

Non-Timber Forest Products Marketing: Trading Network of trader and Market Chain in Luang Namtha Province, Lao PDR

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Abstract: *Non-Timber Forest Products are important export products of the Luang Namtha province. Because of the development of roads and bridges in the region, mobility of NTFP traders have greatly improved in tandem with the rapidly growing economies of China and Thailand. As a result, these once relatively localized resources are now increasingly accessible to national and international markets.*

The study on the marketing of NTFPs was carried out in Luang Namtha province in 2011. The main aims of this study are (1) to study the development of the NTFPs marketing with collaboration between farmers/collectors and traders, (2) to provide a general view of NTFPs marketing system, (3) to identify of the route of the NTFP from the collectors to the final market and (4) to study the business relationship between collectors and traders.

The outcome from the study showed that there is an increased demand for NTFP products from Luang Namtha in the cross-border markets of China and Thailand, which has led to rapid depletion of some forest products (food, medicines, fibers, extracts and ornamentals products). Currently, farmers' initiatives to increase production of NTFPs thorough cultivation in gardens and increasing the plantation areas of NTFPs, as well as reducing soil erosion and bringing improving land productivity.

The export value of NTFPs in Luang Namtha to China and Thailand is increased but income from NTFPs marketing has not increased for traders. Although many NTFPs are of considerable commercial importance, Luang Namtha is losing much needed foreign exchange by allowing NTFPs to illegally pass borders unprocessed and undocumented. The prices remain low as products are mainly exported raw to neighboring countries as there are little initiatives to add value through quality improvement or processing.

There is an urgent need to establish partnerships with organizations in neighboring countries, to collect and disseminate NTFPs market system, and to inform individuals and organizations in these countries who deal with marketing development and market information about the situation in Luang Namtha province.

Key words: *NTFPs natural forest, Marketing, Trader network, Market Chain, Trader, Farmer*

I. Introduction

The challenge of addressing global poverty in a sustainable way is greater than ever. The well-being of more than half of the 1.2 billion people who live in poverty depends to a significant degree on the availability of non-timber forest products (NTFPs). Such products are used to meet daily subsistence needs, making a significant contribution to food security, and also provide a valuable source of building materials and medicines. In addition, trade in NTFPs often provides an important source of cash income for the rural poor. Populations in forested areas are increasingly being subjected to changes brought about by economic growth and are being presented with new opportunities to engage in trade (UNEP-WCMC, 2006).

NTFPs are essential for subsistence and economic activities all around the world, and among the earliest and most long-standing of internationally traded commodities. Vantomme, (2001) estimated that 80% of the population in the developing world uses NTFPs to meet some of their health and nutritional needs and the estimated total value of world trade in NTFPs is approximately US\$ 11 billion per year. There is increasing recognition of the important contribution that NTFPs provides to food security and financial well-being as several million households are dependent on these products for income. . In fact in some areas, the financial impact of NTFPs may be even greater than that of forestry. The market for NTFPs has grown by nearly 20% annually over the last several years, and the related herbal medicine market expanded at a rate of 13%-15% annually (Wilkinson, 2004). China and India are by far the largest producers in the world, processing and consuming more NTFPs than any other country in the world (FAO, 2002).

According to (NAFRI, 2009) a report by the National Agriculture and Forestry Research Institute (NAFRI), NTFPs represent a way of conserving forests, watersheds, and biological diversity because NTFPs

help communities meet their needs without jeopardizing forest ecosystems. In developed countries people may not depend directly on forest products for their daily needs, but rather see them as part of recreational activities. However, in a country like Laos, NTFPs provide protein, calories, materials for house construction and handicrafts, traditional medicines and cash income. Proceeds from selling these natural products may account for more than a third of village cash income across the country, and over half in forest rich areas. NTFPs are worth an estimated US\$320 per household per year in rural areas and NTFPs also play an important role in national development and the Laos produces NTFPs with a commercial value of \$7-\$8 million a year (Martin *et al.*, 2007).

In the past interest in NTFPs is based on the argument that in order to conserve the world's tropical forests we have to find new products, develop markets and improve marketing systems for NTFPs, so that the forests will become far too valuable to destroy (Byron and Ruiz-Perez, 1996). Predicting a widespread revival of interest in naturally occurring raw materials, including many NTFPs, they cautioned that the magnitude of such revival could only be speculated (Robbins and Matthews, 1974). They further suggested that a broader, long-term examination of the economic opportunities of NTFPs would be desirable. In the past, there is no dearth of research results on NTFPs. However, most studies in the NTFP sector have been descriptive, product oriented, generally not systematic, and focused on biological issues. There is a lack of actual production records for the majority of products and reliable data on the value of NTFPs used domestically do not exist (Silitonga, 1994).

Early report from studies on NTFPs marketing in Mexico and Bolivia by (UNEP-WCMC, 2006) focused on NTFPs commercialization factors which influenced success and how it can reduce poverty and provide women with greater self-confidence and improve their status within the household and the community. A study in Ghana by Ahenkan and Boon, (2010) focused on the processing and packaging of NTFPs in the rural settings of Ghana and their potential contribution towards poverty reduction, food security and livelihood improvement. In Nepal, a study on the collection and marketing of NTFPs described the role of *chepangs* in the marketing channel of those NTFPs and analyzed the household socio-economic characteristics that influence the collection and marketing of NTFPs (Luni Piya, *et al.* 2011). According to (Ahenkan and Boon, 2008) the knowledge of NTFPs marketing is limited and sparse, unlike timber marketing which has been extensively discussed in forestry literature. . This begs the question whether we should expect any common threads and trends. In terms of natural forest endowment, climate, history, population, forest policies and economic development, the countries of the region are just as heterogeneous as NTFPs themselves. Even within countries the conditions are so diverse that certain products are over-exploited in one area while neglected in others. It could be argued that NTFPs and their uses are so diverse that any trend and development can be predicted. However, there remains a need to help the rural poor overcome the various challenges that constrain successful NTFP commercialization, including securing a sustainable resource supply, accessing market information and developing ways of overcoming uneven barriers to market entry.

Interest in marketing of NTFPs in Lao PDR has increased over the past several years. This is because of the increased mobilization of NTFPs traders resulting from the improvement of transport infrastructure in the northern part of Lao PDR, which is of strategic importance as it links the region to China, Myanmar, Vietnam and Thailand. The improved road networks (road No.1; No.13 North and the newly constructed road No.3) act as important links of the region to the rapidly growing economies of neighboring countries. It is suggested that once relatively localized NTFPs resources have now become increasingly available to national and international markets. Such higher availability of NTFPs in these markets has increased its demand, and value, which now provides greater motivation for traders to access these trading opportunities. There has been several NTFPs marketing studies since 2005 in Lao PDR (Foppes and Souvanpheng, 2005) but no comprehensive study on NTFPs marketing in Luang Namtha has been done yet. A recent study was made by (Horst, *et al.*, 2011) mentioned partly about Cross-border NTFPs value chains Laos-China.

Despite this potential role of NTFPs, little is known about its marketing in Laos and also most NTFPs market systems operating in Laos are poorly developed and inefficient. Moreover, the rural people planting and harvesting of NTFPs in natural forests for commercial purposes cannot sell their NTFPs consistently or only sell it at a very low price. Their economic, social and environmental contributions remain largely undervalued and understudied. This is partly due to lack of accurate and comprehensive data on NTFPs and their value chain in Laos.

This paper examines the marketing of NTFPs, especially food products, medicines, fibers, extracts and ornamentals in Luang Namtha. The central aim of this study is to identify the market chain and trading network of NTFPs from the collector's resource bases to the final market, the trading relationships between collectors and traders and to identify opportunities for 'win win' solutions that benefit both farmers and traders.

II. Luang Namtha Province (study location)

Luang Namtha Province was selected as our study area (Fig. 1). Luang Namtha is situated in North Western part of Laos where the road R3 passes through. The Province borders with Yunnan (China) to the north,

Oudomxai Province to the east and southeast, Bokeo Province to the southwest, and Kaching State, Myanmar to the northwest and has the total land area of 9,325 km². 85 % of the land area is mountainous with the total forest cover of 59%. The province consists of 5 districts, 355 villages with the total population in 2012 of over 172,747 and 23 ethnic minority groups. It is estimated that the density of the population is 17 people per km². Due to its mountainous terrain, the weather can become quite cool, with temperatures generally not topping 30°C in the hot season March-April and dropping to as low as 0°C in December-January. During May-October followed by a cool dry period from November-February, the southwestern monsoon brings the annual rains and marks the beginning of the new agricultural cycle.

Luang Namtha's main industries are agriculture, wood processing, lignite and copper mining, handicraft production, transportation and tourism. In terms of employment, most people are engaged in agriculture. NTFPs are also key sources of income for the rural population. Luang Namtha was selected for this study because they constitute a major area for NTFPs in Laos and have common natural, social and economic characteristics that indicate high forest dependence. NTFPs play a critical role in rural livelihoods for consumption as well as income generation. NTFPs mostly occur in the main forests, especially the Nam Ha National Protected Area (Nam Ha NPA), covering nearly 30% of the land area of the province, the Nam Ha NPA is well known for a range of NTFPs marketing activities.

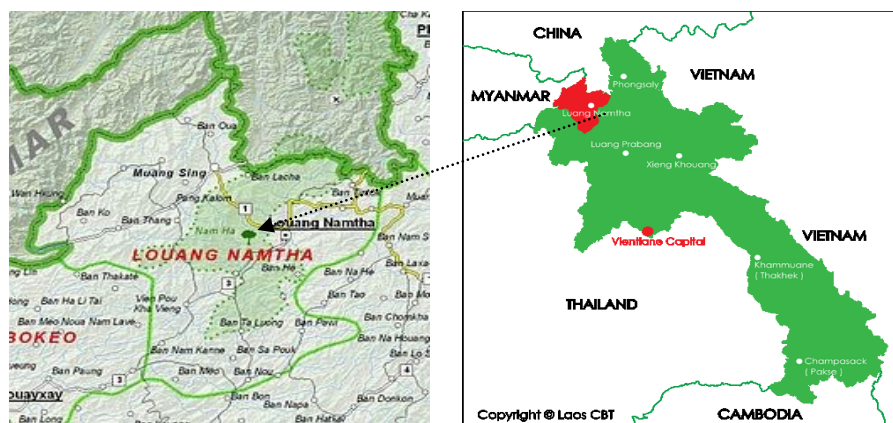


Figure 1. Map of Laos showing the Luang Namtha province (the study area)

III. Methods

To determine the locations for the trade activities of NTFPs traders, we used the participatory rural appraisal (PRA) methodology which is similar to previous livestock marketing studies by Bui Phan, *et al.*, (2005) and for studying the marketing chain of NTFPs we used the same methodology of agro-enterprise development process by (NAFRI and CIAT,2010). The first assignment of the study was to determine the main market nodes in the main city of Luang Namtha province. Initial information was provided by Provincial Agriculture and Forestry Office (PAFO) and District Agriculture and Forestry Office (DAFO) officers. As locations were identified, they were visited and interviews were conducted. Secondary information was obtained from the study of wildlife trade by IUCN, (2005).

The team used different forms to interview the traders buying and selling NTFPs at the village, district, province level and at the border areas. The team also used the interview form for village administration authority, household and state employee. The data and information collections are related to NTFPs trade, trading network of NTFPs traders and market chain.

A flexible mixture of structured, semi-structured and informal approaches was adopted, drawing on the initial survey information but also incorporating subsequent feedback. Prior to field surveys, the methodology was appraised with each of the team members in Luang Namtha. This ensured that the field teams were clear on the objectives and methodologies of this survey.

One week was spent in the border provinces of Laos and China (Luang Namtha province, Laos and Yunnan, China) and Laos and Thailand (Bokeo province, Laos and Chiang Rai province, Thailand). Bokeo is the smallest province in Laos, splitting off from Luang Namtha province in 1983; it was created for gathering secondary data and information at PAFO, Provincial Trade and Industry Office and International Check Point Office.

The survey team spent one month traveling around Luang Namtha province up to the border to China and traveling down from Luang Namtha to six villages (living within or adjacent to a Nam Ha NPA), and then back to Luang Namtha district and province. The team also visited Bokeo province in searching for the link between NTFPs traders from Luang Namtha and NTFPs traders from Bokeo province.

IV. Results and Discussion

4.1. Structure of trade

There seems to be four main locations that NTFPs have been gathered and traded in Luang Namtha province. Transportation access to these locations is one of the main factors that influence NTFPs trading activities. Types of transportation in the four locations have been geographically shaped by the main roads, especially the new road No.3. Luang Namtha District and Province are the main location where most NTFPs in the Nam Ha NPA and other villages in Luang Namtha District are transported before they reach the final markets. Some amount of NTFPs is sent directly to local markets, restaurants and Chinese pharmaceutical factory in Luang Namtha Province. It is found that large amount of NTFPs are sent to Luang Namtha and Bokeo by private vehicles. These NTFPs are then sent to Vientiane Municipality Laos by bus, to Yunnan Province, China by private vehicles and sent to Chiang Rai Province, Thailand by boat.

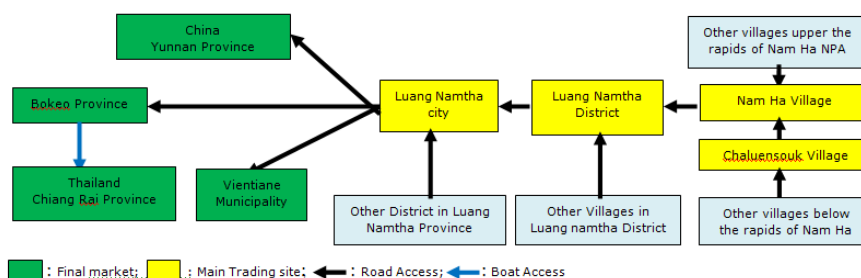


Figure 2. Location of NTFPs trade in Luang Namtha province

In the north from Luang Namtha to Yunnan, which borders Boten-Mohan (Laos-China) is a market for high-value NTFPs. From Luang Namtha to border is just 56 kilometers away from Luang Namtha to Boten by the newly road No.3, a trip which takes half an hour by car. There are several buses travelling to Boten daily, from the station in Luang Namtha. Luang Namtha is the main economic city on the province of Luang Namtha in Laos.

Southwest from Luang Namtha Province towards Bokeo Province is also a place where there is a market for high-value NTFPs. The north of Houai Xay District, Bokeo Province is 200 kilometers away from Luang Namtha by the road No.3. With the completion of this road in 2007, traveling time between Luang Namtha and Bokeo is just over 3 hours by car. There are several buses from Luang Namtha to Bokeo daily, and the trip takes about four to five hours. Cars travelling from Houai Xay in Laos across the border to Chiang Rai in Thailand will take more than one hour. The both bus and car stations are location in Houai Xay District which is called Houai Xay morning market bus and car station. Houai Xay is the border town with Thailand and regional economic center for the Bokeo province.

The primary trading sites appear to be Luang Namtha District, Nam Ha and Chaluensouk Village. NTFPs south of the rapid of Nam Ha NPA are sent to Chaluensouk Village by local traders before they are transported by road to Nam Ha Village. NTFPs from Ham Ha Village are then sent to Luang Namtha District by private vehicles before they are transported to Luang Namtha city. Table 1 shows the distance between the main locations by road. Distance and transportation mode are the vital factors that influence NTFPs trading activities.

Table 1. Distance among the main location

Luang Namtha city		
12 km	Luang Namtha District	
24 km	12 km	Nam Ha Village

4.2. Types of NTFPs traders

This study found that there are five types of NTFPs traders.. These are identified in this survey as follows:

- 1). Chinese enterprise traders: There are Chinese enterprises operating in Luang Namtha Province. These traders are those who have contacts with village administration authorities from whom they buy NTFPs product from at the village. These traders mainly export the products to China by private vehicles.
- 2). Large-scale traders: These are large-scale NTFPs traders who have a large trading network of villages living within or adjacent to a Nam Ha NPA in Luang Namtha District and other districts in Luang Namtha province. NTFPs collected by these traders are mainly sold to the local market, restaurants, Chinese Pharmaceutical factory in Luang Namtha Province and also sent to across the province, mainly Bokeo Province, and also to other countries like China and Thailand where prices offered are much higher. A Transportation of NTFPs product is mainly by car and / or by boats.

3). Village traders: Village NTFPs traders are those who have direct contact with local farmers/collectors of NTFPs in the villages in the Luang Namtha District. In this survey, 6 villages with presence of NTFPs traders were identified. Many of them are from the Nam Ha village. Most of these traders have trading relationships with the large-scale NTFPs traders. In addition, some village traders in Nam Ha village also create their pawn trading networks with farmers and farmer traders from other villages, such as Chaluernsouk Village. The range of distribution is limited as these traders ply their trade at the sidewalk to by cart, which is their main facilitator to access the NTFPs wild collectors.

4). Farmer traders: Local or farmer traders are those who harvesting and sell NTFPs by themselves. Most of these operate actively in Nam Yang Village; a village adjacent to Nam Ha NPA. These traders sell mainly medicinal plants directly to the Chinese pharmaceutical factory located in Luang Namtha District near the Nam Yang Village. We estimate that there are more than 30 medicinal plants farmer traders in Nam Yang Village of which 10 of them participated in this survey and were interviewed. It is found that most medicinal plants are sold fresh and while others are sold in the dried form. One village medicinal plant trader interviewed who bought medicinal plants from farmers in Nam Ha Village in Nam Ha Village was also a medicinal plant farmer as well. This traders' market however was limited to the Nam Ha NPA and adjacent vicinities where she sells her medicinal plants to large-scale NTFPs traders.

5). Unregistered traders: Unregistered NTFPs traders are those who buy NTFPs by chance from farmers in the countryside to accelerate harvesting of NTFPs by using simple and cheap processing techniques, which are often not sustainable. They operate mainly in Nam Ha village and the center of Luang Namtha district. Without paying tax, these traders operate freely using their motorbikes to buy NTFPs from villagers. They are able to offer slightly higher prices to villagers as they do not have capital investment to collectors. In this survey, two unregistered traders were found. Their final markets are in Luang Namtha province.

4.3. Trading network of NTFPs traders in Luang Namtha Province

Traders seem able to link together in one way or another. Figure 3 presents the trading network of NTFPs traders in Luang Namtha province. Chinese enterprises traders link their NTFPs trading network with large-scale traders, village traders and unregistered traders. There is also possible trade activity between the Chinese traders, large-scale traders and unregistered traders. This trade may be specific to only highly valuable products. The Chinese enterprises traders have set up large trading networks at villages within or adjacent in Nam Ha NPA and other district in Luang Namtha, and as a result, the flow of marketing NTFPs of Chinese enterprises traders appears to be effective.

The large-scale traders link their trade not only to the local market, restaurants and Chinese pharmaceutical factory in Luang Namtha District, but also with big traders from Bokeo Province. The trade between the large-scale traders and Luang Namtha traders are mainly in high valuable NTFPs such as forest food, medicinal plants and fibers which are more popular than extracts, ornamentals and animal products. NTFPs harvested within or adjacent to the Nam Ha NPA and other villages in Luang Namtha districts are linked to traders who offer appropriate prices for their NTFPs. Village and farmer traders often come daily to villages for buy NTFPs with farmers whereas unregistered traders usually ride their motorbikes to villages in the evening and ask everyone to sell NTFPs to them. They then bring their NTFPs to sell at the Luang Namtha market, the Chinese pharmaceutical factory or to large-scale traders and Chinese enterprises traders in Luang Namtha Province.

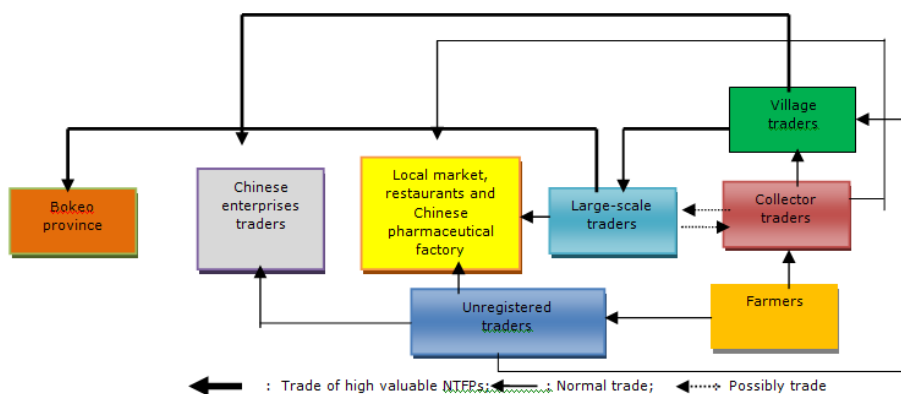


Figure 3. Trading network of NTFPs traders in Luang Namtha province

In the survey it was found that there is some degree of investment among large-scale traders to village traders, collector traders and farmers. Traders often invest their capital in buying mainly NTFPs and providing post-harvest services to some farmers. In return, the farmers sell their NTFPs to the loan traders at negotiated prices.

In contrast, large-scale traders sometimes provide cash for some village traders and collector traders for buying NTFPs for them. This loan system makes the flow of NTFPs trade smoothly and effectively.

4.4. Species and prices

In this study founded that about 15 NTFPs species were identified and highly targeted by collectors and traders due to high market demand. All species are considered top one of relatively high market value. The quality of NTFPs will determine the market price. Very good quality products (Grade A) of NTFPs are paid higher prices while good quality products (Grade B) are considered as medium and paid a lower price and the last quality standard (Grade C) is usually paid the lowest price. The names and prices of all 15 species with high market demand are shown here (see Table 2).

Table 2. NTFPs are high market preference species and prices

No.	Categories	Local name	Scientific name	prices
A	Forest food	1. Het Daeng	<i>Russula lepida</i>	It is a new and fast moving product from Luang Namtha province and exported to China, where it is valued as a special food. Prices range from US\$0.4 per kg for older mushrooms, to US\$3 per kg for young and fresh specimens, or US\$20-\$30 per kg when dried and exported to China.
		2. Nor Hok	<i>Tama bamboo shoots</i>	The local price fluctuates during the harvest season, dropping from US\$0.1-0.3 per kg (fresh) and US\$1.3-1.5 per kg (dried) and exported to China.
		3. Mak Tao	<i>Arenga westerhoutii</i>	It is fruit is exported to Thailand to make sweets. The price from farmers at about US\$0.3 per kg and the price at the Laos-Thailand border is US\$0.5-0.6 per kg.
B	Medicinal plants	4. Chandai	<i>Cinnabaris</i>	Exported to China. Currently villagers receive US\$0.3-0.6 per kg, but the export price is between US\$ 2-3 per kg. In China, the prized "dragon's blood" medicine sells for US\$ 50 per kg.
		5. Kheus Heam	<i>Berberin vine</i>	The medicinal factory in Luang Namtha and Vientiane buys Columbo wood to produce berberine and some Chinese enterprises also buy it. The price peaked at US\$ 0.8 per kg and the price for dried chipped stems is US\$ 1-3 per kg and for berberine chloride (dried powder) is US\$ 20 per kg.
		6. Mark Neng	<i>Tavoy cardamom</i>	Currently, the fresh fruit is selling at US\$0.3-3 per kg and the export price for dried <i>Tavoy cardamom</i> is relatively stable at about US\$ 8 per kg, mostly exported to China, and also to Thailand. The extract is selling for US\$ 18-20 per 100 g in China.
C	Fibers	7. Peak Bong	<i>Notaphoebe umbellifera</i>	It is the largest NTFP export from Luang Namtha province to China and Thailand. The price for unprocessed dry flowers is US\$ 0.2-0.5 per kg.
		8. Cane wai	<i>Rattan Cane</i>	Factories or middlemen buy cane from farmers for about US\$ 0.3-0.8 per kg, or US\$0.50-US\$9 for 5 m and it is exported to Thailand and China.
		9. Po Sa	<i>Paper mulberry</i>	The paper mulberry bark is exported to Thailand and China and the export price of grade (A) dry bark is US\$ 1-1.2 per kg, and grade (B) US\$ 0.80 per kg. Grade (C) bark, with a value of around US\$ 0.40 per kg, is used locally.
D	Extracts	10. Nyang Bong	<i>Persea kurzii</i>	The farm gate price in US\$0.4 per kg, and the Chinese import it at US\$ 1.8-2 per kg. <i>Persea kurzii</i> powder sell at US\$ 2.8-3 per kg, with the main markets are Taiwan and the Chinese provinces of Fujian, Guangdong, Xiamen and Guanxi.
		11. Peuank meuak	<i>Boehmeria malabarica</i>	Exported to China, Peuank meuak is one Luang Namtha most significant NTFP exports. Farmers can currently sell dried bark for US\$ 3-7 per kg. Most is shipped to incense factories in Guangdong, Guanxi and Fujian in China.
		12. Khi si	<i>Shorea dammar</i>	Export companies contact village traders and pay local collectors in advance. The price from farmers is US\$ 1-1.5 per kg. Exported mainly to China and Thailand. Thailand is second major producer of Khi si in the region.
E	Ornamentals	13. Nha bai lai	<i>Anoetochilus</i>	China has a high and growing demand for this plant. In the villages, 1 kg of fresh plants is worth US\$ 12-13 and while a dried plants fetches a price of about US\$70 per kg.
		14. Bai lai khao	<i>Paphiopedilum</i>	The price from farmers is US\$5-8 and the export price to Thailand and China is US\$10-15. Export to China is growing day by day.
		15. E. labdaeng	<i>Aerides crassifolia</i>	The price from local markets is US\$10-15- and the export price to Thailand and China is US\$30-45. There are signs that this genus is becoming rarer due to high demand from traders resulting in rampant harvesting.

Source of data: Trader's survey 2012

4.5. Typical NTFPs exported from Luang Namtha Province

Based on available Provincial Trade and Industry Office data, the Luang Namtha export value of raw NTFPs products increased from US\$ 788,648,000 in 2007 to US\$ 6,842,492 in 2011 with 65% of these NTFPs were exported to China (Table 3) China is the largest NTFPs importer from Luang Namtha province.

Table 3. Estimates of recorded Provincial Trade and Industry Office exports of NTFP from Luang Namtha province to China

Product	Scientific Name	Total value in US\$				
		2007	2008	2009	2010	2011
Het daeng	<i>Russula lepida</i>	4,262	16,753	72,584	1,765,863	4,793
Nor mai hok	<i>Tama bamboo shoots</i>	35,429	5,926	6,748	3,661	7,298
Chandai	<i>Cinnabaris</i>	93,351	249,434	76,378	92,907	61,012
Kheua haem	<i>Columbo wood</i>	643	93,351	48,182	8,695	6,200,591
Mak naeng	<i>Tavoy cardamom</i>	15,692	35,429	13,174	25,709	11,936
Dok khaem	<i>Tiger grass</i>	381,061	243,172	155,099	452,159	122,133
Rattan	<i>Calamus spp</i>	9,607	1,830	3,195	N.a	3,597
Po sa	<i>Paper mulberry</i>	N.a	N.a	242,190	123,897	67,142
Peuak bong	<i>Persea kurzii</i>	498	372	632	N.a	2,130
Peuank meuak	<i>Boehmeria malabarica</i>	143,892	18,636	467,375	536,438	356,800
Khi si	<i>Shorea siamensis</i>	4,733	77,392	N.a	14,462	N.a
Nha bai lai	<i>Anoectochilus</i>	99,351	N.a	192	2,743	3,672
Bai lai khao	<i>Paphiopedilum</i>	N.a	62,190	642	1,751	1,238
E.kou lab daeng	<i>Aerides crassifolia</i>	129	N.a	1,920	N.a	150
Total (US\$)		788,648	804,485	1,088,311	3,028,285	6,842,492

Source of data: Provincial Trade and Industry Office (2012)

N.a=Not available

Thailand is the second largest importer with about 35% because the demand for raw NTFPs is growing and the total import value increased from US\$ 309,213 in 2007 to US\$412,303 in 2011 (Table 4). The increase in the provincial trade and industry office is not known, but is expected to be much higher. An accurate account of harvest and export volumes is difficult because most produces are unregistered. Exports of several products have increased in the past few years, but with unstable and declining prices, the sustainability of these markets must be questioned. Although many NTFPs are of considerable commercial importance, Luang Namtha is losing much needed foreign earnings by allowing NTFPs to illegally pass borders unprocessed and undocumented. China is the dominant world trader in NTFPs, with Thailand also a major supplier to the world market. It may well be that part of the trade in these counties originates from Laos especially from Luang Namtha province.

Table 4. Estimates of recorded Provincial Trade and Industry Office exports of NTFP from Luang Namtha province to Thailand

Product	Scientific Name	Total value in US\$				
		2007	2008	2009	2010	2011
Mak tao	<i>Arenga westerhoutii</i>	125,208	130,638	134,847	142,053	148,026
Dok khaem	<i>Tiger grass</i>	176,156	235,190	93,816	257,109	262,084
Rattan cane	<i>Calamus spp</i>	144	3,480	N.a	2,612	1,738
Po sa	<i>Paper mulberry</i>	386	153	1,326	N.a	N.a
Peuak bong	<i>Persea kurzii</i>	479	N.a	N.a	238	163
Khi si	<i>Shorea siamensis</i>	3,296	3,862	N.a	994	N.a
Nha bai lai	<i>Anoectochilus</i>	1,372	421	158	N.a	292
Euangkoulabdaeng	<i>Aerides crassifolia</i>	2,172	940	1,047	862	N.a
Total (US\$)		309,213	374,684	231,194	403,868	412,303

Source of data: Provincial Trade and Industry Office (2012)

N.a=Not available

4.6. NTFPs Market Chains in Luang Namtha Province

The NTFPs market chain in Luang Namtha province begins with the farmers (collectors) in the villages and then moves towards the end consumers. The chain includes local collectors, who pick the product up from the forest and sells it onto district or provincial traders includes (village trader, large-scale traders and Chinese enterprises trader). These larger traders might dry, grade or repack a product before they ship it to processors. The processors include Chinese pharmaceutical factory, local market and restaurants who can improve the raw products before selling them onto consumers, who might buy through fresh markets, and export it. Together these steps form what is known as the NTFPs market chain. At each step along this chain 'market players perform functions of buying, selling, transporting and adding value. It is important to recognize the functions these players perform and their importance to the overall chain because the action of each player along the chain can affect all others (see Figure 4).

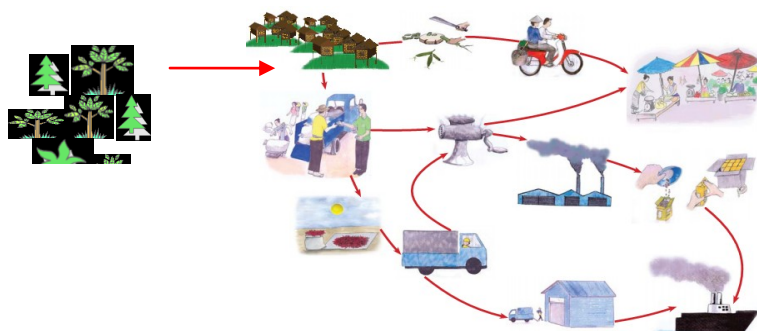


Figure 4. NTFPs Market Chains in Luang Namtha Province

4.7. Economic factors influencing NTFPs trading activities

NTFPs trade in Luang Namtha province is not only shaped by geographical and ecological factors, but also influenced by economic factors such as capital investment and market information access. To become an effective NTFPs trader, one has to have a reliable means of transport to buy NTFPs at the source. In addition, availability of storage and packaging facilities would assist traders in keeping NTFPs fresh and dry, after buying NTFPs from collectors. The study shows that a village trader spends about US\$ 5-15 per day on gasoline, with costs varying considerably depending on the distance traveled. For a daily volume of 50-100 kg of NTFPs, traders will have to spend at least US\$200-300 on the purchase of the material alone. In some case where the trader has a close relationship with collectors, the trader sometimes gets NTFPs from collectors on credit. Table 1 lists the trader’s NTFPs marketing inventory. Operating equipments include weighing scale, storage bags or sacks, harvesting equipment and vehicles for transport of NTFPs to final markets. It can be seen that large-scale and unregistered traders have access to the final market using their private vehicles. This means that they have access to information related to NTFPs sale and market demand. In addition, profit is much higher when NTFPs are marketed in city markets. Such access to the final market has implications for local village traders and collectors. Due to limited access to the market, they often find much low prices offered by large-scale traders. Table 5 shows trader’s NTFPs marketing inventories that facilitate their trade in tightening their trading networks with village traders and collectors is definitely high.

Table 5. Trader’s NTFP marketing inventory

Type of trader	Operating equipments				
	Weighing Scale	Storage Bag /Sack	NTFP harvesting equipment	Vehicle to final market	Capital investment
Chinese enterprises traders	Y	Y	N	Enterprises car	H
Large-scale traders	Y	Y	N	Private vehicle	H
Village traders	Y	Y	N	Private vehicle	M
Farmer traders	Y	Y	Y	Motorbike	L
Unregistered traders	Y	Y	N	Motorbike	M

Source of data: trader’s survey 2012

Y= Yes; N=No

H=High; M=Medium; L=Low

US\$1=8,000 Kip in 2011

4.8. The Major Problems of NTFPs Marketing in Luang Namtha

The market of NTFPs is not consistent. The price of products varies according to season within one year (Asia Network for Sustainable Agriculture and Bioresources, 2002). So due to the high price fluctuation in the NTFPs market, farmers are not ready to carry out planting even though it may be more profitable than cereal crops. NTFPs are not like cereal crops that can be consumed at home if not sold. In the study areas, NTFPs marketing is a challenging business based on the results of analysis. The major problems identified in the two study villages (see Table 6) shows that most of the respondents (35.3% in Nam Ha and 36.5% in Chaluensouk village) mention low productivity, low quality, lack of technology, processing, unstable markets, and low prices as being the make reason for low income. About 13.1% of respondents in Nam Ha and 14.8% in Chaluensouk village stated that the lack access to market information resulted in a lack of data on product quality, price, and as such usually low prices. Another problem faced is the lack of ready buyers as very few companies are ready to invest in product processing for NamHa and Chaluensouk villagers. Due to the lack of coordination between stakeholders for NamHa and Chaluensouk village were cited by 16.1% and 11.3% of respondents respectively as an issue. An interesting difference observed is that while 21.4% of the respondents from NamHa cited lack of support from local authorities in improving market accessibility, only 8.7% of the respondents in Chaluensouk village found this to be a problem.

Table 6. Major problems of NTFP marketing

Problems	Nan Ha		Chaluensouk	
	N	%	N	%
Low productivity, low quality, lack of technology, processing, unstable markets, low prices	10	35.3	10	36.5
Lack of data on product quality, price, methods of data collection	4	13.1	5	14.8
Very few companies are ready to invest in product processing	5	14.1	6	28.7
Lack of coordination between stakeholders	5	16.1	5	11.3
District officers lack capacity to improve market access	6	21.4	4	8.7
Total	30	100	30	100

Source: Household Survey 2012

V. Socio-economic benefits

Growing and harvesting NTFP increases farmers' income, and broadens their plant cultivation skills base, empowering them with new abilities. Growing some NTFP species such as mushrooms, cardamom, tiger grass, bamboo, paper mulberry, rattan, eaglewood, Peuank meuak, posa, Nha bai lai, and Euangkoulabdaeng can increase the areas of NTFP plantation, helping to reduce soil erosion and bringing back unproductive land into productivity. Growing NTFP builds upon rural farmers own inherent plant-cultivation abilities and hence is easily adopted, and it is extremely environmentally friendly with organic inputs, such as fertilizer are better for NTFP growth than inorganic ones.

In Luang Namtha province the Watershed Management Project NTFP nursery is owned and managed by the community village and private enterprises. It enhances the livelihoods of poor, rural farmers by building upon their own inherent plant cultivation skills. It empowers each worker with a voice and a role in its running. It also promotes wider environmental protection, especially if established on degraded land. Much NTFP species can be intercropped with other food plants and industry plant as rubber tree, and so it also helps to improve food security. Community NTFP nurseries are the starting point for development of productive industries in areas in which either there is little NTFP, or the NTFP that exists is poorly managed and utilized. Nurseries can supply not only the communities' needs but those of others-including government forestry departments and commercial growers.

VI. Conclusion and recommendation

NTFPs marketing system in Luang Namtha is established at Nam Ha and Chaluensouk villages and also adjacent to Nam Ha NPA. Five types of NTFP traders were identified in this survey. It is noticed that high-end market for high-value of NTFP are in Luang Namtha and Bokeo province where NTFP are then channeled to other big cities of Laos and sent to other countries (China and Thailand). About 15 NTFP species found in this survey to be commercially viable are Ornamentals, Extracts, Fibres, Medicinal plants, and Forest food being the most common high-value NTFP species in Luang Namtha.

In the past NTFPs is just for human consumption. Currently, we found that NTFP in the local market and the domestic processing industries also have more positive impacts on its markets as it provides job opportunities for local people because since 1989 Government of Lao PDR has allowed only the exportation rattan in the form of half processed and finished products. The marketing of NTFPs is an important activity and needs to be taken into consideration before harvesting and exporting to the international market is Lao PDR as a landlocked country and has some disadvantages over its neighboring countries when trying to access international markets. There are no direct exports from Laos to developed countries and other international markets because all goods would have to be transshipped by road through Thailand and China.

Access to the outside market through improvement of road and infrastructure would definitely accelerate the trade of these natural resources. Local people are likely to increase their working effort to search for natural products that they could sell. Consequently, sustainable use of the natural resources becomes a great challenge for the government and local communities.

It is necessary to clearly understand the trading system of these resources. This is one of the main factors that have a major impact on the level of resource utilization. The study of trade and interaction among different stakeholders involving in trading activities of the natural resources provide valuable data and information for the management planning of these resources. The presence of species in trade and the level of exploitation in the marketing study could be one of main indicators for monitoring environmental and natural resources.

Lao traders and producers badly need more information on these cross-border markets. For China, the main gate to Laos is through Yunnan Province and Thailand is Chiang Rai Province. Strategies for improving NTFP-based province would be very interested to develop initiatives for marketing research on cross-border marketing chains for province products, in collaboration with Chinese and Thai marketing research organizations besides on analysis marketing chain, opportunities of marketing and NTFP product seasonality.

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