period of time. If duration of accessibility to the forest is increased, it helps to produce more items, more varieties and high quality products as well. More people could participate in harvesting and producing the high quality finished products, which ultimately gained the higher price. The duration of opening to the forest had significant importance to the harvesters, which helps to get more income. Normally, people collect more fuelwood from the forest when was opened for them and they collected fuel was sold to the other users. This duration is more important to collect greater amount of fuel wood.

Similarly, the distance had the great importance for income earnings. Long distance transport needs high transportation cost and many local taxes have to pay along the road. Thus, this has a determinant role in the income earned from the timber products. Since the timber products are bulky in nature, which needed many laborers to unload and upload and needed a high cost for its transportation. Therefore this factor came out as a major determinant for the income.

Elite group's influence in the society for the harvesting and sale of timber products is another determinants for the income. Elite class people had some hold and command in the society. Poor and small farmers from JW were depended on them in many ways like informal loan and other social and cultural activities. Moreover they had some political influence and had some connection to the district or national leaders. Thus, farmers did not want to be in against with them. If the product is necessary for them, then the local users were bound to sell them. The price paid by the local elite is very low than the normal market price. This affected the income earning of the people from timber products. A schematic diagram of associated factors is presented in Figure 8.1.

8.4.2. Income from NTFPs

The correlation analysis shows that there are seven variables were significant for the income earning from NTFPs. From Table 8.7, the significant variables are duration of accessibility to forest, knowledge about marketing, occupation of the respondents, regional market price of NTFPs, engagement in other organizations, types of markets for NTFPs trading and grading cost for the products. Among these seven variables grading cost is significant at 95% confidence levels and the rest are significant at 99% level of confidence. Two variables consist of types of markets and grading cost have a low correlation and rest have medium correlation. There is no single factor having high correlation with the income earning from NTFPs.

Table 8.7: Factors Influencing Income Earning from NTFPs

S.N.	Factors	Correlation Coefficient
1.	Duration of accessibility to forest	0.549**
2.	Perception on knowledge about marketing [2]	0.525**
3.	Main occupation (Agriculture)	-0.503**
4.	Regional market price of NTFPs	0.492**
5.	Experiences in other organizations[1]	0.487**
6.	Regional market for product to sold [1]	0.315**
7.	Grading cost of the products	-0.303*
8.	Market distance	-0.226
9.	Means of transportation [1]	0.225
10.	Perception on market information accessibility[2]	0.219
11.	Perception on FUG rules on harvesting and trading [2]	0.199
12.	Food sufficiency for their own farm production [1]	0.183
13	Presence of marketing institutions [1]	0.173

Note: * = Significant at 95% confidence level, ** = Significance at 99% confidence level

[1] = The variables were used as dummy variables by giving value 1 for the majority and 0 for the rest

[2] = The value of WAI were used based on perception of the respondents.

Assessment criteria for Correlation Coefficient (CC)

0.01 – 0.29 = Low
0.30 – 0.70 = Medium
0.71 – 1.00 = High

Duration of Accessibility to Forest

Duration of accessibility in to the forest has a medium level correlation (0.549) with the income from NTFPs as presented in Table 8.7. This could be explained that a longer the duration, the user can go to the forest for a long time, find quality materials and processed based on the consumer demands and preferences. Due to this reason, there is no over supply and short supply of the products and price can be stabilized. Because of long duration, people had passions to go and harvest the product as well as processing. Due to the less competition in the market and get higher price. The CF users from KW who were the major collectors and traders of NTFPs got the high price and high income because of its duration of accessibility. The respective CFs had 5 months and 3 months per year of accessibility to the forests. This time shows a significant difference in volume of collection, availability of resources in the forest and quality of collected products. There is no over supply and short supply of the products and price can be stabilized. Because of the long duration, people had passions to go and harvest the product as well as processing. Due to the less competition into the market and got the high price ultimately contributed to the positive income earned from NTFPs.

Knowledge about Marketing

Marketing knowledge and exposure is quite important and has a medium level with a positive correlation (0.525) with the income earning from NTFPs. Those people who had the knowledge about marketing definitely could sell their product in the higher price. Sometimes they even could wait until the market price became high. Moreover, grading and packaging skills also helped to get the higher returns from the market. Some users from KW were aware of the marketing knowledge by the different donors and supporting

organizations. Moreover they became knowledgeable while working in the marketing cooperative. Some collectors who had that skill got a higher price and higher income from NTFPs.

Main Occupation

Similarly, occupation has a medium level with a negative correlation (–0.503) with the income earned from NTFPs. Those people whose main occupation is farming had very less time to collect and sell of NTFPs. They were almost busy with their subsistence farming activities in the farm and had no time for NTFP collection and trade. From the NTFPs trading area of Deujar and Janapragati CFs, people were engaged in agriculture that had less time for collection and processing of NTFPs than the other occupational groups. This causes less collection and less income.

Experiences in Outside Organizations

It has a medium level with a positive correlation (0.487) with the income earning from NTFPs. The people from KW who were engaged in outside organizations like marketing organization, dairy cooperative, vegetable farming group etc. had more information about marketing and also gained marketing knowledge that helped to get a higher price from their products. Even they could sell the products to local consumers directly because of their skills, knowledge and linkages. These people are getting the higher price and more income than the rest. Thus, this is also a key factor to earn more income from NTFPs.

Regional Market and Regional Price of NTFPs

These have a positive correlation of medium at low levels (0.492 and 0.315). These both helped to get more income by getting a higher price and more marketable volumes. The regional market price of NTFPs for the collectors from KW are higher and if they can sell their products to the regional market Nagayangadh, they will get a higher income causing them to gain more profit.

Grading Cost

It has a medium level with a negative correlation with the income (-0.30). Grading cost is an additional expense that has to spend before selling their products to the markets. Higher the grading cost lower will earn higher income. Even to get more comparative income users have to grade their products to go for competition.

Other factors, which are not statistically significant, are also found some associations in the income earning from NTFPs for the collectors of KW. These are market distance, means of transportations, access to market information, FUG rules on harvesting and trade, food sufficiency and presence of marketing organizations have low levels correlation with the income. These activities are directly related to marketing and if are functional properly, producers get a higher price and will contribute positively to the higher income earnings.

Based on the associated factors on the income from NTFPs, a stepwise multiple regression model was employed to find out its determinants. The model consists of the following factors.

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + b_7X_7$$

Where,

Y	=	Income from NTFPs
a	=	Constant
b1 – b7	=	Coefficients
X1	=	Duration of accessibility to the forest (months per year)
X2	=	Perception on knowledge about marketing
X3	=	Main Occupation

X4	=	Regional market price of the NTFPs
X5	=	Experiences in outside organizations
X6	=	Types of market in which the products sold
X7	=	Grading cost of the products

Out of the listed variables above in Table 8.7, only three variables consist of durations of accessibility by the users per annum, knowledge about marketing and organizations worked outside FUGs are found significantly related to the income from NTFPs from KW. The determinants of income from NTFPs can be put in to the equation as follows.

Y (Income from NTFPs) = 4702.814 + 947.641* (Duration of accessibility to the forest per year) +2977.761* (Knowledge about marketing of the products) + 646.311* (Organizations worked for the respondents outside FUGs)

$R^2 = 0.599$ and Adjusted $R^2 = 0.580$… … … … … … … … … … … (3)

Duration of accessibility to forest has a very key role for the income as well as price of forest products. This factor comes in every model under this study. Knowledge about marketing also has an influence on the income. Those people who were already aware about marketing system and had some experience in marketing definitely had the capacity to sell the product in higher price as compared with the inexperienced ones. Higher price contributed for the higher income. These experienced people had market information, channel of marketing and demand of market due to which they could sell in a higher price and got more income. The similar the case for the organizations worked outside FUG. This also helped to create certain linkages with traders and markets. These all three factors cumulatively contribute about 59 percent for the whole income earning from NTFPs, which shows the R^2 value of 0.599 or 59.9%.

Table 8.8: Regression Coefficient of Determinants of Income Earning from NTFPs

Factor	Coefficient	t – value	Significance
Constant	4702.814	5.970	0.000
Duration of accessibility to forest	947.641	8.334	0.000
Knowledge about marketing	2977.761	3.528	0.001
Organizations worked for the respondents outside FUG	646.311	2.359	0.021

A schematic diagram of associated factors is presented in Figure 8.2.

8.5 Findings Key Factors Affecting Price and Income from both Timber and NTFPs

Between the various social, economic and institutional/legal factors for price and income of timber and NTFPs, some factors are common for all and some are common for a few cases. The duration of accessibility to the forest is the most common factor for all four cases.

Both the price variation and income from timber products have a significant association with duration of accessibility, distance to regional market, a number of household members in a family and size of land holding. Some additional factors have some association with income only from timber products. The duration of accessibility to the forest and a market

distance are the key determinants for the income earning from timber products. Since FUG restrict to enter into the forest all times, from this users felt that there should be a long duration for collection. Users from Chautari and Sundari CFs who got a longer duration for using forest had relatively more income than others.

In both cases of price variation and income from NTFPs, the duration of accessibility to the forest is the key factor. The other common factors are occupation and grading cost. The rest factors for price variation are distance to market, type of ethnic group of respondent, means of transportation, the FUG rules on harvesting and trading and gender. The determinants for this are duration of accessibility to forest and gender. Similarly, the other factors for income are knowledge about marketing, regional market price of NTFPs, organizations worked for the respondents and types of products. The determinants for income are duration of accessibility to forest, knowledge about marketing and organizations worked by the respondents outside FUG.

8.6 Comparative Analysis of Factors between Timber and NTFPs

Various social, economic and institutional/legal factors are associated with the price variation and income earning from timber and NTFPs. Since the products are different in various aspects like volume, harvesting techniques means of transportation, grading and processing etc. Hence, their factors are also different.

8.6.1. Comparison of Price Variation Based on Perception of Farmers

Users from the two products perceived that transportation cost and FUG rules had a very high influence in the price variation. Producers and traders of timber products perceived that FUG rule is the most important and significant factor for the price variation in the regional market. The FUG rules for harvesting and trading of timber products were only focus on group not for individual basis. According to them, the individual users cannot harvest major timber products like timber poles etc. from the forest except some dead and dry fuel wood. It does not mean that they were in favor of free access but they only demanded for the individual benefits not only for the social benefits. Even the CFs became resources full and had many products to harvest and sold but it did not give direct individual benefits.

They were satisfied with the social services and community development works from their FUG but they also expected some benefit to the users who were devoted a lot times to protect and manage resources. They volunteer for a month or more some times but no direct return. They realized that they were getting many social and environmental benefits but they expected some returns in the individual basis as well. Some poor and marginal users told that the community forestry was no more beneficial for them because they were not getting any single benefit from that. Moreover they added that before CF, they could go to the forest and harvest some fuel wood and sold to the market. Which was their ways of living and source of earning. But now, they were not getting any direct benefit from the CFs. Thus, they demanded for the change in FUG rules so that poor and minority people can include for some income generating programs or some soft loan or any subsidy and incentives for them. Not only them, other comparatively rich people also commented that there should be some mechanism through which the users would get some direct benefit from their CF. So the FUG rules had a very important roles in price variation of timber as well as NTFPs.

Similarly, the transportation cost is also a most important factor for price variation for both the products. Higher the transportation cost, higher the price variation and less benefit to

the users or collectors. In case of timber product FUG rules was the most important and with a very high degree of influence followed by the transportation cost. The degree of competition and local tax were perceived as a high level. But for NTFPs, the transportation cost is the highest one followed by their rules. Other factors like degree of competition, local taxes and grading cost were rated as high by the users.

In conclusion, it is found out that based on their perception, the factors affecting the price variation of timber and NTFPs are almost the same. Only a slight difference is on their degree of perception.

8.6.2. Comparison of Factors and Determinants Between Two Products

The analysis of correlation and regression between the several factors that affect the price variation and income of timber and NTFPs found that the duration of accessibility to the forest is the most common factor for all cases. Other factors for price variation and income as well as for timber and NTFPs are different.

The duration of accessibility to forest, distance of regional market, land holdings and number of household members are the important factors for both price variation and income from timber products. Timbers are bulky in nature and heavy to transport, so transportation cost is the most important factor. Where as the case of NTFPs, transportation cost was not much important because of high value and less volume products. NTFPs were sold mostly after processing so grading and processing cost was vital for these kinds of products, which were not so significant for timbers. The market of NTFPs was heavily to depend on the intermediaries and middleman, this knowledge about marketing and experiences to work other organization were the important factors but these are not important for timbers. Ethnic group, occupations and means of transportation are the other key factors for NTFPs, which are not the factors for the timber case.

The marketing of timber products from the studied watershed is more systematic and not much problems. There were no more intermediaries and middleman for the trading of these products. Moreover, they did not have much practice to sell it outside their own FUGs and their local village. Therefore, there are not many factors that affected the price variation of the timber products. In the multiple regression model, the determinants of the income earning from timber products are duration of accessibility to forest, distance of most preferred regional market and elite class's influence on harvesting and sale of timber product.

In case of NTFPs, the multiple regression models show that the determinants of price variation in the regional market are duration of accessibility to forest and gender. Likewise for income the determinants are duration of accessibility to forest, knowledge about marketing and experiences of respondents outside organizations. The duration of accessibility to forest is the common factor for all models and all products. Marketing knowledge and outside experiences are important for NTFP trading for getting competitive price and higher volume of trade.

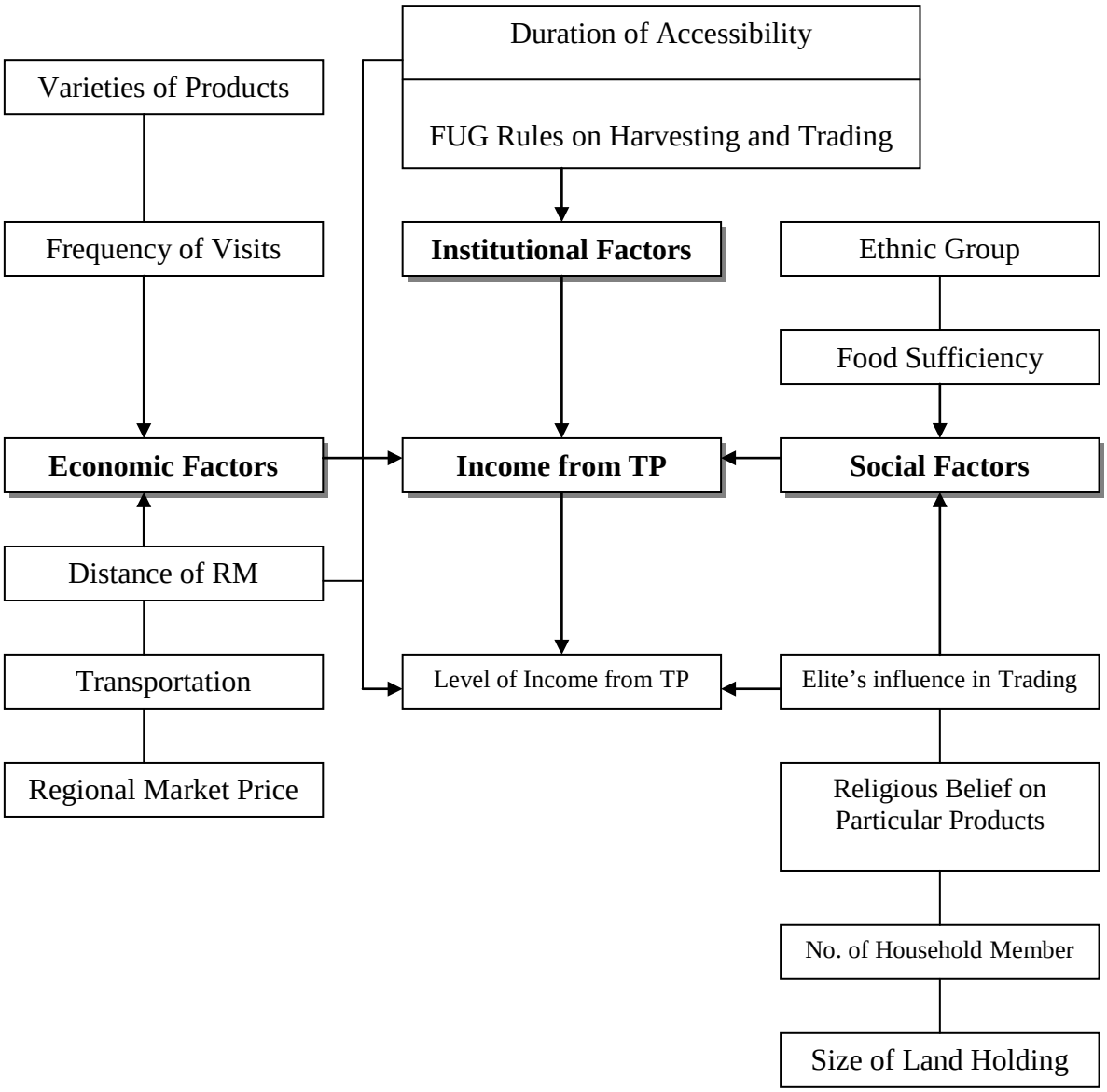


Figure 8.1: Factors Affecting Income from Timber Products and Their Levels

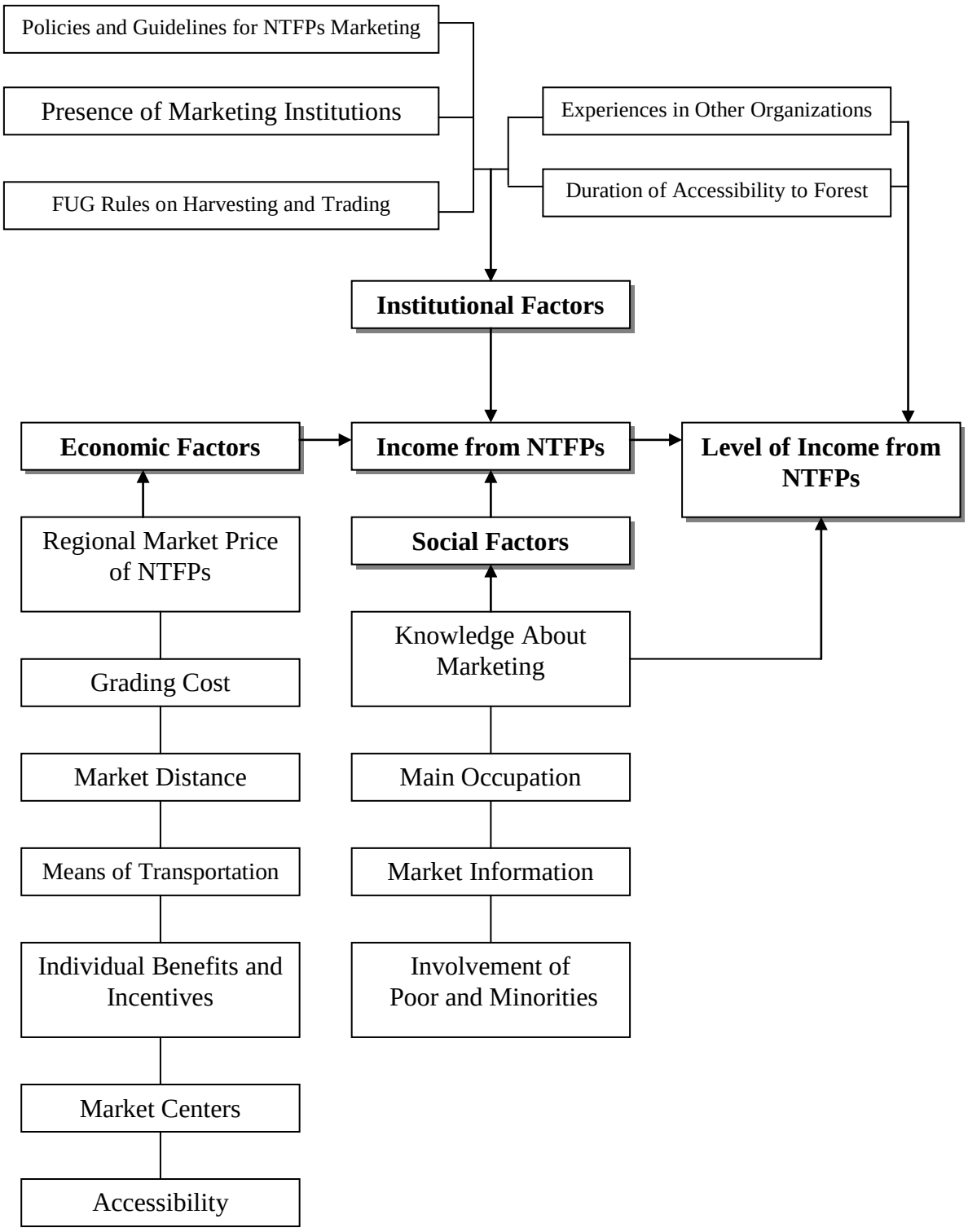


Figure 8.2: Factors Affecting Income from NTFPs and Its Levels

8.7 Chapter Summary

Various social, economic and institutional/legal factors affected the price variation and income from timber and NTFPs. Based on the perception of the users, forest users group rules was the most influential factor for the price variation of both timber and NTFPs. Another important factor according to their perception was the transportation cost. These both factors were perceived at a very high degree for the both products. Other factors for price variation were degree of competition and local tax for the products.

Both price variation and income from timber products had significant association with duration of accessibility to forest, distance of regional market, numbers of household members in a family and size of land holding. Some additional factors had an association with income only from timber products. The duration of accessibility to forest and market distance were the key determinants for income from timber products. Since FUG restrict to enter into the forest all times, from this users feel that there should be a longer duration for collection. Users from some CFs got the long duration that had higher income to earn than others.

In both cases of the price variation and income from NTFPs, the duration of accessibility to the forest was the key and common factor. The factors like occupations and grading cost were also common for both. The rest factors for price variation were distance of market, ethnic group of the respondent, means of transportation, FUG rules regarding harvesting and trading and gender. The determinants for this were duration of accessibility and gender. The factors for income from NTFPs were knowledge about marketing, regional market price, organizations worked for the respondents and types of products. The determinants for income are duration of accessibility to forest, knowledge about marketing and organizations worked by the respondents outside FUG.

Chapter 9

Problems and Potentials of Forest Product Marketing

9.1 Problems in Marketing of Forest Products

9.1.1. Problems Based on Perception of Users

Operating small land holding of poor soil quality and rain fed system of farming, the overwhelming majority of sampled households had not been able to meet their subsistence requirements through agriculture. Worse is the situation of tribal community like the Chepang from the Chitwan district. However, they are rich in natural resources and forest, which is an alternative source of income to some extent.

The major problems related to forest product marketing were identified by the respondents there are lack of road and physical infrastructure, lack of transportation facility, poor storage and processing facility, lack of market information and no provision of individual sold in CF rule. Among them they perceived that no provision of individual sell from the CF is the very severe one (Table 9.1). Problems related to market information, transportation, and road and physical infrastructure, which were the severe problems. Lack of storage and processing facility is the major problem according to the respondents.

Among those stated problems shown in Table 9.1, 83 percent of the total respondents were taken, lack of market information was the main problem followed by lack of road and physical infrastructure by 80 percent of the respondents and lack of transportation facility by 78 percent out of the total.

Regarding the degree of seriousness of those stated problems, no provision of individual sale from the community forest was the very high rating (WAI = 0.83). Problems related to market information, transportation facility and physical infrastructure have a “high” level of seriousness (WAIs = 0.78 and 0.62 respectively). Poor storage and processing facility was the problem having a “moderate” level of the seriousness.

Since the locations as well as other various situations of the studied CFs are different, the seriousness of the stated market related problems were very different from one to another. However, no provision of individual sale from the community forest was the most severe one for all CFs. Even the degree of seriousness was slightly different. Overall, from Sundari CF, the degree of seriousness of marketing problem is under a “high” category (WAI = 0.66). No provision of individual sale from the CF was in a “very high” degree of seriousness followed by the problem related to market information and transportation facility (WAIs = 0.92, 0.80 and 0.65). Storage and processing related problem was comparatively rated as less serious. Whereas the respondents from the Chautari CF, no provision of individual sale from the CF and lack of market information were the most serious problem than the others. From Janapragati CF, all problems were under the same category. For Deujar CF, lack of road and physical infrastructure was the most severe one followed by transportation facility, market information and provision of harvest and sale.

Table 9.1: Perception of Households on the Degree of Seriousness of the Problem in Marketing

(Multiple Response)

Problems	N	%	CFs								Average WAI	OA	F – Test sig.
			Sundari		Chautari		Janapragati		Deujar				
			WAI	A	WAI	A	WAI	A	WAI	A			
Lack of road and physical infrastructure	114	80.9	0.55	M	0.40	L	0.74	H	0.85	VH	0.63	H	0.000**
Lack of transportation facility	110	78.0	0.65	H	0.43	M	0.65	H	0.77	H	0.62	H	0.000**
Poor storage and processing facility	25	17.7	0.39	L	0.52	M	0.64	H	0.65	H	0.55	M	0.000**
Lack of market information	117	83.0	0.80	H	0.88	VH	0.73	H	0.72	H	0.78	H	0.000**
No provision of individual sales in community forest's rule	96	68.1	0.92	VH	0.94	VH	0.73	H	0.74	H	0.83	VH	0.000**
Total/ WAI	141	100.0	0.66	H	0.63	H	0.70	H	0.74	H	0.68	H	

Source: Field Survey, 2004

Remarks:

VH = Very High, H = High, M = Moderate, L = Low. VL = Very Low WAI = Weighted average index and A = Assessment level and OA = Overall Assessment

** = F- test significant at 99% confidence level.

Criteria for Assessment of Agreement Level

Very Low (VL)	Low (L)	Moderate (M)	High (H)	Very High (VH)
0.01 – 0.20	0.21 – 0.40	0.41 – 0.60	0.61 – 0.80	0.81 – 1.00

provision of harvest and sale. Because this CF lies in the remote hilly area and there is no road network and communication facility as well. They have to their produce on their back.

The F-test from the Table 9.1 shows that there is a statistical difference between the marketing related to problems among the four CFs at 99 percent level of confidence. There is a statistically difference among individual problems in marketing as rated by the respondents of the two study watersheds as well as in overall. There is a statistically difference among the all CFs because they have different locations, products and preference of their development needs. Even the problems are more or less similar but the degree of severity is different. In Deujar CF, lack of road and physical infrastructure is the most sever problem, which is less serious in the other CFs.

Likewise, lack of market information perceived the most serious problem for the users of Chautari CF but for the rest perceived it less serious than the others. Similar is the case with the other problem aspects too.

9.2 Major Problems in Marketing of Forest Products Based on Findings of the Research

Marketing of forest products from the community-managed forests is still in a process of practicing. Due to the government's present rules and guidelines the forest is handed over to the community jointly based on their operational plan. If the forest is resourceful and have sufficient product, then they can harvest collectively and can sell to the users group members in a highly subsidized rate. In case of NTFPs, it is still at the stage of planning and implementing. Some community forests already started to plant and promote NTFPs but the management and marketing system are still not clear. Many CF are still in the stage of promotion and plantation of NTFPs rather to marketing.

9.2.1. Problems Related to Timber Marketing

There were not many problems on timber product marketing from the studied CFs. The CFs from JW Sundari and Chautari harvested and sold their timber products. These both forest were the most resourceful forest from the district and had plenty of timber products for harvesting and trading. They harvested the products by the group collectively and sold to their users based on priority and demand. No user from the area can go and harvest their timber products individually except some fuel woods and fodders. There was clear guidelines for jointly harvesting and managing but there is no policy and bylaws regarding harvesting and marketing the timber products individually. Very few users got some financial earning from the sale of fuel wood, which was collected for the household purpose.

Key problems of timber consumption and marketing can be classified into three major aspects as follows.

Institutional Aspects

There was no clear guideline in an operational plan for individual collection and harvesting. Majority of poor and disadvantaged groups pointed out that they were not getting anything from that forest. Further they added that it is no more useful for their income and livelihood. This indicated that the existing operational plan was not sufficiently covered the poor and minority caste people. Due to the national policy and guidelines there was not a single program for individual benefits. They were getting various social benefits like education, transportation and road network and drinking water etc. from the income of CFs but no any individual benefits were generated to households.

This less amount and frequency of direct benefits caused a low level of motivation and participation in management and conservation of their forest.

Most of the respondents and some stakeholders also stated that there should be a certain mechanism to get some individual returns from the CFs. They questioned when we can volunteer like this without getting any returns for their time, efforts and devotions. However, the resources were conserved well and stopped to deplete which is helping for good environment and enhanced biodiversity conservation.

Due to the existing situation and management policies the sustainability of CFs in a very long run is questioned. Since it is not focused on a direct beneficial program to the individuals who have less contribution to the poverty alleviation program, which is the only one key objective of 10^{th} five-year plan. Because of this overall situation, there is less contribution to the individual income from timber products as well as the community forest as a whole.

The problems related to timber marketing are mostly at a policy level. There is not much problems and complexity in the process they practiced. In the national policy level there should be some guidelines and policies that were mentioned about how it could contribute to the users' household income and how they rely on CFs for their livelihoods significantly.

In the FUG level also, there should be some mechanism to solicit equal participation and equal share of benefits to the poor, minorities and disadvantaged groups. In principle, these social classes' are the real target groups of this community forestry program. Thus, there should be some mechanism to include them to get direct benefits and subsequently contribute to the overall national objective of the poverty reduction program.

Economic Aspects

High transportation, loading and unloading cost and lack of transportation facilities were the major problems related to timber marketing from the JW; even the forest is nearby road and close to the community, there is a problem in harvesting and transportation. The forest is situated in a sloppy hill and no road is connected. These raised the cost of harvesting and handling.

Similarly, the royalty from the government is too high. Till the date of survey they did not pay the tax in response to new government policies. But the users were against the newly proposed tax by the government. It was proposed by the government that each CF should pay 40 percent royalty from their annual income which is too high, according to them.

Social Aspects

There are not many social problems related to the timber product marketing. But some respondents felt that elite people influenced on trading. While some poor or disadvantaged groups wanted to sell their timber products, the elite people from the society bought that at a very cheap rate. They said that if they sold it to outsiders they would have get a higher return. Similarly, regional beliefs in some kinds of plants and product also affected to certain parts of the study area.

Gender discrimination and inequalities are the most sever social problems. The men dominated every post, position and local committees in the CF. Even women were also interested to work and participate but their participation was very low.

A schematic diagram of major problems loop found from the study and from discussion with key stakeholders, consisting of the poor, ethnic minorities and disadvantaged group is presented in the previous sections Figure 9.1. These problem were discussed.

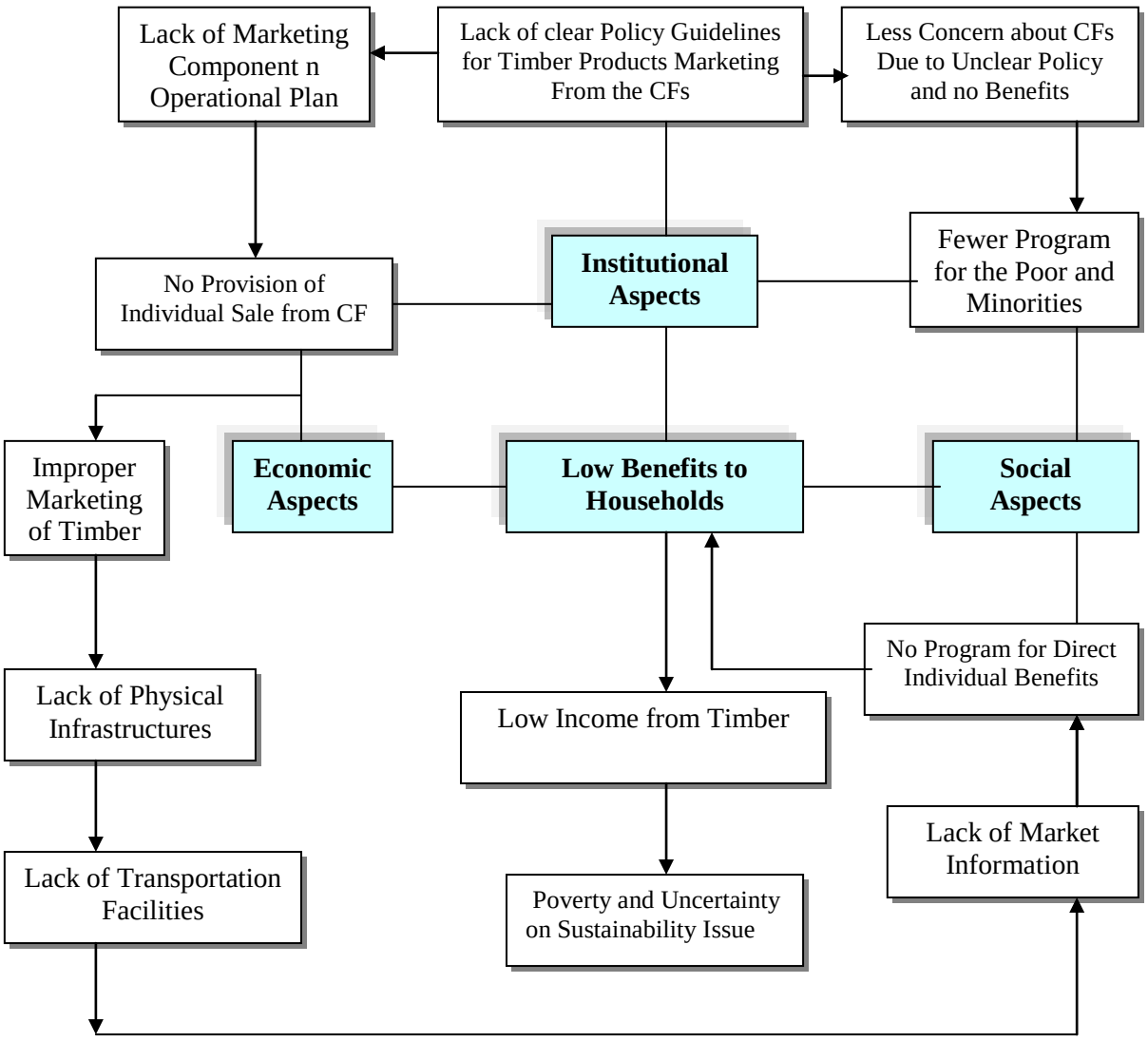


Figure 9.1: Key Problems Related to Timber Marketing

9.2.2. Problems Related to NTFP Marketing

Marketing of NTFPs from the CFs has problems in two major aspects. One is directly related to national policies regarding NTFPs cultivation in CFs and the other is related to a marketing process and system. The policies related to NTFPs marketing were not clearly mentioned and indicated of the conditions from the CFs. There were plenty of research works and also policy guidelines for the collection and trading of NTFPs from the national forests, but those were not stated clearly about the details of the community managed forests.

Major problems related to NTFPs Marketing could be classified into institutional, economic and social aspects hereunder.

Institutional Aspects

The national policy aspect affected to the marketing system in the FUG level as well. Due to this there was no proper management, harvesting and marketing system of NTFPs in the CFs from the study area. They identified the present NTFPs and MAPs in their forest, also planned to cultivate them inside. But they were no clear guidelines on its management, harvesting, marketing and sharing of benefits.

Not only this aspect, the inappropriate policy, particularly in the context of study FUGs, affected the operational plan, which was prepared by the FUG themselves. It could not be reflected the clear-cut marketing aspects of NTFPs. Unclear guidelines and plan made users less involvement in the conservation and management activities. Less individual incentives and benefits and low level of involvement of the poor and minorities caused a low level of this motivation as well as participation in the conservation and protection activities by the users for this category. This has caused uncertainty about sustainability of the established CFs along with a low level of contribution to the overall national objective on poverty reduction.

Economic Aspects

The key problem of NTFPs collectors was the over dependency on intermediaries and even on donors for their products on marketing. In the study area KW, previously there were a lot of works from a donor and NGOs on marketing and processing of NTFPs, at that time they also got a good price. After they left, they could not follow their ways and means for marketing and became the same level of dependency on intermediaries and middleman, which they could exploit them.

Geographical location and accessibility to a road network is also another key problem associated with the marketing. Low value but high volume products spent a big transportation cost than its real value. Less experiences regarding marketing, knowledge, skills and processes was another problem. All these problems were ultimately associated with the profit from the NTFPs trading to the ultimate collectors. A small profit margin caused a smaller amount of income and it subsequently hampered the overall national goal of poverty alleviation.

High transportation cost, processing cost and grading cost are the key economic aspects that reduced the profit of NTFP collectors. The forests from where the product had been collected were quite far and from there to home and then to the local market. They had to carry the product by back. These increased the cost and had fewer profit margins.

Lack of transportation facility, lack of road network and lack of storage and processing facilities were the other problems caused less benefits. The co-operative bought selected products and processed only one. Thus, they felt more facility on storage and processing.

A short duration of accessibility to the forest is another problem. Respondents said that if have a longer duration to go to the forest then they have had collected more and more quality products from which they will get a higher return. But the short duration was allowed to them by FUG committee is not sufficient to harvest and sell the products as they had expected.

Social Aspects

Social problems like gender discrimination and dominance of the marginal collectors by higher caste and elite were common. For NTFPs collection, processing, grading and marketing also, the involvement activities like grading and processing, the products finished by women always get a higher price. Most of the females were busy with their daily household works and animal husbandry, thus, had less time to be involved in the activities like this.

In some cases, the local elites or local traders bought the products collected and processed by the Chepang at a cheap rate. Some cases they kept their products because they did not repay the loans to them. In which they value the products were at a very cheap price.

Ignorance, less exposure to the outside organization and less knowledge about marketing was the other associated problems in the social aspect.

A schematic diagram of major marketing related problems of NTFPs found from the study and from discussion with key stakeholders, the poor, ethnic minorities and disadvantaged group is presented in Figure 9.2. These problems were discussed in the previous sections.

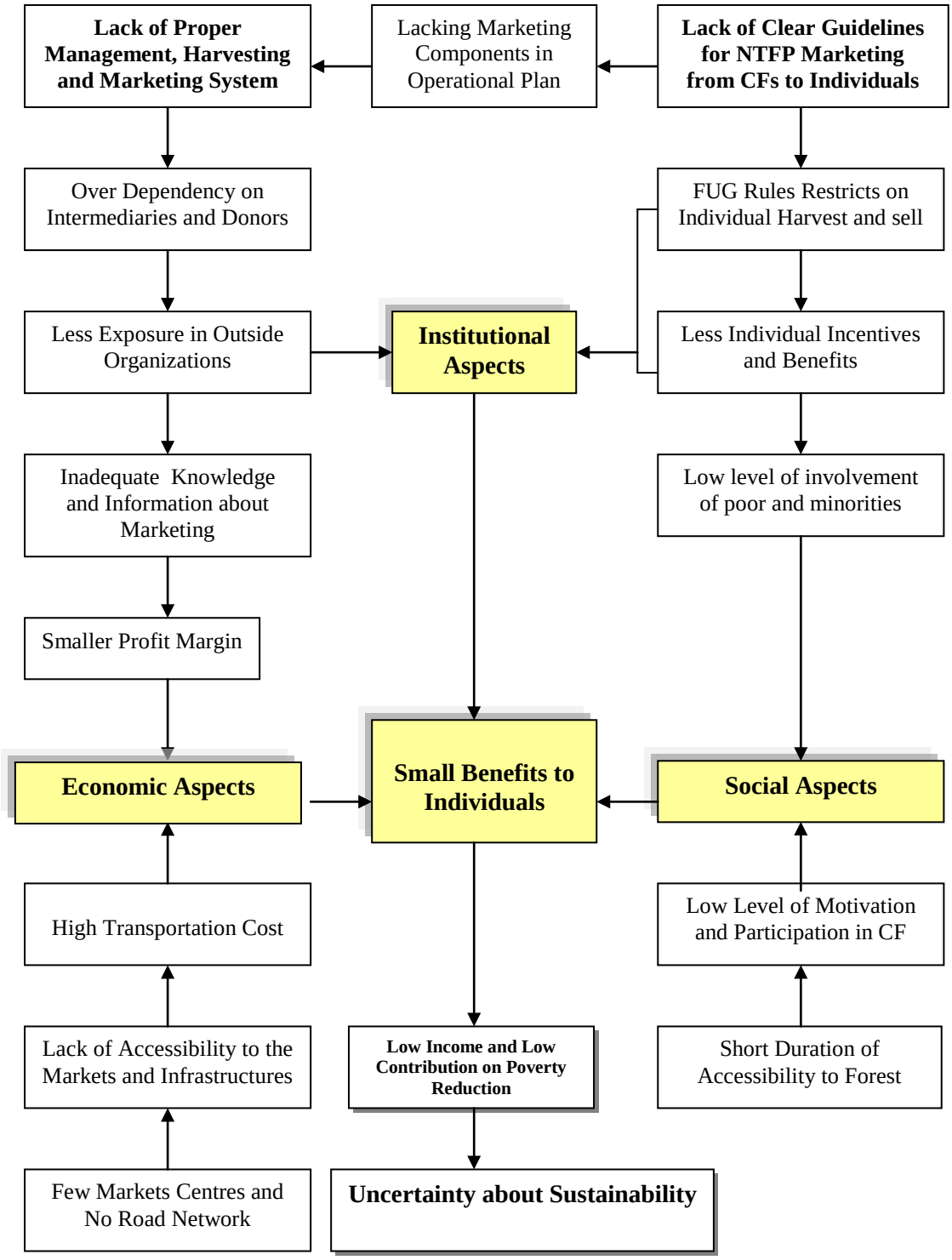


Figure 9.2: Key Problems Related to NTFP Marketing

9.3 Potentials for Forest Product Marketing

There is a big scope in forest product marketing from the study area. The main potentials for this are the area, location and species diversity in the forest. The other key potentials are the market demand, near by markets and communication and transportation accessibilities both for timber and NTFPs.

a) Timber Products: There is an enormous scope and potentialities for timber production and marketing from the study area. The forest area under this study is large and there are plenty of timber trees in different growth stages. Some are in production stage and some are in growing stage. The hot and humid subtropical climate is suitable for fast growing trees. Many timber species having high economic values are found in the forest. The demand of the timber products locally as well as the nearby markets is very high. There are plenty of processing industries locally for timber products prepare various kinds of consumer products.

A national road network is very close from the forest area of average 7 km. But the local road network nearly connected to the forest. There is easy availability of means of transports including buffalo drawn carts to trucks. The possibility of becoming low price because of over supply is very low. The timber products are not perishable in nature so can store longer if the market price is low or not reasonable. The main occupation of the people from the area is mostly agriculture, which is very seasonable in nature. In the off-season (not planting and harvesting) there is plenty of available labor force in cheap rate. Even the products are bulky in nature can handle and manage by this surplus labor force in slack season. This labor force could be used for harvesting, handling, processing and marketing. Moreover, there is an established system of marketing by group of FUG approach. This system should be continued in the future for more benefits from the CFs.

b) NTFPs: In the study CFs there is high diversity of NTFPs species. There were more then 150 species in a CF identified locally. Moreover the climate is suitable for tropical NTFPs and can grow faster. Even for plantation the climate is very suitable fro tropical NTFPs and can grow faster. The local people are familiar and aware regarding the use and its processing technologies of locally available NTFPs and MAPs. This local technology may be use for commercial production and sale.

Income from the NTFPs was very high relative to the other income sources. Because of higher profit margin, users wanted to harvest more products. Relatively non or nominal investment is sufficient for NTFPs collection. Almost all NTFPs are high value but low in volume. Few are voluminous but not like timber products. From the study area in one CF, there was high participation if an ethnic minority cast Chepang. Income generation program can motivate them for sustainable forest management and marketing.

In KW, there was marketing cooperative for NTFPs. It buys major NTFPs and sold to the medicinal industries and intermediaries. The co-operative and a CF (Deujur) are managed by Chepang, an ethnic minority people. This ethnic group is the most backward ethnic group in the country. There is a special program from the government to the area for its development and upliftment of the level of these people. Not only the government but also some donor agencies were interested to work in this area for this minority people. So there is high potentials for promotion of timber, NTFPs and it's marketing. There were many local and regional traders for these products from the area. If the potentialities of NTFPs exploited properly, it will contribute for the income generation and employments. Moreover, the forests are not so far from the national highway and also linked by local roads, so there is easy accessibility as well.

People from the area practiced NTFPs collection and processing for a long time. They know the medicinal value and use of NTFPs. Moreover, they prepare some medicine locally and used it. In case of other kinds of products also, they have the skills to process it. Especially they prepared various products from bamboo and broom for household use and use for agriculture purposes.

9.4 Analysis of Strengths, Weaknesses, Opportunities and Threats (SWOT) of Forest Product Marketing

Based on the group discussion with the respondents, local traders, middleman and other concerned stakeholders as well as the findings from the previous chapters, the SWOT analysis of forest product marketing are presented in this section.

9.4.1. Timber Products

Timbers are the main products for the FUGs from JW. The FUG harvest and traded its timber products to the users as well as to the market. The SWOT analysis is based on that area where the timber is main product.

Strengths	Weaknesses
• Resourceful in timbers • Climatically suitable • High biodiversity and plant density • Very high market demand of timbers • Good source of income from timber • Established marketing system can use for further marketing • Locally available processing industries add value in timber products • Transportation facility available • Products are not perishable in nature so can store more if could not get reasonable price • Availability of labor force for any sort of harvesting and processing activity • Large area of forest • Qualified, experienced skillful and motivated FUG members	• No provision of individual sells for the CF • Less program for individual direct benefits • No program for poor, minorities and disadvantaged people • Short duration of accessibility to the forest to harvest products • High volume and low value products difficult to handle and transport • More labor intensive for harvesting and handling • Poor road and transportation networks • Less availability of processing industries • Takes too long time for its production after plantation • Lack of transportation facility • Fewer program for poor and minority • Lack of market information • Lack of physical infrastructure for road, sawmills, harvesting and trading.

Opportunities	Threats
• Government policies and programs are favorable for production and management of CF • Good marketing policies and strategies will come after pressuring by many FUGs over the country • Possibility of establishment of timber	• High charge of Royalty by the government is not acceptable • Unclear government policy regarding marketing • Price distortion of forest produces esp. timber • High handling and processing cost

processing industries by the users group themselves • Income generation and employment for local people from the rural industries • Many donors are supporting in many aspects and Livelihoods for forestry program has been working in the marketing component. • Promotion of marketing option by exposure, training and case review by the CF, DFO and donor agencies. • Revenue from the timber products will become the major source of government income • Strong FUG could arrange of an efficient marketing. • Nationwide FUG federation is suitable to overcome any issues related to CFs • Rapid rural industrialization and modernization of forest industries	• Complex administrative and legislative procedures for transportation and selling of timber • Uncertainty about the duration of management and using right by the FUG • Limited technical support and facilitation from department of forest and DFO. • Over migration from the hills to that study area • High migration rate of people from hills to the KW and JW.

9.4.2. NTFPs

Respondents from KW basically collect NTFPs and sold to the local market and co-operatives. Both timber and NTFPs are the main products from the forest. Timbers were in the growing stage and they only focus on NTFPs. The SWOT analysis of NTFPs marketing is based on this watershed.

Strengths	Weaknesses
• High varieties of different NTFPs and MAPs in the forest • Availability of materials • Accessibility to the markets for trading of their harvested products • Suitable for most demanded NTFP species like *harro, barro* and *bale (Aegle marmeloes)* • Presence of marketing institution • Presence of intermediaries and traders • Accessibility to market information • Collectors having processing skills and knowledge about marketing • Peoples are aware of the economic value of NTFPs • Availability of planting materials and technical supports • Availability of the labor force	• Over dependency situation on local traders, middlemen, cooperatives and donor agencies. • Market information is controlled mostly by intermediaries • Price was determined based on so call “quality”. Though the quality is good the traders told to the collectors that your quality is not good and buy in cheap rate. • Subsistence farming based livelihood caused less motivation towards marketing and commercialization • The marketing cooperative bought only selected products • Lack of processing and storage facility

Strengths	Weaknesses
• A sort of established business linkages • Availability of road networks and communication facilities.	• Lack of technical/institutional supports regarding the proper harvesting techniques and handling • Lack of grading and packaging skills. • Lack of credit facilities • Less accessibility because of remoteness • Unavailability of resources in near future • Limitation or restriction of harvesting of NTFPs • Short duration of accessibility to the forest. • High transportation cost • Less knowledge and market information • Fewer concern about ethnic minorities and poor • Few market centers caused high competition among collectors for their products

Opportunities	Threats
▪ CF management guidelines encourages NTFP plantation and promotion ▪ Export promotion and earnings of foreign currency from the products ▪ Diversification of occupation from subsistence farming to commercial NTFP cultivation ▪ Resource protection and conservation by well-managed CFs ▪ Development of entrepreneurship and business skills by training and exposure by the CFs ▪ Women involvement in harvesting and processing will get higher sells and returns ▪ Many intermediaries and processing units and collection centers ▪ Mobilization of FUG funds for better marketing ▪ Closely situated with processing industries • National and international demand of	▪ High royalty system ▪ Only group can harvest and trade mostly (less individual members can harvest and trade for their income) ▪ Competition with Indian production and producers ▪ Conflict in land allocation inside CF for NTFP plantation ▪ Unfavorable climatic conditions for high value NTFP plantation which need high altitude and cool temperature ▪ Price uncertainty for the NTFPs ▪ Less technical knowledge and skill for cultivation and harvesting ▪ Uncertain market, industries and processing units ▪ Illiteracy and ignorance of user regarding marketing ▪ Frequent (daily) fluctuation in the price of product

Opportunities	Threats
the products • Availability of external supports from different organizations and NGO/INGOs • Government policies are also in favor of promotion of NTFPs in the community forests	

9.4 Chapter Summary

Based on the respondents' perception, the most serious forest marketing problem was no provision of individual harvest and sales of the products. The problem was equally serious to all CFs and to the both watersheds. The other problems were lack of market information, lack of road and physical infrastructure and lack of transportation facilities. Storage and processing facility was assessed less serious than other. The same trends of perception were found from individual CFs as well as both of the watersheds.

There were social, economic and institutional problems related to timber product marketing. Among these three aspects, institutional problems were the most important for the development, management and marketing for CFs. Institutional problems mostly related to policies, laws and operational plan of CF and its product marketing. The key institutional aspects were FUGs rules not convenient for getting direct benefit by the users, less duration of accessibility and less involvement of marginalized class people. Different cost and taxes are comes under the economic aspects. Gender inequality, elite's influences and some religious phenomena were the problems related to social aspects.

Institutional and economic aspects related some issues were the key problems of NTFPs marketing from CF. The major short comings for NTFPs trading is duration of accessibility, over dependency upon middle man., traders and donors, less exposure to outside organizations and fewer knowledge about marketing. These all problems were because of unclear guidelines and policies for CFs and its product marketing. In the case of NTFPs, including above, lack of physical infrastructure, lack of transportation facilities, less knowledge about marketing, poor access to market information and short duration of accessibility to the forest were the severe ones.

There were some potential for marketing of forest products from the CFs. The key potential related were high varieties of species, large area, and suitable climate, availability of labor force, established market linkages and high market demand of the processed and raw products.

Chapter 10

Conclusions and Recommendations

10.1 Conclusions

The findings from this research conducted in two watersheds of two districts Nawalparasi and Chitwan showed that the marketing activities of forest products from the community-managed forest are still in the development and learning phase. Few users were participated in the trading activities, which was limited to certain products. Harvesting of the products by the FUGs and sold their own users were the most common practice. Individual harvesting and trading was found very nominal. Few users sold the products just to manage their urgent financial problem, which was harvested solely for their household needs. However, some NTFPs were harvested and traded for income generation.

The trading activities of timber products was focused fuel wood, timber and some finished products from timber such as furniture, hangers etc. Mostly, the users can only collect fuel wood from the forest for their household, which was not applicable for a commercial purpose. Those having large family and more labor force available could collect more fuel woods from the forest and they sold the excess amount to their neighbor or other users, which was done informally. The users, who had large land holdings and have trees in their marginal land, sold their trees to the local users or local industries.

Certain NTFPs, not in their depleting conditions were harvested and sold by those users who had proper harvesting technology and information. Other NTFPs could harvest by all users and can sold to the market for income generation. The most common NTFPs harvested and sold by the respondents were bamboo and broom grass and their processed products. There was much practice of collecting and selling of major MAPs, but in the sampled respondents these types were very few.

Nevertheless, the FUG as well as individual users traded certain timber products and NTFPs from CFs collectively. The major buyers of the timber and its finished products were their own FUG members and local people. Very limited products were sold to the market and distance consumers. Whereas, most of the NTFPs from the area were sold to the cooperative and local traders. Even the people were aware that the price of the products was high in the regional market and could get more net profit, but they sold to the products locally. Though they sold their NTFPs to the cooperative and local traders but their most preferred market place is the regional market. The major buyers of timber products were local users and the FUG could only sell their products outside if the local demand is saturated.

Both the road head and regional markets were accessible to the users. The markets were highly accessible to the users from JW and relatively less accessible to the user of KW, whose main products was NTFPs. They have to carry their products on back up to the local market and from the local market they could transport it by any means. The most common means of transport to the regional market was a tractor. Bicycles and tricycles were very common means at the local level. Hence, the accessibility was not much problematic.

Cooperative marketing system was the most preferred system of marketing. The users from KW had practiced and found to be beneficial and profitable. Though the users from JW, were inexperienced about the cooperative marketing, also preferred the same. Group marketing approach also found to be preferable one as well. However, some collectors of

NTFPs were still followed the individual marketing system because they committed to sale it to local traders or they got the advance price from them. The formal channel of marketing was found to be most common both for the timbers and NTFPs. The timber products were traded by the FUG and NTFPs through the cooperative.

The existing cooperative marketing practice was beneficial for the users from KW. Even the existing marketing practices were less efficient and provide less net profit, some aspects like certain restriction on collection, group and cooperative approach was beneficial. It helped to protect resources and conserve biodiversity and environment and also provide plenty of social benefits.

Regarding price variation, there was a high price in the regional or higher level market than the local market and the marketing margin also larger in the regional market. There was not much profit margin and price variation for the products as other research findings showed. Market information was the important aspect for higher profit margin for the area.

Various social, economic and institutional/legal factors were identified as the important for price of the products and income from the product to get more benefits. For this only one factor cannot regulate and make them more profitable. Among these three major aspects, institutional factor were found to be the most important for the profit and the income. Social factors like social structure, gender, elite' s influence, low land holding have relatively less influence as compare to the institutional factors. Institutional factors such as duration of accessibility to the forest, FUG operational plan and its options on marketing, FUG rules on harvesting and trading of products and presence of marketing institutions were the key for price and income. Social and economic factors affecting the price and ultimately income to the collectors can only be addressed by the better and acceptable institutional arrangements. For this all stakeholders involved directly or indirectly in these kinds of activities should work together and come to the beneficial conclusion for the users and for the society as a whole.

Policy related to institutional aspect was the key problem for the marketing of both products. Unclear guidelines about marketing, limited individual collection and trading rights and short duration of accessibility to the forest were the major problems related to institutional aspect. Because of these the community forestry program from the study area was less concern about the program to the poor, ethnic minorities and disadvantaged group people. It provided very few supports in income generation and employment for these class people.

Including above, over dependency upon intermediaries and donors, unclear local FUG rules on collection and marketing, low individual incentives and benefits, inadequate knowledge, few exposure and inadequate information about marketing were the additional problems of NTFPs marketing.

These findings signified the importance of institutional arrangement and support to the CFs for its efficient marketing system by including poor and marginalized users.

The findings showed that there is enormous scope and potentialities for the promotion of community forestry and forest product marketing. Efficient conservation of resources, large forest areas and adequacy of products, availability of markets and market demand and locally available processing technology were the major ones. Including these availability of processing industries, established cooperat marketing system and involvement of most backward ethnic minority people were the additional potentialities for NTFPs.

The interventions on appropriate institutional and legal arrangement and policy implication to improve those problems and capitalized the potentialities are necessary to promote effective community forestry and the efficient forest product marketing system in Nepal.

Based on the outcome of the study, the research Hypothesis I is not found fully depends upon the hypothesized factors. Actually there was some linkages and associations on the effectiveness of marketing with the hypothesized factors but not depended fully. There was not significant contribution of market information, availaable markets, market distance, accessibility and means of transportation and marketing channels to the effectiveness of marketing system, which is more depended upon the institutional/legal and policy related factors in the study area.

Regarding Hypothesis II, the findings supports that formal marketing channel was more beneficial to the users. Cooperative and group marketing were found successful and beneficial to the users for both the products. The findings did not support the hypothesis III, “the economic factor play a major role to determine the price and income from the forest products”. The major associating factor regarding this is the institutional/legal aspect. The hypothesis of no difference in the system of marketing for two products also did not support by the findings. There was the different system of marketing for the timbers as well as NTFPs as elaborated earlier.

Timber products were mostly sold by the FUG to their own user and income goes to committee, which was used for various social works. But for NTFPs the users were sold individually to the traders, middle man or cooperatives. The income goes to the individual users by paying certain royalty to the CF.

The key summary of findings and conclusion is presented in a schematic diagram Figure 10.1

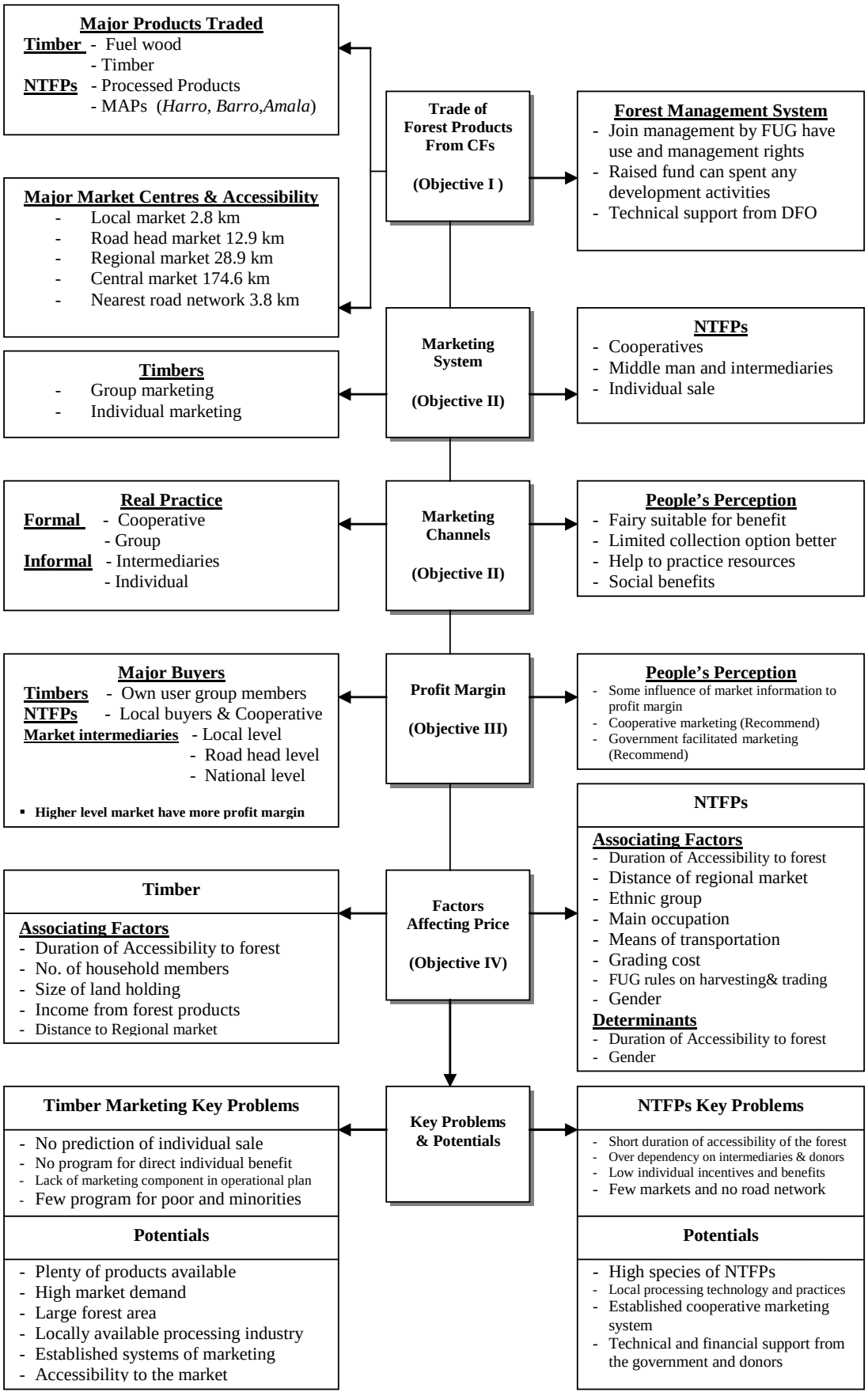


Figure 10.1: Major Findings for Research

10.2 Recommendations

Based on the key findings from this research, a set of recommendations are given hereunder to strengthen the existing marketing system and to promote the efficient marketing approach for the forest products from the community managed forests in Nepal. Especially, the recommendations are focused on institutional/legal factors as a important aspect of marketing. The major institutional area of recommendation for both the forest products are clear policy guidelines for marketing of products from the CFs, operation plan should incorporate marketing components, price information by proper institutional arrangements, promotion of cooperative and group marketing and establishment of small scale local processing industries for NTFPs.

10.2.1. Clear Policy Guidelines for Marketing of Products from CF

Community forestry guidelines did not mention clearly about forest product marketing especially by the individual users. Based on findings of Chapter 9 section 9.1, there was no individual sale of timber products and very limited sale of NTFPs because of the restricted policy and laws. As seen from the Chapter 6, very few products were harvested and traded individually from the CFs.

Therefore, there should be very clear policy guidelines for harvesting and marketing of forest products from the CFs, especially focusing on individual harvesting and trading. These policy guidelines are equally applicable to the timber products as well as NTFPs from the community-managed forest. Harvesting and marketing of both the products from CF has certain restriction and control by the FUG rules, operational plan and forest law. With out getting direct benefits by the users from the forest the motivation of work was reduced. Therefore there should some clear policy guideline to the users of CF regarding harvesting and marketing of timber and NTFPs and its benefit to the individual users. Therefore, the individual users, poor, disadvantaged group and ethnic minority could be beneficial. The District Forest Office and FUG should do this jointly with the guidelines from the Department of Forest. While FUG prepares their constitution and operational plan this issue could be addressed. Before registered as a community forest users group, the users have to prepare their constitution and operational plan with direct technical supervision of DFO. Then they submit to the DFO who assess the resource availability, situation and location of the forest and decide to handover the management and use right to the users. In this stage they can incorporate the issue to overcome this problems.

Based on the findings from this research, the marketing and individual benefits aspects should be taken in account for further planning in community forestry program in the near future. The planning in the CFs should be more focused on individual benefits that should be generated to the poor, minorities and disadvantaged groups and its mechanism for sharing direct benefits.

Community forestry program in Nepal started promotion of NTFPs plantation. Before the CFs were only concerned about the timber products and was focused accordingly. In present context various governmental and nongovernmental organizations are promoting NTFPs in the CFs. This is the best way to utilize resources and mobilize the local people as well as sustainability of the handed over forests.

Before going to make any action decisions for plantation it should be clear that after the final product would be generated, how the market can be organized and what is the mechanism for sharing benefits to the users. Again if the benefits only go to the FUG committee and use for development activities, which does not give the sufficient

motivation and interest of the users particularly the poor and minorities. It will not help on the income generation for them as well. This study showed that individual income and benefits are the key aspects for motivation and sustainability. The promotion of NTFPs considering this the major aspect will help to generate income, protect resources and has significant impacts in a long run.

Those are the areas that should be accounted in the policy formulation and issue clear guidelines for policy implementation, which should be taken action by the Department of Forest.

10.2.2. Marketing Measures Incorporate in Operational Plan

Based on findings from Chapter 9, Section 9.2.2 some marketing aspects could be addressed by the FUG themselves. In reality this was not practiced. This aspect also supports the findings from Chapter 7, where the NTFP collectors only harvest and sold bamboo, broom grass and its processed products. In the forest there were plenty of high value NTFPs and MAPs but not harvested by the users because of unclear marketing options in an operational plan.

This aspect can be solved by the FUG themselves. There was more restriction for timber products, so if the marketing aspects of timber and NTFPs is clear in operational plan, it will make clearer to the users about their rights and limitations. They can harvest and sale both the products accordingly as mentioned in operational plan. This improvement helps to make systematic marketing of timber and NTFPs. FUG prepares their operational plan in every five years and approved by the DFO. While they are preparing or updating their operational plan this aspect could be incorporated. For this they can propose a sustainable harvesting mechanism from the forest in their operational plan. Which is approved by the DFO and can implement by the FUG. Thus, while preparing their operational plan if they analyze this aspect properly and plan accordingly then this issue should have been addressed adequately.

10.2.3. Price Information by Proper Institutional Arrangement

Findings from Chapter 7, Section 7.5 shows that price information for the products have strong influence to the profit margin. More access to information gets more benefits. This issue is also verified from Chapter 9. Hence, market price information had some association with profit. This also helps to decide to the collectors whether they should sell the products in this time or wait until reasonable price to the market.

This recommendation is especially to the NTFPs collectors and trading cooperatives. The market price of timber products is not much flexible and fluctuating day by day. But the price of NTFPs depends on the supply, market situation and degree of competition. The price may vary day-by-day and different on the main season and off-season. So the price information of NTFPs from the various market centers will help to improve the marketing of NTFPs.

DFO can assist to the FUG for price information flow. This could be more possible from the marketing cooperative. The marketing cooperative can collect the market price information of various products from the different market centers weekly or fortnightly and could be displayed in the price information board or in the notice board. Those products, which could not sell to the cooperative, can sell to outside markets deciding by the price information. For this aspect FUG federation can also play an assisting role.

This market price information flow also helps to stabilize the market price. Due to the price information, it helps to reduce over flow of products during the season, which reduced the market price. If collectors are informed about the market price they can sell by some alternate day turn by turn. This helps to maintain a market price, the supply situation and price stabilization from the local supply. This also encourages to the users to process the products if market price is low. These ultimately help to maintain the equilibrium situation of demand and supply.

10.2.4. Promotion of Group and Cooperative Marketing

Findings from the Chapter 7, Section 7.5 shows that the most preferred marketing system is a cooperative approach. This finding also verifies and added group marketing may be the next alternative from the Chapter 9. There was a cooperative from KW, for collection and marketing of NTFPs, which was found to be more beneficial and friendly to the collectors. Similarly, the CF from JW traded timber product by group approach. This was also beneficial as well.

The cooperative marketing system is suitable and hence recommended for both timbers and NTFPs. But because of large volume of the timber products it may not be easy to buy and store the timbers by the cooperative. This recommended system of cooperative marketing is more applicable to the NTFPs and its marketing. This approach can apply to the system and can be followed by the collectors themselves by forming a cooperative or formation of a marketing group. For this district cooperative office and DFO can provide technical support. Formation of cooperative and starting marketing activities could be support by the donors working in the area (DFID, SNV Nepal, Forest Actions etc.). To form a marketing group, DFO or CBOs can help by describing the system or exposing them to the practiced area, where there is successful group marketing was practiced. This approach also helps to stabilize the market price and primary collectors will be benefited by the constant or regulated supply to the market or bargain with the processing industries for a higher price.

10.2.5. Promotion of Small Scale Local Processing Industries

The recommendation of promoting local processing industries is only of NTFPs having medicinal value. Since there was some practice of processing of few medicinal plants in the areas, to utilize this local technology and local market, a small scale NTFP processing industry could be promoted. The users from KW had some skills for processing of NTFPs. This was supported by the findings from Chapter 7, where people were selling their processed products. Some people have the skills to process MAPs and prepare medicine, which was used locally. So these skills could be utilized in a better way by establishing local small scale processing industries. These can be established by the cooperatives or local traders or local elites based on the profitability of industries and locally available materials. For this government should show some flexibility or provide soft loan or some subsidy to the entrepreneur. This helps to collect the material in the cheap rate and production of finished products in low cost. Moreover, the intermediaries or local traders cannot exploit them and make them competition with each other if marketing by the group or cooperative. Sometimes higher price could be asked to them for their collected products.

10.3 Recommendations for Further Research

Based on the findings of this research, some other related aspects may be considered for further research.

- Institutional Arrangement in Marketing of Forest Products from the Community Managed Forests.
- Direct Economic Benefits to the Poor, Minorities and Disadvantaged group people from Community Forests and Its Impact on Poverty Reduction.

References

Acharya, D.P. Shreatha, R. Niraula D.R. and Ghimire, K. (1998). "*Community Forestry for Every Body Forever"* Proceeding of the Third Natioal Community Forestry Workshop from 27 to 29 October, Kathmandu, Nepal.

Amin, A.T.M.N, (1995). *Economic of Rural Urban Relations, Reexamined in the light of growing environmental concerns. Regional Development Studies.* UNCRD.

APO, (1997a). *Marketing System of Agricultural Products.* Report of an APO Seminar on marketing system for agricultural products held in Tokyo, Japan from 14 to 24 May 1996. Asian Productivity Organization, Tokyo.

APO, (2001). *Marketing of Vegetables and Fruits in the Asia and the Pacific*. Report of the APO seminar on marketing of vegetables and fruits held in Islamabad, 4 – 9 October 1990. Asian Productivity Organization, Tokyo.

Basnyat, B. (2003). *Data Analysis of Community Forestry Users Group, Nawalparasi District*, Livelihood and Forestry Program-Terai, Butwal, Nepal.

CBS (2000). *Statistical Year Book 2002*, Central Bureau of Statistics, Kathmandu, Nepal.

Chamberline, J.L., R.J. Bush, A.L. Hammet and P.A. Arman (2002). *Eastern National Forests – Managing for Non Timber Products*, Journal of Forestry, Vol. 100(1), Jan-Feb, 2004.

Chautari Community Forest Users Group (2002). *Constitution and Operational Plan, 2002*, Chautari Community Forest Users' Group, Nawalparasi, Nepal.

Dangi, R.B. and Hyde, W.F.(2001). *When Does Community Forestry Improve Forest Management*, The Nepal Journal of Forestry, Vol. XII (Page 1-16), Nepal Foresters' Association, Kathmandu, Nepal.

Denholm, Jeannette and Rayachherty, (1990). *Major Agroforestry Activities of Non governmental Organization in Nepal*, Ministry of Agriculture, Kathmandu, Nepal.

Department of Forest Research and Survey (2002). *Banko Jankari,* P.O.Box 3339, Kathmandu,Nepal.

District Agriculture Development Office Nawalparasi (2002). *Annual Report, 2002,* Nepal

District Forest Office, (2003). *Annual Reports of the Year 2003*, DFO, Chitwan, Nepal.

District Development Committee, (2003). *District Development Plan*, Nawalparasi, Nepal.

Duchense,L.C., Zasada JC and Davidson-Hunt, (2000). *Non Timber Forest Product Industries in Canada: Scope and Research Needs*, Forestry Chronicle Vol.76 (5) Page 7743-746 Sept-Oct. 2000, Canada

Duchesne, Luc. C and S. Wezel, (2002). *Managing Timber and Non Timber Forest Resources in Canada's Forests: Needs for Integration and Research*, Forestry Chronicle, Vol. 78(6), Page 837-842, Nov-Dec. 2002. Canada

Edwards, D.M., (1996). *Non Timber Forest Products and Community Forestry, are they Compatible?*" Banko Jankari, Volume 6 no. 1 PP 3 –8, Department of Forest Kathmandu, Nepal.

Edwards, D.M., (1996). *Non Timber Forest Products from Nepal: Aspect of the trade in medicinal and aromatic plants*, FORESC Monograph 1/96, Forest Research and Survey Center, Ministry of Forest and Soil Conservation, Kathmandu, Nepal.

Edwards, D.M. and Bowen, M.R, (Eds), (1993). *Focus on Jaributi*, FRSC Occasional Papre 2/93, Forest Research and Survey Centre, Ministry of Forest and Soil Conservation, Kathmandu.

Ellis, F., (1996). *Agricultural Policies in Developing Countries*, Cambridge University Press London.

FAO, (1995). *"Non Wood Forest Products for Rural Income and Sustainable Forestry"*, FAO non wood forest products series no. 7, FAO , Rome.

FAO, (1996). *Income Generation From Non-Wood Forest Products in Upland Conservation.* FAO Conservation Guide 30, FAO , Rome.

Hammett, A.L., (1993). *Non-timber forest products: profits and panacea*? in Edwards, D. M. and Bowen, M.R.(Eds), Focus on Jaributi, FRSC Occasional Papre 2/93, Forest Research and Survey Centre, Ministry of Forest and Soil Conservation, Kathmandu.

Hanson, J.L.(1982). *A Dictionary Of Economics and Commerce*, The English language book society and Mac Donald and Evans Ltd. London.

Jack Ruitenbeek and Cynthia Cortier, (1998). *Relational Explanations: Economic Criteria and Indicators for Suatainable Management of Tropical Forests*, Centre for International Forestry Research, Sindengharang, Bogor, Indonesia.

Kanel, K.R., (1999). *Policy Related Issue in Non Timber Forest Product Business.* Workshop proceedings of Non-timber forest produces: Production, collection and trade of NTFPs in the mid western development regions of Nepal. Department of forest, Kathmandu, Nepal

Kanel, K.R., (2000). *Analyzing Policy for Poverty Alleviation*: *An example from non timber forest product sub sector*, Banko Jankari, Vol. 10 no. 2, Department of Forest Research and Survey, Kathmandu, Nepal.

Kanel, K.R. and Kandel, B.R., (2003). *Community Forestry in Nepal: Second generation issue*, Samudayik Ban Bulletin, Vol. 10, PP 6 – 18, Department of Forest, Community Forestry Division, Nepal.

Karki, M.B., (2000). *Commercialization of Natural Resources for Sustainable Livelihoods*: The Case Study of Forest Products in M. Baskota et al (ed.), Growth Poverty Alleviation and Sustainable Resource Management in the Mountain Areas of South Asia, ICIMOD, Nepal.

Kothari C.K. (1999). *Research Methodology*, Wishwa Prakashan, New Delhi, India.

Lal, Ratan, (1999). *Integrated Watershed Management in Global Ecosystem*, Soil and Water Conservation Society, USA.

Larsen, H.O., C.S.Olsen and T.E. Boon (2000). *The non-timber forest policy process in Nepal: actors, objectives and power*, www.elservier.nl/locate/forpol, 6/4/2004.

Mahat T.B.S.(1987). F*orestry Farming Linkages in the Mountains*, ICIMOD ,Kathmandu Nepal.

Marshall, E.A.C., Newton and K. Schrechenberg (2003). *Commercialization of Non Timber Forest Products: First Step in Analyzing the Factors Influencing Success*, International Forestry Review, Vol. 5(2), Page. 128-137, June 2003.

Muraleedharan, P.K., Anitha, V., Sreenivasan, M.A., Seethalakshmi, K.K. and Sasidharan, N. (1999). *Marketing of Non-Wood Forests Product in Kerala: Price Spread and Economic Efficiency*, Journal of Non Timber Forest Products, Vol. 6 (page 103-109), Bishen Singh Mahendra Pal Singh Dehara Dun, India.

Multipurpose Tree Species Research Network (1994). *Selling Tree Crops*; Forestry fuel wood research and development project, Kasetsart, Thailand.

National Planning Commissions (1997). *Ninth Five Years Plan of Nepal*, NPC Kathmandu Nepal.

National Planning Commissions (2002). *Tenth Five Years Plan of Nepal*, NPC Kathmandu Nepal Rodney, Stark and Lynee Roberts, 2002, Contemporary Research Methodology, Wadswoth/Thomsom learning, Belmontm CA94002-3098, USA.

Nicholson, K. (1995). *"Income Generations through the Production and Marketing of Handicrafts and Non Wood Forest Products"* The Mountain Institute, Franklin, West Virginia, USA.

Olsen, C.S. (1997). *Commercial non-timber forestry in Central Nepal: emerging themes and priorities*. Royal Veterinary and Agricultural University, Department of Economics and Natural Resources, Copenhagen, Ph.D. dissertation.

Pandit, B.H. (2000). *Contribution of the domesticated non-timber forest products (NTFPS) to local economy in mountain watersheds of Nepal*, Asian Institute of Technology, Bangkok, Thailand.

Pandit, B.H. (2003). P*rospects of Promoting Non Timber Forest Products in the Mountains of Nepal*, A Ph. D. dissertation submitted to Asian Institute of Technology, Thailand.

Perez, M.R, and N.Byron (1999). '*A methodology to analyze divergent case studies of non-timber forest products and their development potential*', Journal of Forest Science 45 (1999).

Perez, M.R., O.Ndoye, A.Eyebe and A. Puntodewo (2000). *Spatial Characteristics of Non Timber Forest Products Markets in the Humid Forest Zone of Cameroon*. International Forestry Review, 2(2), Page 71-82.

Shikb, A.M., Kanel, K., Koirala, D. and Pandey, S. (1989). *The Forest Products Marketing System in Nepal, Case Study of the Urban Areas of Kathmandu Valley*, USAID, Kathamandu, Nepal.

Shin, K.U. (2001). *Recent Development in Vegetable and Fruits Marketing, Marketing of vegetables and fruits in the Asia and the Pacific*, Report of APO seminar PP:23 – 34, Asian Productivity Organization, Tokyo.

Sharma, P.N. (1997). *Recent Development Status and Gaps in Participatory Watershed Management Education and Training in Asia*, PWMTA, Kathmandu, Nepal.

Shrestha, R.B. (2003). *Values of Medicinal Plants in Community Forestry*, CF Bulletin Vol. 10 (Page 26-31), Community Forestry Division, Department of Forest, Kathmandu, Nepal.

Shrestha, Ramraja L. (1986). *Socio economic factors leading to deforestation in Nepal*. HMG/N USAID-GTZ-IDRC Winock Project, Kathmandu, Nepal.

Sidhu, D.S. (1997). *Measures to Enhance the Efficiency of Agricultural Marketing System of Agricultural Products*. PP 104 – 132, Asian Productivity Organization, Tokyo.

Subedi, B.P. (2003). *"NTFPs Sub Sector in Nepal, Opportunities and Challenges for Linking the Business with Biodiversity Conservation"* Nepal Journal of Forestry Volume XIV, no. 1 PP 18-32, Nepal Foresters Association, Kathmandu, Nepal.

Sundari Community Forest Users' Group (2003). *Smarika,* Sundari Community Forest Users' Group, Nawalparasi, Nepal.

Sundari Community Forest Users' Group *Constitution and Operational Plan* 2002, Sundari Community Forest Users' Group, Nawalparasi, Nepal.

Taylor, David A. (1996). *Income Generation from Non Wood Forest Products in Upland Conservations*, FAO, Rome.

Tingsabadh, Charit and Phutaraporn Kobkul (1991). *Socio economic Impacts of MPTS Biotechnologies on Small Farmers in the Philippines, Nepal and Thailand,* chulalongkorn University/ Winrock International. Thailand.

UNEP, (2001). Nepal: *State of the Environment 2001*. UNEP, Asian Institute of Technology, Bangkok, Thailand.

Vance, N.C. and J.Thomas Edts (1997). *Special Forest Products: Biodiversity Meets the Market Place*, General Technical Report GTR-WO-63. U.S.D.A., Forest Service Proceedings from a Seminar Series, Special Forest Products – Biodiversity Meets the Market Place held at Oregon State University in 1995, USA.

Wallace, Micheal B. (1986). *Community Forestry in Nepal: Too Little too Late*, His Majesty's Government of Nepal (HMG/N), USAID-GTZ-IDRC Win rock Project, Nepal.

Appendix 1: Research Coordination Schema

Objective	Parameter	Complex Variable	Simple Variable	Data Source	Data Analysis Techniques
General information of Respondent	Respondent Ideography		Age Gender HH Size	Questionnaire	Descriptive statistics
	Social Condition	Education	Literate Primary Secondary Higher	,,	Descriptive statistics
		Occupation	Major/Primary Minor/Secondary	,,	,,
		Land Holdings	Size of holding Type Tenure	,,	,,
	Economic Condition	Average income	Agriculture sector Forest sector Other sources • Wage labor • Small business • Cottage industry • Services	,,	,,
		Food Sufficiency	Sufficient from own production Saving form the production Deficit for the production	,,	,,

123

Objective	Parameter	Complex Variable	Simple Variable	Data Source	Data Analysis Techniques
		Production	Field crop • Rice • Wheat • Maize • Legumes • Vegetables • Others Cash crops • Vegetables • Potato • Pulses • NTFPs • Fruits • Others Livestock • Cows • Buffaloes • Oxen • Goat • Pig • Poultry • Bee keeping • Others	Questionnaire	,,

Objective	Parameter	Complex Variable	Simple Variable	Data Source	Data Analysis Techniques
	Institutional Condition	Member in organization	Marketing organization Voluntary organization Profit making organization Cooperatives NGOs User group Others	,,	Descriptive statistics`
		Participation in organization	Executive member General member Benefit sharer Employee Others	,,	,,
		Participation in marketing organization	Marketing Decision making Market information collection Product collection Others	,,	‘’
1. To assess the different types of timber and non-timber forest products traded from the districts and also identify	Major traded products	Timber products	Timber Poles Firewood Fodder Others		

Objective	Parameter	Complex Variable	Simple Variable	Data Source	Data Analysis Techniques
major market centers and their accessibility.		Non timber Products	Medicinal plants Herbs Mushrooms Others	Questionnaire	Descriptive statistics
	Market centers	Types of market	Village/Local Market Road head market Town/City market Regional market	Questionnaire, key informants interview and discussion	Descriptive statistics
		Accessibility	Name and distance form the collection area • Local/village market • Road head market • City market • Regional market Means of transportation • Road transport • Carrying manually/animal	Questionnaire and observation	
2. To analyze the existing marketing system, marketing channels and identify the people's feedbacks on marketing of	Marketing channel • Formal • Informal	Timber products	Traders at different market centers Middle man Wholesalers Government institutions Cooperatives	Questionnaire, key informants interview and discussion	Descriptive, mapping and chain analysis

Objective	Parameter	Complex Variable	Simple Variable	Data Source	Data Analysis Techniques
timber and NTFPs;		Non timber forest products (NTFPs)	Traders at different market centers Middle man Wholesalers Government institutions Cooperatives	,,	,,
3. To assess price variation and analyze marketing margins of major NTFPs;	Price variation	Price of a commodity at different points	Producer or farm gate price Price at village market Price at road head market Price at regional market Difference between the farm gate price and consumer price.	Questionnaire and key informants	Mean, Standard deviation , t test and ANOVA
	Marketing margin	Difference between the buying and selling price	Margin at; • Village market • Road head market • City market • Regional market	,,	,,

Objective	Parameter	Complex Variable	Simple Variable	Data Source	Data Analysis Techniques
	Factors cause price difference of timber and NTFPs.	Social factors	Social belief regarding harvesting and selling Elite group dominance Religious belief	Questionnaire	Correlation, multiple regression analysis, factor loop.
4. To analyze factors affecting pricing of timber and NTFPs and identify problems, constraints and potentials.		Economic factors	Cost of harvesting and harvesting techniques Cost of transportation • Close distance < 10 km • Medium distance 10 – 50 km • Long distance up to 100 km Means of transportation • Carrying by porters • Road transport • Others Cost of processing and value added factors • Drying • Processing • Grading		

Objective	Parameter	Complex Variable	Simple Variable	Data Source	Data Analysis Techniques
			• Packaging Storability factors • Long store quality goods • Highly perishable goods High volume goods (need more space for storage)		
		Institutional and legal factors	Competition between buyers (middleman and wholesalers) Laws or constitution of the user group Tax by the local government Presence or absence of marketing institution Collection center Government institution and mechanism Government policy i.e. price policy Government promoted products Restricted products Quota products Laws related to collection and selling		

Objective	Parameter	Complex Variable	Simple Variable	Data Source	Data Analysis Techniques
	Problems and constraints		Banned products		
		Others	Time of harvesting • Normal harvesting season • Off season	Questionnaire	Problem listing and ranking, SWOT analysis
		Social Aspects	Traditional beliefs related to collection and selling Religious factors Elite influence on benefit and leadership Social status problem	”	”

Objective	Parameter	Complex Variable	Simple Variable	Data Source	Data Analysis Techniques
	Potential	Institutional aspects	User group structure Transparency Share of benefits Higher caste domination Coordination with local government Record keeping system Trained man power (technical and management) Others	,,	,,
	Recommendations	Economic or Marketing aspects	Availability of products Demand of market Processing facility Physical infrastructure Monopoly of middle man	,,	,,

Objective	Parameter	Complex Variable	Simple Variable	Data Source	Data Analysis Techniques
		Production potentials Market demand	Area and productivity Climate and location Diversity of species Processing industries Government supports (Subsidy and other) Regional market Availability of middle man	,,	,,
		Price variation Factors affecting price	Cause of price variation Major factors affect prices	Questionnaire	Ranking and Weighted average index.
		Social aspect	Training and extension to the users • User group member • Middle man • Local trader Harvesting techniques Harvesting time Marketing approaches • Group marketing • Cooperative marketing	Questionnaire, discussion and different reports, journals and publications	T test, chi square test and factor analysis

Objective	Parameter	Complex Variable	Simple Variable	Data Source	Data Analysis Techniques
5. To suggest recommendations to strengthen marketing system of timber and NTFPs and outline policy implications.	Policy implications	Economic aspect	Stabilize farm gate price Reduce marketing margin Improve the quality of product Increase the returns Credit facility • User group members • Traders	,,	,,
		Institutional	Institutional capacity building Share of benefits • Democratic system	,,	,,
		Others	Other recommendations identified by the analyzing social economic and institutional problems affecting pricing and marketing of timber and NTFPs.	,,	,,

Objective	Parameter	Complex Variable	Simple Variable	Data Source	Data Analysis Techniques
		Government program on community forestry and marketing system Hand over system Use and management right Tax collection from the total income Policies for establish industries Marketing policies Others.	Suggestion of necessary policies to solve the identified problems.	,,	,,

Appendix 2: A Questionnaire for Household Survey

Questionnaire No: …….

MARKET ANALYSIS OF MAJOR FOREST PRODUCT FROM COMMUNITY MANAGED FORESTS: A STUDY FROM THE FOOTHILL WATERSHEDS OF NEPAL

---

by

Bhim Nath Acharya

The purpose of this study is to collect information to meet the objectives of my research study in the Asian Institute of Technology, Thailand. The information filled in this questionnaire will be confidential and will be used only for academic purpose. Please feel free to express your personal opinion and value.

Section I: Socio Economic Information

Information of Respondent:

Name of Respondent……

VDC: ……..Village…….District……

Name of the Forest User Group: ……..

Name of Interviewer: ……

Date of interview: …….

Remark: ……....

……..

……..

1. Demographic Characteristics of Respondents

1.1 Relationship with HH Head	1.2 Age (years)	1.3 Sex	1.4 Marital Status	1.5 Education	1.6 Occupation
1. HH head					
2. Wife					
3. Son 1					
4. Daughter 1					
5……					
6.					

Coding Instructions:

Code 1.3: 1 = male, 2 = female
Code 1.4: 1 = single, 2 = married, 3 = widow, 4 = ….
Code 1.5: 1 = cannot read and write, 2= primary level, 3 = secondary level, 4 =……
Code 1.6: 1 = agriculture, 2 = Agriculture and service, 3 = Agriculture and business, 4 = Business,5 = Service, 6 = Cottage Industry, 7 = Wage laborer, 8 = Tourism works, 9 = Student, 10 = Unemployed, 11 = Others

2. Please mention about your size land holding and land tenure?

Area in ha. (Bigha/Kattha)	Type of Holding				Remarks
	Owned	Share Cropping	Rental in	Rented out	

3. What were the sources of earnings during last fiscal year?

Sources	Amount
Agriculture (crop and livestock)	
Forestry	
Wage Labor	
Small Business	
Cottage Industry	
Services	
Others	

4. How long does your agricultural production can meet your household food demand?

1 to 3 Months	Up to 9 Months	Whole Year	Sold at Last Year

5. Please give details of your production last year?

Enterprise	Production (Muri/ Quental/income in NRs.)
Rice	
Wheat	
Maize	
Legumes	
Vegetables	
Potatoes	
Fruits	
Non-Timber Forest Products	
Others specify…….	
…….	
Cows	
Buffaloes	
Oxen	
Goats	
Pigs	
Poultry	
Beekeeping	
Others specify…….	
…….	
…….	
…….	

6. Are you a member in any organization?

☐ Yes ☐ No

If yes, go to No. 7.

7. In what position you work for?

Organization	Please tick	Position in Organization
Marketing Organization		
Voluntary Organization		
Profit Making Organization		
NGOs		
User Group (specify)		
……		
……		
Others (specify) ……		

8. If you are the member in marketing organization in which level you participated? (Multiple Answer)

☐ Marketing ☐ Decision Making
☐ Market information collection ☐ Product collection
☐ Others (Specify)

9. Did you get any benefits from being a member of above marketing organization?

☐ Yes ☐ No

10. If yes, please identify and rank according to the most beneficial items you gained.

Beneficial Activities	Rank

Section II: Marketing of Timber and NTFPs

1. What are the major products that you harvested from your community forest?

Timber Products	Non-Timber Products
Poles	Bamboo
Timber	Broom grass
Fire Wood	Mushrooms
Fodder	Medicinal plants
Others (specify)	Herbs
	Others (Specify)

2. Do you process the product yourself?

☐ Yes ☐ No (If no, go to Q 4)

3. What did you prepare from those timber and NTFPs?

Source of raw material	**Products**	**Tick**
Timber	Furniture	
	Firewood	
	Readymade finished products	
	Others (Specify)	
NTFPs	Broom grass	
	Bamboo products	
	- Doko	
	- dalo	
	- Nanglo	
	-Choya	
	- Bhakari	

	Tokari	
	Others (specify)	

4. Among the products Q. 1 and 3, which are used or sold for your benefit?

Timber Products	Used	Sold	Non-Timber Products	Used	Sold
Poles			Bamboo		
Timber			Broom grass		
Woods			Mushrooms		
Others (specify)			Medicinal plants		
			Herbs		
			Others (Specify)		

5. During last year which products did you sell and how much income did you get from them?

Forest Products	Quantity	Total Income in NRs.
A. Timber Products		
B. NTFPS		

6. Where did you sell these products?

Forest Products	Market Centers	Quantity
Timber	Local or village market	
	Road head market (specify)	
	- Narayangarh,	
	Town/city market	
	Regional market	
NTFPs	Local or village market	
	Road head market (specify)	
	- Narayangarh,	
	Town/city market	
	Regional market	

7. How far these markets (places to sold) are?

Name of the Place	Approximate Distance (km.)	Approximate time in Hours

8. How do you transport those products up to the market?

Forest Products	Market Center (As identified in Q.7)	Means of Transport
Timber		
NTFPs		

9. To whom you sold the timber products? (Multiple Answer)

Timber Products	Traders	Middle man	Whole salers	Government institutions	Cooperatives	Saw mills	Furniture industries	others
Poles								
Timber								
Woods								
Others (specify)								

11. Who among those that you sold your products are the major buyers? (To whom you sold the maximum amount of product on the basis of value?)

Products	Preferred Buyer	Quantity Sold	Value in NRs.	Preference

12. To whom you sold the non-timber forest products? (Multiple Answer)

NTFPs	Traders	Middle man	Whole salers	Government institutions	Cooperatives	Saw mills	Furniture industries	others
Bamboo								
Broom grass								
Mushrooms								
Medicinal plants								
Herbs								
Others (Specify)								

13. Who among those that you sold your products are the major buyers? (To whom you sold the maximum amount of product on the basis of value?)

Products	Preferred Buyer	Quantity Sold	Value in NRs.	Preference

14. Do you know where the buyers (that you sold) sell the product from you?

☐ Yes ☐ No (if no go to Q. 14)

15. If yes, can you list down?

Products	Places to Sell

16. Why do not sell those products yourself to those places?

☐ No time ☐ Small volume
☐ Difficult to transport ☐ Others (Specify)

17. Please provide the unit price that you got from your products. In which price you sold your products?

18. Do you know the price of same product in the next markets (Fill up the answer on the third column of Q.14)?

Product	Price per Unit (You Sold)	Price of the Other Market
Timber		
- Poles		
- Timber		
- Fire wood		
- Others		
Non-Timber		
- Bamboo		
- Broom grass		
- Mushrooms		
- Medicinal plants		
- Herbs		
- Others (Specify)		

19. If you want to buy the same product from the market, then how much you have to pay per unit?

Product	Unit Price in NRs.	Market Center	Distance in km	Cost of Transportation	Reason to go there

20. If you are selling at farm gate, why you do not take them to the district/ regional market center where the price is high?
    1. _____
    2. _____
    3. _____

21. How frequently you or your household members visit market center?

Market Center	Frequently	Occasionally	Rarely
Local/ Village market			
Road head market			
City/ Town market			
Regional market			

22. Is the price of the same product varies from place to place? Please describe the price at different places.

23. Is the price of the same product varies within the same year? Please describe the price at different time/ period of year.

Products	Price								
	Places (Q. 22)					Time (Q. 23)			
	Farm gate	Local Market	Road Head Market	City Market	Regional Market	Harvesting Time	Off Season	Dried Products	Other Time

Sector III: Factors Influencing Price of Timber and NTFPs

1. How could you rank the influential factors related to price variation of timber and NTFPs as mentioned below? Please specify those in the table below.

Remark: 1 = Very Strong Influence 2 = Strong Influence 3 = Some Influence
4 = Weak Influence 5 = No Influence

Influential Factors		Degree of Influence (Tick off /)					How?
		1	2	3	4	5	
Social Factors	Social belief that forest products are free gifts by nature and don't like sold them.						
	- Religious belief that some plants cannot cut and harvest even they have high economic value						
	Cooperation level between member of FUGs and other community people.						
Economic Factors	- Transportation cost						
	- Grading cost						
	- Perishables						
	- Degree of competition						
Institutional and Legal Factors	Laws and constitution prepared by the forest user group which restrict to harvest and sell certain products.						
	- Tax by local government						
	- Presence of marketing institutions						
	- Collection center facilities						
	- Quota products						
	- Restricted products						
	- Harvesting season						

2. Do you think that forest products (Timber and NTFPs) will be got higher price if their quality are improved?

☐ Yes ☐ No ☐ Don't know

3. If yes, how did you do it?

_____

_____

_____

_____

4. Did you do some processing before marketing?

☐ Yes ☐ No

5. If yes, what did you do?

Product	Method of Processing	Labor (Man/Day)

Section IV: Problems, Constraints and Suggestions

1. Do you have any problem in marketing?

☐ Yes ☐ No

2. If yes, please specify the problems and constraints in marketing of timber and NTFPs from community managed forests.

Factors	Problems	Tick off (/)	Rank	1	2	3	4	5
Social	Traditional beliefs related to collection and selling							
	Religious factors							
	Elite influence on benefit and leadership							
	Social status problem							
Institutional	User group structure							
	Transparency							
	Share of benefits							
	Higher caste domination							
	Coordination with local government							
	Record keeping system							

	Trained man power (technical and management)							
	Others							
Economic or Marketing	Availability of products							
	Demand of market							
	Processing facility							
	Physical infrastructure							
	Monopoly of middle man							

3. In your opinion, what are the potentials for community forestry and forest product marketing? (Multiple answers)

Potential	Please tick (/)	Ranking
a. Large area – high productivity		
b. Climate and location of forest		
c. Species diversity		
d. already had good vegetables		
e. Having good benefits		
f. Availability of market and demand		
g. availability of middleman market institution		

4. What kind of assistance did you get from government institutions (DFO and others) for harvesting and marketing of forest products?

5. What should they do for proper functioning?

6. In your opinion, what should be the proper marketing system for forest products?

7. What should be the proper policy and methods for appropriate marketing system?

8. Please provide main problems, constraints, suggestions related to marketing of timber and NTFPs and rank them.

Marketing Aspect	Problems/Constraints	Rank	Suggestions	Rank
A. Marketing System	1……..		1…….	
	2.		2.	
	3.		3.	
B. Marketing and Market Centers	1.		1.	
	2.		2.	
	3.		3.	
C. Marketing Channel	1.		1.	
	2.		2.	
	3.		3.	
D. Market Information	1.		1.	
	2.		2.	
	3.		3.	

Appendix 3: Checklist for Key Informants Interview

The major key informants for this research are local leaders, FUG executive committee members, school teachers (local and the user of the forest) and local social mobilizers working in that area for some NGO?INGO

1. What are the major products harvested and traded from the community managed forests?
2. What are the provisions to harvest and sell the product individually?
3. Is there any tax and royalty users/collectors have to pay from the selling their harvested products?
4. What are the major activities conducted by this community forestry users' groups for marketing?
5. Is government organization/institution supports adequately to run their program?
6. What types of supports and subsidies they are getting form the government institutions?
7. Are the present laws and policies by the government are favorable for their program?
8. What are necessary changes should be taken by the government to get more benefit by the users as well the sustainability of the forest?
9. Which is the main market place to sell the forest products form that community forests?
10. In your opinion is the price of the products satisfactory?
11. How users transport their product form forest to the home and market?
12. Is there any problem related to illegal harvesting from the users as well as outsiders?
13. What did you do to solve the problems?
14. What are the solutions and your suggestions for better harvesting and marketing of the produce from your forest?

Appendix 4: Checklist for Group Discussions

Participants: FUG members, FUG Executive committee, Local Traders, Middleman, Wholesalers, Traders from the Markets, Government Officials, NGO/INGO staffs and Village leaders.

1. What is the present status of community forest in the watershed?
2. What are the major conservation and marketing activities conducted by this users group?
3. How many times you sit on the formal meeting for executive committee per month?
4. What are the issues discussed during your meeting?
5. Are there any difficulties and conflicts between users for using and harvesting right?
6. Is there any particular FUG that excludes some minority class/lower caste/ disadvantaged group people?
7. What is the harvesting system and using right of the forest?
8. Where is the harvested product sold?
9. Who fixed the price of the product?
10. How the products transported to the market?
11. How collectors/users get maximum price from their sell?
12. What are the factors causing price variation of the produce?
13. How the products flow from collectors to the market?
14. What type of supports provided by the government/NGO? INGO related to marketing?
15. What are the problems, constraints and strength for promotion of proper marketing system in community managed forestry?
16. How could those problems overcome?
17. What are the necessary action that should undertake by the GUG, Government and other NGO/INGO?
18. Are the existing government policies and laws favorable for harvesting and marketing of the produce individually?

Appendix 5: A checklist for Group Discussion with FUG members and Executive committee members

Remark: 1 = Very Strong Influence 2 = Strong Influence 3 = Some Influence
4 = Weak Influence 5 = No Influence

Influential Factors		Degree of Influence (Tick off /)					Rank
		1	2	3	4	5	
Social Factors	Social belief that forest products are free gifts by nature and don't like sold them.						
	- Religious belief that some plants cannot cut and harvest even they have high economic value						
	Cooperation level between member of FUGs and other community people.						
Economic Factors	- Transportation cost						
	- Grading cost						
	- Perishables						
	- Degree of competition						
Institutional and Legal Factors	Laws and constitution prepared by the forest user group which restrict to harvest and sell certain products.						
	- Tax by local government						
	- Presence of marketing institutions						
	- Collection center facilities						
	- Quota products						
	- Restricted products						
	- Harvesting season						

Appendix 6: A Checklist for Market Survey

1. How many shops are there for buying and trading of forest products?
2. From whom you bought the product? From middleman or from the collectors directly?
3. How much the monthly demand of that market?
4. How much product supplied monthly to the market?
5. How many FUGs or VDC covers by the market?
6. Where you sold the product that you bought from the villagers or middleman and traders?
7. What are the infrastructure like collection center, storage facility etc available to that market?
8. How people bring their product up to your place?
9. Is there any legal problem form the side of government for your business?
10. What are the major problems you faced for this trading business?
11. Could you please suggest to the collectors, how they can get maximum price for their harvested produce?
12. Any other suggestions related to forest product trading?

Appendix 7: Photo Gallery

Picture A7.1: Chautari CF Office Building in Background the Forest

Picture A7.2 :Means of Transportation of the Timber Products in Sundari CF

Picture A7.3 :Bamboo Processing in the Area from Sudari CF

Picture A7.4: Timber Products Preparation for Sale

Picture A7.5: Group Discussions with the Different Stakeholders in Chautai CF

Picture A7.6: A Means of Timber Transport from the Forest

Picture A7.7: Prepared Timber Products for Sale and Background Sundari CF

Picture A7.8: Janapragati CF and Kayarkhola

Picture A7.9: Local Shop at Shora Number Selling Processed Bamboo Products

Picture A7.10: NTFPs Marketing Workshop in Chautari CF (February 9-10, 2004) Organized by Forest Action Nepal. Participated and Discussed During Data Collection.