

**Cross-cutting Article**

## **Livelihood Option from Minor Forest Produce: Context of Non Timber Forest Product and Poverty Reduction in Mid Hills of Nepal**

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### **Abstract**

The paper recognizes Non Timber Forest Products (NTFPs) as contributing resources for improving livelihoods of the rural people. Existing trend of NTFPs in Rolpa district reveals high level of its potentiality where a single Malagiri tree in the one of the VDCs of the district has yielded profit of 15, 000 NRs. in gross. The study supports idea that the quality of life can be secured through the promotion of NTFPs as an additional resource for safety net. Major outlet clusters for NTFP trade and marketing of the Rolpa district are Sulichaur and Holeri regions where mostly NTFP species were found to be traded. Malagiri, Timur, Ritha and Allo are major local species that have a high level of demand in the market. As a result, people have started cultivating a few species in their farmland too. Lack of knowledge and skill in the production of standard commodity has compelled district people towards traditional NTFP farming approach where they are not reaping optimum benefit. Realizing the potential of NTFPs in the district, it is important to consider modernizing the processing of raw material, development of transportation network and undertake facility for the producers. Such intervention could be a major breakthrough in the poverty reduction of the district and securing quality of life.

**Key words:** NTFP, livelihood, community, marketing

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## Introduction

Non Timber Forest Product (NTFP) is an important source of income for poor communities in the hills of Nepal. The most important category regroups Medicinal and Aromatic Plants (MAPs) used by herbal medicine and essential oil industries (Regmi et al. 2000). According to Edwards (1996), in some rural areas the cash obtained from the harvest of NTFPs is the only income obtained from forest land but may still contribute over 50 percent of the annual average household income. However the situation of NTFP is vital, little research or development has been carried out into any aspects of Nepal's NTFPs.

NTFPs are also important parts of the biodiversity and are considered as component of livelihoods in terms of their economic, social and ecological value. As history shows, local communities have used these resources for food security and trade for centuries. The Master Plan for Forestry Sector (MPFS) (1988) claim that 15% of the Gross Domestic Product (GDP) of Nepal has been contributed by the forestry sector. As a result of the population growth and shrinking of the forest area, the pressure upon the existing forest and pasture is being increasing. Indiscriminate collection of NTFP is not only a cause but undaunted regulatory procedure or recognized management practices has threatened the survival of some species and reduced the quality of NTFPs. On the basis of the MPFS, Government of Nepal has formulated policies and logical arrangement for promotion of NTFPs in coordination with different stakeholders as well as local communities.

In recent years, people involved in forestry sector development have recognized the potential of NTFPs in contributing national economy especially through the medicinal and aromatic plants and felt the need of conserving this valuable resource. Increased awareness about the NTFP management amongst the local people has also been clearly evident in conserving, cultivating, utilizing and marketing of NTFPs through CFs. This has further been enhanced with the growing number of community forestry user groups who tend to cultivate and conserve NTFPs that takes less time to mature than trees and provides better option of income. In Nepal, there are many successful experiences in the NTFP utilization and development (Kanel 2004). According to the information revealed from ANSAB (2008) NTFP has high level of success cases such as enhancement on living standard of rural people, reduce women work load, increased standard of living among others. Edwards (1996) divides NTFP into two categories: high value products from high altitude (above 2000 m) and low value product from low altitude. The high value altitude species includes bikh (*Aconytum spicatum*), chiraita (*Swertia chirata*), Jatamasi (*Nardostachys grandiflora*), kutki (*Picrorhiza scrophulariiflora*) among others. The low altitude species include species such as Tejpat (*Cinnamomum tamala*), kurilo (*Asparagus recemosus*), rittha (*Sapindus mukorossi*), timur (*Zanthoxylum armatum*) etc.

NTFPs have been recognized as potential in contributing the national economy especially through the medicinal and aromatic plants (Belcher et al. 2003, Dev et al. 2004, Kanel et al. 2003) and felt the need of conserving this valuable resource sustainably (Arnold 2001, Arnold et al. 2006, Koirala 2007). This has further been enhanced with the growing number of community forestry user groups who tend to cultivate and conserve the NTFPs that takes less time to mature than trees which are providing a better option of income. As a result, increasing an interest in NTFPs has led to their greater recognition in sustainable forest management planning (Ehler et al. 2003). Similarly, the NTFPs can contribute to the livelihoods of the rural people (Acharya 2002, Malla et al. 2003). In the context of Rolpa district, it was deemed necessary for not only to increase district people's access and rights to the forest product but also to conserve biodiversity, safeguard ecological integrity and secure sustainable livelihoods (Adhikari et al., 2007,

Agrawal, 2001, Salafsky and Wollenberg, 2000). This challenging task requires a careful local level analysis in NTFPs collection to the market chain (Mersmann 2004, Ruiz-Perez et al. 2004).

The alternative model of development is needed to balance the forest conservation and local economy with livelihood opportunities, along the sustainable development discourse (Acharya 2002, Acharya 2007, MFSC 2004, Vedeld *et al.* 2004, World Bank 2002). It has become inevitable to manage forest sustainably creating ground for livelihood strategy. The utilization and development of non-timber-forest-products (NTFPs) is identified and considered to be one of the most important feasible solutions for sustainable management of forest and local economy upliftment (Rijsoort 2000, Wiersum *et al.* 2005).

## Methodology

### **Study Area**

Rolpa district lies in Rapti zone of Midwestern region of Nepal. Especially two clusters were given consideration for the assessment of potentiality of NTFPs in the district. One of the clusters, Holeri cluster includes south west region in the district. Other Sulichaur is southern exit of the eastern region of the district. Although there are other collection points such as Libang, Holeri, Jungar (Simpani), most NTFP products are exported from Sulichaur to outside of the district.

### **Methodology**

Primary data was generated through field level information through interview, focus group discussion and observation on the field. The study was focused in major NTFPs collection centres and outlet points of the districts including Sulichaur and Holeri. The interaction was held with officials, local political leaders, and local people to explore issues, challenges and opportunities of NTFP in the district. Apart from this, consultation with civil society organizations, business organization such as Nepal Chamber of Commerce and Industry, district chapter was conducted to identify problem and opportunities of this sector. Similarly, key informant interview was conducted with selected community leaders, traders, collectors at two exit points. Secondary data was collected from DFO and local entrepreneurs at two clusters including research undertaken through different texts. Quantitative data was analysed using descriptive statistics. Revenue and volume of NTFP was analyzed on excel form to present it on the trend chart. Similarly qualitative data was analysed through coding and memoing (Punch 2005). The result was analysed with livelihood approach to strategic intervention for further implication.

## Results and Discussion

### **Major NTFPs in the District**

Local collectors have very little knowledge about modern technology for sustainable collection and enhancing the value of the products. Collectors are adopting traditional system. The following methods and process are being used for collection. It is presented in Table 1 below.

**Table 1: Collection methods of major NTFPs species in Rolpa District**

S.N.	NTFP Species	Part of Collection	Method of Collection
1.	<i>Persea spp.</i> (Kaulo)	Bark	Debarking trees entirely by felling down trees, and making sun dry; and thus debarked product to be stored on pack.
2.	<i>Xanthoxylum armatum</i> (Timur)	Fruit	People begin harvesting fruit after it ripens with red in colour. Fruit is stored in a local pack
3.	<i>Cinnamomum galucescens</i> (Malagiri or Sugandhakokila)	Fruit and flower	Ripened fruit with black in colour is plucked from a tree or is collected from the earth. It is collected on pack and is ripened in sun light.
4.	<i>Cinnamomum tamala</i> ( Dalchini )	Bark and leaf	Both leaf and bark is collected from the tree. Sometimes the branch is collected by felling down the tree. Bark is sun burnt.
5.	<i>Bergenia ciliata</i> (Pakhanbed)	Root	Digging up the entire root of the plant and sun burnt making it into pieces.
6.	<i>Sapindus mukorossi</i> (Rittha)	Fruit and seed	Ripened fruit is collected through a sickle tied in a stick and collected fruit is sun burnt in open place.
7.	<i>Valeriana jatamansi</i> / <i>V. wallichii</i> (Samayo or Sugandhawal)	Root	Roots are dug out and sun burnt and stored in a room.
8.	<i>Swertia spp.</i> (Chiraito)	Whole plant	In Paush and Magh (January and February) whole plants are uprooted and sun burnt and stored in a room.

### NTFPs and Marketing

At present local people collect these NTFPs and sell it to local traders. Local trader finally sells it to the urban centre such as Tribhuvan Nagar Ghorahi Dang. Major export points and destinations for NTFP sale are as follows.

**Table 2: Market chain of NTFPs collection**

S.N.	Collection centres from collectors	First exit point	Second exit point	Exporting outlet 1	Exporting outlet 2
1	Masina, Surpal, Holeri, Dahaban, Tila and Chaukhe	Holeri	Tribhuvan Nagar Ghorahi, Dang district	Nepalgunj, Krishna Nagar, Kathmandu	Lucknow, Delhi, Calcutta etc (India)
2	Budhagau, Jugar, Nerpa Bazar, Simpani	Nigale Pani	Tulsiapur, Dang district	Nepalgunj, Krishna Nagar, Kathmandu	Lucknow, Delhi, Calcutta etc (India)
3	Libang, Holeri, Jungar (Simpani) and also some part of Rukum, Baglung and Pyuthan districts	Shulichaur	Bhalubang, Dang district	Nepalgunj, Krishna Nagar, Kathmandu	Lucknow, Delhi, Calcutta etc (India)

NTFP collection method and processing is still traditional and primitive. Farmers do not have scientific knowledge of the collection of many medicinal plants and stakeholders are also lacking on providing information about NTFP prospect. Such information has not been trickled to the farmer level, which is must for its success. Traders at village level, including district outlet points and collectors, have not been making a strong coalition. Promotion of entrepreneurship is on weak position. Local traders and collectors are heavily competing against one another to grab the materials creating situation of unhealthy competition. It seeks a robust institution for the development as Ostrom (2005) has pointed out. Identification of public and private sector agencies involved in timber, firewood and NTFP marketing is essential. Value addition and processing has to be done to receive meaningful marketing prospect of NTFPs. Similarly, examining the

pricing mechanisms at each stage and identifying the constraints is also a crucial aspect in NTFPs marketing.

Value adding in the value chain system is rarely on practice. Valuable species such as Timur, Jhyau and Dalchini have been identified as a regular source of income for local people as MAPs products. However, exploring the market and the market price of various forest products through rapid market assessment and market information centre for forest products, especially NTFPs at various locations, is utmost necessary step for further movement in this sector. This activity should be collaborated with the VDCs and NGOs. Regarding market promotion of NTFP, it is inevitable to provide reliable market information to both the trader and the consumer. It can be done through encouraging private and public land tree growers to form cooperative organization for the marketing of the forest product and lobbying on different issues related to marketing of forest products. Similarly, export of processed and semi-processed NTFPs is to be encouraged through strategic partnership instead of unprocessed products.

### NTFPs Revenue and Production

Revenue collection of major three species in the past seven years shows gradually increasing in general. These three species constitute the Timur, Jhyau and Dalchini. A polynomial trend analysis reveals that the revenue from Jhyau and Dalchini is promising and a slightly down in Timur. Slowly decreasing the revenue from Timur has resulted need of further intervention in marketing, because this is the major production in Rolpa.

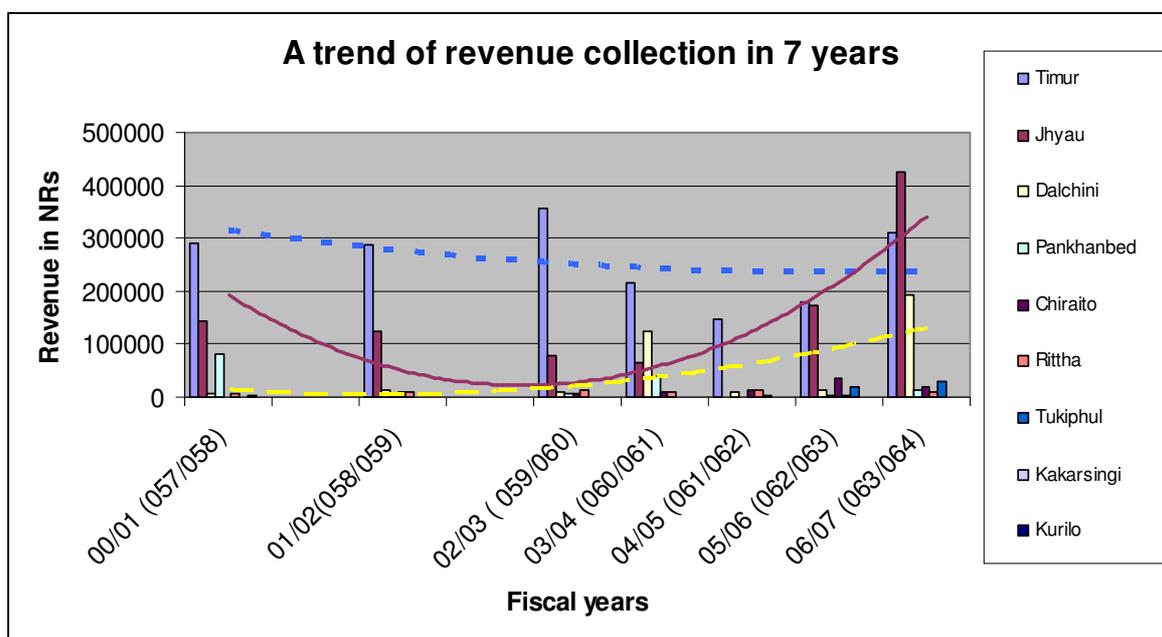


Figure 1: A trend of revenue collection in seven years (major ten species)

NTFPs have considerable potential for CFUGs. They can generate income from the collection of royalties, trade and processing etc. Such outcome of the CFUG is also supported by Regmi et al. (2000).

The trend in Fig. 2 shows that major three species collection quantity is reducing gradually. Interesting figures of Timur were in first three years of data from 057/58 to 059/60. There was a good market though Dabur Company and at the moment the market is down. It is also experiencing in other two following species Jhyau and Dalchini too. At the moment the Dabur Company is not purchasing Timur.

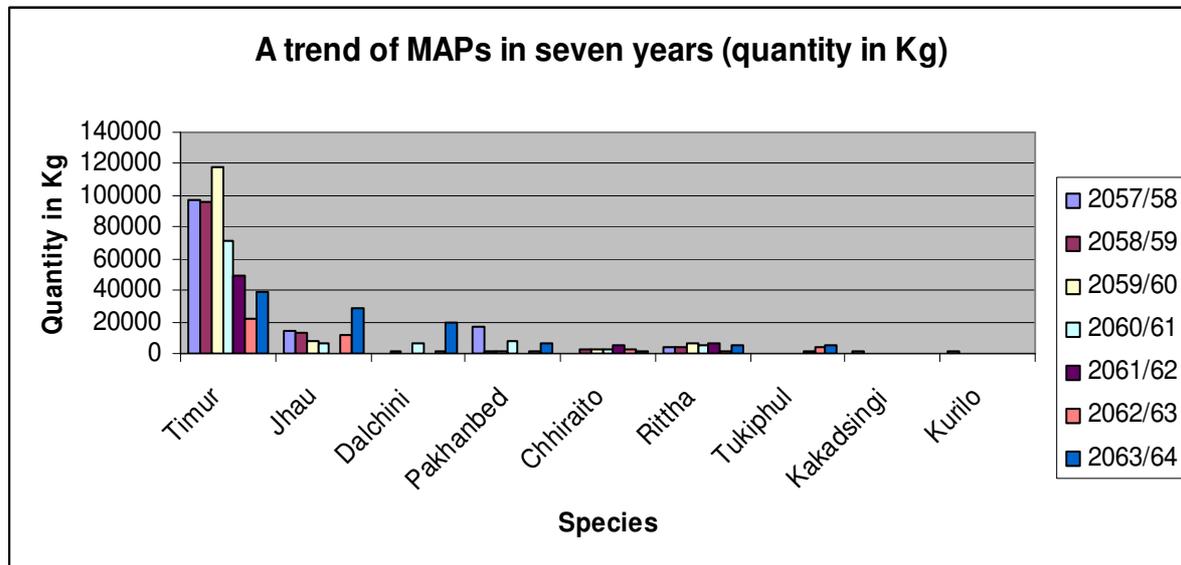


Figure 2: NTFPs trend (2000/2001 (057/58 BS) to 2006/2007 (063/64 BS))

Furthermore, major three species: Timur, Jhyau and Dalchini have 62 % production sharing and other species have only 38 % (Of total 1028467 Kg). Among them, Timur has only 48 % allocation in the production in above information.

Similarly, resin production and revenue sharing between the government and community forests is also an important part in livelihoods. The Fig. 3 shows that about one third of resin is produced in community forests and gradually the revenue is transferring from government treasury to community. Community forests are generating more number of employees by the money receiving in their account. They are expending the money into various development activities. Two resin companies in the district have been creating an attractive number of employments to local people. A study, carried out based on secondary source reveals that more than 950 people are being employed through resin tapping in the district (DFO Rolpa 2008). About 70 % forest coverage is coniferous stand (DFO Rolpa 2008). Therefore, the extraction of resin has a huge potentiality in the district. It could generate more employment in the coming days when the road network will link the forest areas.

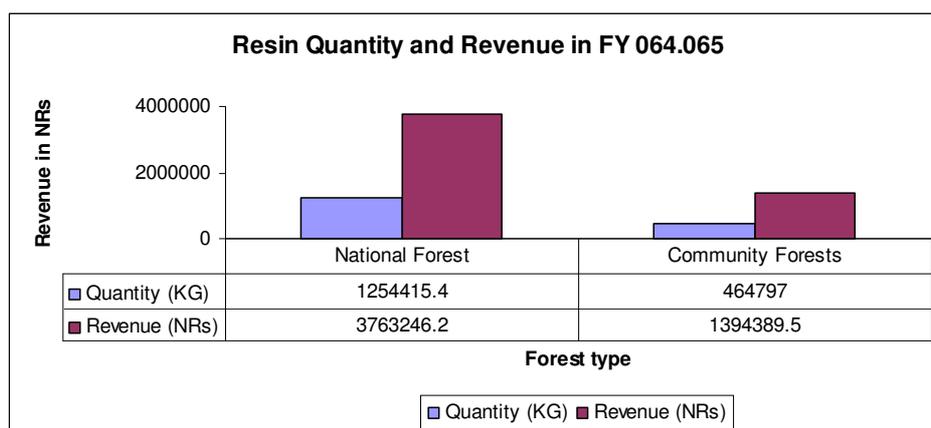


Figure 3: Revenue of resin collection in FY 064/065 BS (2007/2008)

The forest type of Rolpa district is as follows:

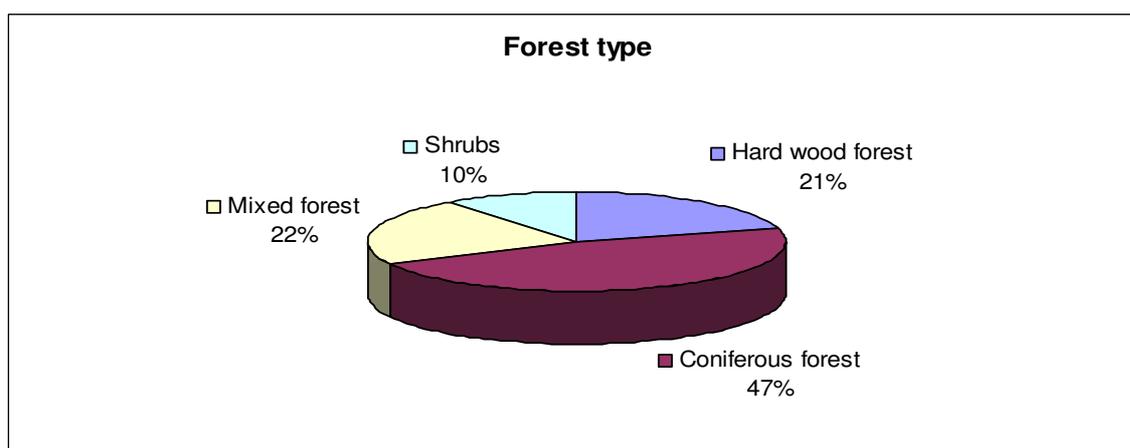


Figure 4: Forest type of Rolpa district

### Challenges and Opportunities

After collection of the raw material, it is lost due to the lack of technical knowledge to preserve it. It has been realized that NTFP collection and management knowledge is very less among collectors. The process of raw material storage is not standard one. Processing has not been made genuinely. For example, processing and storage of Timur has not been made scientific at all. Instead, making more weight by adding branches is also on practice. Trust building is most necessary for business regularity especially in a business where multiple stakeholders are involved. Similarly transportation management is also the important part of the NTFP management. As far as transportation is considered in this district, it has not been made friendly to the NTFP transportation. As a result, it has been deteriorating the value of the products. Value added approach has not been adopted to the raw material to this date. There is lack of knowledge and skill in the production of standard commodity.

It is interesting to point out that local police and other forest technicians have very little knowledge on medicinal plant identification and its legal importance. Field posts of forest office have no information system

on this kind of knowledge. Knowledge banking is very weak in all level of forest offices. At the same time, local traders as well are deprived of correct information. Similarly, identification of NTFPs has been very limited and only traditional NTFPs have been traded in the market. Likewise, the traders have very little knowledge on market information. The traders seem very reluctant in exploring the latest information and entrepreneurship technique for upgrading their business. DFO is also carrying their job in traditional knowledge banking and not working for the fast changing demand in NTFPs development in the district. Further, collectors are also not receiving the right information in proper way that could assist them for value adding and sustainable harvesting. Almost all collectors have very less knowledge for right way of harvesting technique. They are using their traditional way of practice. The study has received an impressive result of success through Malagiri products in private farms. Despite success, it is also not replicating to a large scale. Therefore, mass production of NTFPs and its diversification is the best option for increasing standard of living. Otherwise, it would not positively impact to the economy of poorest people through present practice of NTFPs development and harvesting mechanism. Wiersum *et al.* (2005) point that only diversification of the NTFPs cultivation can generate the income for good livelihood. Malagiri seems a lucrative business in this line of direction but needs more support from private owners and community forests. Without its mass production it may not address the the poor to increase the income level and standard of life.

This study points the role of DFO as vital for its role on development of NTFPs in the district. Forestry technicians who are only enjoying their routine traditional supporting mechanism should be mobilized to community forests also as NTFP extension workers. The DFO office has very low capability, expertise and knowledge towards entrepreneurship and NTFPs cultivation. This should be enhanced involving them on training, institutional development and exposure.

## Conclusion and Recommendations

Geographical location should be divided according to the potential NTFP sites and zoning of the district should be undertaken for its promotion. Within each zone, sites should be developed as the cluster area. The district should be divided into different zonings according to the potentiality of NTFPs of the district. Most economically important species for cultivation in district are Rittha, Malagiri, Allo and Timur. All of these species should be farmed to produce in mass scale in collaboration with CF.

Equity issue should be considered while undertaking benefit sharing. The benefit sharing from the NTFP should be made accessible to poor and impoverished section of the society. Such mechanism should be developed so that there will be a guaranteed benefit sharing for underprivileged people. Similarly the institutional development of DFO and line agencies including local level NGOs/Federation is very important to support NTFP activity in the district. As a part of entrepreneurship in the district, NTFP should be developed as an enterprise realizing the high turnover in the district. Current method of processing of the raw material is very primitive and traditional with high level of wastage. Processing plant should be established to export processed and semi processed product. NTFP enterprise should be promoted through co-operative organizations that support poorest collectors. Coordination among the line agencies should be established and institutional support should be provided. Training should be provided on value addition, marketing, quality control and sustainability on NTFP management. Regarding technical support, the DFO is to be strengthened to assist the farmers and clients. A central data base should be managed to record NTFP inventory. A Management Information System (MIS) should be prepared to update data base

regularly. Highly valuable species should be paid high attention for the NTFP species. Such species should be produced on mass scale such as Malagiri among others. In order to develop a mechanism to manage resource effectively, a strong coordination among the line agencies should be developed. While managing forests, hill forest should be managed through community forestry modality giving importance to the NTFP species. It has been found from the study that management of NTFPs and vision of CF are compatible and lead towards sustainability. Different species including improved varieties of Walnut should be planted in agro-forestry model as it is naturally grown in the forests. Awareness program should be provided to the herders, NTFP collectors and local NTFPs traders as well as forestry and security field staffs, including identification of the species, about biodiversity / NTFPs conservation.

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