

# CHAPTER I

## INTRODUCTION

### 1.1 Background of the Study

Nepal, the land of Himalays, lies in between  $80^{\circ}, 40'$  to  $88^{\circ}, 10^E$  longitude and  $26^{\circ} 22'$  to  $30^{\circ} 27'$  N latitude, has an area of 147 181 sq, kilometer (14.7ha) where the altitude ranges from 67m above sea level at Kechana Kalan Jhapa in the south eastern Terai to Mount Sagarmatha at 8848m the highest point in the world. Nepal comprises only 0.09 percent of land area on a global scale but it posses a disproportionately rich diversity of flora and fauna at genetic, species and ecosystem level (NBS, 2002): Nepal is a land lock developing country and home place of natural beauty with traces of artifacts. The country bordering between the two most populous countries of the world India in the east south west and China in the north. The northen range of Nepal is covered with show over the year.

Nepal is a developing country, rich in natural resources. The country has a divers physical features, bio-diversity and castes and cultures. Basically, natural resource of Nepal includes land ,water, forest which carries the possibilities of economic prosperity and development. Forest resource is an important source of livelihood in the mountain region of Nepal. Because of grossly inadequate foods supply throughout the year from the limited agriculture land available to the farmers, the rely on multiple income source and adopt a wide range of livelihood strategies for food security to supplement insufficient production and income from agriculture a mainstay, the local people as a means of

livelihood have adopted NTFP collection activity (Baskota & Pradhan, 2007).

Himalaya kingdom Nepal is rich in Natural vegetation, globally significant and biologically diverse ecosystem produce a wide range of unique and valuable NTFPS. Nepal is remarkably rich in Himalayan Jaributi/NTFPs. More than 700 species (Comprising about 10% of the total vascular plant species) of medicinal exists in Nepal (Malla and Shakya, 1984, Rawal, 2003). Owing to its unique topography geography and climatic condition, Nepal provides a natural ground for the promotion of a number of natural herbs. (DVN, 2002)

NTFPs is very significant resource in Nepal. Non timber forest product (NTFP) include all product of biological origin other than timber, fuel wood and fodder non timber forest product constitute an important resource of livelihood particularly for mountain people of Nepal as well as potential source of national economy. The forest dwellers and people living around the forest have extracting product for food, medicine and other uses for household use and the local inhabitants as employment and income source have adopted collection of NTFP since last few years (Baskota & Pradhan 2007).

NTFPs are being increasingly recognized because of their critical role in the rural livelihood, export value and biodiversity conservation in Nepal. They also have potential to be substantial source or revenue to the government. However these valuable resource are demandable under utilized and under valued at present.

The role and contribution of NTFPs are crucial, more so amongst rural communities because of their richness of variety as a source of

subsistence as well as the store house of their traditional health care system. Some 80% of the population of developing countries depend on NTFPs for their primary health and nutritional needs & income generation (FAO, 1995, cited in Rawal, 2003).

Nepal has been facing mainly of two challenges; namely high unemployment rate and poverty. At present when the country passing through a weak economic conditions; the capacity both government and private sector to provide new job opportunity is limited with the country in the process of establishing peace and restructuring the political structure of the state, the political and security situation rebuilding, rehabitation, employment and job creation are important aspect of peace building process. To left out poverty and un employment micro-enterprise can play crucial role in the country at transition period and help to reestablishment of peace process. So micro enterprise help to generate employment and increase income level by sustainable utilization of natural resource in the rural areas of Nepal.

Micro-enterprises contribute signification to economic growth social stability and equity. The sector is once of the most important vehicles through which low-income people can escape poverty and access to resource. It has been witnessed that micro enterprises have become increasing popular in the new development agenda the globe and more so in the developing world to address income and employment opportunities through the development of micro enterprises.

Diversification of economic activities into products and service which these areas offer comparative advantages through enterprises production for the market is considered for necessary for sustaining livelihood and alleviating poverty of rapidly increasing population. There

are several business opportunities based local resource and nature bounty. Enterprises based non timber forest product, herbs and medicinal plants to name a few could easily promoted given the right kind of human resource (ICIMOD, 1999, Cited Shrestha 2008).

During the last ten years, an interest in NTFPs has taken by the storm. This is due to the increasing recognition of the fact that NTFP can provide community need for improving rural livelihood contribute to house hold food security and nutrition help to generate additional employment income, opportunities of NTFP based enterprise contribute to foreign exchange, support bio diversity other conservation objectives (FAO, 1995, Cited in Shrestha ,2008).

NTFPs based micro enterprises creation could be an alternative means to uplift the socio economic condition of rural community. NTFPs based micro enterprises are playing a crucial role in employment generation and income generation in the recent year. The number of NTFP based micro enterprises are found increased in recent years which helped retain them physically at local area by providing employment opportunities and improve their livelihood pattern some extent.

Income generation through off farm employment in rural mountain are a can help improve the livelihood status of the rural people. A large number of non timber forest product (NTFP's) of used property can contribute to poverty alleviation growth and most importantly improve biodiversity. In addition to the profit motives the community based processing enterprise in the higher mountains could provide incentive for sustainable harvesting of individual species and increase the local communities control over the management of raw material by providing greater economic return to the community member (Rawal, 2002).

Karnali Zone is one of the backward region of the whole Nepal. The five districts of Karnali Zone viz. Jumla, Humal, Dolpa, Kalikot and Mugu are home to the people with the lowest Human Development Index (HDI) in Nepal. Out of 75 districts Mugu lies in 75<sup>th</sup> position in measurement of HDI. All development indicators such as education health and access to services are the lowest. Total food production of the region hard full fills food needs of the Karnali people approximately for seven month. People of Karnali region directly depend upon the natural resource for their livelihood. The entire zone receives heavily subsidized food shipped by the government to the zone but it doesn't have significant impact on the overall food deficit especially in areas far from airports.

NTFPs harvesting is the major economic activities of the Karnali zone. It represents around 20% of the cash income of harvests (although not all Karnali residents are harvesters). NTFP trade is the first major source of earning cash in Karnali after seasonal wages laborers that go Terai and India during winter. It is undoubtedly the most important product exported out of the zone (Bhandari 2000).

Jumla is one of the districts of Karnali zone, which is very rich in natural resources specially; in terms of NTFPs that's why there is a great potentiality of NTFP based micro enterprises. It was roughly found that about 70 million worth of NTFP is annually transacted at collector's level. More than 110 medicinal plants have been found in Jumla district. Jatamansi is the dominant NTFP species traded in Jumla as it generates more than 50% of the total value.

Yarsa gumba and Gucchi Chayu are two other important NTFP species followed by silajeet, sugandhawal, attis, kutiki and others. ANSAB community based enterprises approach and dissemination of NTFP

market inform have played a crucial role to retain that big amount collectors level. In recognizing NTFPs substantial role income generation. Jumla District Development Committee has played NTFP as one of the most important development program and resource. It's recently to include in district development periodic plan. (EWW/ANSAW, 2003)

Jumla is richest district interims of NTFP's resource such as medicinal plant (Jatmansi, Yarsa gumba Sugandhawal, Kutki, Attish, Chiraito, Gucchichaya, Bhojo and pacheaule, Padam chal & Pankhanbed). Fiber plants (Allo, Bhang, Nigalo, Chomlaya etc). Food species (Oil-Dhatelo) are prime sources for micro enterprises development. Except Yarsa gumba on the NTFPs are ultimately exported at India. Yarsa gumba is highly valuable (about Rs. 100000 per kilogram at Nepal Tibet border but is illegally exported to Tibet because traders considers it's royalty rate to be high Rs. 20,000 per kilogram (ibid).

NTFP raw trading is the major economic enterprises activities from prehistoric period. Nigalo, Bhang and Allo are the major NTFP's resource for enterprises which in subsistence level and self using pattern. NTFP's harvesting and trade is the major economic activities in Karnali Zone specially in Jumla and Dolpa. It represents around 20% cash income of harvesters which is second major source earning in Karnali often seasonal wage labours that go Terai and Inida during winter so, this district has a lot of potentiality for NTFP based micro enterprises.

According to FNSCBI micro, cottage and small industries and play significant role in national economy contributing about 90% of total industrial GDP, MCSI sector contribute about 70-80% total industries value addition provinding 80% the small micro enterprises are found to

contribute 40-70% of the total output are value added to national economy. Jumla is resourceful districts in terms of NTFP resource and starting the cultivation of NTFP in leasehold forestry and private land in the district. So NTFP based micro an enterprise is crucial sector for enterprises development in grass root level and to overcome problem of hand to mouth for ultra poor people.

## **1.2 Statement of the Problem**

Jumla is the richest district in terms of natural resource specially NTFPs. Even being the ample resource the livelihood of the people is still poor. Poverty is very high, the main causes of poverty are rapid population growth, illiteracy, unemployment, inequity , gender discrimination, under utilization of natural resource, environment degradation , dogmatic believes and norms, traditional agriculture, lack of technical skill and knowledge , social exclusion, lack of entrepreneurship etc. There are many natural resource but lack of entrepreneurship culture, is a serious problem especially in rural area of Jumla where marginal productivity is zero.

For the betterment of livelihood of the people in this area, NTFP based micro enterprises can play crucial role, which help to generate employment and preserve chances for apply local traditional knowledge skill and technology. Other hand micro enterprises helps to use locally available NTFPs resource in systematic manner and really to uplift the living standard of the local people and poverty reduction. NTFP resource is being extracted unsystematic way in the district. NTFP based micro enterprises helps proper management of these resource and sustainable biodiversity conservation.

Micro enterprises are very useful to address the issue of unemployment, social exclusion, poverty, inequality, miss utilization of resource (both natural & Human), traditional skill and knowledge. Lack of enterprises culture etc. and during their start up constitute a strategy for survival of vulnerable and disadvantage individuals, or group, deprived caste and ethnicity. The locally available NTFP resource can help to establishment of small and micro enterprises which are panacea for rampant poverty in Jumla. It will help to address the issue of employment, poverty, social inequality and lack of access to resource, loss of traditional knowledge, technology and skill, gender disparity for economy prosperity and human development.

### **1.3 Objective of the Study**

The broad objective of this research is to assess the situation, prospect and problems of NTFP based micro enterprises and livelihood in Jumla district and specific objectives of this study are as follows:

1. To assess the availability and use of NTFP resource for micro enterprises in Jumla district.
2. To identify existing practice in management of NTFP resource in Hanku and Dillichaur VDC.
3. To analyze the impact of Non-timber forest product based micro enterprises on livelihood of Jumli people.
4. To enlist the potential and constrains of NTFP based micro enterprises development in Jumla district.

### **1.4 Significance of the Study**

Nepal has expressed it's commitment to develop a national strategy for the conservation and sustainable use of biological resource. So it



needs to have detailed information and knowledge about its natural resource and potentialities (Dobremz, 1971).

Despite rich in forests and vegetation, NTFPs in Nepal are reported to over exploit the main factors identified are urbanization, industrialization, habitat destruction, acculturation and destructive harvesting practices (Malla 1994).

In recent years, the awareness about the role of NTFPs in the livelihood of the local people is increased. Various NGOS, INGOS and government organization working at the forestry sector are convinced that sustainable management of NTFPs and enterprises development a big potential to contribute to poverty reduction

Nepal is mountainous country and hilly country where more than 90 percent people in the rural area with subsistence agriculture and farming. The sustenance agriculture system also directly depends upon the forest resource. Both timber and non-timber forest resource contributing as the best alternative for the needy population.

Micro enterprises have a crucial role to play in generating income and employment opportunities and reducing poverty in Nepal. Although their role has yet not been recognizing well till now, small and micro enterprises are of particular importance as they are essential in creating employment and a main source of economic growth while increasing competition and contribution for equitable distribution.

The increasing market demand encourage intensive harvesting which in diversity in Jumla is leading to a because in the diversity, quality and availability of the NTFPs in Jumla. The consequences are serious for plant biodiversity and local harvesters and NTFP based micro

entrepreneur who depend on NTFP resource to meet their basic needs. Jumla district development has included NTFP as important program and resource in district period plan , various NGO's, INGOs and government organization are working at the sector of NTFP cultivation and management and NTFP based micro enterprise such WUPAP, MEDEP and DFO/DDC. The two NTFP processing unit are establishing in Jumla district (Lahasi (*Jatamasi*) and Hanku,( *Dalechuke*) in general. The Jumla district has the greatest potentiality of NTFPs based micro enterprises in terms of availability various kinds of NTFPs resource, particularly in Hanku and Dillichaur VDC.

The study will fulfill one hand the academic career at the same time, it will be useful in order analyze the status of NTFP based micro enterprises and constrains in this area. Therefore, researcher has selected Hanku & Luma to observe the micro enterprises development activities and its impact on livelihood. Because this villages are one of the resourceful in Jumla district.

Findings of this study will be useful to researchers' districts resource planer, policymaker, local government bodies and other line agencies working in the district. It will also help to assess the potentiality NTFPs plants for NTFP based micro enterprises and availability of these resources will find potentiality and constrains of micro enterprise development in Jumla district.

## **1.5 Limitation of the Study**

This research was not free from some limitation and constrains. The respondents don't keep the actual records in written documents of the daily activities. Hence, the data obtained from

interviewing were subject to memory. The research was conducted in September (Asoj and Kartik) 2009 which is the harvesting season of different agricultural crops grass cutting and other works. This women group discussion couldn't be conducted as it was expected during the study period. This present study was limited to assess the states of NTFP based micro enterprises and livelihood Jumla district. The study was very specific like that case studies of Hanku and Dillichur VDC. Thus the result drawn from the study was represented the select study area. Only and may be generalized the whole districts in terms availability of NTFP resource.

This study is a mini research work, which is prepared for partial fulfillment of the Master degree in rural development, and this study has not covered the whole sector of micro enterprises.

## **1.6 Organization of the Study**

The report has been divided into 6 chapters. The First chapter deals introduction of the study. It contains background of the study, statement of the problem, objective of the study, significance of the study and limitation of the study and organization of the study.

Second chapter consist of the reviews of the literature divided into two parts, conceptual review and empirical review. Third chapter describes the research methodology. Chapter Four describes about profile of the study area. Chapter Five describe data analysis and interpretation and lastly, chapter Six describes about summary, conclusion and recommendations.

## **CHAPTR II**

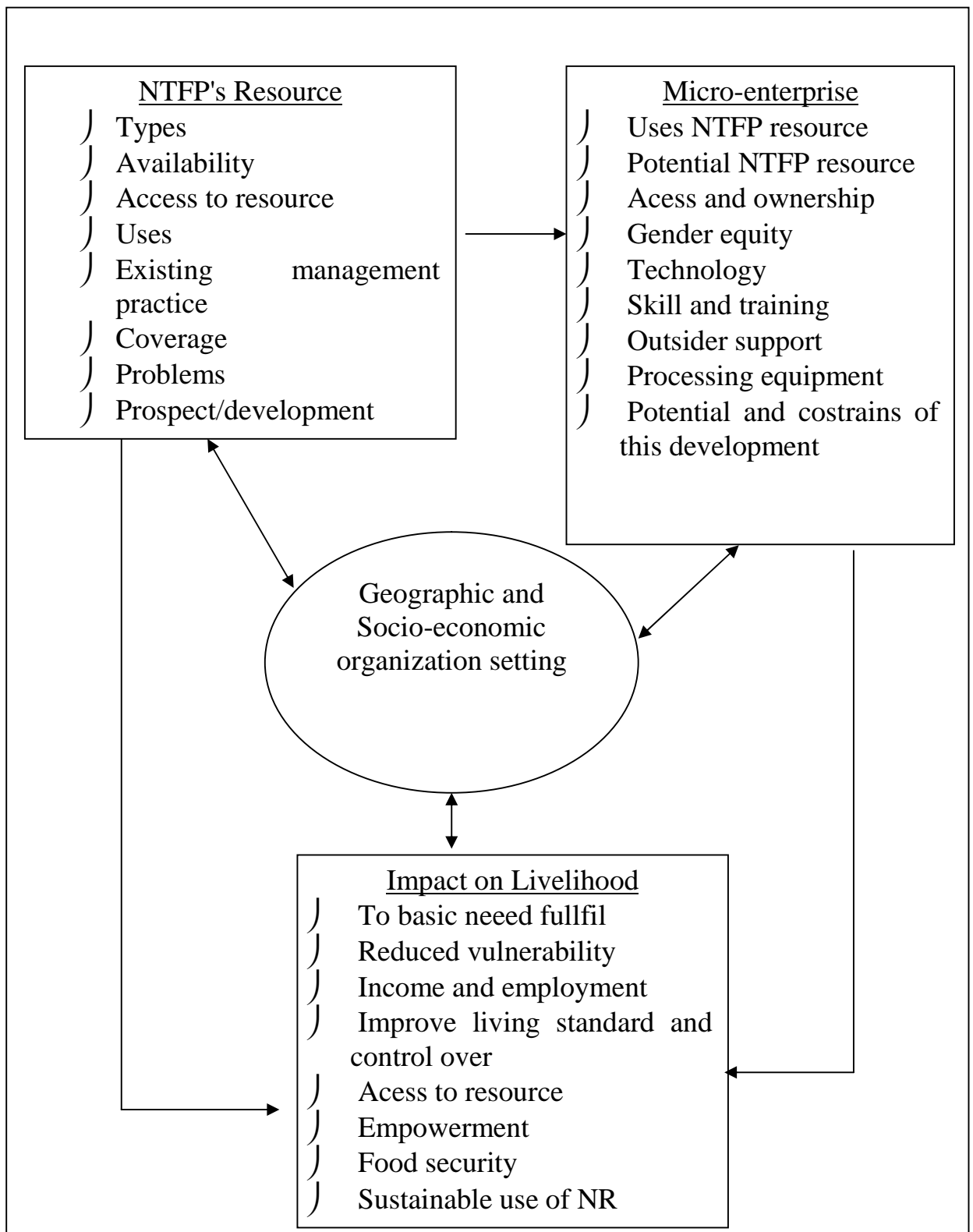
### **LITERATURE REVIEW**

This chapter reviewed the various related literature on concept of NTFPs, importance of NTFPs. NTFP management, micro enterprises and development model, NTFP based micro enterprises, NTFP based rural livelihood, Micro enterprise plan, policy and strategies were comprehensively reviewed. This chapter inputs are reviewed from the books, reports articles, research apery, acts, plan and policies. During the review of literature of the literatures the central library of T.U. and MEDEP resource center. SNV resource center and the Asia network for sustainable agriculture and Bios source (ANSAB) were intensively used. The literature is done divided into two parts conceptual and empirical review.

#### **2.1 Conceptual Framework of the Study**

The whole study was based on the following conceptual framework.

**Fig. 2:1 Conceptual Framework of the Study**



## 2.2 Conceptual Review

Non-timber forest products (NTFPs) in a broad sense include all the forest products other than timber, fuel wood and fodder. It also includes the service rendered by the forest. NTFPs sometimes are mislabeled as minor forest products. This is definitely a misnomer given that there is nothing minor about these products. One of the most important categories of the NTFP's in Nepal medicinal and aromatic plants (MAP'S) used by medicine and essential oil industries. Commonly, people refer to MAPs as *Jadibuti*, which derived from sanskrit *Jad* meaning a root used in medicine and the Hindi *buti* meaning a shrub or plant (Bhandari, 2001).

NTFP's are "all biological materials other than timber which are extracted from forest for human use". (<http://www.NTFP.org>)

NTFP are considered as any commodity obtained from forest that doesn't necessitate harvesting trees. It includes medicinal plants, mushroom, nuts and seeds berries oils foliage, peat, forage etc. ([www.wikipedia.com](http://www.wikipedia.com))

NTFP, by the classical definition include all the forest product other than timber fuel wood, and fodder. It is attracting more attention in recent years. No one will dispute that NTFP is important to the vast population of people living in around the forest NTFP are major source for off farm employment and income generation for low-income household (Baskota and Sharma 1994).

NTFP is the term used to describe a broader range of goods than those defined as non-wood forest products and include small products made of ligneous or woody materials such as wooden stools, mats, drums

or other handcrafted item, which is not industrial timber or pulp etc (FAO, 1995). In this definitions is explained clearly the concepts and meaning NTFP in particle way.

NTFPS "all biological material (other than industrial round wood and sawn timber wood chips, wood based panels and pulp) that may be extracted from natural ecosystem managed plantations etc and Latinized within household be marketed or have social cultural or religious significance. (Wicknes, 1991)

They are defined all kinds of goods derived from forest both plant & animal origin other than timber and phalloid. A Narrower definition of NTFP's appropriate for Nepal includes all biological material other than timber, fodder and phalliod (Hammett, 1993). Non-timber forest is the product obtained from the forest other than timber and fodder, which are harvested from their natural, and community management forest.

Non-timber forest products (NTFPS) are product of biological origin other than wood derived from forests wooded lands and tress out side forests. Example of herbs species and condiments, aromatic and medicinal plants) fibers resin, gums and plants and animal product used in medicinal, cosmetic and cultural purpose (Rawal, 2003).

### **2.3 Non-timber forest Product and its Importance**

Non-timber forest products (NTFP) include all product of biological origin other than timber fuel wood, fodder. The plants parts such as root rhizome, leaf, stem bark; seed and resin are highly contributing to the expansion of NTFP, which significantly useful as food herbal medicines, spices, essential oil, resin, gum, latex, tannin, pigments, dyestuff, incense, fiber and so forth. Apart from these. NTFP cover a

wide range of products including one of the fascinating the factors for ecotourism and environment conservation (Sigdel, 2003).

NTFP is very important resource in Nepal. There is great NTFP diversity in the country which can play a vital role in the overall rural community development (Rawal, 2003). Recently there has been increasing awareness of the importance of NTFP's as a result of factors such as dependence of rural communities on NTFPs site quality, growing market preference for natural product, increasing concern about the conservation biodiversity and occurrence of many non-wood products amongst the biological richness and ecological complexity of natural forest (FAO, 1994, Grne et al, 1994, Cited in lekhak and lekhak, 2005).

The value of these products can be far greater than that of timber harvest or the land converted to pasture or agriculture (Roque, 1992). According to one rough estimated 29 million people in South Asia, depend on NTFPs for subsistence income (lekhak and lekhak 2003).

The reason for promoting NTFPs as against timber is following. First although timber is found in surplus in many high attitude forest. It is an accessible for the city market because of lack of road network in many high mountain areas in these places, transportation of and trading in high value, NTFPs ever in low volume are more cost effective in comparison to timber. Second harvesting of NTFPs particularly those of hubs and shrub organ and also part of tree's such leaves, flowers, fruits exudates is ecologically less destructive as compared to harvesting of trees themselves. The Third production needs relatively long time. It make decade to get a harvest where as NTFP make short gestation period. Poor people who are dependent on forest cannot wait for longer period to get return from the management of their forest. Fourth, the poor can have



better access to NTFPs than to timber because timber many collected tree of cost of community forest cost while timber is sold (Ban jade and Poudel, 2008).

NTFPS/MAP collection and production is highly labor intensive and it provides a gainful employment to thousands of rural poor people round the year. It has a special significance as employment generation in hilly areas where other employment opportunities are meager. NTFP collection/harvesting and production system involves lot of work such as collection and adapting past harvesting operation. The local people (Rawal, 2003) perform these operations. The value for NTFP's resource is expanding as more people recognize their value for health, environment and social justice. The growing market opportunities of medicinal and aromatic plants have potential to raise the income of the local people contribute to the national economy and create conservation in centers. However, the ecosystem that generates valuable products as well as the people's traditional knowledge about medicines and healing practices are increasingly threatened. NTFP resource and contribution of this sector to the overall social and economic development of the country (Subedi 200, cited in Rawal, 2003).

## **2.4 NTFP's Management**

NTFP's management has been receiving attention in the last few years. Donor development agencies and user group have involved with great enthusing in different aspects of NTFP promotion, taking this as panaceas for poverty reduction (Banjade and Paudel, 2008).

NTFP and it's usage is not new thing because the local communities are using these NTFP since the past. But these days such

valuable NTFP are endangered getting the rapid loss due to over harvesting, habitat destruction and irrational and illogical policies of the government. Besides the conditions is fuelled in most part of the Nepal by deteriorating law and order economic conditions among rural communities policy makers and planners of the country don't make seriousness about its present status and it as a minor product (Sigdel, 2003).

While talking about difficulties in the sustainable development of NTFP, questions of rural livelihood, conservation, sustainable harvesting of NTFP's has become more challenging and worth considering than before. There are various stakeholders involved while about the management of NTFPs. However, they have diverse interests and visions. Collectors (First tier trade) are generally the marginal farmer having nominal share of income from NTFP to meet their expense for food, health and child education. Nevertheless, there is lack of transparency marketing information and equitable sharing benefits among participating group (Ojha, 2000).

There is a global demand of Himalayan medicinal plants due to their fewer side effects in comparison with allopathic drugs, which has caused over exploitation of these plants (Subedi 1997). It has resulted into the degradation of resource, which ultimately loss of NTFP. In addition, there is ignorance about these plants among collectors and common people. Due to this, many NTFP have gone in loss. Owing to the lack of knowledge, there is immature collection and over exploitation of many species resulting in the loss of potentiality as well as their sustainability. In nutshell diversity, quality and availability of many species of NTFP are decreasing (Subedi, 1997).

According to Bhatari (Cited in Shrestha, et al 1994). The 14 most endangered medicinal plants due to deforestation forest fire, shifting cultivation over grazing over exploitation are Bojho (*Alchornea cordata*), kurilo or satawari (*Asparagus racemosus*), yarsa gumba (*Cordyceps sinensis*), Panchaunle (*Dactylorhiza hatageria*), Satuwa (*Paris polyphylla*). Jatmansi (*Nardostachys grandis* flora) Kutki (*Picrorhiza scophulariiflora*), Sarpa gandha (*Rauwolfia serpentina*), Padamchal (*Rheum australe*) Majitho (*Rubia Manjith*), Chirato (*Swertia Chiraito*) and Sugandhawal (*Valeriana Jatamansi*). Management of NTFPs by local communities provides them with means to increase their control on harvest and trade as well as incentive to conserve the resource base. The potential for income generation in community forestry through the management of NTFP has is now widely recognized and accepted. But, what is to be noted here is that the community forest user group (FUG's) the forest Act, 1993 defines a fug as a registered and using the products for collective benefits. "Improper harvesting and have become in the position endangered-like wise due to lack of knowledge on fug quality raw material have not been produced and supply is inconsistent (CECI 1997).

Sustainable management of NTFP is important because of their value perennial source of sustenance income and adequate a means of bio-diversity However, little attention has been given to biological, socio-economic and conservation of NTFP resource (Lekhak and lekhak, 2005). Following the changing global focus, forest policies in Nepal for the last two decades have also highlighted NTFP through various policy documents, public meetings, party manifestoes and other documents. In Nepal there are more than 700 plants species that have medicinal value of which 238 are in active use and 100 are traded. The government of Nepal

has kept 30 species in priority of which 12 are for commercial cultivation and market. NTFPs are increasingly growing popular in natural and international market, as they are important ingredient of several herbal cosmetics, herbal tea and medicines (Banjade paudel, 2008).

Nepal's current bureaucratic system and legal provision are not enough to control illegal trade of NTFP. Such situation has serious consequence in the sustainable development of a nation. The conservation of NTFP and their sustainable use in livelihood support should be the collective concern of local communities and other stakeholders.

## **2.5 Micro-enterprises and Micro-enterprise Development Model**

### **a) Micro-enterprises**

An enterprise is broadly defined to include any economic unit engaged in the production of good and service. Whether it employs only one person or more whether or not use fixed capital, whether or not it has a fixed location for conducting business. Enterprises means an organization primarily for production commercial sale of industrial product is almost all case for pecuniary other material benefit of the enterprises owner as owner such as the preparer, partners or members of co-operative (Harper, 1984, cited in pradhan 2004).

Economic enterprise is one of the important component for strengthening urban-rural relation. They are not only for the utilization of local resource, but also to act as agents for the flow of good and service between urban areas (Pradhan, 2004).

Micro-enterprises a home level based production unit of small scale without requiring much capital any many sophisticated tools.

(Shrestha, 2008) Micro-enterprises are labor intensive requiring very little capital and help to generate employment opportunities for self-employment. Generally, each unit of micro-enterprise generates usually 2 to 10 full time and part time job for family member relatives and neighbors (ibid).

A self employed construction worker, a self employed transport worker such as driver of three wheel rick saw and 2 self-employed service worker such as shoeshine boy for example, are all treated as constituting an initial enterprises even though they don't hire any employees, own little or no capital; have no fixed business location and produce only service. This primarily refers to micro-enterprises (Pradhan, 2004).

The weikipedia encyclopedia defines that; a micro-enterprises is a type of small business. A micro-enterprise is defined as a business having 5 or fewer employee and a seed capital of not ore that \$ 3500. Typically, micro-enterprise has no access to the commercial banking sector.

According to the micro-enterprises policy, 2064

- a) Micro-enterprises means any industry, enterprises or other service business, based particularly on forest, tourism , mine and handicrafts which meet the following conditions:
  - i) In the case of manufacturing industry enterprises involving the investment of fixed capital of two hundred thousand rupees (200,000), except house and land in the case of service enterprises and industry, enterprises involving the investing of fixed capital of not exceeding one thousand rupees.

- ii) The entrepreneur himself or herself is involved in the management.
- iii) A maximum of nine workers including the entrepreneur are employed.
- iv) It has annual turnover of less than two million rupees.
- v) If it uses an engine or equipment, the electric capacity of such engine or equipment is less than five kilowatt.

Provided that notwithstanding anything contained in any law or enterprise, which manufactures, liquors, cigarettes or other tobacco product or for the establishment of which approval has to be taken will not be considered as a micro-enterprises.

In several developing countries the parameters used to define micro-enterprises include number of employees, assets employed, scale turnover, employment and turnover, employees and assets, turnover assets and employee sales and assets (Pradhan, 2004).

Micro-enterprises are very small business or economic units that usually support rural economic development and cater to rural market centres. These enterprises require very little investment and poor people with an interest in business can enter the market at their own risk. However, to engage the poor in enterprises development support services are required to ensure their survival and expansion. The importance of micro enterprises is currently being seen within the broader development framework of improving the socio-economic status of the poor and excluded (MEDEP, 2008).

Micro-enterprises are useful to address the issue of lack of employment opportunities to address the issue of lack of employment

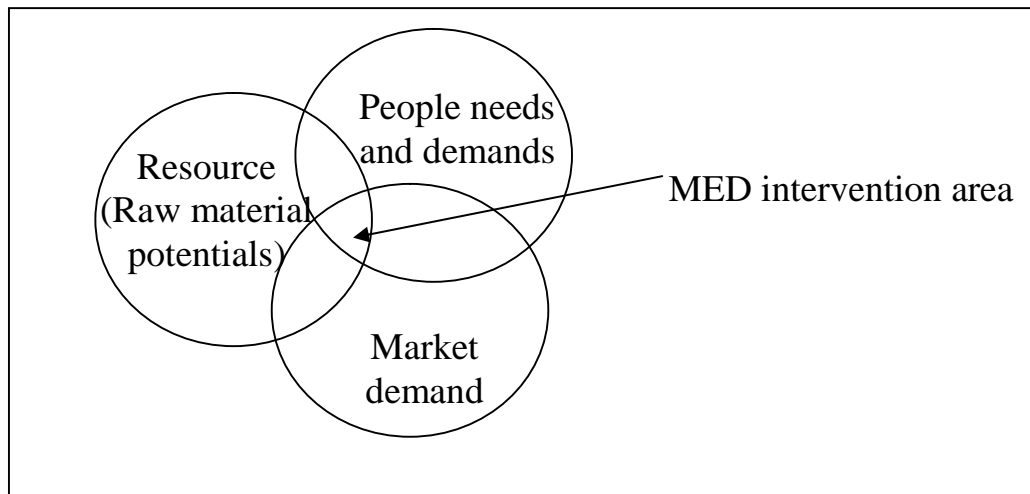
opportunities and during their start up constitute strategy for the survival for vulnerable and disadvantaged individual's or groups. The progression of micro-enterprises helps poor people to accumulate or invests capital and certain percentage could graduate to become small enterprises contributing to the natural economy and assimilate into the supply chain of large-scale business (ibid).

Micro-enterprises have become increasingly popular in the new development agenda globe and even more so in the developing world because such enterprises offer income and employment opportunities. In least development countries like Nepal, therefore micro-enterprises is one of the more viable alternative to create employment opportunities and consequently to reduce poverty. Moreover, since Nepalese society is characterized by social exclusion, unequal development of such enterprises can address different social realities of women and men across varied classes, caste ethnic age group locations.

#### **b) Micro-enterprises Development Model**

The micro-enterprises development model promoted by MEDEP is targeted the poor and excluded group who have an interest or the potential to be entrepreneurs. The model incorporates a comprehensive set of services needed for business development to engage the poor usually in sequential chronology. The model's interactions are based on availability of local resources and human capital and market demand.

**Fig. 2:2 Micro-enterprise Development Model**



Source: MEDEP, 2008.

## **2.6 NTFP based Micro-enterprises**

Community based forestry enterprises have a scope for local economic development, harnessing, social equity and conserving natural resource. Fascinating service and Technology development can trigger local group or individual have the capacity to learn to innate the various dimensions of enterprises activities (Subedi et al).

Most of these NTFPs based enterprises established by individual or communities in different district are of small scale, having low scale of production with poor yield rate poor quality product. They have not been able to complete with is Indian product due to weakness in a business approach, support policies and marketing continued support in the form of technical infrastructure and policy is essential for their sustainability and expansion. A complete market environment and quality conscious buyers and sellers are surprisingly missing in the trade, which probably has constrained the market expansion of in the third countries (AEC/FNCCI, 2004).



According to subedi (2006). 161 plants species are harvested as commercial NTFP's in Nepal. There have been, however, very limited examples of success stories of value addition and enterprise development. Rather, we see several challenges for establishing and running small scale NTFP based enterprises. Banjade and Regmi (2005) elaborate how external agency sponsored NTFP enterprises in the remote hills were on the verge of collapse and suggested assessment of the resource base before creating such false optimism on the ground. NTFP related enterprises and trade shows that value addition and establishment of enterprises are not as optimistic as highlighted by the development agencies and discourse around it. There are more challenge than potential return. Several attempts were made in Nepal to study the existing NTFP trade (Edwards 1996, AEC/FNCCI 2006).

Small-scale forest based enterprises are notoriously riskily and have short life expectancies although they do employ millions of poor people worldwide. The commercialization of forest and NTFP's means both to promote conservation and improved local livelihoods rely on the currently untested assumption that:

- ) Commercialization will relieve poverty and increase social equity
- ) The people gaining now income have control over exploitation of the resource
- ) Valuation of the forest is equivalent to cash value (RECOFTC, 1995).

Almost all NTFP traders of mid western region who told that grading cleaning and initial processing of NTFPs before trading to India was more of an additional burden to the rather than increasing the income since the whole sealer at Indian city centers were reluctant to give higher

prices for the graded (value-added) product issue the of quality of the products developed by some entrepreneur in Nepal and traded to third countries (other than India) has offend is courage investment in the area (Banjade and Poudel, 2008).

During the last ten years, an interest in NTFPs has taken the world by the storm. This is due to the increasing reorganization of the fact that NTFPs can provided community needs for improving rural livelihood, contribute to household food security and nutrition, help to generate additional income offer opportunities of NTFP based enterprises, contribute to foreign exchange, supported bio-diversity and other conservation objective (FAO, 1995, cited in shrestha 2008).

The master plan for forestry sector (1989) has accorded high priority of NTFPS forest based enterprises and bio-diversity conservation along with community forestry which the high-test priority program in the forest sector. However, it has been many years the potential of NTFPS for rural economy and local livelihood was adequately recognized in action.

The tenth five-year plan (2002–2007) has explicitly recognized the importance of management trading of NTFPS in poverty reduction, biodiversity conservation and emotions development (NPC, 2000). The three year interim plan of Nepal (2007/8–2009/10) recognize the value of NTFPs and foreign investment in the from of joint venture in the case of non-timber based high value product including other sector such as hydropower, generation. In addition, it expects forest product, including NTFPs to contribute to food security. Propose economic program to promote industries based on NTFPs and marketing them. In promoting NTFPs Dalit, community should be given priority. Towards these ends,

the plan sets the forget of formulating necessary acts and regulating of markets revising and implementing with priority to herbs and non-timber forts product development policy 2004 (Banjade and paudel 2008).

In the annual budget of fiscal year 2008/09, the government has set agriculture sector reform as a priority. In this line, the budget statement lands foreign exchange earning by enhancing export through boosting these forest are agro-based industries that enjoy comparative advantage. The promotion of herb collection in public land for poverty reduction in the form of a camping has been planned the budget is allocated to produce 16.5 million seeding medicinal herbs bamboo. Care and fodder and planned to establish a herb-processing center in zone during the fiscal year (ibid).

Nepal is facing the problem of high population growth, unemployment and income inequality. There is a huge potential for rural enterprises development, particularly in the field of NTFP. So NTFP based micro-enterprises are most important program for poverty reduction in Nepal. It also provides employment opportunities to those poor segments of the people. The government has emphasized to develop NTFPs basic micro-enterprises indifferent level. The main aims of this program are to provide employment opportunity and improve living standard of rural people.

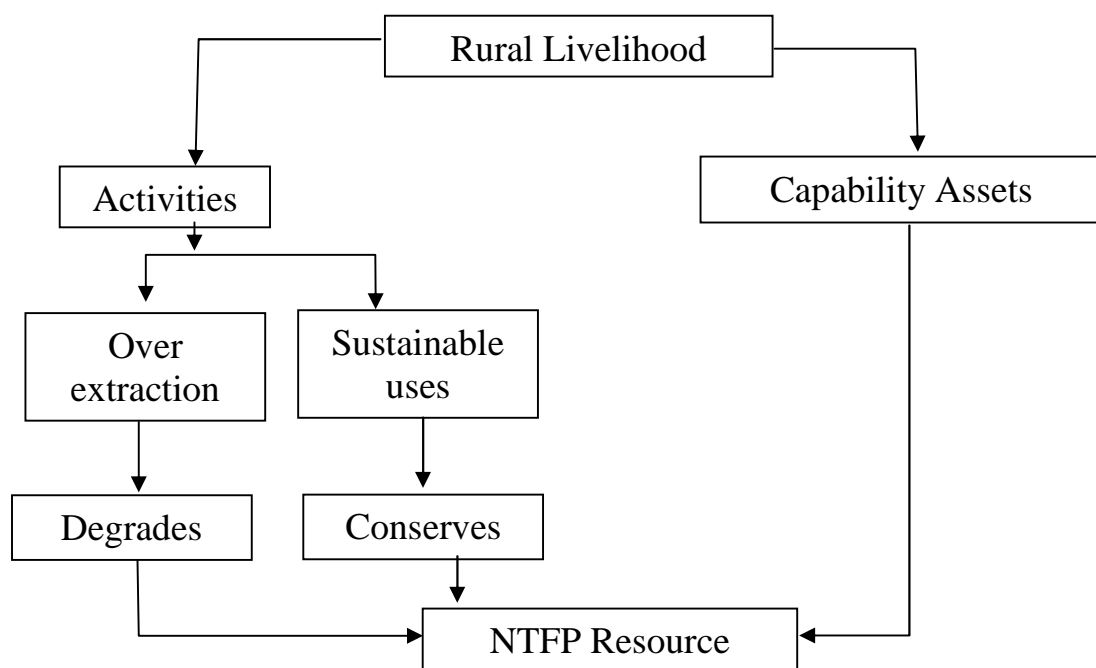
## **2.7 NTFP resource based Rural Livelihood**

NTFPs are natural resource, which refer to natural capital and natural assets. They yield a flow of valuable good and services to human communities for example; a forest stock can provide a flow or harvest that is potentiality sustainable year. The stocks that produce this flow is

natural capital and the sustainable flow is natural income. Natural capital also provides such services as waste assimilation erosion and flood control (Pradhan and Pradhan, 2006).

A livelihood comprises the capabilities and assets (stores, resource, claims and access) and activities required for the means of living a livelihood is sustainable which can cope with and cover from stress and shock, maintain or enhance its capabilities and assets, provide sustainable livelihood opportunities for the next generations and which can contribute net benefits to other livelihoods at local and global level and in short and long term (Krantz, 2001).

**Fig. 2:3 NTFP Resource based Livelihood Concept**



The NTFP resourced based rural livelihood in comprise two major components such as capabilities assets and activities required for a means of living. The capability assets as suggested by chamber (1992) include resource their type and volume, claim and access. The activities at the local context comprise over extraction and sustainable use. If extraction

activity is intensified it may degrade the NTFP resource will be conserved and forest ecosystem will also be protected from losing its biodiversity.

NTFP is an integral part of rural population from economic point of view as it contributes them in their daily life and welfare from generating income millions of people around the world, living in the vicinity of forests session these product. They provide opportunities for off-farm employment and income. It is NTFPs on which some 80 percent of the population of developing world depend primary health and nutritional need similarly some 50 million tribal people in India (Chandrasekharn, 1998). Beside, R.P. chaudhary in 1998 has reported that in south east Asia, at least 29 million people rely on NTFPs for subsistence income non-timber forest products (NTFPS) contributing to almost 5 percent of the total revenue collected from the forestry sector (Edward, 1996). In certain rural areas, NTFP alone provided to 50 percent family income. This shows the importance of sustainable use of NTFPS.

More specially, NTFP have become a major source of income for rural people from mid hills of Nepal. Collection and harvesting of NTFPS for their subsistence and economic use is since the time immemorial. It is as old a human existence out of the collected and traded NTFPS in Nepal 90 percent are traded to India (Edward, 1996).

The concept of community forestry in Nepal is regarded, as an innovative approach for managing Nepal's forest, which is being depleted at rate of 1.7 percent, is annual basics (Forest resource of Nepal 1999).

In the Koshi hills some FUG focus on management of NTFPs mainly chirato. In Dolpa one FUG has, developed access is rules,

rotational harvesting system, and fixed collection period for NTFP (Hertog, 1995). In Karnali zone and western Nepal. Asia Network for sustainable agriculture and bio-resource has been working since long in the field of NTFP management and NTFP base enterprises development.

Entrepreneurial farmers in the koshi hills begun to experiment with chiraito cultivation on their private lands. Commonly, people trans plant immature, one year old plants from government forest, called wilding on to their private land, and thus have tenure over the mature plants during the time of harvesting in the second year (Edward 1994). Herb production and processing company Limited (HPPCL) and the Gorkha Ayurvedic Company (GAC) cultivate species for their processing plants. Alainchi (*Ammoum Subulatum*), Rudraksha (*Elaeocar sphericus*), Timur (*Zanthoxylum amentum*), Amriso (*Thysanolaena marima*) indreni (*Catullus colocynthis*), Kutki, Chiraito and Nagbeli are cultivated on private land in south east Nepal (ANSAB 1997: Nepal Entrepreneurs Directory).

## **2.8 Micro-enterprise Development in Three years Interim Plan (2007-2010)**

The three-year interim plan has highly emphasized in micro-enterprise. The government has taken micro-enterprises as a poverty alleviation technique to emphasis on social inclusion. And another hand, different types of training and other kind of support to micro-enterprises to be given form the government.

### **i) Objective**

To create a strong industrial environment by developing industrial policy and institutional structures.

To support poverty alleviation by putting emphasis on social inclusion through micro-cottage and small industries.

ii) Quantitative targets:

To create 150000 additional jobs in the industry sector (50000 in big industries and 100000 in micro, cottage and small industries.)

iii) Strategies:

To make the selection mechanizing effective in order to ensure the participation of women Dalit, Adibasi, Janjati, The poor and back ward group and those affected by the conflict, in trainings related with micro-cottage and small industries and to be conducted in different districts.

- ❖ To promote micro, small and traditional cottage industries, which have the involvement of the marginalized and socially dejected group and Dalit women, Madhesi, Muslim, Adibasi, Janajati and people with disability.
- ❖ To run capacity enhancement programs in order to provide assistance to the development of micro, cottage, small and traditional industries.
- ❖ To campaign like "Be Entrepreneur, Reduce youth unemployment" and one village one production for employment generation.

iv) **Policies ad Working Policies**

- ❖ Necessary policy framework will be established for making the establishment, management and operation of micro cottage and small industries,. Simple, convenient and organized, along with the

ensuring compatibility, clarity and coordination in policy and legal provision developed by associated to industrial sector.

- ❖ Micro-enterprises Development program will be implemented in all districts.
- ❖ The development of industrial business clusters will be promoted in order to facilitate the creation, promotion and development of micro-enterprises.
- ❖ Program related to micro, cottage and small industries will be implemented by targeting the extremely deprived and socially excluded group and those below poverty line, selected from the designated rural communities.
- ❖ Emphasis will be given to industries based on the local availability of raw material, traditional skills and geographical specialties.

**v) Programmes**

- ❖ Regional offices will be opened for an easy entry of small investors to the capital market along with simplification of company administration.
- ❖ Micro-enterprise development program will be expanded to all 75 districts.
- ❖ Skill oriented, income oriented and employment oriented programs will be implemented targeting the women, Dalit, Adibasi, Janjatis, Madhesis, Conflict affected and displaced people.
- ❖ Various programs target the needs of those interbred in industry and business, potential entrepreneurs and those engaged in the



industrial activities as well as organization involved in industry and commerce like new and micro enterprises creation training, business movement training entrepreneurs programs and consulting services, explorative studies and research etc. will be carried out.

- ❖ Programs to provide skill development training to 80000 people in all the districts of the country will be carried out through skill development for employment project, cottage and small industry offices and small industry development committee as approved by council for technical education and vocational training (CTEVT).

#### **vi) Budgets**

- ❖ Micro-enterprises development program to be expanded to all districts 189.0 millions.
- ❖ Micro-cottage and small industry credit development fund 35.0 millions.
- ❖ Micro-cottage and small industry development fund 40.0 millions (NPC, 2007).

### **2.9 Micro-enterprises Policy, 2064**

#### **i) Objective**

- ❖ To provide opportunities of employment and self-employment by way of the micro-enterprises and entrepreneurship to the hard core poor people, people below the poverty line, women dalit, indigenous, nationalities Madhesi or classes who are backward economically, socially or culturally, the disabled, oppressed, marginalized class and the communities specified by the

government of Nepal as the targeted classes and there by improve their level of income.

- ❖ To encourage the maximum use of the local resource means technologies and skills, while improving, modernizing and diversifying the traditional occupation or sector.

ii) Policies

- ❖ To make and build such legal and institutional mechanisms and infrastructures as required for the inclusion of the micro-enterprises in the formal sector of economy of the country.
- ❖ To simplify, facilitate and systematic the establishment, management and operation of micro-enterprises.
- ❖ To establish the micro-enterprises development fund in order to entrance market access and explains by increasing the competitive capacity of the micro-enterprises.
- ❖ To get the micro-enterprises promotion to be included by the local bodies (District development committees, municipalities) and village development (committees) in their perspective plan and operated with priority.
- ❖ The acrod special priority to the targeted group specified by the government of Nepal, while promoting and operating the micro-enterprises.
- ❖ To build the capacity of the targeted group to select and promote appropriate enterprises based on the feasibility of means and resource, demand and interest of the targeted group and demand of

market, through the availability training technology and capital and motivation.

- ❖ To reader support to identify and promote the product of micro-enterprises through the use of collective marks (MOICS, 2008).

## **2.10 National Policy Rules and Regulations on NTFPS**

Although no specific policy and legal framework, relating to the NTFP sub sector exists in Nepal, serial policy and legal provision cover this sector the most prominent of they are:

- ❖ Master plan for forestry (MDFPS, 1998)
- ❖ Forest Act (1993)
- ❖ Forest Rules (1995)
- ❖ Three year interim plan (2007–2010)
- ❖ Medicinal plants and NTFP Development Rules (2004)

### **i) Master plan for forestry sector (HMGPN/MPFS, 1998)**

Nepal contemporary forest policy document is both social and ecological objective to achieve these objective, there are twelve programs of which six are the primary progress and the rest six are the supportive on program related to the promotion of medicinal and Aromatic plants (MAP's) and minor forest product is one of the primary program envisaged in the MPFS. This program emphasizes the need of promoting value-adding business through MAP in the country. The plan read a follows.

"The establishment of socially and commercially viable and scientifically based development program on MAP'S is essential to

improve healthcare, the economy and the quality of rural life in general" (MAPFS, Chapter 2, pp.7)

**ii) The forest Act 1993 and Forest Regulation, 1995**

It provide regulatory framework for NTFPS collection and trade in the country. All NTFPS in the national forest are under the control of government in one way or other. Under community forests, CFUG'S have full right to manage the NTFPS according OP approved by district forest office (HMGN, 1993: HMGN, 1993). For the collection and trade of NTFP'S, the collections have to register an application to DFO to get collection permits specifying the name of species, collection area, quantity to be collected and collection objective. They have to prepare and approved an IEE/EIA reports. After the due to evaluation of species collected, it's quantity, collection region the DFO can grant an export permit to collectors. These law have clearly spelled out can any plant species to collect and export with due consideration of the present status of such plants. The department of plant resource issue exports permits for the processed product of those plants to collects, use transport, and export with or without processing based on the status in ecosystem.

**Table No. 2:1**

**List of Plants (MAP'S) that can't be collected use, sell, transport and exports to foreign market**

S.N.	Nepali Name	Scientific Name	Remarks
1	Okhar (Bark)	Juglans regia	
2	Kutaki	Picrorhiza scrophulariflora	
3	Panchule	Dactylorbiza hatageria	

Source: Forest Regulation, 1996.

**Table No. 2:2**

**Plants prohibited Exporting to Foreign Countries without Processing**

S.N	Nepali Name	Scientific name	Remarks
1	Jatamansi	Nordostacbys grandiflora	
2	Jhyau	Parmelia spp.	
3	Lauth salla	Taxus baccata	
4	Sarpangandha	Rawolia serpentia	
5	Silayit	Organic exudates	
6	Sugandha kokila	Cinamomu galucescens	
7	Sugandha wall	Valerina wallichii	
8	Talis patra	Aies specabilis	
9	Yarsagumba	Cordycep sinensis	

Source: Forest regulations,1996

**ii) Medicinal plants and NTFP Development Rules 2061 B.S. (2064. A.D)**

There are 112 different types of ecosystems providing places for 5884 species of flowering plants and grand total of flowering plant of 10091 among which the medicinal value of about 700 species have already been explored out of 700, 238 species have been proved by different tests.

The long-term vision of the rules is to make Nepal destination of NTFP by year 2020.

The main objectives are:

- ❖ To sustain the collection and management without hindering natural source regeneration and reproduction.
- ❖ To assist employment opportunities through the promotion of ex-situ conservation of valuable NTFPS.

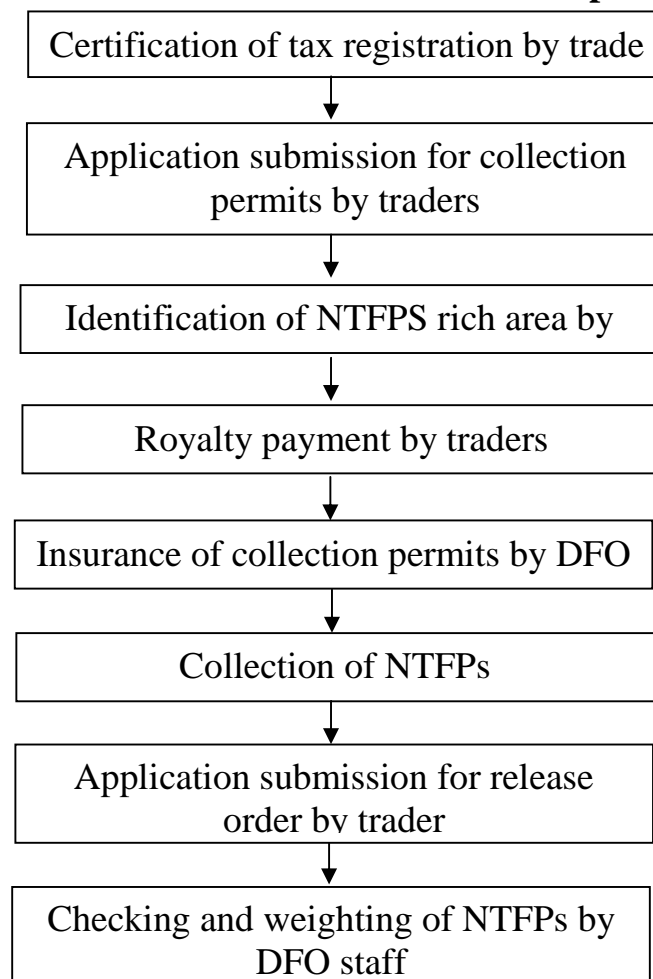
- ❖ Empower women and deprived to manage NTFPs.
- ❖ To create international market for NTFPs.

**The Rules for NTFPS**

- ❖ To utilize and conserve NTFPs in sustainable basis.
- ❖ To promote participatory approach.
- ❖ To simplify the certification and tax policy.
- ❖ To serve people with appropriate technology and development efforts.
- ❖ To increase the awareness program for skill development and give subsidy for simplification of commercialization.

According to the government guide line the general procedure of NTFP collection and trade is shown in fig. 2:4

**Fig. 2:4 Flow chart of NTFP collection and trade procedure legally**



## **2.11 Three year Interim Plan (2007/2008–2009/10)**

In addition to providing the necessary goods and services to many Nepalese stay in rural areas the forestry sector has contributed significantly to the sector of the national economy such as agriculture, water resource, environment conservation and community based village tourism. It is essential to make forest products available to the public through protection, conservation and the use of forest resource and wild life in order to ensure the access of the poor in the forest based industries. It is also necessary to promote community tourism by improving the environment through sustainable forest and soil conservation and management. Similarly, it is necessary to support the livelihood of Nepalese people including the poor and deprived group through the management and sustainable development of forest, watershed area, environment and biodiversity.

### **Major policy Statement related NTFP based Enterprise**

#### **i) Objective**

- ❖ To develop internal market and promote exports focusing on forest based industries and entrepreneurship and create employment opportunities.

#### **ii) Strategies**

- ❖ To amend existing polices and rules by adopting participatory and people s right based approach and to encourage the involvement of government, non-government, co-operative and private for the development of forest products based entrepreneurship by using appropriate technology system.

- ❖ To arrange the system of market mapping for value addition of herbs, timber and non-timber forest products and other forest based product.

**iii) Policy and Working polices**

- ❖ Action research program will be conducted for obtaining more knowledge on conservation, development of cultivation, technology, promotion and marketing of yarsa gumba and high value non-timber forest products.
- ❖ Various model of partnership among household, community, co-operative and non-governmental organizations will be studied and promoted of the development of timber and non-timber base industry.
- ❖ Special package program will be implemented of herbs by declaring Seti Mahakali, Rapti and Karnali zone as herb area.
- ❖ Entrepreneurship in the forestry sector will be developed incurred generating employment opportunities programs will be conducted and woman, Dalit, Adibasi, Janjati and the disadvantage group will involved in the forestry related micro-enterprises. Towards this end, entrepreneurship, employment and poor friendly government policy rules and working approaches will be developed.
- ❖ Investment of the government, non-government, co-operative and the private sector will be promoted in the timber, non-timber forest products based industry, and laboratory will be strengthened for providing the service of photo sanitary and quality certification together with upgrading of forest products regulations.



- ❖ Support will be provided to men and women of the poor class families by involving them in forest related micro-entrepreneurship.

## **CHAPTER III**

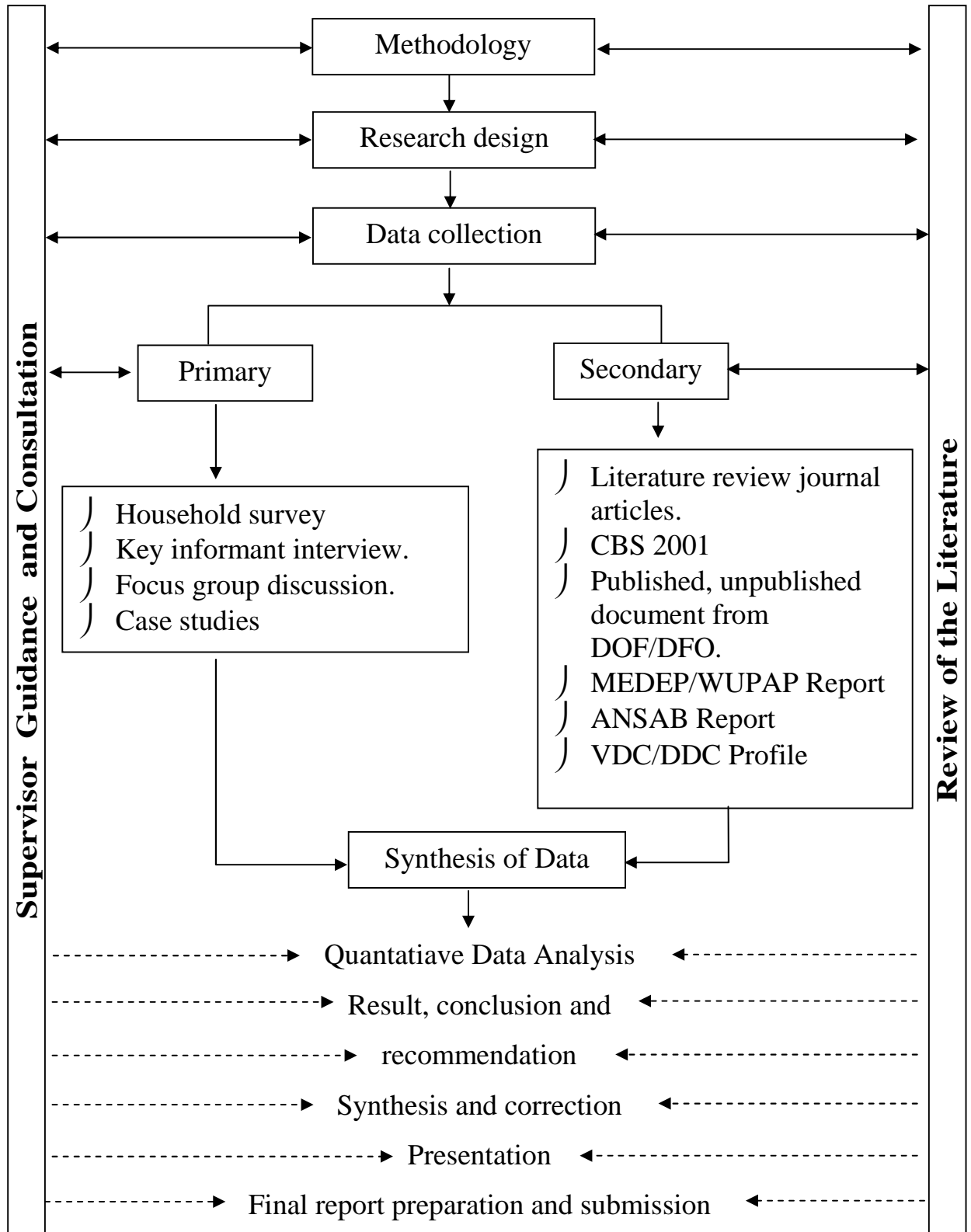
### **RESEARCH METHODOLOGY**

This chapter deals about the methods, tool and technique were used by the researcher to obtain relevant qualitative and quantitative data during the study period. Similarly, other methods of methodology technique ie. Research data collection, interview, sampling etc. are used according to research topics. Data collection instruments such questionnaire as well as checklists were prepared. Most of data were obtained fro the focus group discussion (FGD), Key informant interview (KII), field observation and case studies which are explained in this chapter.

#### **3.1 Methodological Framework of the Study**

The whole study was based on the following mythological framework

**Fig. 3:1 Methodological Framework of the Study**



### **3.2 Research Design**

Both descriptive as well as exploratory types of research design were applied in the research study. It is hope that the descriptive research design was able to describe over all situation of NTFP sub-sector .From this method research able to describe conveniently what NTFP'S used for micro-enterprise, what are management system exists and what are the potentials and constrains of NTFP based micro-enterprises development. It also supports systematically to decribed various pattern of cultivation and NTFP based micro-enterprises.

Exploratory method was applied to obtain the information on impact of non-timer forest products based micro-enterprises on livelihood, potentialities and constrains of NTFP based micro-enterprises development. At sometime some local legal indigenous method of resource management were explored within the given circumstance.

### **3.3 Nature and Source of Data**

#### **3.3.1 Primary Source of Data**

Primary data were collected by field observation, household survey, key informant interview, focus group discussion with the help of structure and semi structured questionnaire and checklist with villagers, NTFP harvester and entrepreneur, local collector and trader, women, NGO's and DFO staff who involved in NTFP sub-sector of Jumla district. Sixty-house holds were interview with help of schedule and checklist. A list of checklist and questionnaire were developed before going to field. In addition to this, some case studies were also used for specially NTFP based micro-entrepreneur and three entrepreneur groups, NTFP cultivator to obtain required information.

### **3.3.2 Secondary Source of Data**

A brief review of literature was done in Kathmandu for cross checking of the scientific name of product plant, many book that has listed the high altitude flora were consulted. During the research period to identify locally available NTFP's from Initial environment Examination Report, 2065 was useful and this was combined with flowers of Himalayas (Pollulin o. and Stainton A 1990). CBS, Forestry research and survey department, central library at Baharmahal, Central libraryT.U Kirtipur, MEDEP resource center, most significantly the resource center of Asia Network for sustainable agriculture and bio resource (ANSAB) were extensively used.

### **3.4 Sampling Procedure**

In this research purposive, judgment and convenient sampling has been adopted to conduct household survey. The Hanku and Dillichur VDC were purposively selected because these areas are the most resource full area interms of NTFP resource and enterprises activities. In Hanku VDC, Neapani is very famous for conducting NTFP based micro-enterprise since longer period of time such as Nigalol's product viz. Doka (basket to carry composts), sanku (tradional type of Umberalla) with help of tradition knowledge and skills. It lies in word no. 9 under Hanku VDC. Neapani is the universe of study population comprises 82 household out of 82 household 27% (23 households) sample were selected with the using of purposive sampling in the study area.

Luma gaun is another study site which lies under Dillichaur VDC ward no. 8 and 9. It is also rich in NTFP resource such as medicinal and Aromatic plants, fiber plants, and high value plants that's why it was purposively selected. The most of the population in study area are

depended upon NTFP resource to survive their livelihood. Luma gaun is the universe of other study population comprises 140 household. Out of 140 household 27% (37 households), samples were selected with the help of purposive and convenient sampling. In both study area altogether 60 households were selected for study each household is one sampling unit. Beyond the two sampling area, some farmers and LFUG cultivation on NTFPs on the private land and leasehold forestry were also visited. Similarly, 3 key persons have been purposively selected for key informant interview.

### **3.5 Data Collection tools and Techniques**

To generate the primary data the structured and semi-unstructured questionnaire interview and field observation focus group discussion methods as well as case studies was applied in the research work.

#### **3.5.1 Household Survey**

Structured and semi structured questionnaire was developed and used to obtain, socio-ecological, socio-economic information such as availability NTFPs and using for micro-enterprises ,education status, income of people, landholding pattern, occupation, awareness about NTFPS, management practice of NTFPS ,impact on livelihood of NTFP based micro- enterprises and potentials and constrains of NTFP based micro-enterprises development.

#### **3.5.2 Key Informant Interview**

Key informant interview was used to gather information on potential and constrains of NTFP based micro enterprises in present and future. Key informant interview was applied to obtain the relevant information about existing condition of NTFP has micro enterprises in the

study area. District forest officer (DFO), NTFP harvester, NTFPS innovative farmer and cultivators, micro-enterprise development officer, and NGO's staff are included in the key informant interview with help of checklist to those people to literate, easily read, and write.

### **3.5.3 Field visit and Observation**

Each households select in sampling was visited and NTFPs based micro-enterprises farm was observed. The data was collected observing in the field their availability and local use of NTFPs resource for micro-enterprises and utilization pattern resources.

### **3.5.4 Focus Group Discussion (FGD)**

The focus group discussion was conducted in separate with participation of enterpriser who direct related with NTFP resource. Altogether 8 persons were participated in focus group discussion. This discussion focused more on present status of NTFP resource, potential and constraints NTFP resource base micro-enterprise and future consideration of this filed in Jumla district.

### **3.5.5 Case Studies**

Different special case studies were done to share broadens practices in the field of NTFP resource and enterprise activities in Jumla. Few case studies were developed such NTFP cultivator, NTFP entrepreneur and NTFP based entrepreneur groups, success case studies of NTFP related micro-entrepreneur was done in Jumla district.

### **3.5.6 Secondary Data Collection**

Secondary data were collected different source like books, journal, CBS report and other articles.

### **3.6 Data Processing and Data Analysis**

All the data collected through various techniques were put together processed and analyzed manually. Data were split into separate section according to their nature and made separate section and then were analyzed accordingly. The demographic features such as sex ,composition, land holding pattern, caste and ethnicity, food deficiency income by various source, available NTFP's, use for micro-enterprises in Jumla, were analyzed and presented in simple tabular form and graphical form such as pie chart, simple bar diagram, table, frequency, percentage etc.

### **3.7 Ethical Consideration**

Firstly, this study is a mini research work, which is prepared for the partial fulfillment of master degree course in Rural Development, and this study has not covered the whole condition of micro-enterprises. Consent to participate was voluntary for all respondent. They were able to stop completing the questionnaire or undergoing an interview at any time without any obligation.



## **CHAPTER IV**

### **PROFILE OF STUDY AREA**

This chapter describe about the physical and socio economic setting of Jumla district and particularly of study area. Here is tried to relate the socio - cultural and biological condition of the Jumla district. This includes location, topography, climate and weather, biological significance of the area , Population and ethnicity , education status cultural and religion , occupation and forest resource pattern by the local people.

#### **4.1 Brief Introduction of Jumla District**

##### **4.1.1 Location**

Jumla is generally known as the headquarters of the Karnali Zone situated in the lap of Himalaya. It is the origin of Nepali "Khas Bhasa" and 'Masrsi black' rice. It lies between 80<sup>0</sup>51" to 82<sup>0</sup>35" longitude and 28<sup>0</sup>58" to 29<sup>0</sup> 50" N latitude and located in the for northern Himalaya region of mid western Nepal. This district is surrounded by Dolpa district in the east, Kalikot in the west, Mugu in the north and Jajarkot in the south (see the MAP of Jumla). The total area of the district is 2531 sq.km and population is 89427 with 45848 male and 43579 female, which covers 0.39% of the total population of Nepal. In Jumla total 15850 households are constitutes with an average family size of 5.64 per household and population density is 35 per square kilometer (CBS, 2001)

The altitude of this district is varied from 2076m at the Tila river basin near the broader of kalikot and extended up to 6229m. The district has two distinct geographical river system, one is Tila river valley where

there are 19 Village Development Committees are situated and other is Sinja river valley where there are 11 VDC's situated along. The district head quarter is situated in the middle of the district. In one day can reach in each border district. The major part of district lies in sub-alpine zone and cool temperate zone. Maximum, minimum temperate recorded up to now is 15<sup>0</sup>c and maximum temperature is 27<sup>0</sup>c.

#### **4.1.2 Climate and Weather**

Lower temperate to alpine types of climate occur in Jumla. The average annual temperature of Jumla is 13.9<sup>0</sup>c, average maximum, average maximum is 22.1<sup>0</sup>c and average minimum temperature is 5.6<sup>0</sup>c. The area receives the average annual rainfall about 800mm in summer, which is lower in context of Nepal. Therefore, it is on the practical shadow area because the tall ridges of mahbous or chakhure. It receives summer rainfall with maximum intensity between. Ashad to Bhadra and receives winter snowfall until chaitra with maximum intensity in Posh and Magh (source: Field surveys 2009). It receives more winter monsoon than other part of the Nepal. The high meadow (patan) is some time covered with snow early in Asoj and the snow melts in Baisakh.

#### **4.1.3 Biological Significance of the Jumla**

The forest area of the Jumla district is 41.3% of the total area (1046 km) (source: LRMP 1986, JFTA ,2001) was reported 43.7% Forest coverage area and 0.4% shrub area within 2531 sq km in Jumla. The forest percapita is 1.25 % with respect to total population in Jumla. (JFTA, 2001). The district is characterized with alpine, sub alpine and high temperate vegetation types.

The specific characteristic of this district is that in the southern aspects of the lower altitude the ridges and slopes are open and encroached with concentrated settlement. In northern aspect, there is more vegetation. Dense coniferous forests of pine and silver fir are concentrated on the northern aspects. In the low range area the free species like, gobre sallo or leksallo or pabai sallo (*Pinus walli* Chiana), Deudar (*Cedrus, deodara*) spruce (*Picea, Smithiana*), *Rhododendron* spp. Ghode pangro or horse chestnut (*Aesculus, inclia*) and Kharsu oak (*Quereus, seme carpefolia*),. High valued NTFP's like mores (Nore Chella Whica) Sugandhawal (valerian, Jata mansi), Atis (*Delphinium himalayal*) and chutro (*Berberis aristata*) are found and in the high altitude of the district free species like junipers (*Jumperus spp*), lauth sallo (*Taxus baccata*), Bhojpatra (*Betula, utilis*) and Bogre salla (*Tsuga dumosa*). And in the transition of the forest and meadows (patan) NTFP like jatamansi (*Nardo stachys grandiflora*); Sunpati (*Rhododendron anthopogan*) and Padam puskar (*iris nepalensis*) are abundant padamchal (*Rheum australe*), Panchaunle (*Dactylorhiza atageria*) and kutki (*picroniza, scropbulariflora*) are found in the upper part of meadows "Patan".

#### **4.1.4 Land use Pattern**

The land use in Jumla is based on climate, soil, fertility, land relief and distribution and composition of population. The plain, river basin area and gentle slopes are used for agricultural purpose while steep slope and other accessible area are covered with forest, shrubs and grass. Shifting cultivation is practiced in sloped and adjacent the forest area. The following are land use pattern shown in the Table no. 4:1.

**Table 4:1**

**Land use Pattern in Jumla**

<b>S.N.</b>	<b>Land use type</b>	<b>Total Area (ha)</b>	<b>Percentage</b>
1	Forest	104570	41%
2	Agriculture	24060	6%
3	Pasture land	66210	26%
4	Rockly slope, lake	59570	23.3%
5	Others	93390	23.34%
<b>Total</b>		<b>2547000</b>	<b>100%</b>

Only 6% of the land is available for agricultural purpose and rest 94% area is covered by forest, pasture, Rocky slopes etc. percentage of agriculture, land is very low as compared to national context. Majority of the population has been facing the problem of starvation since long period of time the government is providing food subsidy. Jumla is also recognized as highest place in the world, rice is cultivated up to 2850 from the mean sea level.

**4.1.5 Population and Caste/ethnicity/Religion**

Total population of the district according to the census, 2001 is 89427 with 45848 female and 43579 female, which resides in 15850 HH. Total population of Jumla, which covers 0.39% of the whole population of Nepal with an average family size of 5.64 per household and population density, is 35 per square kilometer (VDC profile, 2008). Jumla is major locale of Khas population Nepal. Khas are also recognized as Non-tibetin mongoloid people. The majority of the populations are chhetri, Brahmin, Damail, Sarki, Kami, Newar, Gurung, Magar, Thakuri and few Bhotias. The VDC profile of Jumla shows that 63.12% chhetri, 14.53% Brahmin,

13.64 Dalit and 8.5% others are residing in the districts. Main religion of the local people is Hindu (97.9%) and followed by Buddhism (1.88%) and Christian (0.16%) (Source: CBS 2001). It's reported that current Nepali national language was originated from this Karnali dialect.

#### **4.1.6 Education Status**

Education status of the Jumla district is very poor. The literacy rate is 32.5%, which is very low comparison between other districts. The only one campus is running here. Altogether 4 higher secondary school, 25 secondary school, 25 lower secondary school and 129 primary school are running over the district. The literate and illiterate population of this districts are shown in the following table.

**Table 4:2.**

#### **Education status of Jumla District**

	Male	Female	Total	Percentage
Literate	27744	18030	45774	44%
Illiterate	23951	35276	59227	56%
Total			105001	100%

Source: Jumla Jilla Parswab Chitra, 2066

Only 44% people are literate the majority of the population (56%) are still illiterate in the age of 21<sup>st</sup> century.

#### **4.1.7 Food and Agriculture**

The farming and cultivation is totally subsistence. Major grain and food of this district is barely, wheat, millet, Maize, chino kaguno, potato buckwheat and beans. The traditional cultivation is carried out with no leveled terracing up to know. Jumla is supported by the government for

the subsidies, which is taken into transportation from Nepalgunj and Surkhet, which does not have significant impact on the food deficiency problem of Jumla. No one in the village is found land less who doesn't have land.

#### **4.1.8 Forest Resource use Pattern**

The majority of the forest area in this area is two hours walking from the village through the people have realized the scarcity of timber and fuel wood due to growing population day to day. People of the Jumla are collected different high valued & high altitude medicinal plant without any obstacles by any agencies. At present situation, medicinal plants are decreasing due to rapid population growth and not plantation in private land to large scale. They have been using these medicinal plants produces viz. Atis, and Kutki, sugdhawal, which are known to be oldest NTFP have been traded since the remote part in Karnali. There are different categories of NTFP's viz, NTFP trade locally, NTFPs used domestically for subsistence purpose and NTFPs availability is good but not exploited in systematic manner which is potency for future trade and enterprises. There are two processing unit established during 1995-96 in Jumla. Now a day they are not functioning. Shepherding and livestock rising in this area is common, therefore people use fodder from the oak trees specially and they use the open grass meadows. Bee keeping in this high altitude is valuable and important in Jumla. The bee kept in high altitude feed in the medicinal plants of patan and produce pure medicinally valuable honey. People are directly depending upon the forest resource breeding materials.

#### **4.1.9 Infrastructure Facilities**

Jumla is least developed district in Nepal. There are not good motarable roads that the track open of Karnali high way Surkhet to Jumla is 220 km. Most of the VDC are accessible by the poor condition *Goreto bato* on the other land there are link with developing district of Surkhet and Nepalgunj by the Sita Air and Yeti Airline, which is not sufficient for passenger. Electricity facility is very poor in the district. In Jumla produces 250 kW hydropower for only Jumla market area and neighboring VDC. There aren't sufficient phone facilities in the last time NTC, Mero Mobile, HelloNepal cell phone service is operating now.

#### **4.2 Introduction of Hanku VDC: Nepani gaun**

##### **4.2.1 Geographic Setting**

Hanku VDC is one of the VDC of Jumla district, which is most resourceful and rich area in terms forest resource. It is lies between 29<sup>0</sup>.04' from 29<sup>0</sup>.15' N latitude and 82<sup>0</sup>5'from 82<sup>0</sup>14' longitude. Nepani is the main study area of this research, which includes ward no. 8 and 9 of Hanku VDC. It is situated along the Tila river basin and Gidikhola. It is elevated from 2000 m to 4600m from the sea level. It takes 3 hours walk from the district head quarter Jumla Khalanga to reach there. This gaun is surrounded by Kartiswami VDC in the east, Tatopani VDC in the west Lamra VDC in the north and Tamti VDC and Jajarkot district in southern part of the study area famous GidiDaha(lake) lies in the east part of this gaun and VDC. In the southern part of this settlement large patan are located with all the high altitude high value NTFP's and Tamti and Jajarkot district are also situated.

#### **4.2.2 Topography**

Topography of the study area is so diverse with ever plain at the elevation of 2000m to high alpine meadow, locally known as *patan*, which extends up to 4600m. These alpine meadows provide the grazing area for the cattle horse, sheep and goat summer. This study area can be divided into two parts like hill area and cultivated land, which made small valley. The southern part of the study area has dense coniferous forest and large Patan with valuable NTFPS like Jatasmansi and Yarsagumba.

#### **4.2.3 Climate and Weather**

The climate of Hanku different from main Jumla valley with more rainfall amount because it lies in the base of the Bhurichulla and patan range. The maximum intensity rainfall in summer occurs in Ashad and Bhadra and winter snowfall during mangsir to Falgun. The high altitude meadows are some time covered with early snow in *mansir* and remained cover with snow up to *Baiskha*.

#### **4.2.4 Population and Caste Ethnicity**

Total population of Hanku VDC is 2067 with 1039 male and 1028 female which resides in 383 household with average household size 5.4 (Census, 2001). In this area Chhetri, Bahun, Dalit, Sanyasi and others are residing here the ethnic composition of population of the study area are shown in the following table.

Most of the people are Dalit caste which coverage 34.2 percent and followed by chetri , Bahun and Sanyasi consequently. Major religion is Hindu in this area. The people are speaking Jumli *Jharo Khas Basha* (language).



**Table 4:3**

**Ethnic composition of the Study area Hanku**

<b>S.N</b>	<b>Caste</b>	<b>Population</b>	<b>Percentage</b>
1	Chhetri	396	19.2
2	Bhaun	942	12.1
3	Dalit	707	34.2
4	Sanyasi	13	0.6
5	Others	9	0.4
Total		2067	100.00

Source: VDC Profile, 2008

**4.2.5 Education Status**

Hanku VDC is backward in term of education. The literacy rate of this VDC is 38.1% remaining 61.9% are illiterate. There are only on secondary level school and other 3 school are in primary level (VDC Profile, 2008). There is no good education environment in the school due to lack of infrastructure and this area is mostly disaster prone area. All the people are victimized by flood disaster during the study period.

**4.2.6 Infrastructure**

There is no good infrastructure facility. The road access is also in poor condition and only one Ghoreto bato. There is only one illaka health center, which provide service for more than 2060 people, which is not provide quality health service for all. There is no electricity service the entire VDC some people are used to solar electricity for only household use. Altogether, 66% people are using drinking water from pipe drinking water and 14.33% from river and stream and 17.3 percent from naturally running tap. There is no safe drinking water facility of residing

population. There is no telephone facility for the resident of Hanku VDC. Unluckily today, it is age of information technology. The government should be attention for providing social service as a welfare state of 21<sup>st</sup> century.

#### **4.2.7 Food and Agriculture**

The farming and cultivation is totally subsistence. Major grain and food of these area are Paddy, Maize, Wheat, Millet buckwheat and barely etc. Paddy and Maize are the major dominant grain in the study area. Most of the agriculture land area lies in the side of river basin and adjacent forest. The average food deficiency level is 6 month. In Nepani, most of the agriculture land, especially Paddy cultivation field on the both Gudikhola river basin and prone to flood and paddy grain has lost by river flooding hazards during the study period.

The traditional cultivation is carried out with no leveled terracing there is a food deficit area. The produced food is suffering to summer the population for 6 month. Therefore livestock grazing, wage labor work, seasonal migration to India, NTFP collection and small trade are major source income which can supplement the food deficit in the village.

Food supply situation of Hanku VDC is shown following table.

**Table 4:4**

**Food supply situation is the Study area**

<b>S.N.</b>	<b>Supply Situation</b>	<b>Household</b>	<b>Percentage</b>
1	No. of food sufficiency family	184	52.72
2	No. of Food Deficiency Family	165	47.28
Total		349	100.00

Source: VDC Profile, 2001.

#### **4.2.8 Vegetation and Wildlife**

In Hanku VDC, Neupani is characterized with temperate sub alpine and alpine vegetation. In the low altitude area. Deodar forest is dominant on the southern slope and on the northern aspect Gobre sallo with Jhule sallo (*Picea smithiana*), okhar (*Juglans regia*), gohde pangro (*Aesculus indica*) and laliguras (*Rhododendron* spp). Around the paddy field in the river basin, Dale chuke is also found abundantly. In this study area are found different birds species such, Danphe, Chyankhura, Kaliz, Dhukur etc and others wild life found abundantly such sayal, tiger, bear, kasturi, ghodeland banel etc.

#### **4.3 Introduction of Dillichur VDC: Luma**

##### **4.3.1 Geographic Location of the Study Area**

Dillichur is another key study area of this research. Luma gaun lies in ward no. 6,7 & 8 of Dillichur VDC. It is situated along the Jawa river basin of chaudvisa valley at the elevation of 2650 m. in the eastern part of Jumla district. It takes four walk from the district head quarter. Jumla khalanga to reach there. In the north of this settlement large patan are with all the high altitude high valued NTFP's and Mugu district are situated.

##### **4.3.2 Topography**

The study area has very diverse topography with river plain at the elevation of 2550 to high alpine meadow locally known as patan, which extends up to 2600 m. These alpine meadows provide the grazing area for cattle, horse, sheep and goat in summer. The tree line in the northern aspect goes higher average (3900m) than in the southern slope (average 3400m) like other plants of the district. It has also open hued and

cultivated southern slope and dense coniferous forest on the northern slopes part of southern and northern aspects are cultivated.

#### **4.3.4 Climate and Weather**

Climate of the chaudavisa valley differs from main Jumla valley with more rainfall amount because it lies in the base of the patراسي Himalaya range. The area extends from upper temperate to alpine region. The maximum intensity rainfall in summer occurs between Ashad and Bhadra and winter snowfall during poush and falgun. Some times the high altitude meadows are sometimes with early snow in Asoj and remained cover with snow up to Baiskaha.

#### **4.3.5 Vegetation**

In General, Dillichaur is characterized with upper temperate sub alpine and alpine vegetation type at particular in luma. In the low altitude area Gobre sallo (*pinus walli chaina*) is dominant on the southern slope and on the northern aspect Gobre sallo with Jhulo sallo (*picea Smithaina*), Devdar (*cendus desdara*), Okhar (*juglans regia*), Ghode pang (*Aesculies indica*) and lali Gurans (*Rhododendrons spp*). At the higher altitude tree species like Dhupi (*Juniperus spp*), lauth (*Taxus baccta*), thingro sallo (*Abies spectabilis*) and Bhoj patra or bhuj (*Batula litalis*).

#### **4.3.6 Population and Caste Ethnicity**

The total population of the Dillichaur VDC is 3673 with 1883 male and 1790 female, which resides in 619 households. The average household size is 5.95 in this study area. In the study areas, most of the khas people are living there. Majority of the population is matwali chetri or non-Tagadhari (not wearing ritual threads) Chheri and followed other cast such Dalit, Sherpa, Thakuri and others. The caste of the people is

Kami, Sarki, Damai, Aidi, Bhandari, Bohara, Rokaya, Rawat, Thami and Budha in the study area. Dillichaur VDC. The following table are shown the ethnic composition of the studies areas.

**Table 4:5**

**Ethnic Composition of the Study Area (Dillichur VDC)**

S.N.	Caste	Population	Percentage
1	Chhetri	3120	85.2
2	Dalit	445	12.1
3	Sherpa	84	2.3
4	Thakuri	5	0.1
5	Others	10	0.3
Total		3673	100.00

**4.3.7 Literacy and Education**

Dillichaur VDC is a backward in education. The literacy is 32.5%, which is very low comparison with other VDC of the district. Recently there is only one higher secondary school in the Dillichur VDC and other primary school, which aren't sufficient for the VDC. The mass of the people are illiterate they can't read and write. Education is main factor of backwardness in development process of this VDC but the people of this area are very enthusing for community development. They are very co-operative with development actors for socio-economic development of entire VDC.

**4.3.8 Infrastructure Facilities**

This VDC is model VDC declared by district development committee Jumla because there is good initiation of development project and works through different GO'S and INGO'S. The road access is good

condition and constructed by DRILP. It makes easier for walking from Dillichur to khalanga bazaar. There is no good hospital facility for more than 300 populations.

The electricity facilities is not available in this VDC somewhere the micro-hydro project is implemented such has lhoarpa and other village people are being used the solar electricity. There is no proper telephone service only CDMA phone is in communicating network, which is not everywhere. Drinking water scheme is running community people this sector is implemented satisfactory way. Recently, the Karnali Jadibuti production and processing unit is establishing by co-operation of different Agency such DFO, WUPAP, and MEDEP.

#### **4.3.9 Food and Agriculture**

The farming and cultivation practice of the people is based on subsistence nature. Major grains and foods of these are barely, wheat, millet, chiono, kaguno, potato, duck wheat, paddy, beans and maize. Most of the agriculture land confined on southern open slopes and prone to erosion and soil fertility loss. The tradition cultivations carried out with no leveled terracing. This is a food deficit area. The produced is sufficient to survive the population 6 month. The forest livestock raising wage labor work seasonal migration to India, NTFP collection and trade are major source of income, which can supplement food deficit in the village.

Most of the village have upland fields (Pokhoo or not irrigated) land and very few low land paddy cultivates.

#### **4.3.10 Religion and Culture**

All the people are Hindu. But these non-Tibetan mongoloid people same times follow both Buddhist and Hindu culture. Dashin is the greatest festival and celebrating other customs such as Tihar and fagupurnima are newly introduced festivals which people deprived from out side the district. Early marriage and multi marriage are still under prominent culture in this area.

There are many local festivals on rituals celebrated by local people of Luma and other parts, sakranti (First day of month) is the frequent day to celebrate such as sauna sakranti, Maghe sakaranti , Baiskah sankarnti (new year). Other local festivals are purnimas (fool Monday) are taken as religious celebration such as Baisakh purnima, Saun punima, Bhadra punima (Ananta purnima), Kartik purnima and Magh purnima there are the auspicious any which local people worship their local god deities for the place and safety in the study area.

People of luma speak Jumli dialectic. People especially women wear traditional dresses and ornaments at forests and festivals. People here have short house with less ventilation, which warm the house in winter.

## **CHAPTER - V**

### **DATA ANALYSIS AND INTERPRETATION**

Data analysis and interpretation is the most important step of any research, which helps the researcher to reach conclusion, and for providing recommendation of the conducting research. This chapter deal about the data analysis and interpretation. Which is collected from field observation and secondary source? The data has been analyzed about and interpreted about socio-economic characteristics, income source form NTFP enterprises, employment status by NTFP enterprises. Awareness, about NTFP availability and use of NTFP for micro-enterprises. In this stage descriptive method were used for qualitative data such, problem and constrain of NTFP based micro enterprises development. The data has been presented with help of simple statistical tools, table percentage, frequency, simple bar diagram, pie chart so on.

#### **5.1 Socio-economic Characteristics**

##### **5.1.1 Population**

Total population of Luma is 840 with 390 female and 450 male residing 140 households another study area, total population of Neupani is 180 female with 230 male residing in 82 households. Most of the population depends upon subsistence farming. Population growth rate of the area seems increasing because of less awareness to family planning service, early marriage and multi marriage.



**Table 5:1**

**Distribution of Sex of Sampled HH**

Sex	Frequency	Percentage (%)
Male	233	48.24
Female	250	51.76
Total	483	100

Source: Field Survey, 2009.

(N = 60)

According Table 5.1 average household size of the respondent household is 8.05, which is more than national average household size of the country (CBS, 2001). Among the total population of 483, 48.24% are male and 51.76 are female the range of household size from 2 to 20. The female population is more than 50% in the sample household.

**5.1.2 Caste and Ethnicity Composition**

Luma is the key study area of the research, which reside *Khas* people. Majority of the population Matwali Chhetri, Kami, Sarki, Damai, Aidi, Bhandari, Bohara, Rokaya, Rawat, Rawal, Tami and Budha in the study area.

Neupani is another study area while resides the majority population of Dalit people and followed by Bahun and other the caste of the people are Nepali, Sarki, and Samal Jaise. The ethnic composition of the study samples are shown in the following table.

**Table 5:2**

**Ethnic composition of the respondent household in the study area  
(Luma and Neupani)**

<b>Caste</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Chhetri	33	55
Dalit	25	41.7
Brahmin	2	3.3
Total	60	100

Source: Field Survey, 2009.

Table 5.2 shows that Chhetri have majority (55%) population, dalit have 41.7% and Brahmin caste has only 3.3%. coverage in the respondent house of the study area. Luma gaun has the chetri dominant caste and in Nepani gaun dalit caste. Majority of Dalit caste is residing there, only one 4 house are Brahmin. The Chhetri in these villages are Rawat, Rawal, Aid Thami, Budha Raut, Brahmin and Jaise semal, where as dalit caste includes Sarki, Kami and Nepali.

### **5.1.3 Education Status**

Neupane and Luma are backward in education. The literacy rate is very low in both study area. Only about 8 people have done S.L.C. and 2 people are complicated higher education in both study areas sampled household. There is no primary school in the Luma village and for the secondary school the children have to go to Rina Mokshya secondary school at Dillichaur half an hour walks from the village same case in Neupane. There is also only one primary school in the village.

For the secondary education, the children have to go Thanta Chaur secondary at Hanku one hour walks from the village. The literacy level and education status of respondent household are shown in the following table 5:3.

**Table 5:3**

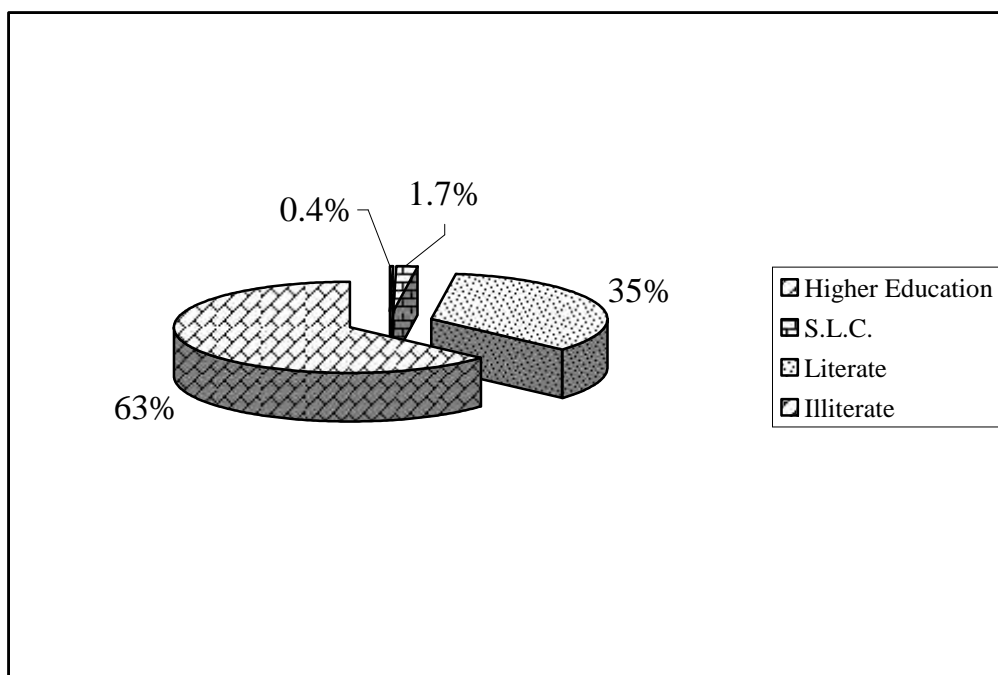
**Literacy of Respondent Households**

<b>Level</b>	<b>Male</b>	<b>Female</b>	<b>Total</b>	<b>Percentage</b>
Higher Education	1	1	2	0.4
S.L.C.	4	4	8	1.7
Literate	111	56	167	34.6
Illiterate	45	191	306	63.3
<b>Total</b>	<b>231</b>	<b>252</b>	<b>483</b>	<b>100</b>

Source: Field Survey, 2009.

Table. 5:3 represent the literacy level of the respondents family member. It shows that majority of the people 63.3% are illiterate, only 34.6%. People are literate, very few 0.4 have higher education and 1.5% has completed school having certificate. The education status is very low in the study area due to low awareness about education and prevalence of dogmatic beliefs and norms in society.

**Fig.5 :1 Literacy Level of Respondent Household in Family Member**



#### **5.1.4 Agricultural Landholding Pattern**

Almost all the lands belong to the people here is the Pakho land meaning upland cultivated land. Landholding size is a major variable in the household economy of the study area. Some households acquired the cultivated upland Pakho highest up to 16 halls (2.4 ha) whereas few household acquired lower than 1 hall (.15 ha) of Pakho. Average land holding capacity per household is 68 ha. It is found that few farmers have there irrigated field in the Jawa river basin in Luma and Gidi khola river basis in Neupani.

Most of the farmers have less than 5 halls (0.75) in the study area. The status of land holding capacities of the study area's people are shown the following table.

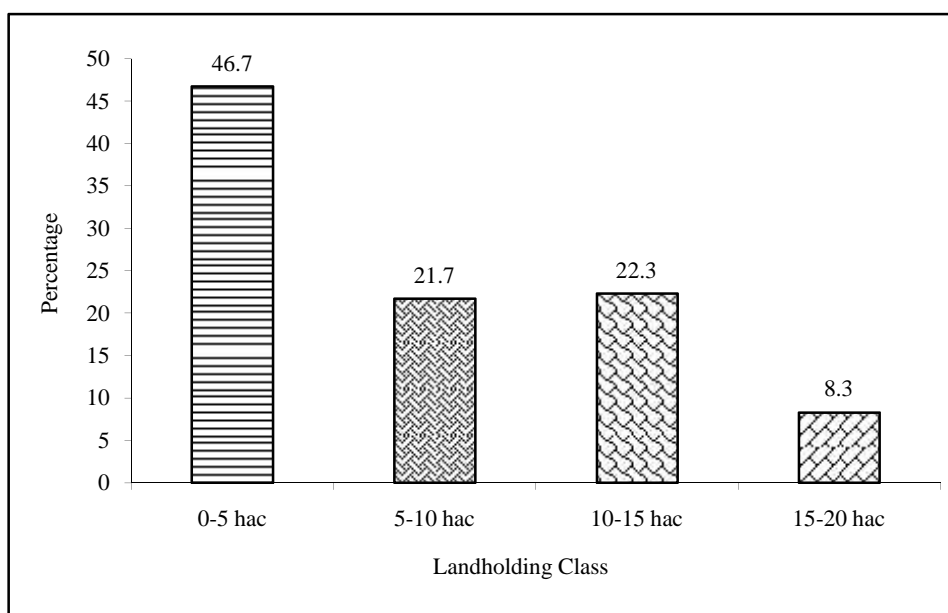
**Table 5:4**

**Landholding Capacity of Sample Household in the Study Area  
(Luma and Neupani Village)**

<b>Landholding size</b>	<b>Frequency</b>	<b>Percentage (%)</b>
0-5 hall	28	46.7
5-10 hall	13	21.7
10-15 hall	14	22.3
15-20 hall	5	8.3
<b>Total</b>	<b>60</b>	<b>100.</b>

Source: Field Survey, 2009.

**Figure 5: 2 Landholding Capacity**



1 hall = 0.15  
hector

The farmer of the low land class (0-5) is in majority (46.7%) (See fig. 5:2). The majority of the people are depends upon other activities such as seasonal wage labor, NTFP collection and trade and enterprise to survive the livelihood. The poverty is high in the study areas. All the land are hold and managed by the farmers or respondents themselves.

### 5.1.5 Family Size

Family size of the sampled HH was found from 2 to 20 members. The age between 1-5 represented over 11.67 percent, the age between 5-10 over 63.33 percent, 10-15 represent over 21.67 and 15-20 represented over 3.33. Table 5.5 below shows the family size in orderly.

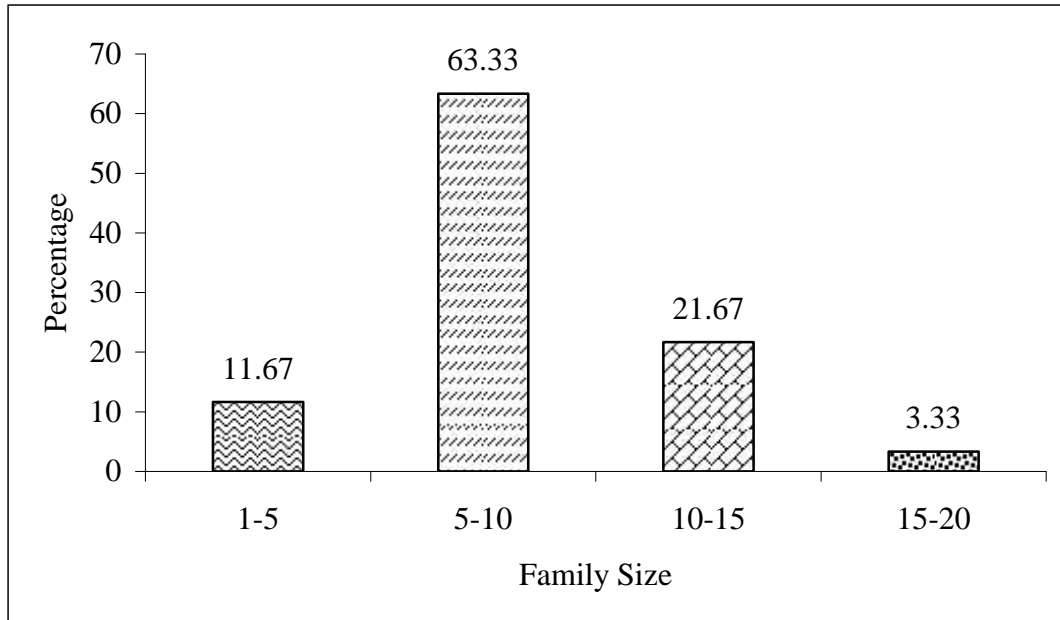
**Table 5:5**

**Distribution of Family Member in Sampled HH**

Family size	Households	
	Frequency	Percentage (%)
1-5	7	11.67
5-10	38	63.33
10-15	13	21.67
15-20	2	3.33
Total	60	100

Source: Field Survey, 2009.

**Figure 5:3 Distribution of Family Member in Sampled HH**



The most of the households have family size (5-10) which covers more than 63.33 percent. Population growth rate of these areas seem increasing because of less awareness and access to family planning service, early marriage and combined family structure.

### **5.1.6 Food Sufficiency**

Agriculture production is the major occupation of the people in the study areas but the farming and cultivation is totally subsistence. The agricultural production and productivity is very low because of lack of modern inputs. Such hybrid seeds, technology, irrigation, lack of fertile soil and scientific cultivation and other technical service. Disasters also impact on grain harvesting and production period such as Hailstorm, drought etc.

Table 5:6 shows that the majorities of the respondents are in 6-month food deficit problem and followed by 3 month. Full year and 9-month full sufficiency.

**Table 5:6**

**Annual Food Sufficiency of Respondent Household**

<b>S.N</b>	<b>Food sufficiency</b>	<b>Frequency</b>	<b>Percentage (%)</b>
1	3 month or less	23	38.3
2	6 months	26	43.3
3	9 months	3	5
4	Full year	8	13.3
	Total	60	100

Source: Field Survey, 2009.

The Jumla district has been facing problem of feed deficit. The government has provided the food subsidies, which is taken, transportation from Nepalgunj and Surkhet, other NGO/INGO has been working to prevent the problem starvation as the name of different community development program such as food for Work, World Food Program (WFP), Disaster rehabilitation program (Red cross), QIP, by DEPROSC. The government subsidy doesn't have significant impact on the food deficiency problem of Jumla. The various programs are implemented by different non-government organization very popular and success, they have been providing rice for in spite of wage labor, which helps to prevent coming food deficient problem at immediate in the whole district.



### 5.1.7 Occupation

Table.5:7 indicates that agriculture is the main occupation in the study area but only 40% of the respondent are depended in agriculture which includes working in the field, cattle and sheep and goat farming and other work related to agriculture activities 85% of the respondent are involved in NTFP enterprise which includes collection, raw trading, and semi-processed after trading, to make products and sales in the local, regional national market. However, the respondent seems to have more than two occupation such as person who go for the wage labor also does agriculture and NTFP enterprises. Therefore, aggregate percentage here more than 100%.

**Table 5:7**

#### **Occupation of the Respondent Households**

<b>S.N.</b>	<b>Occupation</b>	<b>Frequency</b>	<b>Percentage (%)</b>
1	Agriculture	24	40
2	Black smith	1	1.66
3	Service	3	5
4	Wage labour	42	70
5	NTFP enterprise	51	85
6	Small trade	12	50
Total			

Source: Field Survey, 2009.

[N = 60]

### 5.1.8 Source of Income

Local people of this area are ultra poor and depend upon subsistence farming though they have sufficient forest resource. Major cash income source here is tabulated. All the income is calculated based

cash income made by particular last year. Table 15. shows that NTFP is the major source of cash income of the households covering 47.34% of the total cash income. Flowed by seasonal wage labor (42.74), agriculture (8.12%) and small trade and business (1.8).

**Table 5:8**

**Different Source of Cash Income of the Respondent Households**

S.N.	Occupation	Frequency	Percentage (%)
1	Agriculture	108500	8.12
2	Seasonal ways labor	571000	42.47
3	NTFP enterprise	632600	47.34
4	Small and trade business	24000	1.8
	Total	1336100	100

Source: Field Survey, 2009.

**5.2 Availability of NTFP and Use for Micr-Enterprises in Jumla**

**5.2.1 Available NTFP in Jumla**

NTFPs resource has significant contribute in the local economy. It constitutes an important source of livelihood for the rural people. Jumla is the richest districts in terms of NTFP resource. The district has recognized as 'Capital of NTFPs' whereas the diversity of flora. Jumla district has found 110 herbal plants out of 110 herbal plants, 265 herbal plants are used for earning purpose and used in daily life. Out of 26 herbal plants are used for earning purpose and used in daily life. Out of 26 herbal species, 16 herbal plants are the most important for income generation activities. In this district, 5 fiber yielding NTFP's 13 dye yielding NTFP, and 60 food species plants NTFP have found.

Specially, in this research, NTFP has divided into three parts according to available of NTFP resource in the districts such as medicinal plants, fiber-yielding plants and food species plants. Jumla has a great biodiversity in term of available different biological resource.

### **5.2.2 Medicinal Plants**

Medicinal plants are the most important NTFP's in terms of his high trade value and to use as folk medicine in the rural areas. In this study, medicinal plants to perceive as herbal plants (Jadi buti). Each plant species is provided with information on it's folk medicinal use and commercial value. Jumla district is one of the richest district based on availability of herbal plants (Judibuti).

Medicinal plants are used as primary health care in the village where as the lack of health service such health post. There is on proverb quite familiar in the study area that says "*Bhok ko roto, ra chot ko khoto*" meaning as the best treatment of hunger is bread, treat for hurt and sprain is 'pine resin". There exist different beliefs in society to perceive the medicinal value of these non-timber plant resources. Altogether 110, herbal plats were recorded by district forest office. Among these plants, 28 herbal plants are mostly available everywhere in the district. These plants were selected through household survey, FGD and key informant interview and preference ranking as given on the table below.

**Table 5:9**

**Major Medicinal Plants Available in Jumla District**

<b>S.N.</b>	<b>Local Name</b>	<b>Botanical Name</b>	<b>Part used</b>	<b>Medicinal or Consumptive use</b>	<b>Remarks</b>
1	Guchi chayu	Morchella conica	WP	tonic and taken as decisions food	HTV
2	Sugandhawal, samayo	Valerina Jatamansi	Rt	headache and eye trouble	HTV
3	Jatamasi, Bhulte	Nardostachyas gradi flora	Rt	stomach disease, hysteria, chronic, stomach ache and medicinal oil	HTV
4	Kuttiki Katuka	Nepicrorhiza scrophular flora	WP RZ	Could cough, and fever jaundice, tonic stomach diem disease	HTV
5	Atis	Aconitum heterophyllu,	Rt	Fever, tonic	HTV
6	Yarsa gumba	Cordycep dinensis	WP	Tonic orally	ETV HTV
7	Chiraito (Tito)	swerita chirayita	WP	Cold, fever asthma, ey vision, strain disease	HTV
8	Panchaule hategoria	Dactylorhiza hatageria	RT	Aathma, anemia to stimulaties sexactivities	
9	Padmchal (chuthe)	Rheum outstale	Fr.B	Fracture, asthma and local pickle	
10	Bojho	Acorus calamus	Rz leaf	Common cold, stomach achethroat infection	
11	Ghode marche	Thymus linearis	L	Taken as tea	
12	Dalechuke	Shivoc throne	Fr.	Bitamin B & CE toothache, toparent worm, localpickle	HTV
13	Lauth salla	Taxus bacta	Leaf & RT	Stomach and nerves disease	HTV
14	Gunaino	Pleurospermum dentatms	RT	Taken as curry to releive stomach	LTV

15	Bayajadi	Tanaetum olichophyllum	RT	Gastric	LTV
16	Nimaujadi	Morina polyphylla	RT	Used as ingredient for incense	LTV
17	Satuwa	Daiswa, polyphylla, variuter media	RT Fm	Ingastric,menstracactionpain antiworm fer cattle	LTV
18	Pankhan bed (simpati pat)	Bergina cillita	RZ	Fever, dysentary, to past natal women witfoney ulmonary disease	LTV
19	Bikha jara	Aconiturm ferox	RZ	Cold cough, influenza antidote forintoxiation	LTV
20	Titepati	Artemisra idubai	L	Used inincons, insuts kill	LTV
21	Manjitho	Rubia manjith	RT	Dye the cloth	
22	Bankachur		-	Gastric	
23	Ban lasun	Allium wallichi		as appetizer	
24	Ram Tulasi	Origanum vulgeare	L	for cough and cold for respiratory disease	
25	Sunpati			Perfum	
26	Kaladana				
27	Kurilo		Root	Throat, stomach,TB, leprosy night blindness, kidney disease	
28	Avijale				

Source. Field Survey ,2009

Note: Rt = Root, Rz = Rhizomes, L = Leaf, Fr = Fruit, WP = Whole plant. HTV=High trade value LTV= Low trade value

Table no. 5:9 shows that, 28 major medicinal plants with medicinal and consumptive value, NTFPS are available Jumla district, Gucchi chauya, sugandhawal has found every where in the district. The major dominant herbal plant is jatamansi interms trade experts and collection.

Those plants which have most economic and medicinal value have found in the districts such as jatamansi, yarsagumba, guchhichaya sugandhawal padmachal, kutki, attis, kaladana, biskha jara etc.

### 5.2.3 Fiber Yielding NTFP's

People harvest NTFP's from the forest and sell it at the village level after dying and cleaning. The clean and dry product will fetch in good price market. Usually collectors go through the primary process like cleaning, dying storage of collected product. Fiber yielding NTFP's has found such as Nigalo, Bhang ganja, sisno and ghatchomlaya in Jumla district. The following table are shown the part use, and method use and propose of fiber yielding plants.

**Table 5:10**

#### **Fiber Yielding Plants**

<b>S.N.</b>	<b>Local Name</b>	<b>Botanical Name</b>	<b>Part use</b>	<b>Purpose and method of use</b>
1	Nigalo	Arundinaria faceta	Sh,B	hard fiber, basket mats, hats, sayaku (umbetla)
2	Allo	Geraradiana	B	tomake ropes, socks, coarse, clothes
3	Bhango Ganja	Connabis stativa	ST,L	Soft fiber are used to make ropes and socks
4	Ghat chomlaya		ST	Soft fiber use for basket and rope
5	Sisno	Crittica dioca	WP	Soft fiber

Table 5:10 shows that there are five yielding plants, which are available in the district they are being, used day-to-day life in household and to sell in the market after raw material processed and making the product. After the processing these fiber yielding NTFP has made

different product Doko (baskets), bamboo umbrella (Syanku), hemp sacks (Bhango ko thailo) and other bamboo related products such as Photo frame and other goods and the people barter grain with such type of NTFPS product. Bhojpatra, paper locally called Bhuspat also bartered with grain usually people from chaudevisa valley, exchange Bhuspata for grain.

#### **5.2.4 Food Related NTFPS**

Non-timber plant resource has been consumed as food since pre-historic time. They constitute even today an important of the food of rural people. Many of these edible, plants consumed vegetable, fruits, nuts, edible oil and species.

Apart from domestic consumption, a number of edible plants are used to bold in the market of Jumla Bazaar. People bring many vegetable species, Niruro (Likhudo), Padamchal, Dhokaya, Banlasun and Jimbu to sell in Jumla Bazaar.

Altogether 60 foods related NTFP were identified in Jumla district. Out of 60 foods related NTFPs, 7 fruits, 4 vegetable and 2 edible oil NTFPs have found in the study area, which is presented in following table.

**Table 5:11****Food Related NTFPS Found in the Study Area**

S.N.	Local Name	Botanical Name	Part used	Purpose and method of consumption
	<b>(a) Fruit plants</b>			
1	Ainselu	Rubus ellipticus	Fr, Rt	In stomach pain e constipation in cough and fever
2	Are	Prunus nepallensis	Fr	fruits edible
3	Bhue kafal		Fre	fruits edible
4	Okhar	Julglans regia	Fr	fruits edible
5	Maleu		Fr	fruits edible
6	Guyoala		Fre	fruits edible
7	Mahel	Dyru pashra	Fr	fruit and juice taken with to baco
	<b>(b) Vegetable plants</b>			
1	Niuro (likhodo)	Dryo pteris spp.	LWP	as vegetable
2	Pate Bako	Ansaema spp.	L	are fried taken vegetable
3	Pauro		L	are fried taken vegetable
4	Ruga sag	Mega corpae polyodr	L	are fried taken vegetable
	<b>(c) Oil/seed plants</b>			
1	Dhatelo	Prisepia utilis	Sd	Cooking oil
2	Khamu	Prunus sp.	Ys	

Source: Field Survey, 2009.

[N = 60]

**5.2.5 Awareness Level about NTFPs**

NTFP has played great role in the household economy of the study area. It is the major source of cash income for remote village Luma and Neupani. The level of awareness level is very low and NTFP, due to ignorance of the sector NTFP in the study area. The livelihood of the people of those areas depends in directly and indirectly upon the natural resource mainly in Non-timber forest product. The awareness level of the people in the study area is showing as below table no. 18.



**Table 5:12**

**Level of Awareness about NTFP of Respondents**

<b>Awareness about NTFPS</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Informed about NTFP	8	10.33
Not informed about NTFP	52	86.67
Total	60	100

Table 5:12 shows that the majority of the respondents (86.67) are not informed about NTFPS and only 13.33% respondents are informed by non-timber forest product. Therefore, the level of awareness is very poor about NTFP in the both study area.

**5.2.6 NTFP Resource used for Micro-Enterprise**

NTFP based micro-enterprises creation could be alternative means to uplift the socio-economic condition of rural community. NTFP's are playing a crucial role in employment generation and income generation in the study area. The number of NTFP based micro-enterprise are found increased in recent years which helped retain them physically at local area providing opportunities and improve their livelihood pattern to some extent.

There are a lot of NTFP specially use for micro-enterprises in the study area. Herbal plants and fiber yielding NTFP are use source of NTFP based micro-enterprises in particular study and in general in the district. Herbal plants are collected and raw trading in local as well as regional market without processing. The process unit of Jatamansi oil was established in the Luma, which is a defuncted resource yet. In herbal plants such jatamansi, sugandhawal, kutki, Attis, Yarsagumba, Gucchhichayu, Satuwa and Dalechuke are major NTFP which is use for

micro-enterprise. Nigalo sale and Dale chuke are dominant NTFP resource for micro enterprise in the Nepani gaun. However, the respondents seem to use more than two NTFP's such as a person who use Jatamansi, Guchhi chaya also use sugan dhawal. Therefore, aggregate percentage exceeds more than 100%. The flowing table 5:13. Shows that the situation of NTFP use for micro-enterprise in household level.

**Table 5:13**

**Situation of NTFP Used for Micro-Enterprises in the Study Area**

S.N.	Name of NTFPS	Frequency	Percentage (%)	Enterprise nature and products
<b>1.</b>	<b>(a) Herbal plants</b>			
1.1	Jatamasi	34	56.66	raw trading and processed oil
1.2	Guchhi chaya	22	36.6	raw trading and collection
1.3	Yarsa gumba	22	36.6	raw trading and collection
1.4	Sugandhawal	12	20	Making dhupa and semiprocessed sole
1.5	Kutki	18	30	Raw material trading
1.6	Kala dana	2	3.3	Seed sale (raw trading)
1.7	Attis	2	3.3	Rootsale
1.8	Gunayano to other	1	1.6	Medicine as root powder
<b>2</b>	<b>b)Fiber yielding plants</b>			
2.1	Nigalo	20	33.3	Duoka basket, sayanku (umbrella)
<b>3</b>	<b>Fruits = plants</b>			
3.1	Dolechuke	10	16.6	Making juice and fruit sale

[N = 60 households]

Source: Field Survey, 2009.

Here, in this study enterprise as a every activity for earning purpose. So, in the study collected NTFPs, raw trading, semi processed also known as one of enterprises. Majority of people (56.6%) are using jatamansi for enterprises purpose, other Guchichaya, Yarsagumba and sugandhawal followed them. The fiber yielding NTFPs. Nigalo and fruit related Dalechuke are also using for micro enterprises, which provide main basis of the running enterprise, to supported livelihood in the study area.

**Table 5:14**

**Annually Collection of NTFPS (or Nigalo and Chamlaya) for Micro-enterprise**

<b>S.N.</b>	<b>Name of NTFPs</b>	<b>Frequency</b>	<b>Quantity (in kg.)</b>	<b>Collection</b>	<b>Remarks</b>
1	Nigalo collected HH	16	4000 kg.	Jesth-Asar	Neupani
2	Chomlaya collected HH	3	100 kg.	Kartik-Mansir	
3	Both not collected HH	41	-	-	Other NTFP collection Hanku 8 Nepani
<b>Total</b>		<b>60</b>	<b>4100 kg.</b>		

Source: Field Survey, 2009.

**Table 5:15****Herbal Plants NTFP Collection for Enterprises for Activities**

<b>S.N.</b>	<b>Name of herbal plants</b>	<b>Frequency</b>	<b>Percentage (%)</b>	<b>Remarks</b>
1	Gucchi collected households	38	63.33	Baishakh-Jestha
2	Jatamansi collected households	20	33.33	Bhadra-Mansir
3	Swandhawal collected household	12	20	Bhadra-Asoj
4	Kutki	21	35	Aso-Mangisir
5	Yarsa gumba	17	28.33	Asar-Bhadra
Total			10493.45 kg.	

Source: Field Survey, 2009.

Table 5:14 the collection of Nigalo and chomalayo for annually to run the micro-enterprises in the study area. Neupani gaun, Nigalo based enterprises is major source of income in the Dalit household there is open to collect Nigalo. The are supply of Nigalo product such Doka all over the district. The nature of Nigalo based enterprises is mainly subsistence nature and without use of modern technology and training and skills. Out of 23 samples HH, 16 household are collected Nigalo and others 3 household were collected chomlaya, to made a 100 Doka. Remaining 4 household in Nepani and 37 households are not collected Nigalo and chamlaya for enterprise purpose. Annually 4100 kg. Nigalo is collected for running these enterprises.

Table 5:15 shows that the status of NTFP collection and trade annually in the study area. The people collect the major NTFP take as Jatamansi, Gucchichayu, Sugardhawal, Kutki and yarsagumba. Majority of the people are collected Gucchichayu (63.33) in the favorable seasons which constitute only 20 kg annually study area. Out of 10403.45 kg. of herbal plants. 7775 kg jatamansi is collected which coverage 7775 kg which major herbal plant for micro enterprise and trade expert out of the district. Pervious time, the jatamansi processing unit had to run in the study area. Yarsa gumba is collected very law quantity because of it's very rare and most valuable species interms of availability and market demand which coverage 450kg. collected annually in the study area.

#### **5.2.7Way of Collection NTFP for Micro-Enterprises**

NTFP based micro-enterprises is home base economic unit, which can operate without requiring much capital and number wage labor. It is very small, scale enterprises, cost, technology and number wage labor. Such type of enterprise, which can run self-entrepreneur family member and less number of wage labors. The following table showing that collection ways of NTFP for micro-enterprises in different way in the study area.

**Table 5:16**

**Way of Collection NTFP for Micro-enterprises in Respondent Households**

<b>Way of collection</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Collected by self entrepreneur	30	50
Collected by family member	15	41.7
Collected by wage labor	2	3.3
Net collected any NTFP	3	5
Total	60	100

Source: Field Survey, 2009.

Above table show that majority of entrepreneurs (50%) are collected NTFP through himself. 41.7 (25 households) are collected through family members and 3.3 are collected by wage labor.

**5.3 Existing Management Practice of NTFP Resource in the Study Area**

**5.3.1 Existing Harvesting System**

The local harvesting system of NTFP's Luma and Neupani village is based on the traditional harvesting system followed by unmanaged, premature, and over harvesting. In this traditional system of the regeneration of the plant species is not considered only immediate market demand is tried to be fulfilled. Local people gathered the herbs of they got the order remote local traders. Usually people starting collecting NTFPs according to season of NTFPs availability such as, Guchchichayo in Chaitra-Baisakh, Yarsagumba in Jestha-Ashad, Jatamansi in Asoj-Kartik-Mansir, and Dhatelo in Jestha-Ashad when they are collection agriculture pick season. Some time, they collect NTFPs before Dashain

holiday and they collect as much as they can. The collection seasonal also depends upon the occurrence of species through out the year. The collection of NTFP's during monsoon might be easy to uproot but it might be most in appropriate method of harvesting because the root might decay.

### **5.3.2 Harvesting Season**

In the most of the cases season of NTFP collection is determined by the following factors:

- ) Availability of Labour (family member, free time).
- ) Availability of NTFP resource.
- ) Community rules and regulations.
- ) Ownership resource base.
- ) Advance taken by the farmers in the previous year by local traders.
- ) Visibility of NTFP resource.
- ) Immediate cash need of the people.

The season of collection NTFP is determined because of leisure time from the agriculture works and livestock are free of the people harvesting no regards to regeneration and growth of species and market demand. Product harvested during monsoon may not contain the proper constituents. It is difficult to store the product during monsoon and it has higher chance to decay. Resource base of NTFP's in Jumla district is not assessed and even harvesting adjustment is not practiced yet

Principally, after the seed ripening and see dissemination of seeds for the plants regeneration from seed whereas for the plant regeneration from the vegetative parts. It is better to harvest in the dominant stage i.e.

in winter mostly. It should be harvested during the period when the constituents in the plants are higher in the period.

### **5.3.3 Harvesting Method**

Whole plants are uprooted and harvesting is so intense uprooting about more than 50 percent of the plants from the harvesting site. Whole plants are dug out (without leaving any plant) from the earth using 'kuto', a digged tool kuto or Bauso are use to dig out the plants, which also effect the soil surface and caused soil erosion is in the area. There are no restrictions in the use of tools, seasons, part used and quantity of harvest. The impact of harvesting method of NTFP is especially herbal plant which also effect in the survival of species and severely effected in regeneration capacity of valuable plants such as Gucchi chayu, Yarsa gumba etc. The method is destructive for the regeneration and growth of plants. Thefore of the harvesting system is totally traditional and primitive. Harvesting of the plants should be done by leaving some species of the roots and rhizomes under the ground for regeneration of the plants from the vegetate parts. This may be difficult to practice about 20 percent of the ground cover should be left ensure the regeneration of species. The district forest office is not launched the awareness program above harvest method of valuable NTFP in Jumla.

### **5.3.4 Indigenous Management System of NTFP Resource**

Both study areas Neupani and Luma are rich and management system and have sound history of natural resource management issue. In many product such as pine needless locally called *piral*, firewood and fuel wood they have systematic rules and regulations. Usually the decision on the time for collection and the duration of collection of these products used to be undertaken by female members of the village. Now



this system of management is combined with community forestry user group or however the community forest management has followed the same management system for these products in the forest. The number of day are fixed for how long the collection of firewood, fodder or breeding materials and pine needles.

Likewise agricultural activities in the village by which they will start harvesting grains, cutting grasses, planting rice and sawing maize. In the field are regulating by local traditions system. The agricultural system is not individual practice rather the group approach. Up to now, there is only *Harlo and Palo* system to regulate harvesting and collection of NTFPs and overall conservation effort of NTFP resource in the study area. However, the ongoing operational plan has combined the indigenous management of the resource with the community forest management system. It is able to include the specified rules and regulation for the NTFP's management and marketing. The community has determined fixed collection fee of NTFP's resource such herbal plants, jatamansi, Sumayo etc. for one person is equal to Rs.100 rupees for one time open duration through combined decision with community forest user group and all people of the study area.

People have sufficient knowledge about biology use ecology, habit and habitat of NTFP's which can help in the management of those resources. therefore indigenous technical knowledge can be integrated with the improved management system of the resource for example people usually burn the Gochhi chayau growing area before the mushroom regenerated and they believed that of they do so. The site gives more yields of Guchhi chayau next year it is also observed that the area got burn last years. It is also that areas go burnt last year gone more

yields the controlled one. So people make fire after the moral collection season.

### **5.3.5 Community Forestry, Leasehold Forestry and NTFP Management**

Community forest has been defined as 'the control, protection and management of local forest by local communities known as user group. Community forestry in Nepal was formally introduced in 1978. The practice of community forestry is started since two decade ago. It has been experience that communities themselves are the owners of the forest resource. They preserve it and they use it their benefits and fulfill daily needs. In Jumla, 111-community forestry have already been handed over to date. 9327 housed covered within 111-community forest represent 68.8 of the total district households. Total area brought under improved management i.e. managed by preparing plan is 15960.6 ha.

Leasehold forestry program was started from fiscal year 060/61 initiated by western upland poverty alleviation project for people of below poverty line. Through leasehold forestry program, the income generation activity has started for disadvantage groups and improvement of economic status of the people leasehold forestry program has leasehold forestry by the initiated by FUG member.

In 17 leasehold forestry are practicing the cultivation of herbal plants such as Kutki, sugadhawall, Atis, Akkarkanda and chiraito which is cover aged 13 hector. Other hand out of out of 92 leaseholds forest, 12leasehold forest cultivated other NTFP such Dalechuke, Dhatelo and apple which coverage 12 ha in patmara, Ghade Mahadev, Kudari and Dhapa VDC. Nursery plants productions are also started within 9 leaseholds forestry in Ghade Mahadev, Malika thanta, Kudara, Patmara,

Dhapa and Sanigaun VDC leaseholds forestry program is very effective program which helps to inspire the people of Jumla in the field cultivation, conservation and overall management of NTFPs. It also helps to cultivated NTFP in private land and domestication farmers own field. Above mentioned all efforts are helped to overall management of NTFP resource in the Jumla district.

### **5.3.6 Existing NTFP Management Practice Efforts in Luma and Neupani**

Luma and Neuapni is resourceful area, especially in terms of NTFP resource but unluckily leaseholds forestry program has not launched yet. There is necessary to launch the leasehold forestry program by WUPAP/DFO. This kind of program helps to conserve valuable NTFP resource, which supports livelihood pattern of the people in the study area.

In Luma, there are two-community forest called upreghat community forest user group and Bagjale community forest user group. Upreghat CFUG is with 160 HH more than 35% women represent in CFUG. This upreghat CF covered 32.8 ha, other Bagjale CFUG is with 244 household and more 18% women represent in FUG. This CF covered only 2189 ha which includes only low altitude NTFP like morel mushroom, Sugan dhawala Nigalo, Sallo, and Jhulo. Therefore, there is not enough to manage rest of large area of NTFP rich patan.

In Neupani, there is one community forestry called Thala Chaur community forestry user group. Thala chour CF user group is with 76 households. This Thalachaure CF covered only 76 ha. which include only low altitude NTFP Gucchichayu, Nigalo, Sugadhawal, Jatamani, and Gunaino. Therefore, there is necessary conservation effort by related

agencies, which works in the field of NTFPS such WUPAP, SEDA, DFO and DPO etc. The domestication of Dolechuke in private land through group mobilization by collateral efforts different NGO/INGO such as WUPAP, SEDA/Nepal and SNV/Nepal in Hanku VDC. The Jumla District Development Committee as a 'Dalechuka pocket Area declares the Hank VDC.

Now few OP's of FUG's include Non-timber forest product's resource for the management and cultivation process. According to the forest Act, 1993 forest regulation 1995. FUG have rights to collect the revenue and royalty on their products and make a profit from the available forest products previously handed over areas are found to be smaller for the management of NTFP's in CF. Small areas are not sufficient enough for the commercial management of NTFP resource. Therefore, it is hoped economic in centre to the local people on the conservation of the forester natural resource can motivate the villagers to involve into the bio-diversity conservation process.

#### **5.4 NTFP Cultivation Practice in Jumla**

The domestication of NTFPs involves a move from collection in the wild on government management forest to deliberate cultivation of NTFP on tenured form land. Profit from the NTFPs growing under personal control is the incentive to plant and manage the resource sustainability.

For the past decade, there has been a growing awareness of importance of non-timber forest product (NTFPs) not only for the role play in the subsistence economy, but also for their potential and real importance to the economies of many developing countries like Nepal.

Karnali NTFP collectors report significant decreases in availability of all NTFP's and especially those of commercial traded in recent years. These trends were continued it would create threat to the depletion of valuable NTFP resource. On other hand, collection and trade of NTFP cannot be completely checked partly because it is administratively difficult and largely because it is the main resource of cash income for local people. Further more, villages neither understand the true and value of NTFP nor their existence market price. Therefore, local people need to be educated can earning use. Sustainable harvesting method and cultivation of NTFPs. They are also not well aware of the need to sustain NTFP harvest. That is why there is need different concerned development organization to be active and design realistic and feasible concepts to meet the need of local people as well as the concentration of NTFP resource of Jumla district.

In Karnali zone a few lower altitude NTFPs are grown in the agricultural land with crops. This is the case for Attis (Delphinium, Himalaya), samayo (valaerna jatamansi), and nirbishi (pernacia nubbigola), and (hatkaudo (Podophyllum, hexandrum which grows and extends naturally along the side of Bari (Hertog w. den: 1995). In past various attempts have made with some success by local entrepreneur farmers, government and non-government organization for cultivation of NTFP in Jumla. Here is discussing about experience, practice and success in cultivation of NTFP in Jumla. It does not dry to have all the answers about cultivation of NTFPs it hopes to high light the experience in cultivation of NTFP in Jumla district

Special emphasis in cultivation is given have to cultivation, which is one the best alternative of sustainable NTFP - conservation. It will minimize the risks and danger so mass scale enterprise consumption and

commercializing NTFP which, without management control can impose severe pressure on the resource base or even threaten extinction.

#### **5.4.1 NTFP Cultivation Leasehold Forestry**

Cultivation of NTFP in leasehold forestry is being successful in Jumla district. Suitable patches of the LF for the selected NTFP are allocated and transplanted. Seventeen (17) LFUG have planted herbal plants in 25 of the leasehold forest area . Because of the cultivation sites in LF not only the productivity of forest has been increased but also the protection of the forest has been assured. The increased the biodiversity of the area. The species of NTFPs which are introduced and transplanted are kutki Sugandhawal, Atis, Akkarkanda, and chirato in 17 ha. Similarly other NTFP has transplanted are Dalechuke, Dhatelo, Okhar and apple in 12 LF cultivation of NTFP in LF is the best alternative to the CFUGUs as commercial cultivation on NTFP will give the opportunity to run micro-enterprises and the cash income and biodiversity of the area will be conserved.

##### **Box 5:1. Successful Cultivation of NTFP in Oglikhola and Kholochur LFUG**

Oglikhola and kholachaur LFUG are the most important user group in Jumla, which has established a successful cultivation plot in LF in Patmara VDC. The LF is situated at the northern side of Jumla valley. The forest has been extended from 2990 to 4000 m from the mean level. The CFUGs were formed in 203 with technical support from the WUPAP's leasehold forestry program.

Oglikhola 'ka' LFUG is situated in Patmara VDC Ward No. 2. It contains total 6 member with 5 male and 1 female number. In this CFUG has cultivated Kutki in 9-25 hectars. The last year, total production of Kutki is 120 kg. in LF. They sold 100 kg Kutki, has get. 300000 Rs. from selling 100 roots parts members CFUG are very happy because they are earning money from degraded land part of national forest.

Other, Kholachur is another CFUG, which lies ward no. 1 in Partamara VDC. The CFUG has 5 member with 5 female and 2 male. NTFP species are cultivated in 5-7 ha such as sugadhawal, Kutki, Akkarkanda and Padamchal in this LF. The total production of Kutki is 40 kg. in the last years. They are earning money from NTFP which cultivated in LF.

According to Mr Ram Bahadur Thapa cultivation of NTFP will be contributed the conservation of NTFP and support their livelihood

#### **5.4.2 Local Initiative on NTFP Cultivation: NTFP cultivation and Domestication on Private Land**

There are some important efforts made for the cultivation of NTFPs on private level by few Jumli farmers. They have received the training as well as supports on NTFP propagulas and nursery equipment from; DFO, WUPAP, Dabur Nepal and DPR field office are able to produce even seeds from the planted species. Planted species are, Jatamansi sitki, Atis, Sugandhawal, Padamchal, Kurilo, Gunaino, Menthol, Bhojo Kesar (Crocus, Sutura), Akarkenda. Some farmers have also tried the banded species panchaule for the cultivation case story from the farmer field of Mr Ram Krishna Budthapa(Box.2). According to these farmers similarly describe about the domestication of NTFP resource in natural grow in private and government land which is most important initiation by different I/NGO's such SNV/Nepal, WUPAP and MEDEP in Hanku VDC. Which explains on the basis of key informant interview and field observation Box No. 3 below.

##### **Box 5:2 A Story of Mr. Ramkrishna Budthapa**

Mr. Ram Krishna Budthapa is a resident of Kholikot, chandan nath VDC Jumla. He is a famous innovate farmer in the field of NTFP cultivation and enterprises. He has cultivated some of the major NTFP with supported from Dabur Nepal, WUPAP and DFO office 3 ropani of farm land (3 muri is equal to 2 ropani). The cultivated from land is situated at the elevation of 2050 m on the northern aspect. He was started this cultivation practice in 2001. Now his cultivated products have been get started seeds and roots. He sold of attis chiraito, and somayo to some NGOs and DFO and others farmers. He is also sold plants of herbal products to some CFUG and DFO and others farmers.

He has planted, samayo, Attis, Kutki, chiraito, Akarkada and Jatamansi in this form. He said " I left the political professional because of the importance and value of NTFP in Jumla to escape rampant poverty in Jumla district".

### **Box No. 5:3 Dalechuke Domestication Effort in Hanku VDC**

Dalechuke is the most valuable NTFP species in terms of market value. Now a days, Dalechuke domestication process is started in Hanku VDC where as 'Dalechuke Pocket Area' declared by Jumla district Development Committee.

The initiation of social mobilization process of SEDA/Nepal, Milan Dalechuke processing group is formed with 13 member. The collection group is formed in each every ward. This program has only domestical and naturally grow Dalechuke management program. In average 18000 hectare land. is domesticated for Dalechuke based micro-enterprises running in long term.

The processing unit of Dalechuke is establishing immediate near coming future which supported by SNV/Nepal, SFDA Nepal and machine equipment providing WUPAP. The training and skills development program is supported by MEDEP.

Amar Rokaya is pioneer entrepreneur in the field of Dalechuke since 2058 B.S. He was domestic Dalechuke in 4000 sq. He earns 80,000 rupees to selling 400 ltr Dalechuke juice(1 liter is equal to 200 in local market).

Apart from Hanku VDC, Dale chuke domestication process has started other VDC such as Tamti VDC ward no, 6 and 7 and Kudari 3 and 4 in Jumla.

## **5.5 NTFP Based Micro-Enterprises Activities and Livelihood in Jumla District**

### **5.5.1 Sinke Dhupa production: as micro-enterprise a case of two entrepreneur group in Badki VDC**

There are different from MAP's trading such raw trading, processed trading and semi processed trading. Here it is discussed about processed activity MAP's some successful micro-practice have show that they can contribute to create employment generation and income generation and significantly contribute to the needed sustainable bio-diversity conservation.

The following cases are two enterprises group, is formed by micro-enterprise development program. Badki is the potential VDC for conduction of NTFP based micro-enterprises on the basis of availability



on NTFP resources. Two micro-enterprises group is organized through process of social mobilization; they are Bhairab micro-enterprises group and Kalika micro-entrepreneur group.

Bhiarab micro-entrepreneur group has formed in ward no. 5 Jogibada. It has 9 member which included all female number. The group has made Sinke Dhupa, to use of locally available NTFP resource and combination of external material. In last time, the group has made 800 packets. Out of 800 packets, 500 packets had already sold in the market. the group had succeeded to earns NRs.5000.

Others Kalika micro-entrepreneur group is formed in ward No. 2 Dewar gaun. This group has included 9 female member with 6 Dalit and 5 non Dalit caste member. This has also made 800 packets of Sinkedhupa, out of 800 packets 400 packets aggarbati (Sinke Dhup) had sold in the market center. They have earned about Rs.4000.

According to enterprises development facilitator. Mr. Harilal B.K., now both entrepreneur group has benefits different not only economic return such women empowerment women employment, optimum utilization of locally available NTFPs, and development of women entrepreneurship.

This kind of entrepreneurship activities has launched the concept of common service centre. The common facilitator center will be established near future in Badki VDC the composition of Dinke Dhupa describe in following table.

**Table 5:17**

**Composition of Sinke Dhupa Production**

<b>S.N.</b>	<b>Local name</b>	<b>Scientific name</b>	<b>Part used</b>	<b>Propose and use</b>
1	Sugandhawal	Valerina Jatamansi	Rt	Sent/smell
2	Nigalo	Arundinaria falkata	St	Stick
3	Dhupi	Juni perus indica	L. Br	Sent/smell
4	Titepati	artemisia dubai	L	Burning/sent
5	Sunpati	Rhododendroanthogm		Sent/burning
Total				

Source: Field Survey, 2009.

Above table 5:17. Shows that the composition of Dhupa making process is demonstrated. The composition of Sinke dhupa production can divide manly two parts one is locally available NTFPs and other hand external materials such as super oil. Caulo (Sicket powder) which is used as a binding agent and plastics for packaging. This kind enterprise has become one of the potential small enterprises.

**5.5.2 Herbal Tea Production : Case of Shree Bahumulaya Vadi But entrepreneurs group in Pokhari**

Herbal tea production has become one of the potential small -scale micro-enterprises in Jumla. There different types of Maps available in the district. The MAP's are r trading, process trading and semi processed trading. Here, it is discussed about semi-processed activity of Map's.

Shree Bhumulaya Jadi entrepreneurship group has organized by the initiation of MEDP and community people of the Pokhari-6 in Ghodemahadev. It has included 11 members, which includes 2 female and 9 male member. This enterprises development program has been

launched through social mobilization and each member has been collecting Rs.20 rupees per month. This group has Rs.1210 group saving. At the first time, the group was invested Rs.297678/- for collecting materials and preparation of finish as a branded herbal tea. Now, the group has already sold 1700-1800 packet in the local regional and national market consequently such as Jumla Bazaar, Dang, Mahendranagar, Nepalgunj and Kathmandu. In last time, this group has been sold herbal tea of equivalent Rs.43175. The group is very interesting to prepare the Herbal tea because of high demand of product in different level of market in local as well as national market and international market.

### **5.5.3 Process of Herbal Tea Preparation**

Procedure of preparation of this herbal tea is very simple and doesn't need any special skill. First, the crude herbs (green foliage and mature underground parts) are collected from the wild. It is cleared and dried in the sun. After drying, the herbs are cleaned again and chipped into small pieces. The chipped material is packed into small plastic packets including label. The table indicates the number of herbs used on this name of producer. The family members can do this simple packaging also. For effectively the flavor and color. It is found that tea bag of those kinds of herbs is not so effective in preparation of tea because it doesn't give sufficient color. Because of the simple method of preparation, some villagers collect the raw herbs and prepare similar herbal tea themselves.

The tea contains five highly valuable medicinal and aromatic plants (MAP's). Their name part used, medicinal use and content are given in table 5.16.

**Table 5:18****Composition of Herbal Tea Preparation**

S.N.	Local Name	English and scientific name	Part used	Medicinal purpose	Content each 100m
1	Ghode machho	Thyme (Thymos linears)	WP	Fever, blood purification, allergy	55%
2	Ram Tulsi	Maryoram (origanum vulgate)	L	Cough common cold fever, asthma	20%
3	Pudina	Mint (Mentha arrensis)	L	Stomach, relieve, indigestion, cough, appetizer	10%
4	Lautha	Himalayan yew (Taxus bacta)	Br and L	Headache, diarrhoea carminative and stomach relieve 10%	10%
5	Gandhaine	Pleurosperium dentaum	R	Indigestin, gastrists stomach relieve	5%

Source: Field Survey, 2009.

The successful case story of Mr. Birsha Bdr. Nepali as innovative entrepreneur and farmer in Jumla district describes as below as Box 5.4.

**Box 5.4 A Success Story of NTFP Entrepreneur Birsha Bdr. Nepal**

Mr. Birsha Bahadur Nepali is a resident of depalgaun, Dapalgaun VDC Jumla. He was registered Birsha Jadibuti Niji Nursery from in 2053 B.S. He is working as a proprietor in this Niji nursery till now. He has cultivated some of the major NTFPs. Without supported by DFO, DPR, Remote area Development Committee, in 6 hac. of farm land. He has planted, Jatamansi Kutki, Attis, Sugandhawal, Padamchal, Kurilo, Kutki, Gunaino, mentha, Bhojo and Kesar in his form.

He has sold plants of herbal medicine in a year such as Attis Padamchal, Jatamansi. He also sold seeds of different herbal plants such sugandhawal, Jatamansi, Attis, Akkarkada, Kutki. He has prepared herbal tea 1200 packet last year with composition of different NTFPs, they are Ghodemuccho, Ramtulsi, Dadechuke, Mental, Gunaino, Byajadi, Bojho, Bankahur. He sold herbal tea per packet in Rs. 40 rupees in Jumla Bazar and the total production was 150 kg. in last years.

He has earned 1 lakh form different herbal products and enterprises annually. He has received training from small and cottage industry office Jumla. He was also selected as model farmer from small and cottage industry office Jumla. He was also selected as model farmer to get chance Thailand exposure visit in the field NTFP enterprises.

He is working as traditional healers to make different medicine, Gastric Drahorrea, tapeworm with combination different herbal plants. He has get good experience and expertise about NTFP cultivation and experiences in Jumla climate.

#### **5.5.4 Tarebhid Nigalo Micro-enterprises: Case of Entrepreneurship Group**

Tamti VDC is one of the richest VDC of Jumla district in terms of NTFP resource such as Nigalo and other herbal product. Nigalo is the potential fiber yielding NTFPs for it is based micro-enterprises, which supports the livelihood of the people in Surki-8, Tamti.

Potentially of fiber yielding NTFPs is most in this VDC. The MEDEP has assured to launch the Nigalo based micro-enterprises in Surki initiation of MEDEP through social mobilization, which includes 13 members with 11 male and 2 female member. The group has been made different types of Nigalo based product such as Muda, Supo, Doka (booklet) Rag and Photo frame. These products are high demand in the market. This group has invested Rs.4600 for production goods. The product was sold equivalent to Rs.9400 in the local and regional market. The group has mobilized group saving Rs.600. The people of this area are benefited by Nigalo based micro-enterprises, which helps to support of livelihood of the local people. The extension of this kind of enterprises, which help to reduction of poverty, income and employment generation. Optimum utilization and management of NTIP resource. It will be help to conservation of biodiversity in long term.

#### **5.5.5 Processing Units in Jumla**

There are two non-functioning essential oil processing unit in Jumla. One is Rina Mokshaya herb production and processing company pvt. Ltd. Situated at Luma in the study area and Karnali Jadibuti production and processing company Pvt. Ltd. situated at Dansangu of Jumla district headquarter. The community people own the factory at Luma. They obtained the soft loan from Agriculture Development Bank

(ADB) in 1994 to establish local level processing unit at Dillichaur. It was sought that all the raw materials (Jatamansi) from the Chaudavisa valley will be consumed by this factory and at least the people of this valley get market certainty of the product at fair price than broken and traders. At the same time Mr. Mani Shankar Devkota, endeavor to establish an essential oil factory at Dan Saghu one year later.

Both companies have the good production for the first year. After that international particularly Indian price went, so down that it was difficult to meet the break-even price for the oil. Another problem faced by Mr. Devkota's factory was that he hardly got the fuel wood from the surrounding forests because these forests were handed over to communities as community forests. The community forestry were out agreed to provide their required amount of fuel wood for the factory and the fuel wood price.

Now, there is another endeavor to establish an essential jatamansi oil-processing unit at Lahasi, Dillichaur with combined effort of WUPAP/MEDEP/DFO office. The processing plant building has already constructed and the help of supportive agencies has purchased processing. There is a favorable environment for the jatamansi oil in the internal market. It seems like this is time to establish processing unit.

Other hand, the processing plant of Dalechuk is establishing with collateral endeavor and common effort by the community institution and with help of different INGO/NGO such SNV/Nepal, SEDA/Nepal and WUPAP. Recently DDC Jumla is declared to the Hunku VDC as pocket area of Dalechuk. The most of farmers are domesticated of Dalechuk own their private land. The Dalechuk is the most potential NTFPs for micro-enterprises in this area which naturally grow in the river basin

and side of paddy of field. The juice of Dalechuke is high market value in national as international market for pharacetamautical drug purpose. It is also used for different medicine by the local healers. The Dale chuke will be income source and part of employment generation in future, that why it is necessary for cultivation in private land of the farmer. It is free to access collection and trade.

#### **5.5.6 Potential NTFPs for Micro-enterprises in Jumla**

Micro-enterprises is such type of enterprises which can't run effectively without large amount of resource. NTFP is the main resource for operating small scale-enterprises in grass root level. Jumla district is richest in terms NTFP resource availability, which helps to conduct different types micro-enterprises and conservation bio-diversity in long term. In this research is found that following NTFP's are potential for income generation activities (IGA) through micro-enterprises on the basis of availability in nearest area. They are as follows as:

**Table 5:19****Potential NTFP for Micro-Enterprises**

<b>S.N.</b>	<b>Local Name</b>	<b>Scientific name</b>	<b>Part used</b>	<b>Medicine and consumption</b>
<b>1</b>	<b>Herbal plants</b>			
1.1	Jatamansi	Nardostachy gradifloraion	Rt Rl	Fever menstruation cycle
1.2	Bayajadi	Tanacetum dolichophylla	Rt	Gastric
1.3	Bhojo	Acorus calamus	Rz Rt	Toothache
1.4	Gunaino	Pleurosperum	L	To regene stomach
1.5	Banlasun	Allium wallichill	Bu-tu	as appetizer
1.6	Bankachur	-	-	-
1.7	Ban Sinki		Leaf	Herbal tea
<b>2</b>	<b>Fiber plants</b>			
2.1	Nigalo	Arundinaria	SF/B	Basket mats
2.2	Allo	Geradiana divers flora	B	To move ropes sock
2.3	Bhango Ganja	Canrabis satura	ST,L	

Source: Field Survey, 2009.

Note: Rt = Root, Rhizonses, L = Leaf, B = Bark, St = Steam

Above table 5.17 shows that the two kinds of NTFP which is most potential for micro-enterprises in Jumla. Because of these plants was cultivated in private land and easily included in domestication process of these NTFPs that used as daily life people in the study area. When these types NTFP can be cultivated in commercial way. The thousands of



farmer are benefited by these NTFPs and the farmer has got more employment income generation.

#### **5.5.7 NTFP based Micro-enterprises and People's Livelihood**

It is found that the life of the people of these study area directly and indirectly depends upon the natural resource mainly non-timber plant resource people of Luma and Nepani having using NTFPs since time immemorial still they don't have proper and efficient access to modern medical facilities one has to work four hours to reach Jumla hospital at the district head quarter. Almost all the households, keep's certain types of medicinal plants such as Tite pati, Bayasadi, Ninaujadi, Gandhaine, and chut the (Padam chal) at home for te preparation of traditional medicine. Moreover many NTFP are used as food, religious purpose, dying local dress and fiber for making ropes and doka; use of NTFP is overlapped from one to another or NTFP may have more than one use for example one NTFP, which is consumed on food may be used as medicine also. Most important category discussed in this research study in NTFP, which are harvested in the wild and sold at village level, or district head quarter for commercial purpose.

#### **5.5.8 Employment of family member from NTFP based micro-enterprises**

The following table shows the self-employment status of households of the study area in NTFP related micro-enterprises activities.

**Table 5:20**

**Employment Number of Family from NTFP Enterprises in Luma and Neupani Village sample HH**

<b>S.N.</b>	<b>Employment number (Range)</b>	<b>No. of HH</b>	<b>Percentage (%)</b>
1	1	21	35
2	2-4	34	56.7
3	4-6	3	5
4	Not employed	2	3.3

Source: Field Survey, 2009.

There are altogether 60 household samples in these study area. In 60 household, 34-house hold employed in the NTFP based enterprises which coverage 56.7% of the total sample household. Only 2 household are not employed from enterprise activity in the study area. In 21 household 1 people are engaged NTFP related enterprises based activities which coverage 35% of total sampled household. Majority of the employment range is 2 to 4 people are involved in this kind of enterprises which they have food deficiency in households.

**5.5.9 Annually Employment Duration of Respondents of Household in the Study Area (Dillichaur and Luma)**

The following table shows that employment duration of sample household of the study area in per year. The NTFP based enterprises activity is not conducted in whole year, which is seasonal basis in the Jumla district. The major occupation of the people is traditional in the study area.

**Table 5 :21**

**Annually employment duration of Respondents household in the study area**

S.N.	Employment duration	No. of HH	Percentage (%)
1	Less than 1 month	3	5
2	1 month	28	46.7
3	2-3 month	27	45
4	Not involved any time	2	3.9

Source: Field Survey, 2009.

Above that the table 5:19 shows that out of 60 households, 28 household are employed 1 month period which coverage 46.7 percent housed of the study area. 27 household are employed from 2 to 3 months in the whole year. Only 3 household are involved less than 1 month which covers of 5% households of whole sample households and remaining households are not involved in the field of NTFP enterprises. The NTFP related income generation activities is seasonal basis activities so the people don't spend all time in this sector in the study area

**5.5.10 Annual Income from NTFP Based Enterprises Activities in Study Area**

Sixty household of both VDC involved in entire period through NTFP based enterprises in which NTFP collection and trade in Lumagaun and Nigalo based enterprise in Neupani. NTFP based micro-enterprises, through this household activities, the following is the average income pattern per year of 60 sample households.

**Table 5:22**

**Annual Income Status of 60 Sample HH from NTFPs based Enterprises**

S.N.	Income Rs.	No. of Household	Percentage
1	5000	7	11.7
2	5000-10000	25	41.7
3	10000-15000	9	15
4	15000-20000	5	8.3
5	20000-25000	2	3.3
6	25000-30000	4	6.7
7	30000-35000	3	5
8	Above 35000	5	8.3
	Total	60	100

Source: Field Survey, 2009.

The income range from above table shows that 88.3 percent of the people earn the income higher than Rs.5000 per year with exception of 7 people limiting their income to Rs.5000 and 42.7% are earning their average income 5000 to 10,000. The variation of income observed which due to the difference in their time allotment in the NTFP enterprises. Due to cash income and to meet basic needs of the rural people which potential area of micro which potential in the study area.

## **5.6. Potentiality and Constrains of NTFP based Micro-Enterprises Development**

### **5.6.1 Potentiality of NTFP Based Micro-Enterprises Development in Jumla**

Non-Timber Forest Product (NTFP) is precise forest resource which supports the livelihood in mid hill area. NTFP harvesting is the major economic activities of the Karnali zone. NTFP based micro-enterprises is one of the viable sector to create employment generation and income generation in Jumla. There are different kinds of NTFP available such medicinal plants, fiber plants, Dye Yielding and food fruit species. Jumla district is famous as a "Capital of Jadibuti in entire 75 districts. There are also available 110 types of medicinal plants in which 16 medicinal plant are most valuable for income generation and economic development such as Attis (Aconitum, heterphyllum), Okhar (Suglans Regia), Kutki (Nepicrobiza), Scrophlarifolia), Gaucchi chaya (More Chella spp), Chiraito (Swerita, Chirayita), Jatamansi (Nardochiys, grandiflora), Jhayu (Lichen, spp), Padam chal (Rhum, australe). Pancheaule Bikh Majitho, Yausagumba (Card cepty Sinensis), with Salla (Taxus Wallichiana), Sugandahawal (Valerina, Jatamansi), Kurilo (Asparagus, race mous). Except above mentioned Herbal plants, are also available here which might be basis of NTFP-enterprises. There are also 5 kinds of fiber yielding plants which comes the potentiality of fostering NTFP based micro-enterprises.

In Jumla district, Nigalo is the most crucial NTFP resource which has potentiality of the NTFP based micro-enterprises by the product such as Doka (to make basket to carry composts), Sayanku (Umbrella) Muda, Photoframe, Rag Supo and Basket. These product have high demand in

the market. Local people are employed in the production such goods, they are earning much money from this kind of enterprises.

Similarly, the dye yielding plants, and fruit and food species are also abundantly available which supported to meet the basic need of the people. Otherwise, dye-yielding plants are also important for entrepreneurship activities. There are 15 dye yielding NTFP which has found in Jumla district. Which help to cloth according as desire of the people these may be part of micro-enterprises. There 13 food species NTFP found the study area. They can use as food, vegetable etc. The following points are supported for the logical of potentially of micro-enterprises in Jumla District, they are:

- ) Sufficient non-timber forest product and its kinds are available in Jumla.
- ) In district periodic plan, NTFP is declared as a priority sector for development activities in Jumla.
- ) NTFP cultivation technique and skill is disseminated by different agencies as like, as, DFO/DPR and WUPAP through leasehold forestry program.
- ) The different kinds of training and knowledge on processing cultivation technique harvesting and storage are provided by different NGO/INGOs (Such as WUPAP, DFO and Local NGOs).
- ) The two processing unit of NTFP are establishing in two places (such or Hanku for Dale Chuke Juice) and dillichaur for Jatamasi) the district.
- ) More than 92 LFUG had hand overed by WUPAP for purpose of cultivation and domestication of NTFP through initiation of ultra poor.

- ) Subsistence agriculture is major occupation of the Jumli people, which is not sufficient for hand to mouth problem.
- ) NTFP collection and trade in the major income source of the more than 50% of the people in this district.
- ) NTFP cultivation is started in private land, leasehold forestry as well as community forestry in Jumla.
- ) The NTFP is cultivated in 12 ha. and herbal plants in 31 ha which helps to establishing the foundation of micro-enterprises in near future.

### **5.6.2 Constrains of NTFP based micro-enterprises development in Jumla**

NTFP based micro-enterprises is the main pillar of economic development in Jumla district but there are many constrains to run this kind of enterprises in long term. Since, one decade ago the two processing units are not functioning in Jumla, due to lack of raw material, fuel and fluctuating the market value of NTFP product in national-international market. There are many constrains development of NTFP based micro-enterprises which as follows:

- ) Lack of education and awareness about NTFP.
- ) Excessive depletion of NTFP resource.
- ) Market problem of NTFP product for huge quantity.
- ) Raw materials are easily sold in village level and local market in cheaper price.
- ) No access of market network linkage information.
- ) Transportation problem and subsidy dependent activities.
- ) Lack of financial and technical support for micro-enterprises.
- ) Problems in the process of registration of enterprises.

- ) Excessive collection of NTFP in premature, unmanaged and overhasting stage.
- ) Lack of proper specific policy for NTFP based micro enterprises.
- ) Problem of the market arrangement and labeling of the product in farmer level.
- ) No provision of registration of specially NTFP based enterprises in VDC.
- ) High demand of NTFP after processing.
- ) No subsidy for NTFP based micro-enterprises.
- ) No attraction of national capitalists in this sector.
- ) No attention of local development agency and civil society in this sector.
- ) Lack of training and skill about entrepreneurship in NTFPS.
- ) Lack of technical institution about NTFPS.
- ) Very low chances of reasonable price in entrepreneur level.



## **CHAPTER - VI**

### **SUMMARY, CONCLUSION AND RECOMMENDATIONS**

This chapter discuss about the summary, conclusion and recommendations inferred from the research study. The summary, conclusion and recommendations are totally based findings and observation of the study.

#### **6.1 Summary**

The various important non-timber plant resource have been found to be use for different types of micro-enterprises in the study area such as Nigalo based enterprises, Sinke Dhupa enterprise, Dale Chuke juice enterprises and so on. There is huge potentiality of medicinal and aromatic plants based enterprise, fiber plant based enterprises such as Allo and Bhang product and fruit and food plants based enterprises, following the summary of the findings.

Local people are solely depended upon the non-timber forest resource of their survival and livelihood. There are more than 110 types of herbal plants available in Jumla in which major 28 herbal plants have found in the study area. Similarly, 6 fiber yielding NTFPS, and 13 food species has found in Jumla district. There are many NTFPS available in the district but only 8 herbal plant, 1 Fiber yielding plants and more than 1 food species are being used for income generation and enterprises purpose.

Despite of NTFP is the major source of income of study areas people but with regarding awareness, level is very low. Only 13.3 percent

of respondents are aware about NTFP and remaining majority of household are not aware about NTFP.

Existing harvesting system followed by the unscientific method and season does not consider the regeneration, growth and sustainability of the plant resource. This NTFP's resource is managed by only community-based organization such as *Haralo and Palo* system. In the collection, time of NTFP's are fixed by the committee meeting and follow the operation plan of community forestry. The collection fee Rs.100 is determined by community consensus for one person and one time open. Recent time, the government and non- government organizations are started to conserve of NTFP's through cultivation of NTFP in CF and leasehold forestry by the initiation of different program of WUPAP/DFO in Jumla.

Similarly, 92 leasehold forestry group are formed through social mobilization and cultivation of NTFP in 33 ha. Land of leasehold forest, which hand overed by DFO Jumla. Commercial exploration of herbs in Jumla region invariably has led to the decline or extinction of NTFP resource base collection of the herbs is affected by several other market and social factor such as, increasing demand, immediate cash need of the people, local advance system and lack of awareness.

NTFP is playing a crucial role in employment generation and income generation in the study area. Majority of the household (85%) are involved NTFP based enterprises which is major source to support livelihood of people in this area 47.34% of the cash income of respondent household are depended from NTFP micro enterprises (such as raw trading, semi-processed and processed). In the study area, 88.3 percent of the people earn money (the income) more than 5000 per year. At present

in this district, various types of NTFP based enterprises are starting now, in different places by the support of different NGO's like, MEDEP/NEDC, WUPAP and so on. Such as Sinke Dhupa production in Badki VDC. Nigalo based enterprises in tamti VDC. Herbal tea production Ghodemahadev VDC in Jumla Despite wholly NTFP based micro enterprises are not developed they are in infancy stage. NTFP collection and trade was started pre-historic period which was major income source to meet the need cash income and fulfill daily basic needs. Above of them herbal tea as micro-enterprise is a successful case that describe benefits of the local value addition.

Jumla district has huge potentiality of NTFP based enterprises in terms of availability of NTFP resource and Establishing process is started of two processing unit in two places. Jumla District District Development Committee is also declared. NTFP as a priority sector, which included in District Periodic plan. Different NGO/INGO are interested to lunch the program in NTFP sub-sector.

Both many potentiality as well as constrains are existing in the sector of NTFP based micro-enterprises. There are many constrains behind the development of NTFP micro-enterprises in the districts. Micro-enterprises is resourced based economic activities without resource the development of enterprises can't imagined it. The main constrains of NTFP based micro-enterprises are lack of awareness about NTFP, transport problem of the product, Sustainability of processing unit, lack of marketing of the products, problem in registration of NTFP based enterprises, high demand NTFP resource are depleting day to day un systematic manner which creates problem in establishment of NTFP based micro-enterprises.

## 6.2 Conclusion

NTFP based micro-enterprises creation could be an alternative means to uplift socio-economic condition of rural community. The promotion of NTFP based micro-enterprises is essential for gamut change in living of the Jumli people. The number of NTFP based micro-enterprises are found increased in recent years which helped retain the physically at local areas by providing employment opportunities and improve their livelihood pattern some extent. It is observed from the study that people of Jumla are closely linked with Non-timber forest product. Entrepreneurship development of NTFP brought not only the economic return to the local people but also it will be brought biological threat, which may result into the loss of bio-diversity. Following can be concluded from the above finds and study.

If the proper development of NTFP based micro-enterprises, can contribute significantly to reduce rampant poverty and sustained the local economy in the Jumla. It contributes 47.34% of the cash income in household level in the study area. The people of Luma and Neupani village are facing the problem of food deficiency in sixty month it shows that NTFP collection and trade and NTFP based enterprises activities are best alternatives to provide immediate cash need of the poor family of the village.

The proper management of NTFP is essential work for conservation of biological resource, which is the main foundation of sustaining the micro-enterprises to long term. Training and skill is necessary for cultivation and appropriate harvesting method in the study area. There is no any training and awareness program to launch by the different agencies. The collection nature of NTFP is premature and

haphazardly without considering sustainable growth of this resources. NTFP based micro-enterprises development can provide community need for improving rural livelihood, contributing on food security and nutrition and help to generate additional income in the Jumla district.

Cultivation of NTFPS seems possible and beneficial to the communities. Many private farmers have shown and proved this that if the cultivation is done in large scale it might return something to the farmers. It also helps to establish the small-scale enterprises in grass root level. There seems increasing interest and participation of people in this sector. The government and non-government agencies are motivated to launch the program in field of NTFP cultivation and enterprises development in the district.

Small and micro-enterprises activities can contribute to the household economy, For instance, herbal tea preparation, Aggarbati (Sinke Dhupa) and Nigalo based product, which has more potentiality in terms of quality of NTFP resource and to return income. It is very easy to prepare and collect without sophisticated technology and less number of labor.

District forest office has not controlled over exploitation of NTFP in unsystematic manner, which has get to hope maximum royalty from exported NTFP in district. The local people call district Forest Office (DFO) as a royalty owner office "Ban Dhani" office. It has not played actively role in the sector of NTFP management and dissemination of cultivation technique in districts.

In the last, NTFP based micro-enterprises are address the issue of equal access to resource, women participation of community development income inequality, unemployment, social inclusion and

equity and poverty and sustainably management of locally available resource (Both human and natural).

### **6.3 Recommendations**

Based upon the above findings and observations few recommendations are made from this study.

- ) Awareness about the value and usefulness of NTFP should be imparted to the local people.
- ) Local people should be empowered for management of NTFPS.
- ) Technical support should be provided for proper harvesting and poor harvesting and post harvesting.
- ) Technical as well as financial support should be given to those entrepreneurs who want to establish NTFP based micro-enterprises.
- ) The domestication and trial cultivation practice should be scale up to commercial level of production.
- ) The cultivation of the most valuable NTFPS in private lands should be encouraged for commercialization purpose.
- ) The processing plant should be established for enterprises purpose in long term.
- ) Training and skill development Program should be launched amongst NTFP enterprises.
- ) NTFP based micro-enterprises related curriculum should be included into different level education.
- ) The government should be designed a proper policy about NTFP based enterprises.

- ) The government should be assured of market for product by NTFP based micro-enterprises.
- ) The government should be emphasis on leasehold forestry program in the district.
- ) Irrigation and physical infrastructure facilities should be provided for cultivation of NTFPS in leasehold forest.
- ) Testing chemical substance of herbal plants and composition of medicine making idea should promote in farmer level.
- ) The government should be promote the NTFP's based enterprises there and make the policy easier to export to achieve maximum of yield.
- ) The cost benefit analysis of the products should be done company between NTFP cultivation and other grains for encouragement mass production of NTFP.
- ) Collaborative research should be done in the field of NTFP and NTFP based micro-enterprises.
- ) NTFP management should be promoted through leasehold forestry and community forestry program.
- ) Government should made legal simplification of the registration process of NTFP based micro-enterprises.
- ) The government should be established market information network mechanism in local regional, national and international level.
- ) The government for NTFP based entrepreneur should provide credit facilities, subsidies and machine equipment.

- ) NTFP management and enterprises must be given priority for poor classes' people.
- ) To coordinate all stake holders related to the field of NTFP and its based enterprises such politicians and policy makers, bureaucrats, academicians and local user group, donors NGO/INGOs as district as well as National level for holistic development of this sub-sector.
- ) The government should be discounted in royalty, which cultivated in private lands.



## BIBLIOGRAPHY

- AEL/FNCCI 2004. *Trade Pattern of Non-timber Forest Products (NTFPS) in Jumla Surkhet and Nepalgunj*. Appropriate Policy Measure for Business and Trade Enhancement. Federation of Nepalese Chambers of Commerce and Industry. Agro Enterprises Center.
- Banjade, M.R. & Regmi, S. (2005). *Value Addition of NTFPS*. An Analysis of Processing.
- Banskota, S. and Pradhan, K.P. (2007). "Non-Timber Based Livelihood of the Rural Communities." *Journal of Development and Rural Studies*. Vol. 4 (1): 71-73.
- Bhandari, N.B. (2000). *NTFP Market Study Tour (Nepalgunj and Dhangadhi)*. Community Based Economic Development Project, KECT, Kathmandu.
- Bhandari, N.B. (2001). *Commercialization of Non-Timber Forest Products. A Case Study of Upreghat Forest User Group from Jumla District*. An Published M.A. Dissertation of Central Department of Sociology/Anthropology, Kathmandu.
- Banjade, M.R. and Paudel, N.R. (2008). "Economic Potential of Non-Timber Forest Products in Nepal: Myth or Reality ?" *Journal of Forest and Livelihood* Vol. 7 (1) Page (36-39) Forest Action, Kathmandu, Nepal.
- CECI. (1997). *Inventory of Four High Value Non-Timber Forest Product in Jumla*. Community Based Economic Development Project (CBED/HMG/N/ CIDA). Kathmandu.

- Chandrasekharan (1998). *Non-wood Forest Products - Global View of Potential and Challenges*, Paper Presented on Training/Workshop Held on 1-14. February, 1998 Being Organized by IOF/ITTO Project, Pokhara Nepal.
- Chaudhary, R.P (1998). *Biodiversity in Nepal: Status and Conservation's* Devi, Shahrampur (U.P.), India and Teepress Books, Bankok, Thailand.
- Dobremez. JF (1976). *Le Nepal Ecologie-et Biogeography*. Editions ducenter National de La Recherchue, Pasis, France.
- Edward, 1996. *Non-Timber Forest Products from Nepal Aspects of the Trade in Medicinal and Aromatic Plants*. FORESC Monograph No. 1/96. Forest Research and Survey Center. Ministry of Forestry and Soil Conservation, Kathmandu.
- Edwards (1994). *Non-timber Forest Product and Community Forestry Nepal*. UK Community Forest Project, Kathmandu.
- Harper, M. (1984). *Small Business in the Third World, Guidelines for Practical Assistance* London: Intermediate Technology Publications.
- Hevtlong, W.D. (1995). *Hidden Value: Non-timber forest Product in Dolpa District*. Kamali Local Development Program. Netherlands Development organization. Kathmandu, Nepal.
- Gurung, D.B. (2009). *Current Status and Prospects of Micro-Enterprises: A Case Study of Birendranagar Municipality*. Surkhet District. An Unpublished M.A. Thesis of Central Department of Sociology Anthropology, Kathmandu.

HMG/N, Forest Act 1993 and Regulation 1996.

JFTA (2001). *Information System Development Project for the Management of Tropical Forest Activity Report of Wide Area Tropical Forest Resource survey (Kingdom of Nepal)*. Kathmandu: Japan Forest Technology Association (JAFTA).

Kranz, R (2001). *The Sustainable Livelihood Approach to Poverty Reduction: An Introduction Stockholm*. Swedish International Development Co-operational Agency, Division for Policy and Socio-Economic Analysis.

Lekhak, H.D. and Lekhak, B. (2003). *Natural Resource Conservation and Sustainable Development in Nepal*. Kathmandu, Kshit Publication.

LRMP (1986). *Land System Report*. Kathmandu: HMG/LRMP.

MEDEP (2008). *Bourcher Micro-Enterprises Development Programme*. Lalitpur, Nepal.

NBS, 2000. *Nepal Biodiversity Strategy*. HMG/Ministry of Forest and Soil Conservation, Kathmandu.

NPC (2003). *10<sup>th</sup> Five Year Plan (2003-2007)*. Government of Nepal. Singh Durbar, Kathmandu.

NPC (2007). *Three Year Interim Plan (2007/08-2009/10)*. Government of Nepal. National Planning Commission, Singh durbar, Kathmandu.

- Ojha, H.R. (2000). *Current Policy Issue in NTFP Development in Nepal*. A Report Submitted to Asian Network for Small Agriculture Bioresource, Minbhawan, Kathmandu, Nepal.
- Pradhan, P.K. (2003). *Manual for Urban-Rural Linkage and Rural Development Analysis*. Kathmandu: New Hira Books Enterprises Kirtipur.
- Pradhan, P.K. (2007). *Thesis Writing Guide Line Kathmandu*. Central Department of Rural Development. Tribhuvan University.
- Pradhan, P.K. and Pradhan, B. (2006). *Environment and Natural Resource: Concepts, Methods Planning and Management*. Kathmandu: Quest Publication.
- Rawal, R.B. (2002). Challenge and Opportunities in Developing Community Based Forest Enterprises in Higher Mountain of Nepal.
- Rawal, R.B. (2003). "Non-timber Forest Product in Rural Community Development." *Sustainability the Lasting Fuel*. PP (193-197): FSD, Kathmandu, Nepal.
- Renside, N. (1985). *Forestry in Jumla District*. Karnali Bheri Integrated Development Project (R-BIRD) (HMG/N-CIDA), Kathmandu, Nepal.
- Sigdel, K.R. (2003). *Non-timber Forest Product and It's Role in Sustainable Development*. *Sustainability the Lasting Fuel* pp (212-213). Forum for Sustainable Development, Kathmandu, Nepal.
- Shrestha, C.L. (2008). "Allo Based Micro-enterprises of Self Employment: A Case Study of Bala and Sisuwakhwlv VDC o

Sankhuwasabha District." *Nepalese of Formal of Development and Rural Studies*. Vol. 15 No. (2) Jul. 2008. Central Department of Rural-Development.

Subedi, B.P. (1997). *Participatory Utilization and Conservation of Medicinal and Aromatic Plants*. A Case from Western Nepal Himalayan. A Paper Presented the International Conference on Medicinal Plants, Fe. 16-19. Bangalore, India.

Thapa, B. (2008). *Situation of Forest Resources in Jatibudhi Village Internal Assessment of Natural Resource Management*. Central; Department of Rural Development, Tribhuvan University.

USAID (2003). *Enterprises-Based Biodiversity Conservation Jumla*. Jumla Site Report, USAID GCP EWW/ANSAB, Kathmandu.

. Wickens, GE (1991). *Management Issue for Development of Non-Timber Forest Product*. Unsaylva 165, Vol. 42: 3-8.

Wolf, H.K. and Panta, P.R. (2003). *A Hand Book of Social Science Research and Thesis Writing*. Buddha Academic Publishers and Distributors, Kathmandu.

(<http://www.NTFP.org>)

([www.wikipedia.com](http://www.wikipedia.com))

## **Annexes II**

### **Check list**

**(For Key Informants Interview ,FGD ,Field Observation)**

1. Availability NTFP's in Jumla
2. NTFP's used for Micro enterprises
3. NTFP's collection and trade
4. Potentiality of species for IGA
5. NTFP's management practice
  - ) Community level/ Indigenous practices
  - ) Government Policy/Rule / Regulation
  - ) Collection and Harvesting System
  - ) Conservation effort(GON/NGO/INGO)
- 6 NTFP's based micro-enterprises and impact on livelihood.
  - ) Annual income
  - ) Employment generation
  - ) Household economy
  - ) Awareness and Training
  - ) Skill Development
7. Potentiality of NTFP's based micro enterprises development
  - ) Availability of NTFP's resource
  - ) Potential species for Employment
  - ) Market demand of NTFP's based production and their processing
  - ) Management practice
  - ) Micro enterprises relate program ( run by GON/NGO/INGO)
8. Appropriate measure of NTFP's based micro-enterprises development
9. Problem and issues related with NTFP's based micro enterprises development in Jumla.