



# **Marketing of Non-Timber Forest Products of Banke and Bardia**

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## 1. BACKGROUND AND RATIONALE

In Nepal, Non Timber Forest Products (NTFPs) are being increasingly recognized for their role in sustaining rural livelihoods and creating economic opportunities. They are a source of food, medicines, fibers and several other items of household use. They are also a source of cash incomes for thousands of poor men and women, who collect and sell NTFP to the local traders. NTFPs play significant role in maintaining livelihoods of many poor forest dependent families throughout the country. Many of the products are of "high value low volume type", and their production involves individual households. NTFP based activities have a number of attractions such as:

- They often involve a diversity of products.
- They are frequently seasonal in nature, providing important opportunities and supplementary income.
- They are labor intensive and use simple technologies.
- They provide direct benefits to the local economy.
- They are accessible to low income and socially disadvantaged groups and most often managed by them.

NTFPs have also been recognized for their multi-million dollar export potential. They are exported both in crude and semi-processed forms mainly to India, Europe and America. A large number of traders, firms, and processors are engaged in the long value chains creating employment to thousands of people, and raising millions of rupees as government revenues. The market for green and natural products is expected to grow continuously, despite some fluctuations.

NTFP is very important for the economic development of the country. The demand of most of the NTFPs is from the foreign country. The domestic consumption is at subsistence level and in nominal quantities. The demand of herbal products, natural products, ayurvedic medicine and cosmetics is growing in international markets as the numbers of buyers of these products are increasing. The trend for the export-price of herbs is on rise. Nepal exports NTFPs worth about one billion Rupees annually (Kanel 1999). There exists the promising trade potential of NTFPs in the country. There is huge volume of trade and increasing organizational and infrastructure support annually in the sector (Luintel, 2001)

Despite these potentials, the contribution of NTFP in local economy is still limited, due mainly to limited development of reliable markets. Appropriate policies and regulation for promoting marketing as well as development of market information system and support for establishing association and network need to be developed and implemented to overcome the present challenges (Rawal *et.al* 2001).

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Despite the recognition of these potentials of NTFPs by forestry professionals and NTFPs promoters, there is still a limited knowledge as regards ecological, economic, cultural, and policy aspects in general, and the rich knowledge with respect to specific species, ecological zones, products, processing, marketing and use, and cultural systems are still little explored and hardly available to anyone interested in the subjects. This lack of information has limited the scope and

potential of any research, extension and development intervention in the area by interested institutions.

The New ERA through Ban Udhyam under Environment and Forest Enterprise Activity (EFEA) has been planning to implement technical support program with a view to uplift socio-economic condition of the local people by promoting NTFPs based processing enterprises in Banke and Bardia. These districts are rich in forest resources including NTFPs. In addition they are the potential districts for the commercial production of NTFPs. It has been observed that the villagers are the primary collectors and also the producers of NTFPs. They collect various plants and plants' part as demanded by the traders.

The purpose of the EFEA is to facilitate local control and management of natural resources in the Mid-Western Development Region (MWDR), to improve forest productivity and sustain the environment.

2001). This study aims to broaden the knowledge of marketing aspects of some identified NTFPs in the area, with a focus on identifying opportunities for enhancing the incomes of the collectors.

## **2. OBJECTIVES**

The main objective of the study was to analyze prevailing situation of marketing and identify the potential market linkage for the nine NTFP species identified as potential for commercial production in Terai area of EFEA region. The specific objectives were

- To make an inventory (from available secondary sources) of annual production and/or sale of potential nine NTFPs in Banke and Bardia district
- Assess the flow of raw materials of respective NTFPs and processed products and recognize the trade system and analysis of market sub sector to look for the solution the questions; how do NTFP producers/collectors obtain market information? Where is the actual market for those products? How could the benefit be increased to collectors/producers? How could present system be improved?
- Observe the production and processing system (if any) and recognize the constraints of marketing in order to improve the existing production and marketing system
- Assess the potentials and prevailing constraints in order to expand the market sub sector
- Provide practical suggestion for respective NTFPs and related enterprises through identifying key steps that could be integrated in ongoing EFEA program to enhance the livelihood of the rural communities
- Collect current market price of respective NTFPs and their volume in export and local consumption.

## **3. METHODOLOGY OF THE STUDY**

### ***3.1 Selection of the study sites and respondents***

To select the study sites and Community Forest User Groups (CFUGs), staffs of Ban Udhyam - New Era and District Forest Office (DFO) of Banke were consulted in Banke whereas a group of people gathered in a workshop from different CFUGs was also consulted in Bardia. CFUGs having market potential NTFPs were selected for the study. Four CFUGs from Banke and five CFUGs from Bardia districts were selected as representative for field survey. The respondents were taken

from DFO, local Non Government Organizations (NGOs), CFUGs, Federation of Community Forest Users of Nepal (FECOFUN) and proposed NTFPs cooperatives (see Annex-I).

### **3.2 Data collection**

Both primary as well as secondary data were collected to complete the study. Various relevant literatures, CFUGs' record and operational plans, DFO records were reviewed to collect secondary data and these were ratified by triangulation during field data collection.

Different participatory techniques were employed to collect the primary data such as semi-structured interview, focus group discussion, field observation etc. Semi-structured interviews and focus group discussions were conducted to collect the data from CFUG members by using a set of questionnaire (see Annex-II). Focus group discussion was conducted to identify the potential issues and concern of NTFPs marketing. Field observation has been carried out to collect the data regarding the availability of NTFPs in community forest, NTFP production and management practices and local processing systems. The data gathered from secondary sources was also examined by triangulation during field observation. Similarly, two separate checklists were used to collect the data from government offices and NGOs and traders and users' network (see Annex-III and Annex-IV).

### **3.3 Data analysis**

The collected quantitative data were analyzed by using different statistical tools such as percentage and average. Qualitative data were analyzed descriptively. The analyzed data are presented in the form of tables, diagram, flow charts and texts.

## **4. COMMERCIALY POTENTIAL NTFP RESOURCES IN BANKE AND BARDIA**

### **4.1 An overview of the nine selected NTFP species**

Forest Based Micro Enterprise Project (FBMEP) has identified nine NTFPs potential for the trade in the terai region. These species are *Amala*, *Barro*, *Bet*, *Harro*, *Neem*, *Pipla*, *Satawari*, *Shikakai* and *Tendu*. These are described with their few crucial characteristics like production management, collection part, season and methods, processing, uses etc. Collection rules are mentioned according to the practice followed by CFUGs. But the collection season and processing methods mentioned below are not always applied in the practice.

#### **1. Amala (*Phyllanthus emblica*)**

- Production management: The preferred method of regeneration is by seed. Cold-water treatment of seed is essential. However, the regeneration can be obtained from shoots cutting.
- Collection parts: Fruits
- Collection season: August - January
- Collection methods: Shaking the branches or by cutting small branches, hand picking of fruits
- Collection rules: By the users without any restriction for household consumption (Rimna CFUG); collection by the users themselves or by auctioning (Gijara CFUG), with the consultation of the forest technicians collection by users themselves or auction (Siswara, Tharu CFUG).

- Processing methods: Green fruits collection – boiling – separation of seeds – oven or sun dry – packing - storage
- Uses: Used as pickle, in wine making, in skin diseases, laxative. Dry fruits are important constituents of ‘tirphala’.

## 2. Barro (*Terminalia belerica*)

- Production management: Natural regeneration is profuse. Artificial regeneration by direct seeding and seedling and stumps planting is also possible.
- Collection parts: Fruits, barks
- Collection season: December- February
- Collection methods: By shaking branches and hand picking of fallen fruits
- Collection rules: Free collection for household use (Mahila Upakar CFUG); with the consultation of the forest technicians collection by users themselves or auction (Tharu CFUG)
- Processing methods: Collection – shade/sun drying – packing - storage
- Uses: Fruits: Used in Asthma, diarrhoea, bronchitis, sore throat, inflammation, eye and nose disease, heart disease and also to make tannin  
                   Bark: Anaemia and leucoderma  
                   Seed: Acrid ulcer,

## 3. Bet (*Calamus tenuis*)

- Production management: Rattan can be propagated by seeds and rhizomes. Mostly rattan is found naturally in waterlogged and swampy areas of Bardia district.
- Collection parts: Stems
- Collection season: February - April
- Collection methods: Stems/Culms cut just above the ground, pull the cut stuff, removal of tender and immature tips.
- Collection rules: Auction (Lathuwa CFUG)
- Processing methods: Collection - after removing sheaths from the culms, culms are dried which is followed by making bundles. These bundles are then kept in aerated place in a straight manner so that they will not be twisted.
- Uses: Furniture items – chair, sofa, book cases; walking sticks, rope to drag logs, decorative uses

## 4. Harro (*Terminalia chebula*)

- Production management: Direct seeding; seedling, cutting and stump planting are the potential methods of artificial regeneration.
- Collection parts: Fruits
- Collection season: January – April
- Collection method: By shaking branches
- Collection rules: Collection by users themselves or auction with the consultation of forest technicians (Tharu CFUG). In Gijara CFUG, committee members collect the fruits for the CFUG and bark is distributed to the users for use and to teach them what type of bark should be collected. In Rimna CFUG, for household consumption, by users without any restriction.
- Processing methods: Fruits collection – shade drying – grading - packaging - storage
- Uses: Used in cough, skin diseases, for preparing tannin; laxative; one of the constituents of 'triphala'.

## 5. Neem (*Azadirachta indica*)

- Production management: Artificial regeneration is possible by seed, branch and stump cutting. However the seedling plantation is preferred.
- Collection parts: Fruit, bark and leaves
- Collection season: Fruits: June – August  
Bark: October – February  
Leaf: dry season
- Collection methods: Fruit: hand picking, branch cutting, shaking the branches  
Leaves: small branch cutting  
Bark: Slicing
- Collection rules: Free collection (Baghaila phanta and Mahila upakar CFUGCs).
- Processing methods: Leaf: collection – shade drying – packing – storage  
Fruits: collection – removal of outer portion – drying – steaming and expression to extract oil - packing – storage  
Bark: collection – cleaning – drying – packaging - storage
- Uses: Bark: Many medicinal uses as relieving cough, vomiting, burning sensation, fatigue, skin diseases, fever thirst, blood complaints, urinary discharge, etc. as well as insecticidal.  
Leaves: piles, tumors, urinary discharge, asthma etc.  
Fruit: skin diseases, urinary discharge, eye trouble, snake bite etc.

## 6. Pipla (*Piper longum*)

- Production management: Artificial regeneration is possible by seed and root-shoot cutting. Compost is necessary for the cultivation. Since it is climber, well pruned support tree is useful for higher production.
- Collection parts: Fruit and root.
- Collection season: August - January
- Collection methods: Hand picking of fruits, digging of roots.
- Collection rules: Small divided groups of the users (Siswara CFUG). Goat herders without restriction, not formally collected (Tharu CFUG)
- Processing methods:  
For fruits: Collection – cleaning – sun drying (4/5 days)- packaging - storage  
For roots: Collection – washing – shadow drying (2 days)- cutting into pieces – grading – storage
- Uses: Fruit: Used as tonic to liver, snake bite, scorpion sting, night blindness and also used in cough, asthma, fever.  
Root: Stomachic, laxative, also used in leprosy and jaundice.

## 7. Satawari (*Asparagus recemosus*)

- Production management: Artificial regeneration is possible by seed and adventitious roots. Compost is necessary for the cultivation. Moisture maintenance should be done.
- Collection parts: Tuber, terminal buds
- Collection season: Root: November – March; Terminal bud: April - May
- Collection methods: Digging the root, plucking the terminal buds

- Collection rules: Free collection (Baghaila Phanta CFUG); with the consultation of the forest technicians collection by users themselves or auction (Tharu CFUG).
- Processing methods: Roots collection – washing - boil in water- removal of the outer portion of the bark and stem – sun drying – packaging - storage
- Uses: Terminal buds: Vegetables  
Tubers: Cooling indigestion, stomach ache, tonic, aphrodisiac, galactagogue, dysentery, tumors, inflammations, blood and eye disease, throat complaints, tuberculosis, leprosy, epilepsy and night blindness (Ayurveda),  
Roots: kidney and liver, scalding urine, lactation in human and animal, diuretic blood circulation.

## 8. Shikakai (*Acacia concinna*)

- Production management: Artificial regeneration is possible by direct seeding or seedling planting.
- Collection parts: Fruits
- Collection season: March – April
- Collection method: Pods can be collected by picking by hands and by beating with sticks
- Collection rules: Free collection by users (Baghaila Phanta CFUG)
- Processing methods: pods collection – sun drying (1 week) – shade drying (1 week) – packing - storage
- Uses: Hair tonic, hair blacking, an infusion of leaves is used in malarial fever, used to remove dandruff, pods- detergent

## 9. Tendu (*Diospyrus tomentosa*)

- Production management: Artificial regeneration is possible from seed, stem and root cutting. However, regeneration from seed is preferred.
- Collection parts: Leaves
- Collection season: May - June
- Collection method: Leaves are collected from the trees or by cutting the branches
- Collection rules: Free collection of leaves by users (Rimna CFUG), in the year 2057/58: Mahila Upakar CFUG, auctioned the leaves (50-60 Kg.).
- Processing methods: Leaves collection-making bundles - shade drying (8-10 days) – packaging in jute sacks after spraying water
- Uses: Leaves for *bidi* making, fruits are edible, the flesh of the fruits is used as soap in rural areas.

### 4.2 Distribution and production of NTFPs

NTFPs are being managed and produced both in government-managed forests and community forests (CF) as well as in private land. Though DFO is responsible for the management of the forest including NTFPs in government-managed forest, specific management measures are lacking. The major NTFPs such as Amala, Barro, Bet, Harro Pipla etc. are naturally available in most parts of the districts and most of the studied CFUGs have started to cultivate these NTFPs in their CFs. However, these are abundantly found in different Village Development Committees (VDC) and CFs (see Annex V).



According to a study carried out by EFEA in the MWDR of Nepal, among the NTFPs collected from the project area, only one percent is collected from Banke and Bardia districts in the Terai region and the rest (i.e, 99%) is collected from the hill and mountain districts (EFEA cited by Rawal *et al* 2001). The annual trade of all NTFPs in the EFEA area is estimated to be 9,826 metric tons with estimated cash value of US \$4.08 million in 1997/98 (EFEA 1999). This means only 98 metric ton of NTFPs is traded from Banke and Bardia. But according to DFO record, only 47, 50, 20 and 41 metric ton have been sold from those district in the year 1998/99, 1999/00, 2000/01 and 2001/02 respectively.

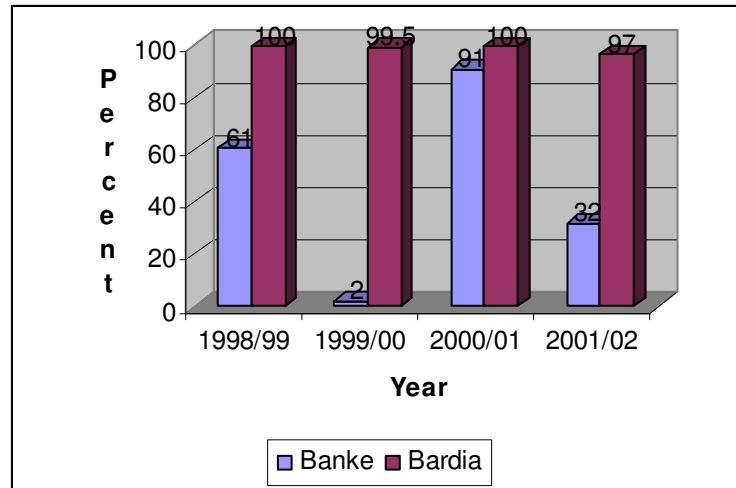
The present strategy of some CFUGs is to be recognized as the producer and supplier and thus they are conserving existing species as well as introducing new species to produce in large scale. Some CFUGs such as Rimna, Jalandhara and Gijara in Banke and Tharu in Bardia have NTFPs development plan and they have established NTFPs nursery. Jalandhara CFUG has 9,400 seedling stocks of 6 species in the nursery (see Annex V) and approx.16,500 kg. growing stock of 16 different species in CF (see Annex VI).

## **5. MARKETING ANALYSIS**

### **5.1 NTFP marketing trends**

The present NTFP trade practices in Nepal have recognized about 100 species as commercially important (Rawal 1995). The commercial values of the remaining species are yet to be known. Out of 75 districts of the country, only 58 have been generating revenue from NTFPs (Department of Forest 1999). The country exports about 10,000-15,000 tons of NTFPs per annum with estimated value of US \$ 8 million (Edwards 1996). About 90 percent of the total NTFPs' export is still in the form of crude/ raw materials. Almost all the NTFPs collected in Banke and Bardia are exported to India. Very often collectors and producers have not idea how the NTFPs they collect and/or produce are used or the destination of these products (processing industry, end products, international markets etc.).

From 1998/99 to 2001/02, 870 kg. Amala, 170 kg. Pipla, 360 kg. Satawari and 22860 kg. Sikakai had sold in Banke district. Similarly 470 kg. Pipla, 25800 kg. Satawari, 67100 kg. Sikakai and 32331 kg Bet had sold from Bardia (see Annex VIII). The concept of marketing is not understood properly by the collectors and/or producers and the trade of NTFP is found to be supply driven rather demand driven. Thus the NTFPs are still being sold but not marketed. The supply of these NTFPs is erratic in nature. The following diagram shows the percentage contribution of studied NTFPs in the total amount of government royalty earned from all NTFPs.



**Fig. 1 Percentage of studied NTFPs' revenue on total revenue of all NTFPs in the districts**

Out of 14 NTFP species traded from government managed forest from 1998 to 2002 in Banke, only 4 among 9 commercially potential NTFPs are found i.e., Amala, Pipla, Satawari and Sikakai. However these constitute significant part of the revenue earned by DFO. The government revenue earned from these 4 species in 1998/99, 1999/00, 2000/01 and 2001/02 constituted 61%, 2%, 91% and 32% of the total revenue of NTFPs earned, respectively. The data seems to be inconsistent probably due to lack of appropriate database system of NTFP trade in the district level and the quantum of legally traded NTFPs vary according to the natural supply and trade practices. Experiences have shown that the major portion of NTFPs have been trading illegally i.e., without paying royalty at DFO. A study made by W.D. Hertog, 1995 mentioned that only 12% of the total collected and traded NTFPs in Dolpa district during fiscal year 1992/93 are recorded and legally exported. This is mainly due to the intention of the traders to pay less royalty and lower commitment of the officials as well. The weak and impractical government mechanism to control and monitor the royalty is also equally responsible. It is difficult and virtually impossible to estimate the volume of NTFPs collected and traded in the area with existing official data.

Out of 8 NTFP species traded from government managed forest from 1998 to 2002 in Bardia, only 4 among 9 commercially potential NTFPs are found i.e., Amala, Bet, Pipla and Sikakai. However these constitute major part of the revenue earned by DFO. The government revenue earned from these 4 species in 1998/99, 1999/00, 2000/01 and 2001/02 constituted 100%, >99%, 100% and 97% of the total revenue of NTFPs earned, respectively (revenue from timber is not considered to calculate these data). Due to the legal trade of comparatively large volume of studied NTFPs, the percentage of contribution in the government royalty is high.

CFUGs are also selling the NTFPs to traders. They are also supplying the seedlings of NTFPs to other organizations including CFUGs. Jalandhara CFUG had sold *Kurilo* to IUCN in the year 2001.

## **5.2 Market of NTFPs**

The market of NTFP is gradually emerging. Nepalgunj is the main market area of these potential NTFPs for producers and collector in MWDR. However, the ultimate market for these products is India. There are wholesalers and commission agents who buy from the Nepalgunj traders and sell as ayurvedic medicine and as raw materials in industries. Approximately 90 percent of harvested NTFPs are traded to India (Rawal, 1995).

## Box 1. A Story of Jung Bahadur Oli

Jung Bahadur Oli is a creative farmer of year 70. He is very much interested in the field of community forestry management and working as a president of Rimna CFUG, Dhakeri, Banke since last five years. When I met him, he was working in the nursery. In Rimna CFUG, although users are not able to sell or market their NTFPs' seedlings, they are producing some in the nursery to introduce in the forest. They have already planted *Bet* in the forest and planning to plant *Amala*, *Harro*, *Barro* and *Satawari* this year. While I asked him about marketing of NTFPs, he said "Although we are not able to market these products at present, we are working with the hope for the future. We expect that there will be the demand of the products and we can sell our product in the future". We are hopeful regarding sale of these NTFPs in near future, so we are producing.

### Domestic markets

Past experiences have shown that most of the rural people use the traditional medicines and other various NTFPs to generate their livelihoods and likely to do so far a long time to come. People of Banke and Bardiya districts are not exception in this regard. People have a long tradition to use NTFPs for different domestic purposes such as medicine, furniture, food, fiber etc. NTFPs' domestic markets have a strong potential which can be tapped through improving rural infrastructure. It is, furthermore, a reliable market and one that is easily mastered by local participants (Lecup, 1993 as cited in Nicholson 1999).

### International market

Only a limited number of traders have the access to the international markets. Due to easy access and the emotional relationship of the Nepalese traders to Indian traders, most of them are trying to explore markets in India rather than abroad. The potentials of the international marketing are yet to be explored. Market Information System (MIS) project of Asia Network for Sustainable Agriculture and Bio-resources (ANSAB) could be an effective attempt to explore the international market. There are few challenges to grab the international market.

Almost all NTFPs exported are for industrial purpose. Industries are the organized body and they practice unique and complex buying behavior due to their unique characteristics and surrounding environment (Kotler 1999). Adequate quantity and quality requirement is necessary in regular basis for organizational buyers. Some buyers want to follow the "system buying"- buying all required materials in a complete package from a single seller. Although this system is not prevailing in Nepalgunj, it is prominent in Indian industrial market. This directly affects NTFP wholesalers' trade strategy of Nepalgunj traders.

### **5.3 Legal procedures of NTFPs trade**

The forest act, 1993 and forest regulation 1995 provide regulatory framework for NTFP trade in Nepal. There is the provision that CFUGs can manage and utilize forest products including NTFPs

in accordance with an approved operational plan. The CFUG can issue a collection permit for the products that are prescribed for harvesting.

**Box 2. The general procedures/steps of NTFPs trade are as follows**

- Certificate of income tax registration
- Collection permit
- Royalty payment
- Checking and weighing
- Release orders or transit permit
- Local taxes
- Checking and endorsement
- Export recommendation
- Certificate of origin
- Certificate of general system of preference
- Export permission and duty
- Import permission and duty

*(Adopted from Himalayan Bio-resources Vol. 3, 1999)*

Government policies in some cases are supportive for the trade of some NTFPs. Almost all NTFPs based manufacturing enterprises can entertain income tax holiday for an initial five year period, which can be extended upto ten years. To assist the trade and processing of NTFPs, the export companies are given the tax exemption facility for the export value of the products. However, to boost the NTFPs trade, taxation provisions and export procedures of NTFP have to be considered.

Although the steps of trade are seen quite simple, these are very difficult to follow in practice from collection to export. A lot of bureaucratic harassments are being faced by the traders in different time such as in checking, issuing release order, transport etc.

There is the provision of plant quarantine while exporting NTFPs to India. NTFP traders of Nepalgunj feel that the idea of plant quarantine is conceptually justifiable; the present practice adopted by India is more complex, tedious and time consuming. To export NTFPs in India, one has to obtain photo sanitary certificate from Lucknow for which the administrative procedure is long and complex.

**5.4 Products – the issues of quantity and quality**

There are various systems of NTFPs collection in different villages and CFUGs. Most of these systems allowed to collect individually rather collectively. Thus quantities of individual sources are small. So collectors and even local traders do not pay adequate attention of using additional labor for value addition of such small quantity of NTFPs in a better way. Rather they are forced to combine all quality range product together to make the required minimum marketable load. Products need to be in large quantity otherwise there may not be the interest to outside buyers and even to the traders/middlemen supplying these products. It is found that there is difficulty in marketing small quantity of products. If large quantity NTFPs is produced, traders may be attracted to buy.

The markets of NTFP outside Nepal have quality requirements. These products can fetch higher prices only if good quality materials are supplied after cleaning, drying, grading and/or other necessary processing. Collectors and producers perceive a very low incentive to invest additional labor to improve quality raw materials because many traders and middlemen involving in the trade of NTFPs and dealing with villagers do not pay enough attention for high quality products (Edwards 1996). Usually the payments are made on the basis of weight or volume, regardless of quality unless there is exceptionally low quality and other dirt mixed in the NTFPs. Thus the value of good quality and local processing of the NTFPs is unrealized. Instead collectors and producers try to earn more by collecting more quantity in the short span of time. This ultimately affects the management and harvesting of the NTFPs which again affect the quality of products and thus a vicious cycle is formed.

However, few traders in some places have started to demand for the quality products such as for Timur (*Zanthoxylum armatum*), Ritha (*Spindus mukurosi*) etc. The indicators of the quality are ripeness and size of seed, color, smell, taste, water/oil content, harvest time/season, source of origin and price them accordingly.

**Table 1. Indicators of the quality of the products**

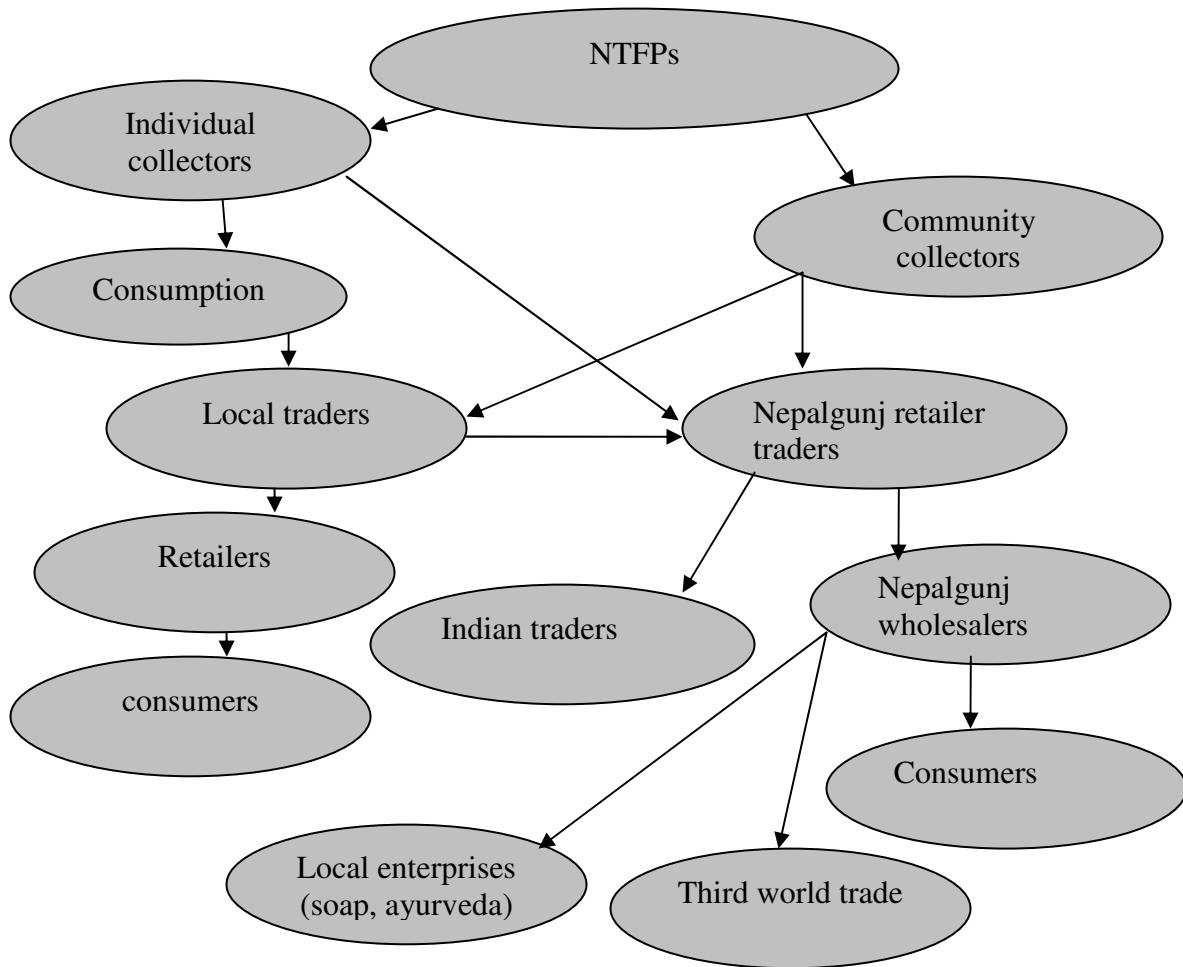
Species	Characteristics
Harro, Barro	color, hardness and size of the fruits
Tendu leaves	Vigor and healthiness
Amala	Size, color and vigor
Neem leaves	free from insect and disease
Neem seeds	solidness, free from insect and disease
Bet	solidness, length, strength and color
Pipla	color and moisture

Quality production of NTFPs at local level is important for efficient and sustainable trade in the long-run. There are very low improved skills, knowledge and technology to add the value/quality of NTFPs in Banke and Bardia at present. There are not well organized and improved processing plants of these NTFPs. Only basic primary processing such as cleaning, boiling, drying etc. have been carrying out by local collectors especially women by using traditional knowledge. Information related to the quality is not well studied, documented and communicated to the collectors, producers and local traders. Both cultivated and wild varieties are traded mostly in the "crude", "unmanufacture" and "not ground" forms, which means that they have been cleaned but not further processed.

### **5.5 Marketing channel – flow of NTFPs**

In both the districts, local people collect the NTFPs either from community forest or from government managed forest and contact Nepalgunj trader. Mostly, Nepalgunj traders ask local people to bring the products at Nepalgunj to sell. In some cases, they put demand with the local people before NTFP collection and collect from the contracted persons. In both the cases, the pricing of NTFPs is greatly decided by the traders. In Bardia, local traders were also involved for the marketing of Satawari. The present trade channels do not provide an equitable share of profits to collection. The market is being operated for several decades but it is still imperfect and depends on a limited number of wholesalers. The NTFP traders appear to be less competitive and less informed. The present system of trading shows the dominancy of Nepalgunj traders to collectors/producers.

The producers/collectors are not capable enough to compete with them and operate independently for NTFPs marketing.



**Fig. 2 Existing trade channel of NTFPs of Banke and Bardia**

In theory the collectors and producers could significantly increase their income by selling directly to the corporations in India by-passing the Nepalgunj traders. This is, however, not in practice because Nepalgunj traders operate as a cartel that prevents would be new-entrants from breaking into the trade structure and competing effectively at the same level (Edwards 1996). Due to financial constraint to buy adequate stocks, new entrants' access to trade is very difficult. The financial risk is also high in the trade. In addition, accessibility to the network of buyers in India is difficult and limited. The same problems could be faced with the bureaucracy both Nepal and India. It seems that financial investments with transparent mechanism, building up a sales' network, accessibility to the government offices and accurate price information are pre-requisites for direct sale to Indian trade corporate. These are lacking with the collectors and producers at present.

### **5.6 Price – question of equity**

Only a small percentage of the final price goes to the collectors. Collectors only command about 10 percent of the final price of their product (Lecup, 1993 cited in Nicholson 1999). Harvesters receive 32 percent of the final price obtained in India (Subedi 1997). There are many collectors, each with small quantities of a product, which gives them little bargaining power with the middleman, resulting in lower prices and smaller profits.

The market price of NTFPs at different marketing centre is given in the Annex IX. The market price of Satawari, Sikakai and Amala in Nepalgunj which collectors get is only 82, 42 and 69 percent of the total price obtained in Delhi respectively in 2002 (This figure is based on the information provided by traders at Nepalgunj). The bargaining power of the collectors and producers is nil because they are unorganized and they cannot supply big quantity. They are also not aware about the market forces to determine the price. They feel that they are exploited by the Nepalgunj traders. But the traders of Nepalgunj feel that they also have more or less same problem. They have to rely on the Indian traders regarding the demand, price and other market related information because they can not directly supply to the concerned industry. Industries may not trust Nepalese traders regarding the adequate supply and required quality of NTFPs in time.

Many CFUGs in Banke and Bardia have mentioned in their Community Forest Operational Plan (CFOP) that the pricing of NTFPs will be done by general assembly and that will not be less than government royalty rate. However they have not mentioned and even think either any scientific approach or market forces of pricing. They are not aware about the strategy to raise the bargaining power with the traders. However CFUGs are trying to form the cooperatives with the support of Ban Udhyam (BU)/New ERA to raise the bargaining power by offering large scale and good quality products in both districts. The formation of co-operative as the CFUGs are expecting soon (i.e, being CFUG as member) has some legal problems. Both districts' NTFP co-operative association are in the process of registration in the District Co-operative Office, Banke.

#### **Box 3. Gijara CFUG, Udarapur VDC – 2, Mankhola, Banke**

Gijara CFUG is the first CFUG in Banke district. The forest is handed over in 2052 – 4-29 and 256 households are involved for the management of 133.85 ha. of forest. Now, CFUG members are involving actively in the management of CF including NTFPs such as *Pipla*, *Sikakai*, *Barro*, *Amala*, *Kurilo*, etc. They are managing a NTFPs nursery also. Some of the NTFPs such as *Bet*, *Bans* and *Kurilo* are introduced in the forest. There is considerable quantity of NTFPs for marketing.

CFUG is looking for the access to the market for the products. They have collected *Pipla* since last year. Collection of *Pipla* was done by the school students. It was intended that it will help to raise awareness on NTFPs and CF among the students and the poor students could be benefited from the income earned. Rs. 40 / Kg. and Rs. 30/Kg. was paid in the year 2001/2002 and 2002/2003 respectively. The reduction of the cost of collection is due to the intense competition of the collectors (students). However, this year they are not able to sell and storing approximately 50 kg by hanging in the office of the CFUG. While interviewing, Om Pd. Paudel, secretary of the CFUG said that they are searching for the market but could not get yet. Similarly, community forest user committee members collected *Sikakai* voluntarily. They are not able to market *Shikaki* also. They are now searching market to sell these products. Nepalgunj trader want to buy those products on their own price but the CFUG members try to get more by bargaining. As a result, the NTFPs remain unsold.

### ***5.7 Promotion – expanding the market***

Users are interested to promote the market of NTFPs. But they do not have any specific strategy and program to do so. They are seeking information regarding markets and potential traders. But, effectiveness of users' effort for marketing of NTFPs is rather low. Producers and collectors are not much aware about the concept of promotion. They are not able to attract traders by offering the adequate quantity of good quality NTFPs. CFUGs are unable to make traders aware about the availability of NTFPs in the specific part of the districts.

To work in the direction of market promotion, CFUGs of both districts have informally formed a cooperative in each district so that cooperative will work collectively for the promotion of NTFPs business. It is intended that the cooperative will be able to deal about collection and marketing of NTFPs in a holistic approach in the districts. The cooperatives will collect the NTFPs from CFUGs in the district and search for the potential markets. However specific promotional activities are lacking.

### ***5.8 Market information – access to the market***

The market for NTFPs are informal, unstructured and vary enormously. Most of the NTFPs are found either in the government or in the communal lands and the tenure of these lands are complex. This may create conflict between primary users and other stakeholders. NTFPs are often seasonal and depend on nature for growth and regeneration which makes their productivity unpredictable. Information on NTFPs is even lacking with foresters because they often train in overall forest management which is focused on timber. Often there is considerable local indigenous knowledge concerning the production and management of NTFPs. Therefore collaboration between various stakeholders is needed for the smooth functioning of the NTFP business sector which demands adequate and proper information in time (Koppell 1995). Market information is critical to the success of NTFP business since, in order to market products effectively, the seller needs solid information about what the buyer wants. Similarly, to ensure that the most effective production, processing and distribution methods are being used; producers need to know what their options are. Requirement of knowledge differs according to the position and role played by the actors in the market. Producers, local traders, processor, exporters and final users of NTFP need different specific information to effectively play their respective roles in the market. Producers need more information regarding site suitable species, high yielding variety, cultivation techniques, harvesting methods and season, quality of products, production cost, inputs required, local market price, level of demand, price fluctuation, competition etc.

NTFP collectors get information about markets and prices through interaction with the support organizations and traders in seminars/workshops in both districts. The users of Gijara and Jalandhara were informed about market of Pipla and other NTFPs in the seminar organized by BU. There is an information gap between producer and traders. Traders of Nepalgunj are willing to purchase Pipla at the rate of Rs. 90.00 per kg. However, many of the users don't have the information about potential market of Pipla. Respondents of Mainahiya and Baghaila Phanta CFUG told that they don't know where the actual market of the NTFPs is. Ban Udhyam has worked with Nepalgunj Chamber of Commerce and Industries (NGCCI) to develop Market Price Information System (MPIS) to disseminate upto date prices of important NTFPs from various trade centers in the region for the benefits of collectors/producers. It is expected that the knowledge and bargaining power of the collectors and producers will be increased if the price information is provided periodically. Jaributi Association of Nepal (JABAN) has been working to promote NTFPs on policy, market and information issues. Thus there is a system of publishing the current rates of the



NTFPs of various markets (Nepalgunj, Lucknow, Delhi, Kathmandu, Kolkotta) in Nepalgunj. Additionally, a radio program, intending to inform different stakeholders of NTFPs, from regional center Surkhet was also conducted by BU. But, the adequate information including price information has not reached to the collectors and producers in proper form and time. This could be due to not listening the radio and not reading the newspaper by the collectors due to their limited access to these media. Even the MPIS may not be the sufficient information for them. They need to have the information regarding the quantity of products' demanded, fluctuation of demand, price fluctuation, products' characteristics, traders' details, marketing channel, legal procedures, and payment systems as well as the technical and managerial information of production and/or collection. Some traders are found to be reluctant to pass the market related information to the producers and collectors because they want to make more profit than producers/collectors. They are not much concerned with the transaction with the producers and collectors of Banke and Bardia districts because the volume of trade from those districts is quite less and insignificant for the big traders in Nepalgunj. Their concentration is on the high value NTFPs of high altitude and also in big volume.

The collectors and producers have been getting the information regarding NTFPs partly from support organizations like BU/New ERA and partly from the traders directly. However people feel that they are not getting the whole set of information they need to decide regarding production and marketing. Even big traders of Nepalgunj get market and price information from their counter parties of India through telephone.

## **6. ANALYSIS OF TRADE POTENTIALS AND CONSTRAINTS**

### **6.1 Potentials**

#### **6.1.1 Huge volume of existing trade**

The products derived from various NTFPs are commercially valuable and traded. These have been occupying certain share of the market particularly in India since long past. Several pharmaceutical and perfumery industries use those raw products to maintain quality of their final products. The demand of these products is in rising trend in national as well as international market during recent years. From Banke and Bardia district, 47, 50, 20 and 41 metric ton of different NTFPs have been legally sold in the year 1998/99, 1999/00, 2000/01 and 2001/02 respectively. The actual quantity of NTFPs collected and traded might be quite magnified in reality. A study made by W.D. Hertog, 1995 mentioned that only 12 percent of the total collected and traded NTFPs in Dolpa district during the fiscal year 1992 /'93 are recorded and legally exported. This is mainly due to the intention of the traders and brokers to pay limited government royalty as well as the lower commitment of the officials. The weak and impractical government mechanism to control and monitor the royalty is also equally responsible for this. It is difficult and virtually impossible to estimate the volume of NTFPs collected and traded in the area with existing official data (Luintel2001) . However the volume of trade is huge.

#### **6.1.2 Rising market price**

The local (Nepalgunj) market price and the increment of the prices of NTFPs is in increasing trend such as.

**Table 2. Trend of NTFPs' market price**

S.N	Name	Market price (NRs / kg at 2000)	Market price (NRs. / kg. at 2002)	Increase in Price (NRs.)	Increase rate (%)
1	Amala	22	50	28	127
2	Satawari	125	160	35	28
3	Sikakai	18	30	12	67

*(Source: Calculated from JAWAN, Ukali and Lahara Community Newspaper)*

The market price of the NTFPs has raised over time such as 127 percent in *Amala*, 28 percent in *Satawari* and 67 percent in *Sikakai* from 2000 to 2002. This is the indicator of growing demand of the product. The numbers of buyers of these products are also increasing in the market and thus the competition has raised.

### **6.1.3 Increase in organizational support**

A large number of NGOs, Community Based Organizations (CBOs), business houses, financial institutions and government agencies have recognized and valued the importance of NTFPs trade in upliftment of socio-economic condition of the local people as well as nation. These organizations devote maximum time and resources towards managing the NTFPs. They are also directly and/or indirectly involved to create the better environment for trade though their basic objectives are conflicting sometimes for short-run.

### **6.1.4 Existence of indigenous informal trade system**

Though many organizations have started to work in this field recently, various NTFPs have been trading since long past in our society. There are traditional healers, traditional medical practitioners, local, district and national level traders involved in the business of NTFPs. The traders and collectors have informal but very strong network of trading. Many newly born organizations in NTFPs sector generally consider the traditional trader-collector network as obstacle for the progressive and new intended trade system. Some collectors and their associations also think in the same manner. However the progressive and innovative organizations recognize and appreciate the vast knowledge of the traditional traders and collectors. Their willingness to involve in NTFPs trade and contribution to create the market during the past is important milestone to further develop the market strategies. Various studies and researches relating to the NTFPs trade also have become completed only with the information gathered from the traditional traders and collectors.

### **6.1.5 Development of infrastructure**

Development of infrastructure like transportation and communication network, timely and frequently flow of market information facilitate the NTFPs trade. Nowadays, basic infrastructure facilities and market information systems are being more favorable to NTFPs trade. Availability of basic and primary processing techniques and their facilities in the local level also facilitate the trade potentiality of some NTFPs as Sal leaf plate making, rope making etc.

### **6.1.6 Production potential of NTFPs**

There are wide varieties natural products growing in the wide range of habitat as well as ex-situ cultivation potential. Many CFUGs in Banke and Bardia now have started to cultivate the NTFPs in

the community forests. Better management of these products ensures the continuous supply of the higher and desired quality and quantity of products that is pre-requisite of the sustainable trade. Natural production of NTFPs reduces the cost of production and management and thus provides an opportunity to compete in the market or to get the higher profit. Higher profit lead to recognize the value of the NTFPs, their protection, management and proper utilization. However, regular inspiration, motivation, facilitation, and various supports are essential.

## **6.2 Constraints**

### **6.2.1 Market constraints**

NTFP collectors are generally illiterate, poor and living in the rural and remote areas where the government supporting programs are rarely reached. Due to less access to the education and other opportunities, women and poor are less entrepreneurial. NGO working to support the collectors also do not possess the experience and program to run profit-making venture (Lecup, 1993) so that the dependency of collectors can be minimized and fair trade can be established. Supply is often erratic and of low quality due to lack of organized methods for the collection and marketing the NTFP (Malla, 1991).

The government does not have scientific, transparent and judicious royalty fixation policy for forest products particularly NTFP which is not conducive to the market environment. Only a small fraction of the final price goes to the collectors as 10 % (Lecup, 1993) and 32 % (Subedi, 1997). In Banke and Bardia, it is noticed that the market price for collectors of Sikakai is 42 percent of the price of Delhi in the year 2002. There are many reasons of this situation such as

- Collectors' low bargaining power due to small quantity of the product,
- Unorganized collectors, quality standard is not specified for NTFP and the traders specify the quality and fix the rate,
- Collectors do not know to calculate the cost of labor,
- Mal-interpretation of the legal and market information by traders,

Timely and frequently flow of required market information are lacking in Banke and Bardia where NTFP marketing is mostly under the control of large-scale Indian wholesalers through district level handful NTFP traders. Few Indian traders have made cartel and practice monopoly on the trade by controlling the price of NTFP. The majority of value adding activities even cleaning, sorting etc. are also carried out by the Indian traders in India. NTFP market in Nepalgunj is speculative and the traders take the advantage. Marketing information system in the village is very low due to illiteracy and to some extent negligence of people, remoteness and lack of infrastructure, lack of reliable supporting organization etc. Therefore, people are dependent on the middlemen or village level traders or Nepalgunj traders for market information who generally distort the information in favor of their own interests. Inadequate knowledge of products and market to the collectors and producers adds another dimension to the marketing challenge.

The quality of products is low due to lack of organized and improved methods of the collection; processing and handling marketing of NTFPs. Local users are not aware about the quality requirement of the product. The inconsistent supply of quality raw materials is also a major

challenge of the marketing of NTFPs. On the other hand, inconsistent and irregular demand of NTFPs adds another challenge to market them.

### **6.2.2 Resource management constraints**

Generally, NTFP collection areas are difficult to reach particularly in the interior part of the big national forest and open access creates the obstacle for sustainable management. Scattered source of raw materials and lack of marketing networks at the local level cause availability problem of NTFPs on the part of buyers. NTFP collectors are concentrating only on collecting more volume as quickly as possible and resource management has not been taken in consideration. NTFPs having higher market value are heavily and haphazardly collected which leads to threaten the existence of species. Collectors are not feeling the ownership and control over the resources in national forest, which is the major chunk of forest resources in both districts. Even in community forest, local people are not feeling ownership due to lack of group cohesiveness, policy confusion and controversial role of DFO staff etc. As government has enforced the rule to charge 40% of CFUGs' income as royalty, it has been one of the hindrances to disturb the relationship between government staff and CFUG members in the course of participatory forest resource management.

There is no any perceived incentive for collectors to practice sustainable harvesting. Most of the plantation areas and few natural forests have been handed over as CF to the FUG in the district. This is seen from the fact that only 3 percent in Banke and 9 percent in Bardia of district forest is handed over to the CFUGs so far.

Collectors lack resource security and are tempted to harvest early in the season before plants have fully matured and dropped their seeds and haphazardly (De Coursey, 1993, Yadav *et.al*, 1995). In the study sites, for example, *Bet and Amala* are harvested haphazardly from the government managed forest during December - January and June - July.

There is lack of proper baseline database of NTFP in both districts, which is the major constraint to formulate effective programs and policies. Most of the CFUG do not contain the details of NTFP management provision in their CFOP. However, BU/New ERA has initiated to incorporate NTFP management provision in CFOP which is found to be good for forest health as well as generating livelihoods of the local people. Even they have not listed the NTFP found in the forest. No inventory and management prescriptions of NTFP have made in CFOP. With the interview of the field level DFO staffs, it is found that they are not capable and confident to carry out forest survey, inventory and silvicultural operations without the help of middle and higher level technical staffs of DFO. Similarly CFUG members are also not capable to carry out resource survey and inventory scientifically. Users have little idea about management aspects of NTFPs. They do not know when to harvest, when to collect, how to collect the certain introduced NTFPs. This may cause unscientific harvesting of the NTFPs.

There are many collectors, each with small quantities of a product, which gives them little bargaining power with the middleman, resulting in lower prices and similar profits. Due to scattered resource base, the collection of the NTFPs in the present system of marketing has been one of the obstacles to get markets. To collect considerable quantity of NTFPs, one has to collect from various sites.

Though the average annual royalty collected from NTFP in Banke and Bardia is huge i.e, Rs.2,30,490 and 1,58,662 respectively (average is taken from last four year data), DFO does not have the NTFP management program in the annual/fiscal program.

### **6.2.3 Social and institutional constraints**

The management of medicinal plants in Nepal is poor and is handled virtually on an ad hoc basis (Malla, 1991). No organization exists to manage or co-ordinate the collection of medicinal plants in either the public or private sectors, and a workable administrative network to implement procedures for the proper exploitation of NTFP has yet to be developed (Nicholson, 1999). There is not any specific guideline or directive to manage the NTFP in CF also. DFO generally issues the licenses and permits to collect and transport the product. Government policy and support often seems to favor the large modern sector and export oriented industries. Consequently, small enterprises based on NTFP are often discriminated against and excluded from access to available incentives and other forms of support (Sharma, 1996, Lecup, 1993).

In the districts, people involved in NTFPs collection, processing and trading reported that they have been facing hassles from forest officials while taking collection permit, release permits and their transportation of NTFPs.

There is no clear-cut government policy to facilitate the cultivation of NTFPs and no organized system in government revenue fixation. Similarly, frequent changes in the legal provision have been creating uncertainty in NTFPs business. Interpretation of rules for NTFP collection and trade is left to DFO and it varies between different districts and DFOs.

### **6.2.4 Science and technology Constraints**

The major marginalized group in NTFP trade is collectors. The efforts to the development of NTFP enterprise should benefit those less benefited and widely scattered collectors. There are no existing skills for processing and very little cleaning and grading knowledge or incentives for collectors (Nicholson, 1999). He further mentioned agrotechnology for NTFP is mainly at the research stage. Though few distillation plants are established in some part of the district, desirable and expected profits have not met yet. Technology to maintain quality standard ISO-9000 is not known to many traders and it is very difficult to maintain even if known due to different quality of raw materials to be used. Due to lack of proper and sufficient infrastructure, it is very difficult to establish and operate enterprises using such technologies. Managerial, institutional and local political problems always exist in the remote and illiterate society where the collectors are living and the NTFPs are available.

The products that are marketed or sold are in raw forms or without any systematic processing. Although the value of NTFPs is large, the potential of value addition opportunities are unrealized by collectors and Nepalese traders.

## **7. CONCLUSION**

NTFPs are being managed and produced both in government managed forests and community forest areas of Banke and Bardia dsitriacts. The major NTFPs such as Harro, Barro, Amala, Bet, Pipla, Tendu, Neem are naturally available in most parts of the districts. In some CFs, the natural regeneration of NTFPs is supplemented by artificial means, which includes initiatives by CFUGs to cultivate NTFPs in CFs. The present strategy of the CFUGs is to conserve the existing species and introduce new NTFPs in the CFs.

Almost all NTFPs collected in those districts are exported to India. The earning from these NTFPs constitutes the major part of the revenue earned by the DFO. However, very often collectors and producers do not know how the NTFPs they collect and produce are used, or what are the destinations of these products.

Different parts of the species have their use and economic value. Fruits and seeds of Pipla, Sikakai, Harro, Barro, Neem, and Amala are collected. Similarly barks of Neem, stem of Bet, root of Satawari and Pipla; leaves of Tendu and Neem are also collected. Various practices are adopted for the collection of products including systematic collection or auctioning or free collection by the users themselves.

Nepalgunj is the main market area of these NTFPs for producers and collectors. However, the ultimate markets for these products are India. People have long tradition to use NTFPs for different domestic purposes. The potentials of the international marketing are yet to be explored. The present trade channels do not provide equitable share of profits to collectors and producers. The market has been in existence for several decades but is still imperfect and depends on a limited number of wholesaler. The present trading system shows that producers are not capable to compete with traders and operate independently for NTFPs marketing.

NTFPs collectors/ producers have not been able to maintain good quality processing and value addition. Only basic primary processing such as cleaning, boiling, drying etc. are carried out by local collectors especially women by using traditional knowledge.

There are many collectors, each with small quantities of a product, which gives them little bargaining power with the middlemen, resulting in lower prices and smaller profits.

Although they do not have any specific strategy and program for the promotion of market, collectors/ producers of NTFPs in the districts are interested to do so. Due to lack of effective market information system, there is a gap and mistrust among different stakeholders such as collectors/producers, traders and support organization. NTFPs collectors/ producers get information about market and prices through interaction with the support organizations and traders in the seminars / workshops in both districts. Traders of Nepalgunj get market information from their counter partners of India through telephone. BU/New ERA has initiated the publication of MPIS in local newspapers, regional radio program and market price display boards in different locations of the region.

A number of CFUGs have started to cultivate NTFPs. The NTFP production in natural forest has not yet been managed properly. The growing demand of the products, involvement of large number of NGOs, CBOs, business houses and government organizations have increased the potential of NTFP trade. On the other hand, there are a number of constraints. Collectors' low bargaining power, dominance of traders in fixing prices, lack of timely and frequent flow of market information are some of the critical marketing constraints. Similarly, resource management constraints include lack of technical know how for the management of resources. Additionally, there is no clear-cut government policy to facilitate the cultivation of NTFPs and no scientific, transparent and consultative system of royalty fixation. The products are exported mostly in raw forms, without any processing to add values.

## 8. RECOMMENDATIONS

There are opportunities that can be explored and grabbed by some intervention despite various constraints associated in the marketing of NTFPs. Following are some of the recommendations which if properly implemented can contribute to increase the benefits to the collectors and producers while at the same time contributing the sustainable resource management.

### 8.1 Strategic programs

- **Improve awareness and capabilities of the collectors/producers**

Present practices of NTFP collection from nature is gradually leading towards the decreasing trend of resource, which is deeply rooted to the socio-economic condition, and cultural background of the collectors' community. Collectors should be trained in "right based approach" so that they will feel the ownership on the resources and thus peoples' participation will be ensured. At the same time they also have to be empowered to undertake marketing rather than simply selling their products. For example, they have as much control over the product as possible and be able to make product improvements and market selections based on price and customer requirements.

Despite a lot of training delivered by BU/New ERA, most of the collectors within CFUGs lack knowledge and skills regarding NTFPs collection, management, marketing, uses etc., they have to be trained. Some of the CFUGs have reached in the stage of NTFPs management in their CFs, but lack technical know how. So, they should be strengthened and supported in this regard. CFUGs' training need assessment should be done first and respective trainings should be given to them according to the need. Such type of trainings will be very helpful to the producers to be competent in the market and lead the business ahead.

- **Establish CFUGs' network to regulate NTFPs supply**

A network of the CFUGs to work in the fields of NTFPs marketing has to be established. To regulate the regular supply of NTFPs, *ex-situ* cultivation should be promoted along with the management of naturally occurring NTFPs. For promoting cultivation, skill oriented training along with required materials should be provided by support organizations. Various technical and action researches should be carried out simultaneously so that the learnings could be incorporated in the new venture.

The network has to conduct its activities with the coordination of different stakeholders including DFO, traders, traders' network, FECOFUN, other supporting agencies. The network will deal the business in a holistic manner. The central collection and sale of NTFPs from various CFUG will help to reduce the uncertainties in the part of the CFUGs to supply adequate quantity of good quality NTFPs to the traders.

Although this is an emerging concept in the field of NTFPs sector, the structure may work if it could run as it is designed for. Alternatively, a network of the active members of CFUGs (active group of users from various CFUGs) is recommended which will deal every aspects of NTFPs (production, management, marketing etc.) in the districts.

- **Establish market information system to maintain transparency**

Despite the information support of BU/New ERA, most of the collectors are unaware and/or limited aware about market information, establishment of user-friendly market information system is

recommended. To start, price information base on the qualities at various trading points is essential for the collectors/ producers. Then, the formation and strengthening of collector's associations should be encouraged and supported to assess information needs at community level, and disseminate market information of those NTFPs that are in demand in certain market centers. The government has to coordinate the work by consulting various stakeholders so that it will contribute to reduce the gap in information among them. The market information centre having information regarding potential sites for NTFPs, NTFPs availability, demand and supply, market price, price fluctuation, value addition etc. at various locations will provide the opportunity to be informed about market system and help to enhance the bargaining power of the collectors/producers, and ultimately it contribute to promote of NTFPs sub-sector.

There is a need to improve communication linkages between responsible agencies about NTFPs trade and collection via. radio broadcasts of current market price, demand etc. Furthermore the journals, newsletter etc. which are useful to the users should be published and be available at the producer level so that producers /collectors could get the information regarding NTFPs trade.

- **Establish cooperative enterprises for processing and value addition**

Most of the CFUGs in Banke and Bardia districts are rich in NTFP resources. However, it will be difficult to invest in the enterprise at the commercial scale by a single CFUG. Considering the reality of the CFUG in view, the cooperative approach seems more relevant and practical through which large segment of producers could be benefited. Through this scheme, a number of cooperative enterprises can be created that develops sense of ownership among several producers and subsequently helps in the conservation and management of natural resources. However, the support from various organization could be needed to establish and run the enterprise.

Due to establishment of processing units, people get processed materials to sale in one way and employment in another. People can add the value on their materials and get more money by selling processed materials. It is recommended to establish the portable and site suited processing units in various places of the district. This will also reduce the transportation cost of raw materials. Once people get more money from same quantity of NTFPs, the pressure exerted to resources by poor economic condition of collectors will be reduced. Processing unit / company will be the main channel of trade which is organized body. It will be easy to control the quality of the products to be processed. The control of traders over collectors will be reduced and shifted to local processing company to whom it will be easier to regulate than individual and unorganized traders. However establishment of such enterprises require capital outlay, give greater local control. Discerning buyers may be appeared after the establishment of small-scale processing plants and more efficient marketing channel. This will directly contribute the proper and sustainable harvesting and management of the resources. Careful feasibility study should be carried out before establishing the enterprise. A detail outline of the feasibility study is given in the Annex X.

- **Promote NTFPs marketing to enlarge the market**

Today, there is a lack of awareness and recognition of Nepali NTFPs by international market organizations. Therefore, the government should take steps to make access the products to the outside world. It would be possible through organization of international trade fairs and exhibitions and participating there. The exposure of Nepali products at international market will help to obtain the competitive price by traders and thus collectors/producers. The NTFPs are of organic products of great value and thus can be popular in international market. Both the producers as well as other



support organizations should adopt the strategies as per their capabilities. However, the coordination among the stakeholders would be one of the easiest ways to reach the goal.

- **Improve infrastructure development to facilitate NTFP business**

Market infrastructure is one of the basic requirements to develop the market of NTFPs. As there is a lack of infrastructures such as storage, simple and affordable processing plants etc. in community level, there is a need of such infrastructure for the marketing of NTFPs. Government and/or support institution could be the implementing agencies to develop market infrastructure including market places, storage, handling depots, processing plants etc. to aid efficient marketing.

- **Improve policy to open the competitive business environment**

Government agencies should not regulate the collection, transport, and handlings of NTFP instead promote open market for enhancing the trade.

## **8.2 Intervention options**

Various intervention options are proposed to implement in integrated way focusing the above discussion. To implement the intervention options, participatory process should be followed in planning and implementation. The main thrust of the options will be to promote biodiversity conservation and sustainable use while diversifying the livelihood opportunities of the people.

- **Social mobilization**

Communities should be mobilized through introducing various activities as rapport building, awareness raising through mass media and/or group media, PRA etc. as well as different entry point activities according to the felt needs of the local people. These activities will be helpful to influence positively in peoples' attitude and develop institutional mechanism. Participatory planning among the stakeholders is to be done to create conducive environment. Institutional development and strengthening of CFUG, VDC, FECOFUN and other community based organizations and self-help women groups should be done to mobilize the local communities.

- **Resource management**

To operate trade and enterprise in sustainable way, sufficient and regular supply of raw materials is pre-requisite. Therefore either proper management of resource or cultivation of the raw materials is necessary. According to the potentials of the species to be cultivated, *in-situ* availability of species and social and institutional factors, either management or cultivation or both strategies can be adopted. Further detailed study is necessary for this. It is recommended to establish the *in-situ* management plots in the natural forest areas and *ex-situ* production plots in degraded forestlands and private agriculture land for carrying out the action researches. Capacity building, institutional strengthening, developing support infrastructure, adopting primary processing technologies and participatory monitoring and evaluation should be carried out for sustainable management of the resources.

- **Information and technology transfer**

Information and technology play the key role in NTFP marketing and enterprise development to be successfully run. Community based information center should be established in the local level i.e., VDC level and district level to pass the information regarding the resource management, market, enterprise activities etc. Selected collector's leaders should be trained in various aspects so that they

could be the local resource persons for the continuously needed technical and information support for collectors and other stakeholders.

- **Project development**

The support organization should assist the producers, collectors and entrepreneurs in the selection of NTFPs for feasibility study, preparation of NTFP development plan, and delivering the training and skills etc.

- **Networking and partnership**

CFUGs and their cooperative should initiate and support organization should assist to establish various kinds of linkages with the selected key direct and indirect actors of the NTFP sub-sectors. These linkages may be established by means of technical assistance and maintenance contracts, purchase contracts between harvesters and processors, financial support contracts for short-term loan for working capital etc. The partnership will help to smoothen the business.

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## ANNEX – I. RESPONDENTS CONSULTED DURING FIELD DATA COLLECTION

### Government officials

S N	Name	Organization	Designation
1	Soharat Pd. Thakur	District Forest Office, Bardiya	DFO
2	Anup Raj Chalisae	District Forest Office, Bardiya	AFO
3	Padam Prasad Dahal	District Forest Office, Banke	AFO
3	Santosh karna	District Forest Office, Bardiya	Ranger
4	Suraj Nidhi Tiwari	District Forest Office, Bardiya	Ranger
5	Ram Kumar Chaudhary	District Forest Office, Banke	Ranger
6	Satya Narayan Yadav	District Forest Office, Banke	Ranger

### Non- Government Organization

S.N.	Name	Organization	Remarks
1	Narendra K. Rasaily	Ban Udyam / New Era	
2	Narayan Dhital	Ban Udyam / New Era	
3	Pashupati Dahal	Ban Udyam / New Era	
4	Shayam Narayan Jha	Ban Udyam / New Era	
5	Kuldip Paudel	CARE, Bardiya	

### Local NGOs (users' Network)

S.N.	Name	Organization	Designation
1	Radha Dhital	FECOFUN, Banke	President
2	Suraj Bhandari	NTFPs Cooperative, Banke (Proposed)	Secretary
3	Radha Sharma	FECOFUN, Bardiya	Vice President
4	Kalpana Nepal	FECOFUN, Bardiya	Office secretary
5	Laxmi Baral	NTFPs Cooperative, Bardiya (Proposed)	President,

### Community Forest Users

S.N.	Users	CFUGs
1	Mina Shrestha,	Mahila Upakar CFUG, Kohalpur, Banke
2	Rishisara Gaudel	
3	Mira Shrestha	
4	Rupa Baniya	
5	Sudershan Khanal	
6	Jung Bahadur Oli	Rimna CFUG, Dhakeri, Banke
7	Sher Bdr. Dangi	

8	Him Lal K.C.	
9	Dal Bdr. Khhetri	
10	Tulasi Khhetri	
11	Fula Rani Chaudhery	
12	Mangalnsen Tharu	Jalandhara CFUG, Mahadevpuri VDC - 5, 6,
13	Tek Bdr. Chaudhery	Banke
14	Prithvi Lal Chaudhery	
15	Asha Devi Tharu	
16	Om Prasad Paudel	Gijara CFUG, Mankhola, Banke
17	Netra Narayan Shrestha	
18	Yam Bdr. Shrestha	
19	Bechan Ram Tharu	
20	Akabar Ali Gaddi	Mainahiya CFUG, Mahamadpur - 9,
21	Sahadat Ali Gaddi	Bardiya
22	Saliman Ali Gaddi	
23	Abdur Rahaman	
24	Ishowari B.K.	
25	Bashudev Chaudhary	Siswara CFUG, Bagnaha - 6, Bardiya
26	Bhim Bdr. Chowdhary	
27	Dil Bdr. Chhetri	
28	Suran K. Chhetri	
29	Mira Dhungana	
30	Makhan Chaudhary	Bagdaila Phanta CFUG, Mainapokhar,
31	Kaliram Chaudhary	Bardiya
32	Gopal Pd. Chaudhary	Baghaila Phanta CFUG, Magargadi -3,
33	Ram Pd. Chaudhary	padnaha 2,4, Bardiya
34	Chheduram Tharu	
35	Buddhi Tharu	Tharu CFUG, Guleriya -6, Balapur, Bardiya
36	Kali Pd. Tharu	

### Nepalgunj traders

SN	Name	Organization
1	Rajesh Jain	JAWAN, Nepalgunj
2	Mohdishaq Haluwai	JAWAN, Nepalgunj
3	Nabakul Sijapati	

### Others (Enterprise, Key informants)

SN	Name	Organization
1	Prabha Shretha	SATHI
2	Dev Bdr. Rana	

## ANNEX-II. DETAILS OF THE SEMI-STRUCTURED QUESTIONNAIRE

1. What are the major NTFPs found in your community forest?

*Questions regarding the concerned species of the NTFPs (Pipla, Bet, Shikakai, Neem, Amala, Barro, Harro, Tendu and Satawari)*

### **Production and Management**

2. Do you have any idea about the abundancy of these species in your forest?

3. What is the mode of origin of potential NTFPs? (whether natural or domesticated / cultivated)

4. How NTFPs are being managed (protection, harvesting and utilization)?

5. When are these NTFPs produced (seasonably)?

6. How do you harvest NTFPs? Are you adopted old system or new learned system?

7. What are various methods of harvesting?

8. What is the season, percentage and parts of plant harvested?

9. Is there any harvesting monitoring mechanism and control (harvest, reproduction, growth etc.)?

10. Are you aware about the management/ conservation of potential NTFPs? yes / no

11. How do you contribute in managing the NTFPs?

12. What is the level of participation of users regarding NTFPs management in community forestry?

13. What have you done so far and planning to do in future for sustainable harvesting, management of NTFPs and enterprise development?

### **Collection**

14. When do you collect (respective) NTFPs? And for what purpose?

15. How much (quantity) do you generally collect in one time or season or per year?

16. Who collects and harvests the NTFPs?

17. Who uses these products? And what are the products/parts used?

18. Do you collect these NTFPs for your subsistence use (for your local need) or export outside of your local area?

19. What is their volume (quantities) in export and local consumption?

### **Product processing**

20. What are the forms of supply of these NTFPs (processed and /or raw)? If processed, how are the products processed?

21. What do you know about what happens to the goods after they are sold?

22. Who processes the products? And where they are processed? (at collection / harvesting site, primary processing at household / village site or secondary processing)

23. What are the NTFPs used as raw materials for industries? And in which amount?

24. Could you list out the industries (small-scale and medium and large scale industries) that are using the respective NTFPs?

25. How do you get knowledge and skill of proper processing, value - addition?

26. How do you arrange financial resources for processing? What is the availability of labor for this?

## **Marketing**

### **Location**

27. Where is the actual market of these products?

### **Pricing**

28. What are the current wholesale and retail prices for the product?  
29. What price do the products bring at local station? Who fixes the price of NTFPs?  
30. Does it vary with the price of the local market? If so, in which amount?  
31. What have the price trends been for the last three to five years?  
32. Are prices expected to go up or down in the future? Why?

### **Demand and supply**

33. What is the demand of potential NTFPs?  
34. Who buys the product and where are they located (individuals, retailers, wholesalers, distributors, users, exporters)?  
35. How much was sold over the last three years?  
36. Over the last three years has there been a shortage or oversupply of the product? Why?  
37. What conditions cause purchasers to buy from a new supplier (lower price, better quality, more reliable supply, need for more supply, better packaging etc.)?

### **Competition**

38. Who are the competitors? Who currently makes the products?  
39. What type of competition is there in NTFPs business (fair, unfair, monopoly etc.)?  
40. Could large firms flood the market with low-cost products and drive the price down?

### **Marketing Channel**

41. How do you market your product? (Either by contacting with the contractors or by yourselves or by corporate or etc.) What is the existing marketing channel for these NTFPs?  
42. Is there any existing any network of NTFPs producers/ collectors?  
43. What is your preference for distributing the products (wholesaler emphasized or retailer emphasized)

### **Marketing Information System**

44. How do you obtain market information?  
45. Do you share and discuss information on products, prices and markets with others?  
46. How is the information forwarded? Formally or informally?  
47. Are there any documented information systems?  
48. What are your suggestions to improve the information system? Who should take responsibility and how to document required information and flow timely?  
49. How will purchasers learn about the product?

### **Market Strategy**

50. Are there any other potential target markets and where are they located?  
51. Will there be the need of any marketing promotion methods (advertisement...)? How can you advertise and persuade customers to buy?  
52. What kind of marketing channels will be used to reach the customers?

53. How much will the target market pay for the product?

### **Policies and Regulations**

54. What and how are the trades, industrial and forest policies and regulations affect the business?

55. Do you have any idea about effects of legal and administrative process in NTFPs collection, management and enterprising?

### **Transportation**

56. How are the products transported to the selling point? what are the costs associated with this?

### **Risks**

57. What are the risks in marketing the products (supply price, market, share, profitability, policy etc.)?

### **Miscellaneous (enterprising, livelihoods and NTFPs..)**

58. Are there any other root organizations working in the field of NTFPs? If yes, what do these organizations do?

59. What is the district level political commitment (DDC/VDC) regarding development of NTFP enterprises?

60. Who are the key actors (men, women) in production, processing and marketing of NTFPs? Role of women?

61. What do you think about potentialities of NTFPs commercialization? If so, which species and how?

62. Are you interested to establish NTFPs based enterprises? If yes, what type?

63. What do you think about enterprise development at local level (existing, possibility, methods, who to initiate, who has to support what etc.)?

64. What financial resources are available for which actors (access to credit) in the marketing chain of NTFPs?

65. What are the principal problems that you are facing in NTFPs enterprise / business?

66. What are the major shortcomings in the present system of NTFPs business? Do you have any changing approach for this business?

67. In your opinion, how could the benefit be increased to collectors / producers?

68. What do you think about NTFPs contribution for income generation at the local level?

69. Do you think the NTFPs sub sector is contributing to enhance the livelihood of the rural communities? If so, how?

70. How could we manage NTFPs for the enhancement of the livelihoods of the rural communities?

71. Do you have any comments, suggestions regarding NTFPs sub sector?



### **ANNEX-III. DETAILS OF THE CHECKLIST USED TO COLLECT THE INFORMATION FROM GOVERNMENT AND NON-GOVERNMENT ORGANIZATIONS**

- Major NTFPs in the district
- Management practices ( production, harvesting, collection and distribution ) adopted by CFUGs
- Interest / participation of users
- Processing: methods, by whom, where
- Sustainability of NTFPs
- NTFPs based industries (status, sources of raw materials etc.)
- Enterprise development: existing, potentialities
- Market availability- location
- Current prices: trends
- Demand and supply of NTFPs
- Marketing channel
- Modes of transportation
- Competition
- Key actors in NTFPs business
- Market information system (sources, sharing / dissemination)
- Market strategy / promotion
- Policies and regulation ( prospects and constraints)
- Risks
- Existing NTFPs related organizations in the districts and their roles
- Problems in NTFPs business
- Ideas regarding how producers / collectors be benefited more ( Income generation, livelihoods )
- Options for improvement in the present system, if any?
- Potential and prevailing constraints in NTFPs marketing
- DFO's role and activities and future planning
- Comments, suggestions( if any ) regarding NTFPs marketing in the district

#### **ANNEX-IV. DETAILS OF THE CHECKLIST USED TO COLLECT THE INFORMATION FROM TRADERS AND USERS' NETWORK**

- NTFPs business: species
- Sources , collection spots (hot spots in the area)
- Products: uses, production and processing intensity
- Demand (national, international, local) of the products
- Demand fluctuation
- Level of demand for the product (low, improvement of the product to meet demand standard)
- Product quality requirements
- Processing: by whom, type
- Value of the products and their collection costs
- Price variation ( at collection spots and at the market)
- Price change during the trading season/ long term price changes
- Means of transport
- Complementary and supplementary goods
- Market information access: price information
- Market: monopoly, market actors, degree of competition
- Marketing channel/ number of levels in trade structure
- Marketing promotion
- Product supply/ quantity : average volume
- Producer's perspectives regarding collection and sale
- Access to capital: initial investment/working capital
- Networking (if any)
- Infrastructure : physical infrastructure (quality and type, transport equipment)
- Policy /access constraints
- Constraints
- Opportunities
- Any suggestions?

#### ANNEX V. MAJOR AREAS OF NTFP DISTRIBUTION

SN	Species	Major areas of Banke	Major areas of Badiya
3	Amala	Kachanapur, Kohalpur and Mahadevpuri VDCs	Rajapur area
5	Barro	Fattaepur VDC	Baniyavar VDC
9	Bet	Rimna CF, Jalandhara CF	Rajapur area: lathawa CF
4	Harro	Fattaepur VDC	Baniyavar VDC, Baghaila Phanta CF
8	Neem	Mahila Upakar CF, Rimna CF	Ramjanaki proposed CF
1	Pipla	Kachanapur and Mahadevpuri VDCs	Siswara CF, Baghaila Phanta CF, Nepal Kedwai CF, Tharu CF
7	Satawari	Samsergunj VDC	Ramjanaki proposed CF
2	Shikakai	Kachanpur VDC	Khata area, Baghaila Phanta CF
6	Tendu	Kamdi VDC, Babukuwa CF, Chhakrahawa CF, Sitamahila CF,	

#### ANNEX VI. NURSERY STOCK IN JALANDHARA CFUG

S.N.	Species	Number
1	Amriso	1,000
2	Bet	2,000
3	Kurilio	400
4	Pipla	500
5	Sarpagandha	1,500
6	Bans	4,000
<b>Total</b>		<b>9,400</b>

#### ANNEX VII. NTFP STOCK IN JALANDHARA CF

S.N.	Species	Production quantity (kg.)	Remarks
1	Babar lahara	450	
2	Ban basar	20	
3	Banmara jhar	15	
4	Barro	10	
5	Bet	10	
6	Bramhi	4	
7	Dudhe lahara	1350	
8	Ghodtapre	8	
9	Gurjo	480	
10	Kantakari	14	
11	khar	12,750	
12	Khas Khas	95	
13	Muj	900	
14	Neuro	60	
15	Pipla	475	
16	Rohini	50	
<b>Total</b>		<b>16,691</b>	

Source: CFOP of Jalandhara CFUG

**ANNEX VIII. PRODUCTION AND SALE OF NTFPs (BANKE)**

S. N.	Species	1998/99		1999/00		2000/01		2001/02	
		Qty. (Kg)	amount (Rs.)	Qty. (Kg)	amount (Rs.)	Qty. (Kg)	amount (Rs.)	Qty. (Kg)	amount (Rs.)
1	Pipla	90	450	0	0	80	400	0	0
2	Amala	70	140	0	0	800	1600	0	0
3	Sikakai	200	600	9000	9000	12700	38100	960	31000
4	Rohinifal	250	750	600	1800	0	0	800	2400
5	Mahuwa Phul	0	0	1400	7000	500	2500	0	0
6.	Kurilo jara	0	0	1500	3000	2300	4600	0	0
7.	Momosahad	0	0	100	1000	0	0	0	0
8.	Amriso kucho	0	0	200	400	1000	2000	0	0
9.	Sabai grass	0	0	14875000	750000	0	0	0	0
10	Khar chhadi	0	0	9000	150	0	0	0	0
11	Satawari	0	0	200	400	160	320	0	0
12	Amlesi	0	0	0	0	0	0	600	1200
13	Gujargan	0	0	0	0	0	0	30	150
14	Tendu	0	0	0	0	0	0	31500	63000
Total		610	1940	14897000	772750	17540	49520	33890	97750

Source: DFO, Banke

**Production and sale of NTFPs (Bardia )**

S. N.	Species	1998/99		1999/00		2000/01		2001/02	
		Qty. (Kg)	amount (Rs.)	Qty. (Kg)	amount (Rs.)	Qty. (Kg)	amount (Rs.)	Qty. (Kg)	amount (Rs.)
1	Pipla	0	0	270	1350	200	1000	0	0
2	Sikakai	7100	7100	5000	5000	55000	72600	0	0
3	Kurilo jara	0	0	0	0	950	1900	7155	14310
4	Amriso kucho	0	0	0	0	0	0	200	400
5	Satawari	22300	44600	3500	12400	0	0	0	0
6	Bet	11866	178001	19365	290475	1100	5500	0	0
7	Semal	0	0	5	10	0	0	0	0
Total		41266	229701	28140	309235	2050	81000	7355	14710

Source: DFO, Bardia

## ANNEX IX. MARKET PRICE OF NTFPS (NRs/KG)

	Nepalgunj			Lucknow			Delhi		
	2000	2001	2002	2000	2001	2002	2000	2001	2002
Amala	22	50	50	NA	56	56	NA	80	72
Barro	30	NA	10	NA	NA	NA	NA	NA	NA
Bet	35	NA	65	NA	NA	NA	NA	NA	NA
Harro	25	NA	10	NA	NA	NA	NA	NA	NA
Neem	NA	NA	25	NA	NA	NA	NA	NA	NA
Pipla	105	NA	90	NA	NA	NA	NA	NA	NA
Satawari	125	180	160	NA	210	220	NA	216	220
Shikakai	18	20	30	NA	24	35	NA	29	48
Tendu	25	NA	20	NA	NA	NA	NA	NA	NA

Source: Field survey (JAWAN) and Ukali & Lahara Community Newspaper

## ANNEX – X. DETAILS OF FEASIBILITY STUDY OF NTFP ENTERPRISE

Feasibility analysis is the process of determining the implementability of the enterprise. It examines the viability of the enterprise through detailed investigation. Viability is the ability to meet the objectives of the enterprise. It is needed to take the final decision to commit resources to the enterprise. It is multi-disciplinary in nature and should be carried out by a team of specialists on the basis of accurate information (Agrawal, 2000). Following various analyses should be carried out judiciously to complete the feasibility study properly.

### (a) Market analysis

Marketing viability of the enterprise including its ability to satisfy customer needs should be studied foremost. Marketing analysis is indispensable for the success of every NTFP based enterprises. Many such enterprises failed because of marketing problems. The coverage of the market analysis should include following.

- Estimation of national, regional and international market demand (existing and creative) of the product;
- Marketing program consisting of marketing mix;
- Sale forecast and estimated revenue;
- Market coverage of the enterprise – intensive, selective or niche marketing;
- Product characteristics and quality specifications;
- Competitive factors;
- Elasticity of demand;
- Complementary and supplementary goods and their market and marketing;
- Promotion strategies;
- Distributional channel etc

### (b) Technical analysis

Technical analysis of the enterprise is considered as the foundation of the feasibility analysis and equally important as market analysis. The feasibility of meeting technical solution is examined and the viability of the enterprise design is investigated. The analysis includes

- Availability of the raw materials;
- Geographical location;
- Size if the enterprise;

- Design requirements;
- Technical risk;
- Human resource requirement etc.

**(c) Financial analysis**

It studies the financial suitability and sustainability of the enterprise from the viewpoint of entrepreneur. Generally the marketing analysis gives the projected income data and technical analysis gives the major part of the cost for this analysis. The areas to be covered are

- Capital requirement and its structure;
- Sources of funds;
- Projected cash flow;
- Profitability (Internal Rate of Return, Net Present Value) etc.

**(d) Economical/social analysis**

Generally it is carried out only for the large-scale enterprises. It studies the economic contribution of the enterprise to the economy and society at large from the viewpoint of society. Cost-benefit analysis should be carried out in terms of contribution to the national economy by achieving goals of economic growth, social development, income redistribution, poverty reduction, employment generation etc. Shadow pricing and other suitable indirect technique should be used to quantify the benefits and costs.

**(e) Sensitivity analysis**

It is carried out for the safety purpose of the enterprise. The possible effect of the external factors in the sale of the product is estimated and the impact in the profitability of the enterprise is analyzed. The more sensitive enterprise gives higher profit in the favorable situation whereas incurs heavy loss in unfavorable situation. Since the products of NTFP enterprise is exported which is extremely sensitive, sensitivity analysis is recommended to carry out.

**(f) Managerial analysis**

It covers the institutional viability of the project. Here the adequacy of the management system to plan, organize, direct and control the enterprise is examined. The legal and political acceptability of the enterprise is also examined. It covers the study of the following areas.

- Institutional and organizational relationship;
- Enterprise management;
- Stakeholders and their functional relationship;
- Enterprise organization etc.

**(g) Environmental Analysis**

It studies the impact of the enterprise on the environment. It is also done generally for large-scaled enterprise. The Environmental Protection Act has made mandatory requirement of environmental analysis of every enterprises beyond certain level of capacity. It focuses in environmental suitability and environmental impact assessment. Environmental impact of the enterprise activities can be studied in the areas of ecological, physical, aesthetic, social, ecological relationship etc.