

Macroeconomic Policy Support for Socio-Economic Development in the Lao PDR

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Small and Medium-sized Enterprises (SME)

Promotion WG

1. Preface: Report of the SME Working Group

Shigeru MATSUSHIMA

Chareune INTHAVY

Economic development in Laos is only possible in conjunction with the development of industries that compose the Lao economy. Additionally, the development of each of the industries is only possible in conjunction with the development of companies, especially small and medium enterprises, composing those industries. These companies are established and developed primarily by entrepreneurs. Therefore, in order to plan a scenario for the development of the Lao economy, it is necessary to examine what kind of obstacles entrepreneurs, companies, and industries are facing, how they are trying to overcome those obstacles, and what type of policies are effective for supporting their efforts. Based on this standpoint, the Lao side members and Japan side members of the SME Working Group shared and cooperated in the tasks of conducting interviews with companies and carrying out questionnaire surveys and industry-specific surveys.

Professors Ohno and Matsushima played the central role in interviewing ninety companies in Vientiane, Luangphabang, and Savannakhet. In Chapter 1, Professor Matsushima analyzes the various routes by which entrepreneurs were born in Laos in reference to those interviews. His report comes to the principal conclusion that “entrepreneurs are born from their experiences as *talat* merchants or craftsmen in small local factories. To develop their companies thereafter, entrepreneurs themselves are required to devote steady efforts for the ‘discovery of the market’ and the ‘mobilization of technology’ so that they may respond appropriately to changes in the business environment.” A part of the interviews was conducted by a joint team of Japan and Lao side members. After the interviews, they discussed possible policies that would prove effective in reference to specific cases. The interview surveys and the results of discussions regarding those interviews are reflected in the policy proposals of each chapter, as presented below.

Questionnaire surveys were carried out on companies using a questionnaire form designed mainly by Professor Ohno. In Chapter 2, Professor Ohno analyzes the results of 173 questionnaire samples collected in Vientiane city. He emphasizes the significance of traditional *kha patcham* relationships and the importance of achieving a stable macro economy to realize those relationships, stating that “micro-entrepreneurs are suffering from instability of business circumstances and capital shortage,” but “they cope with these difficulties by establishing client relationships with both suppliers and customers.”

In Chapter 3, Professor Ninomiya presents her analysis that “the distribution system basically serves as an infrastructure for the marketing activities of uncompetitive domestic manufacturers of consumable goods, but the present distribution system in Laos is not capable of responding to diverse consumer demands,” based on interviews with distribution companies and his observations of small retail businesses in the *talat*. She then stresses the importance of raising the overall level of domestic retail businesses in Laos and of developing promising businessmen in order to give domestic manufacturers

sufficient competitive power against the inflow of consumable goods from foreign countries.

Industry-specific surveys were conducted by the Lao side. The members divided into three teams—wood processing industry team, agro food processing industry team, and silk and cotton industry team—and each conducted on-site surveys in regions that are focal areas of the respective industry. Chapter 4 analyzes the on-site survey results of the wood processing industry and presents policy proposals based on the analysis, and Chapters 5 and 6, the agro food processing industry and the silk and cotton industry, respectively. These chapters should be referred to for details, but here I would like to cite the following three points. Firstly, the efforts of administrative officers in making an on-site visit to observe the actual condition of an industry and discussing necessary policies based on their findings are extremely important procedures for formulating realistic policies. It is highly significant that this was carried out for three major industries as part of the recent activities of the SME Working Group. Secondly, these chapters call attention to the need for the government and industries to share information. They also describe the importance of strengthening the functions of the chamber of commerce and industry as a measure to promote information-sharing. The third point specified in these chapters is the necessity of coordinating the policies of different government ministries and ensuring transparency of the policy-making process. For example, as mentioned in Chapter 4, the business activities of a single industry involve a number of policies created by different ministries. Without coordinating those policies, the effort of a single ministry to promote the industry will only prove ineffective. A clear example of this was obtained from interviews of the recent on-site surveys, and is expected to serve as a significant reference in examining policy-making frameworks in the future.

Chapter 7 presents Mr. Sengphachanh's regional study on SME development in Savannakhet province. Mr. Sengphachanh provides an analysis based on statistical surveys and the results of 109 questionnaire samples collected from the central area of Savannakhet province. According to his analysis, various SMEs are also developing in Savannakhet province based on entrepreneurs' previous experiences in commercial business or small local factories, but it is clear that the difficulty in acquiring technology and the shortage of working capital are posing obstacles to their future development.

During the two years of this project, the motto of the SME Working Group was "First, let's see the site. Then, let's discuss the issue based on fact." The new industry encouragement policy of modern Japan was also formulated based on a survey of the actual conditions of industries throughout Japan. The survey was conducted by Masana Maeda, a high-ranking official of the Ministry of Agriculture and Commerce, and fifty of his subordinates. Our SME Working Group set out to follow Maeda's example. Directly transplanting the details of a policy formulated under completely different circumstances is apt to cause vast problems without a single benefit, but we believed that it is possible to adopt the policy-making concept. The success or failure of our efforts rests on whether SME policies in Laos are formulated and implemented in accordance to the reality of Laos. It is likely that SMEs, particularly domestic resource based SMEs, supporting industries and handicraft industry could generate employment opportunity through inducement mechanism and contribute to poverty alleviation. We hope that the ideas presented in this report will contribute to the development of small and medium enterprises in Laos and ultimately to the development of the Lao economy.

2. Entrepreneurship in Laos

Shigeru MATSUSHIMA

Beginning in March 2003, our group conducted five separate field studies in Vientiane, Savannakhet, and Luangprabang, and interviewed as many as 90 Laotian entrepreneurs. As a result of those interviews, we found that many entrepreneurs have already begun to appear in Laos although the country has only recently begun to seek avenues toward a market economy. Based on these and other information acquired through our field studies, this paper will first discuss the importance of creating a diversified industrial structure in order to develop the Lao economy. Secondly, it will examine the significance of entrepreneurship as the main factor in achieving industrial diversification, and also present several case studies of how people become and develop into entrepreneurs. The third objective of this paper is to discuss policies for promoting entrepreneurship.

1. Industrial Diversification—the Source of “Robustness” of the Lao Economy

According to governmental statistics, as of 2000, Laos had a population of 5.218 million, a GDP of US\$1.7038 billion, and per capita GDP of US\$326.5. Although its GDP continued to grow about 6% each year since overcoming the Asian currency crisis of 1997, it is still at an extremely low level. The agriculture and forestry sector comprises the largest sector in the industrial structure of Laos. It is centered on rice production and wood processing thanks to the country’s once abundant forestry resources, and accounts for 80% of the working population and 50% of GDP. However, its share in GDP is steadily decreasing. In 1985, it corresponded to 70% of GDP, but dropped to 60% in 1990 and 50% in 2000. In contrast to the weakening agriculture and forestry sector, the mining and manufacturing sector (from 1988, the sewing industry has been showing remarkable growth) and the service sector (including the construction industry and the hotel and restaurant industry) are showing positive growth in recent years. In 2000, they each accounted for approximately 25% of GDP.

In terms of trade structure, the difference between the total export of US\$319.5 million (2001) and the total import of US\$510.3 million (2001) generated a large trade deficit of US\$190.8 million for the year, an amount exceeding 10% of GDP. Major export items are electricity (US\$106.4 million), sewn products (US\$98.7 million), wood and wood products (US\$78.6 million), and coffee (US\$14.9 million). Major import items include household goods (US\$269.9 million), raw materials for sewn products (US\$65.5 million), construction materials and electric appliances (US\$56.1 million), fuel (US\$38.0 million), automobiles (US\$36.0 million), and machines and instruments (US\$30.5 million).

The limited data presented above indicates that the Lao economy is beginning to industrialize, albeit at an extremely slow pace. Yet, this “industrialization” is occurring in only a couple of industries, namely the electricity industry which exports electricity to Thailand, and the sewing industry, which mainly

imports textiles from Thailand and exports sewn products to Europe in the form of consignment manufacturing trade. The fact that the majority of industrial products for domestic consumption are imported either means the manufacturing industries for these products do not yet exist, or even if they do exist, they are not sufficiently developed to meet domestic demand.

The Lao economy is certainly not robust. First of all, the export of electricity is dependent on Thailand's demand for electricity. If electricity consumption in Thailand drops for some reason, Laos would be forced to reduce its export of electricity to Thailand and its national finance would be profoundly affected. This is precisely what occurred when Thailand was beset by an economic crisis in 1997. Secondly, it should be remembered that the growth of the sewing industry, which adopted a consignment manufacturing trade system, was made possible due to the preferential tariffs conferred to Lao products by the European countries. Whether or not the sewing industry in Laos could have acquired competitive power without the preferential tariffs is a moot point. Thirdly, even if Laos' national income were able to increase in spite of the inadequate development of the manufacturing industries for domestic consumption goods, the resultant increase in the import of consumption goods and industrial goods would have led to a constant expansion of the trade deficit, which would have greatly hindered economic development in Laos.

Now, assuming Laos can overcome the above problems and its economy can achieve robustness¹, let us examine possible scenarios for its economic development. As the absolute amount of corporate economic activities increases, the more the industrial structure needs to diversify. In order to achieve industrial diversification, a variety of export industries must first develop in addition to the electricity and sewing industries. Preferably, these industries should have as large an "inducement effect" as possible. In other words, they should be industries that use raw materials that can be acquired domestically, or industries with the potential for creating various added values within the country. Secondly, it is necessary to generate a wide range of manufacturing industries—import substitution industries—of industrial products such as household goods, construction materials and electrical appliances, and machinery and instruments, that are consumed domestically. In this case, it would be inappropriate to address import substitution through import protection measures, because Laos is already committed to liberalizing trade under the AFTA framework. Rather, import substitution should be pursued by reinforcing the competitiveness of Lao companies. They would at least be able to manufacture products in locations near the consuming market, and naturally, the greater the transportation cost² of those products, the more advantageous they would be. In this respect, if we assume that trade liberalization in the ASEAN region will continue to advance, there is a possibility for import substitution industries to become export industries to surrounding regions.

¹ In this paper, "robustness" is used to refer to an economy that can maintain stability regardless of external impacts.

² In the broad sense of the word including deposit cost and delivery cost.

As mentioned above, an “inducement mechanism”³ must function in order for industrial diversification to occur. In other words, a backward linkage effect and a forward linkage effect must work simultaneously. A backward linkage effect occurs when “all economic activities other than those of primary industries induce efforts to supply the input necessary for their own activities through domestic production.” A forward linkage effect takes place when “all economic activities, excluding those of industries whose primary objective is to satisfy final demand, induce efforts to utilize their output as the input for different and new economic activities.” Let us take the cement industry, for example. If, after the cement industry is created, an industry that manufactures paper bags for packaging the cement is established, then it can be said that the cement industry had a backward linkage effect. Additionally, if a concrete block manufacturing industry that uses the above cement is generated, then the cement industry can also be said to have produced a forward linkage effect.

To solidify industrial diversification, the backward linkage effects of multiple industries must join together. This is because import substitution by a single final consumer goods industry in a developing country such as Laos frequently entails the import of intermediate goods as raw material, because the country’s intermediate goods industry is usually still undeveloped. However, if more than one final consumer goods industry has needs for the same intermediate goods, then that intermediate goods industry can at least achieve the minimum economic scale and induce import substitution. The inducement of such intermediate goods industries can lead to the creation of a tight network of domestic transactions among industries and companies, and ultimately develop the economy.

2. Entrepreneurship—Engine of Industrial Diversification

The above-described “inducement mechanism” that functions to bring about industrial diversification is essentially driven by entrepreneurs. The activities of entrepreneurs, or entrepreneurship, are indeed the engine of industrial diversification.

Entrepreneurs must first discover “what kinds of products are sought by consumers.” Let us call this “discovery of the market.” “What kinds of products” include the judgment of “how to offer them” in terms of cost, sales channels, and services. In the case of import substitution, the product itself is a basic given, so “how to offer the product” is the most important issue. Secondly, in order to realize the product or service, it is necessary to decide “what technologies should be used and how to combine them.” Let us call this “mobilization of technology.” Technology as used in this context refers not only to production technology, but also to distribution technology. Finally, the decision of “how to combine the technologies” is essentially the decision of whether to provide those technologies in-house, or whether to outsource them. The entrepreneurs’ “discovery of the market” and “mobilization of technology” drives the “inducement mechanism” and ultimately generates industrial diversification.

³ This point was emphasized by A.O. Hirschman [1958]. The definitions of backward linkage effect and forward linkage effect are those of A.O. Hirschman [1958].

Let us examine the paths by which entrepreneurs are born, and how they start up and develop new businesses in Laos. We analyzed the results of our field studies from the viewpoint of two keywords, “discovery of the market” and “mobilization of technology,” and derived the following four types of entrepreneurs.

- (1) “Trader/manufacturer” type
- (2) “Spinout from small workshop” type
- (3) “Entrepreneurial government factory” type
- (4) “Adaptation to overseas market” type

In the sections below, we will introduce specific cases of each entrepreneur type and present our views.

(1) “Trader/manufacturer” type

The entrepreneur type we came across most frequently in our observations was the type who started up a manufacturing industry after accumulating business experience as a trader. There are two types of traders: those who have a shop in a *talat* (market) and sell to consumers at retail, and those who are commissioned by a *talat* retailer to procure and deliver products from Thailand. The former requires considerable initial investment for costs needed to rent space in the *talat* and for stocking an assortment of merchandise. However, in this case, the trader can gain the experience of calculating how to recover those costs through anticipated earnings. The process of considering what types of merchandise would attract consumers also forms a part of the experience of “discovering the market.” Both experiences provide effective training for starting a manufacturing industry. In this sense, it can be said that the *talat* serves as an incubator for would-be entrepreneurs. In the latter case, no initial investment is needed as in the former, but a trader could acquire a broader experience in the mechanics of matching demand in Laos with supplies from Thailand. This also provides a good basis for starting a manufacturing industry. It is certainly understandable why many people become manufacturers after accumulating knowledge in the capacity of either one of these two types of traders. [Case 1] introduced below is about the former, and [Case 2], about the latter.

[Case 1] Mr. Souphat Souttivong’s case

- Started as a retail trader of garments, and became an importer and seller of palm oil and a manufacturer of plastic bottles

Mr. Souphat Souttivong is president of Sengsavang Food & Plastic Co., Ltd., a company in Vientiane that imports, refines, and sells palm oil and manufactures plastic bottles. At present, he employs 55 factory workers and 13 office workers, comprising a total of 68 employees. The ratio of the company’s sales from palm oil (wholesale) and from plastic bottles is 60:40.

(Personal history)

Mr. Souphat was born in 1962 in Oudomxay province in northern Laos. When he was 13, he and his

family moved to Luangprabang, the central city in northern Laos, where he later graduated from junior high school. In 1978, he and his family again moved, this time to Vientiane. In Vientiane, (1) he spent two years studying electrical engineering at a technical school established through the cooperation of Laos and Germany.

After graduating from the technical school, Mr. Souphat married, and in 1981 he began a garment retail business in Talat Thong Khan Kham. His parents as well as his wife's parents were all engaged in garment retailing, so his experiences in helping them had prompted him to start his own retail business. Mr. Souphat basically acquired the necessary capital for his business from his family, but he also added his own savings. Thereafter, his business steadily expanded.

In 1991, Mr. Souphat switched from garment retailing to becoming a money exchanger within Talat Thong Khan Kham. However, in 1995, a new governmental currency exchange system prohibited private money exchanging businesses, so he quit his business and became an independent consultant to several companies for some while.

In 1997, Mr. Souphat started another business importing milk, sugar, candy, and other food items. He imported these items mainly from Thailand. Before long, (2) the government announced a policy of promoting import substitution, and Mr. Souphat began to think about the types of investments that could promote import substitution and match the needs of Lao companies at the same time. As a result, in 1998, Mr. Souphat came up with the idea of importing palm oil by the bulk and selling it to the domestic market in smaller packages. To study the feasibility of his potential business, he visited plants in Malaysia, the production region of palm oil. In January 1999, he applied to the government for permission to construct a factory, and set out to realize his new business.

(Factory construction)

Mr. Souphat's factory was completed in 2000. It began as a factory for mainly filtering palm oil, the basic ingredient imported from Malaysia, and bottling it as cooking oil. The major facilities initially installed in 2000 included a plastic bottle production equipment (blowing machine), ten tanks for storing the imported palm oil, a line of printing machines to print labels for the bottles, an automated bottling device, and two filtering machines. (3) At this time, plastic bottles did not need to be produced in great quantities, so instead of manufacturing them from resin paste, roughly-shaped, semifinished products were imported from Thailand and finished using the blowing machine.

Thereafter, the company purchased another blowing machine (made in China) in 2001 and two more same machines (made in China) in 2002 in an attempt to launch a full-scale external marketing business for plastic bottles. Toward this end, the company also purchased two machines (secondhand Japan-made machines imported from Thailand) for the preliminary molding of resin paste, and created an integrated production system that began from resin molding.

The capital invested in the machinery and equipment for the factory up to this point was entirely supplied by Mr. Souphat's family. The operating capital for purchasing raw materials and others were borrowed from the bank.

Because it took time to have plastic bottles manufactured in Thailand, the company decided to install its own production line. In 2000, the company only manufactured plastic bottles for its palm oil, but to maximize capacity, it began manufacturing plastic mineral water bottles for Lao Beer. In 2002, the company also began manufacturing plastic bottles for other brands of mineral water and orange juice.

The mold for the blowing machine is designed by the company and made to order by a company in Bangkok. Resin, the raw material for plastic, is imported via a trading firm in Thailand.

(Palm oil marketing business)

The company holds a 90% share in the market for palm oil in Vientiane. Mr. Souphat gives two reasons for this large share. The first reason is because the company has a price advantage. It offers palm oil at a price 20% lower than palm oil imported from Thailand. The import tariff for goods imported from Thailand is 10%, but even deducting this amount, the company's palm oil has a competitive edge. This price advantage is derived from the absence of transportation cost, the low cost of raw materials because they are imported from Malaysia by the bulk, the low cost of labor, and the low utility costs of water and electricity. (4) Mr. Souphat's immediate concern is to penetrate the domestic market even deeper, but he is also considering the possibility of exporting his product to the surrounding countries in the future. The second reason for the large market share is because consumers tend to favor domestic products as long they display good quality. If Lao products are considered poor in quality, then consumers would favor Thai products, but Mr. Souphat strongly believes that if opinions of the quality of Lao products improve, domestic products have equal competitive power as Thai products.

There are two distribution channels for palm oil: one is within Vientiane, and the other encompasses all other regions. (5) In Vientiane, the company conducts business with about 200 retail stores. Three sales representatives visit and take orders from client retail stores every day from Monday to Saturday. The lot size of orders differs according to the retail store, ranging from a small lot of only one case (twelve bottles) to large orders of 100 to 200 cases. The ordered merchandise is delivered directly from the factory to the retail store by company truck. For other regions, sales agents are stationed in Pakse, Savannakhet, Khammuane, Vientiane province, Boikhamxay, and Luangprabang. These agents have their own shops where they sell palm oil to consumers at retail, but they also sell cans and bottles of palm oil by wholesale to other retail stores in the region. In this respect, they are both wholesaler and retailer at the same time.

(Plastic bottle marketing business)

The company's plastic bottles are primarily sold to Lao Beer. The company sells 200,000 bottles per month of mineral water bottles (500 ml) branded with the tiger head symbol. It also sells 50,000 bottles per month of another type of mineral water bottle (1.5 L). The bottles are delivered from the factory to the Lao Beer plant situated about 15 kilometers away twice daily by company truck. The company owns three trucks.

The second destination is an orange juice factory. The company sells 40,000 bottles per month to this factory.

Thirdly, the bottles are sold to a company that produces drinking water in Luangprabang. It makes a delivery of 130,000 bottles once in two months.

The company has also exported bottles to Vietnam in response to an order received through a trading firm. The first order was for 100,000 bottles. They were delivered directly to the water bottling plant in Vietnam. The company is still awaiting the second order, but going forward, it has hopes of selling plastic bottles to an even wider clientele.

[Observations]

Mr. Souphat Souttivong studied electrical engineering at a technical school, as mentioned in underlined portion (1), and this experience proved invaluable throughout the course of his business development. For instance, in 1998 Mr. Souphat came up with the idea of refining and selling palm oil, and the following year he decided to construct a factory for that business. However, he couldn't have done so if he had no technical background in the refining technology of palm oil. Also, it was precisely because of his technical background that he was able to make the decision of installing a plastic molding machine to expand his business into the area of plastic bottle production as early as 2000.

In reference to underlined portion (2), it is extremely noteworthy that when Mr. Souphat decided to start a new business he clearly recognized the social significance of starting an import substitution business and he was well aware that his business would correspond to the governmental policy on import substitution. This case example shows that in Laos and other developing countries, governmental policies can influence entrepreneurs' "discovery of the market."

Underlined portion (3) clarifies how the joint demand for plastic bottles from Lao Beer and the orange juice factory introduced in [Case 2] induced the company to create the preliminary shape of bottles from resin paste, an intermediate material.

In underlined portion (4), it is interesting to note that the entrepreneur himself recognized the fact that a competitive import substitution industry has the potential to become an export industry with ties to neighboring countries.

Underlined portion (5) describes the company's customer-oriented distribution and marketing system, in which three sales representatives make frequent visits to their clients to receive orders, and the company delivers the orders, however small or large, directly by company truck. The company was able to boost its competitiveness owing to this system. Instead of simply producing good-quality products, Mr. Souphat was able to go a step further to create a customer-oriented distribution and marketing system primarily because he had acquired ten years' worth of experience working in the garment retail business in competition with other talat retailers in the same line of business.

[Case 2] Mrs. Syphetda Phouthavon's case

—Started as a wholesaler of household goods, became a producer of orange juice, and has plans of also becoming a noodle maker

In Vientiane, Mrs. Syphetda Phouthavon manages an orange juice factory and a company that imports shampoo, noodles, and other household goods from Thailand. She is also a female entrepreneur who jointly established an export company of wood and wood products with a Vietnamese-Laotian friend in Attopeu province located in southern Laos bordering Vietnam and Cambodia.

(Personal history)

Mrs. Syphetda was born in 1963 in Vientiane. Her parents worked as wholesale traders. In 1984 Mrs. Syphetda also became a small-scale wholesaler of household goods. It was a small business in which she sold products imported from Thailand to retailers in the talat, but it showed steady growth. In 1996, she and her family created a small orange juice factory with the money earned from the wholesale business. They were able to cover all initial expenses by themselves. (1) Mrs. Syphetda decided to start an orange juice factory because orange juice was among the products she had been importing from Thailand when she used to be a wholesale trader, and she knew that she could do a lucrative business selling it.

(Orange juice production business)

The principle materials are orange juice concentrates and cans. Today, plastic bottles are used instead of cans, and (2) the plastic bottles are purchased from Sengsavang Food & Plastic Production Co., Ltd. introduced in [Case 1]. In the beginning, the business only consisted of herself, her husband, and six workers. Now, she employs 12 to 15 workers during the rainy season and 30 to 35 workers during the dry season, adjusting the number of workers each day in accordance with the amount of work. This is possible because there are always plenty of workers in the area, none of whom are regular workers.

The amount of sales differs between the rainy season and dry season. In the dry season, it is double that of the rainy season. Annual net income is approximately 10 million kip. (3) The net income is small because of the high cost of the orange juice concentrate, which is the primary ingredient, and also because a competitor appeared this year, where until the previous year she had a monopoly in the market.

Among the materials needed to produce juice orange, the concentrate costs the most. At present, Mrs. Syphetda imports the concentrate from Thailand on a cash basis, but she has just placed an order with a company in Hong Kong and hopes to import from Hong Kong in the future. Orange juice concentrate from Hong Kong costs the same as that from Thailand, but Hong Kong produces higher quality concentrates.

The orange juice is marketed in two routes. The first route is to a wholesale dealer. A box of orange juice contains 96 bottles, and a regular lot is about 50 to 100 boxes per order. Mrs. Syphetda does business with twenty *kharpatcham* (customers). Of these, ten are wholesale dealers in Vientiane, and

the rest are wholesale dealers in other provinces. For transactions within Vientiane, deliveries are made from the factory. In the case of other provinces, the dealers come to the factory. (4) The second route is to retailers in Vientiane. Mrs. Syphetda has more than 100 customers in talats throughout Vientiane. The ratio of sales to wholesale dealers and sales to retailers is 50:50.

(Trade business and the new noodle making business)

In addition to the above orange juice factory, Mrs. Syphetda owns two more companies. One is a company in Vientiane that imports shampoo, noodles, and other household goods from Thailand. The other is a company situated in Attapeu province in southern Laos which exclusively exports wood and wood products. Wood products are exported to Vietnam, and wood is exported to Thailand. The company in Attapeu is a joint venture between Mrs. Syphetda and a Vietnamese-Laotian friend of hers.

Mrs. Syphetda is also (5) fixing up an old factory site in another area of Vientiane to build a new factory for noodle making.

[Observations]

In the case of Mrs. Syphetda, three factors allowed her to make the switch from the wholesale business in household goods to a manufacturing business. The first factor was the “discovery of the market” for orange juice. The unit price of orange juice is low, but even a low-income country such as Laos has a wide customer base ranging from children to adults. As mentioned in underlined portion (1), Mrs. Syphetda knew from her experiences as a wholesale trader that there is a stable demand for orange juice in Laos. Secondly, as stated in underlined portion (4), she also had a distribution route to talat retailers who sold orange juice at retail. Thirdly, as mentioned in underlined portion (2), although Mrs. Syphetda initially considered manufacturing plastic bottles at her own factory, she abandoned the idea because she could not secure suitable engineers, and instead chose to procure them externally from the company introduced in [Case 1] which engaged in the external marketing of plastic bottles. This can be interpreted as a forward linkage effect of [Case 1].

The combination of these three factors allowed Mrs. Syphetda to determine that the risk of capital lock-up can be minimized. Mrs. Syphetda’s desire to venture into the noodle making business, mentioned in underlined portion (5), can be considered a strategic response to the reduction of income caused by the emergence of a new competitor mentioned in underlined portion (3).

(2) “Spinout from small workshop” type

The second type of entrepreneur is the type who starts a spinout business after accumulating training as a craftsman in a small workshop. In such a workshop, a worker can acquire practical technical knowledge through “learning by doing.” He can also learn about workshop operations and customer management by following his master’s example. In the sense that a small workshop provides training in the two areas that are most essential to starting a spinout business, it can be said that a small workshop also serves as an incubator for entrepreneurs as does the *talat* (market). The case example for this entrepreneur type

introduced below is about a medium-sized automotive repair shop. In Vientiane, there are about fifty automotive repair shops of the same scale, and about a hundred smaller workshops.

[Case 3] Mr. Bounthai Luanglath's case

—A small workshop that produces a chain reaction of spinouts

Mr. Bounthai Luanglath manages two automotive repair shops in Vientiane. Previously, the repair of motorbikes accounted for the largest share of his work, but today, the repair of four-wheel vehicles constitutes the larger share. (1) In addition to automotive repair, Mr. Bounthai has begun to receive requests for factory machinery repair as well in recent years.

(Personal history)

Mr. Bounthai was born in 1957 in Ho Chi Minh. He and his parents moved to Vientiane in 1967. His father was a general trader in Vientiane. (2) In 1973, he enrolled in a polytechnic school. He was unable to graduate because of the continuing social disruption at the time, but the skills he acquired at the school formed the foundation of his present business. At a young age, he started working at a small metal processing workshop resembling his present automotive workshop. The workshop was small, with only two to three workers. There were many small-scale factories around this time, but there were only five factories which were the size of Mr. Bounthai's present workshop. In 1978, Mr. Bounthai married Mrs. Chitmy. Mrs. Chitmy is Vietnamese, but she was born in Savannakhet in 1960. When she was four, she and her family moved to Vientiane as suggested by a relative living in Vientiane.

In 1988, Mr. Bounthai began a small metal processing workshop at his present location. There were only 15 such factories around this time. The building he used as his workshop was originally owned by his parents, so he simply installed a used lathe turning machine there and began working on his own. He bought the used lathe from another small metal processing workshop that had closed down. Mr. Bounthai has since disposed of it, as it had gotten old. In 1995, Mr. Bounthai opened a second workshop in Nong Bone Village, as the first workshop had become too small for his increased amount of work. He was able to purchase land and pay the necessary expenses for the construction of the workshop with the earnings he gained up to then.

(Business expansion and the addition of mechanical equipment)

Mr. Bounthai gradually added more and more lathes and other metal processing equipment to his workshop, as shown in Table 1. He acquired his machinery at low prices from other workshops in the same business in Vientiane that have closed down, or purchased them from dealers in Thailand and Vietnam handling used machinery. (3) Mr. Bounthai aggressively obtained more mechanical equipment particularly between 1997 and 2001. This period coincided with a construction boom that had occurred, and he received many orders for construction-purpose bolts. The capital for acquiring the additional machinery was partly his own money and partly money borrowed from his wife's parents. He did not

borrow from the bank.

When Mr. Bounthai first began his workshop in 1988, he received all types of work that he was able to process using what machinery he possessed. For instance, he even undertook the repair of various types of spare parts. In the beginning, his work consisted mainly of repairing motorbikes, but today, he is increasingly undertaking parts repairs for trucks and other four-wheel vehicles. His customers also bring their factory machinery for repair when it malfunctions. Mr. Bounthai has 20 to 30 *khapatcham* (customers), all of which are automotive repair shops.

Table 1 Summary of Mr. Bounthai's capital investment in his automotive repair shops

	First Workshop			Second Workshop		
	Equipment	Cost		Equipment	Cost	
1989	#1	30,000	Bht			
1990	#2	75,000	Bht			
1991						
1992	#3	75,000	Bht			
1993						
1994						
1995				#1	800,000	Bht
1996						
1997				#2	100,000	Bht
1998				#3	50,000	Bht
1999	#4	120,000	Bht	#4 #5	80,000	300,000 Bht
2000				#6	9,000	US\$
2001	#5 #6	120,000	500,000 Bht			
2002	#7	60,000	Bht	#7	12,000	US\$

(Worker composition)

The first workshop is run by Mr. Bounthai himself, his eldest son, and four other workers. The second workshop is run by his wife's uncle, his second son, and four other workers. Although there are individual differences, each worker has worked for Mr. Bounthai for three to seven years on the average. Needless to say, there are workers who have put in more years. Most workers come to Mr. Bounthai's workshops after acquiring similar experience at a different workshop, but there are also cases where high school graduates come to Mr. Bounthai immediately upon graduating from school. The ratio of experienced workers to non-experienced workers is 50:50.

The workers come to Mr. Bounthai in search of employment, and not the other way around. Mr. Bounthai tests their skills and inquires about their experience before setting their wage. There are many applicants, but it is difficult to find skilled workers. (4) Even graduates of a technical school cannot be put to work right away. They must receive training. However, with about two years' experience, most of them become able to handle all the processes in the workshop.

Sometimes, workers will switch to a different workshop. Their reasons may vary, but one of the reasons is because they prefer to work at a workshop near their homes.

(The spinout of workers)

(5) In small workshops, there are cases where, like Mr. Bounthai himself, workers quit their job to start a similar workshop on their own. From Mr. Bounthai's workshops, five workers have so far started a spinout business on their own. One worker worked for Mr. Bounthai for two years and then opened his own business in Xayabury. The second worker worked for a year and then opened his own business in Luangprabang. The third and fourth workers opened their own businesses in Vientiane after eight years. The fifth worker worked for Mr. Bounthai for a year, and opened his own business in Borikhamxay. All five of them saved their wages to accumulate enough savings to start their business. Previously, it was possible to buy secondhand machinery for about 30,000 baht to start a spinout business, but now, apparently about 50,000 baht is required.

[Observations]

Underlined portion (1) signifies that in Laos, an automotive repair shop also functions as a repair and maintenance station for mechanical equipment used in factories, albeit in part. The ability to provide this kind of service is an extremely important prerequisite for the existence of small and medium-sized manufacturing businesses outfitted with machinery and equipment. If small workshops continue to expand their services in this way, industrial diversification can be expected to advance through forward linkage effects.

Underlined portions (2) and (4) are interesting when analyzing the relationship between technical education offered in technical schools and skills training provided on-site at small workshops. Mr. Bounthai recognizes that “learning by doing” alone is insufficient for workers to improve their skills, and that technical education offered in technical schools is also indispensable.

Table 1 shows how Mr. Bounthai's business achieved steady growth through a sound strategy, but as seen in underlined portion (3), he was quick to seize the optimal opportunity for aggressively reinforcing his facilities. The money necessary for these additions was supplied not only from his own savings, but he obtained a part of it from his relatives at relatively high interest. Mr. Bounthai's entrepreneurship is also evident in this regard.

Underlined portion (5) is an indication that a succession of spinouts often occur at small workshops. On the average, the number of years a worker stays on with a workshop until he spins out is a long eight years in Vientiane but shorter in a rural town. This difference can be interpreted as the difference in the level of technology demanded in each region and the size of the initial investment for starting a spinout business.

In his interview, Mr. Bounthai stated, “I am always committed to offering services that will satisfy my customers.” This thinking is the greatest reason for Mr. Bounthai's success.

(3) “Entrepreneurial government factory” type

In developing countries, it is at times necessary for the government to establish companies in priority industries. In fact, even in Japan during the early years of the Meiji era, a number of governmental factories in the industrial sector were established by the government as a means of prompting the introduction of modern industrial technologies. From these governmental factories, many industrial technologies spread widely among the private industries. State-owned factories are fundamentally corporate bodies, so entrepreneurship is required of managers just like in private companies. In industrial fields that lack the participation of private companies, the performance of state-owned companies has a great effect on the country’s economy. The example below introduces a case that shows shrewd entrepreneurship in the management of a state-owned pharmaceutical factory in Laos.

[Case 4] Dr. Sananh Choumlamany’s case

—Effective entrepreneurship transformed a state-owned pharmaceutical company into a corporate body

Dr. Sananh Choumlamany is an administrative officer in the Ministry of Public Health and also the manager of Pharmaceutical Factory No. 2, a state-owned factory. Having been built in 1970, the factory is rather old, but Mr. Sananh transformed it into a corporate body after he was assigned to be the factory manager in 1986.

(Personal history)

Dr. Sananh was born in 1947 in Thakhek. After completing primary school, he studied at a junior high school in Pakse. In 1966, he came to Vientiane to study for the baccalaureate, as the examination was only held in Vientiane around this time. In 1968, he went abroad to the University of Montpellier in France where he studied biochemistry and pharmacy. He returned to Laos in 1977 and joined the Ministry of Welfare.

Mr. Sananh’s first job in the government was manager of a depository of pharmaceutical supplies. Next, he was placed in charge of managing medical instruments in general. From 1984 to 1986, he worked as supervisor of the Pharmaceutical Factory No. 3 construction project. Immediately upon completion of the factory in 1986, Dr. Sananh was appointed as manager of Factory No. 2 and quality control inspector of all pharmaceuticals produced in Laos. Factory No. 2 was an extremely old factory built in 1970, but (1) when he was appointed as factory manager, Dr. Sananh emphasized the necessity of transforming it into a corporate body. His superior at the Ministry of Welfare told him that he would approve the idea if it is indeed feasible, so Dr. Sananh put forth his greatest effort. As a result, a year after he assumed the post of factory manager, he succeeded in transforming the factory into a corporate body.

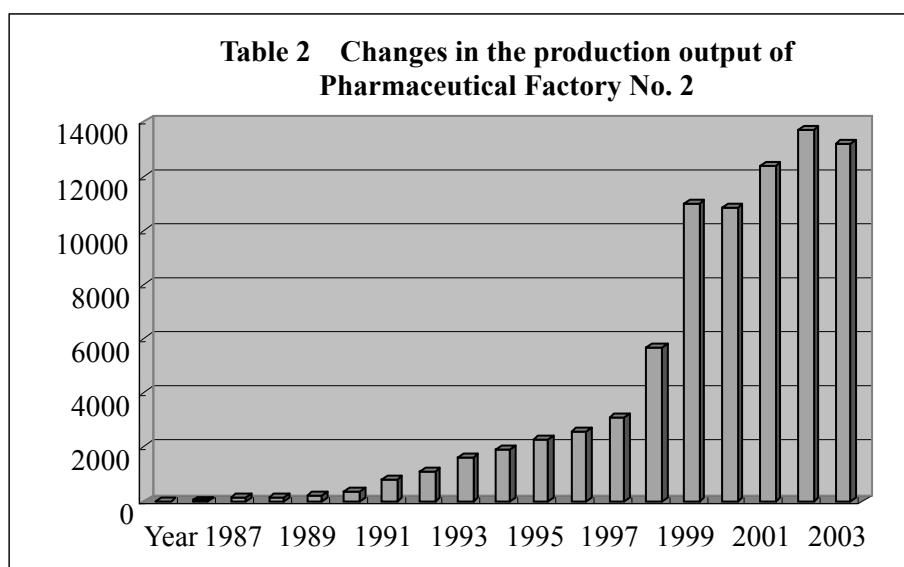
When Dr. Sananh was construction manager of Factory No. 3, he learned a great deal about business management methods from the Japanese experts he worked with. Specifically, the experts taught him the importance of creating a timetable and confirming daily progress, the quality of teamwork, and

particularly the significance of full participation.

(Transformation to a corporate body)

Factory No. 2 was built in 1970 by the French as a private factory for the manufacture of pharmaceutical products. In 1975, the government took over the factory and placed it under the control of the Ministry of Welfare. When Dr. Sananh took up the post of factory manager in 1986, it was still a state-owned factory belonging to the Ministry of Welfare organization, but by 1987, it became a state-owned company funded 100% by the government. Business operations as a corporate body began in 1988, but until then, the factory supplied pharmaceutical products to national hospitals free of charge. During this time, the factory was small, with only about 40 employees, but today, the number of employees has increased to 170.

The factory has four production lines for (1) intravenous fluids, (2) injection fluids, (3) pills, and (4) syrups. It also produces antiseptics. It is not a large factory, but it has the capacity to produce all the necessary types of pharmaceuticals. In the beginning, there were only 15 different formulas for modern medications, but today there are as many as 400. In addition to these formulas, the factory makes natural medicine from 50 to 60 different herbs. The changes in the factory's production output since Dr. Sananh became factory manager are shown in Table 2.



(Unit: 100 million kip)

(Business development)

Today, 2000 pharmaceutical products are manufactured under license in all of Laos. Until 1989, they were imported from East Germany, Hungary, and the Soviet Union, but when the socialist system collapsed in 1989, import from these countries stopped. Therefore, Dr. Sananh and his staff stepped up their efforts to develop the necessary pharmaceuticals, and began producing the minimum necessary products based on more than 200 different formulas.

(2) From 1995, they maximized the factory's production capacity and began supplying pharmaceutical products to the general market in Laos. Because the company was still small, the Ministry of Welfare had no reason to interfere with this activity. Dr. Sananh himself determined how to run the company through his own judgment. Just as in a private company, the organization had to be operated at the discretion of the corporate leader, because administrative officers of the Ministry of Welfare are not businessmen and therefore cannot be expected to make decisions, nor could the organization wait for their decisions. Reflecting back on earlier years, Dr. Sananh says he initially operated with the same mentality as administrative officers, but as he accumulated experience in managing a company, he began to think differently from them.

(Procurement policy)

(3) Dr. Sananh makes a point of procuring supplies needed by the factory from Lao companies as much as possible in an effort to support the development of companies in Laos. For instance, he obtains cardboard boxes from Lao Carton Factory; he has his medicine labels printed by two Lao companies, Paksak Printing and Nakhonluang Printing; and he orders plastic bottles and plastic boxes from KM14 Factory (a factory belonging to the Ministry of Education). Unfortunately, there are no factories that produce ampoule glasses in Laos, so these are imported from Thailand. When Dr. Sananh comes across Lao-made products that he could use in his factory, he tries to substitute them for imported products whenever possible. However, because the quality of Lao-made products is still generally poor, Dr. Sananh is encouraging Lao companies to improve the quality of their products.

Chemical agents that are the basic ingredients of modern medicine are all imported from foreign countries. Herbs for making traditional natural medicine are produced in Laos. At the moment, the production ratio of modern medicine to traditional natural medicine is 90%:10%. However, in recent years, the production of traditional natural medicine has been showing a 40–50% growth over the previous years. The increased popularity of traditional natural medicine made from herbs is undoubtedly one of the reasons for this growth. However, another reason is because banks have begun to stop selling US dollars since 1997 and it has become more difficult to procure large amounts of chemical agents needed to produce modern medicine. (4) The production ratio of modern medicine to traditional natural medicine is estimated to become 80%:20% in five years. Yet, even if the production of natural medicine increases, Dr. Sananh thinks a growth of 25–30% is the limit.

(Future vision)

(5) With an eye toward the post-AFTA period, Dr. Sananh has plans for the construction of a new factory in 2008. The new factory is planned to be outfitted with a production line for pills and a production line for natural herbal medicine. Dr. Sananh is aspiring to produce and export products that satisfy the global quality standard.

[Observations]

Underlined portion (1) shows that Dr. Sananh was not simply an administrative officer, but that he also possessed the qualities of an entrepreneur. Those qualities blossomed through his experiences as a factory manager between 1986 and 1995, and enabled him to make the decision of seeking a selling destination of pharmaceutical products in the general market, as described in underlined portion (2). The fact that the state-owned company made an effort to “discover the market” through its own efforts shows that Pharmaceutical Factory No. 2 indeed transformed from being a part of a governmental organization to a corporate body thanks to the leadership of Dr. Sananh.

Underlined portion (3) can be interpreted as an expression of Dr. Sananh’s strong intention of generating maximum backward linkage effects to the Lao economy through his procurement policy. His effort to increase the production of natural medicine will undoubtedly generate the same effect.

However, Dr. Sananh is also realistic. As mentioned in underlined portion (4), he is aware that there is a limit to the growth in the demand for natural medicine. An entrepreneur must have a clear vision of the future of his company, as Dr. Sananh does in underlined portion (5), but at the same time, an entrepreneur must always think realistically.

(4) “Adaptation to overseas market” type

The final entrepreneur type is the type who aspires to expand business in search of markets overseas. From the perspective of “discovery of the market,” overseas markets are obscure compared to the domestic market. More effort is needed to “discover the market.” Furthermore, overseas markets are more competitive and more volatile than the domestic market. Therefore, it is more difficult to secure *khapatcham* (customers) overseas. Yet, in spite of these two difficulties, entrepreneurs are attracted to the broadness of overseas markets. It is indeed what draws aspiring entrepreneurs to overseas markets in hopes of expanding their business.

Entrepreneurs who fit this type are frequently found in the silk textile industry, which is founded on traditional Lao craftsmanship and designs. Phaeng Mai Gallery is introduced below as an example.

[Case 5] Mrs. Kongthong and Mrs. Viengkham Nanthavongdouangsy’s case

—Overseas market strategies based on traditional craftsmanship

Mrs. Kongthong and Mrs. Viengkham Nanthavongdouangsy are sisters who own Phaeng Mai Gallery, a boutique selling silk fabrics. One of the characteristics of the boutique is that the sisters themselves apply traditional Lao designs and craftsmanship to produce new products that are suited to the Japanese and Western markets. A part of the weaving process is outsourced to local weavers, who come to the boutique’s own factory to do the work. 70% of its sales are acquired through exports, and exports to Japan correspond to 70% of all exports.

(Personal history)

Mrs. Kongthong, the elder sister, was born in 1963 in Xamneua. When the Vietnam War intensified, Xamneua became a target of daily bombardments. Therefore, Mrs. Kongthong's mother moved from Xamneua to Vientiane with her one-year old daughter, carrying the yet-to-be-born Mrs. Kongthong. Mrs. Viengkham, the younger sister, was born in 1965 in Vientiane. The name of the sisters' mother is Phaeng, and the boutique takes part of its name from her. Their mother wove silk fabrics since she lived in Xamneua, as it was the culture of Xamneua for women to weave silk fabrics in their homes. Their grandmother was a master of silk weaving. She even won an award at an annual competition held by the princess of Luangprabang. Silk weaving was therefore a skill handed down from generation to generation in the family. The sisters' father sold the silk fabrics woven by their grandmother and mother to the Hmong people or to traders near the country's border with China. After coming to Vientiane, their mother took the fabrics she wove to *Talat Sao* and sold them for a living.

(Shift to an overseas market strategy)

In 1986, changes were made in central government policies, and the country became more open to the outside world. However, the sisters centered their business on the domestic market until 1993, when they exhibited their products for the first time at an exhibition held in Tokyo. The experience opened their eyes to overseas markets. At around this time, laws required export companies to be registered, so the sisters opened their gallery in 1993 and registered under its address.

(1) Since 1993, the sisters have been coming to Japan yearly to study the Japanese market. During each visit, they make a round of department stores to check out the current trends. They believe that, since Japanese consumers have a very good eye for quality products, if they obtain success in Japan they would be successful anywhere else in the world. In this respect, Japan is an ideal market for test marketing new products. (2) In their efforts to seek entry into overseas markets, the sisters actively participate in various trade fairs, conferences, and World Crafts Council (WCC) events.

The total sales of Phaeng Mai Gallery expanded 1.8-fold in the seven years from 1996 to 2003. The share of overseas market sales in total sales was 30% in 1996, but increased to 70% in 2003. Export to Japan accounts for 70% of all overseas market sales. In addition to Japan, the gallery exports to the US, Korea, Italy, and Singapore, but not in large amounts. Incidentally, it is interesting to note that exports to Singapore target Japanese companies.

(Changes in market trends and measures based on a differentiation strategy)

(3) Expensive products sold well in 1996, but the sales of low-priced, casual products increased in 2003. To cover for the lower unit prices, efforts needed to be made to sell more quantities. Also, a domestic competitor appeared in the area of high-priced silk fabrics, so Phaeng Mai Gallery has begun to develop and increase the share of casual products that would appeal to the Japanese market but still preserve the tradition of Lao silk fabrics. Also because the gallery does business with the same buyers, it must continually offer new designs to retain their interest. The sisters consequently focus their energies on

researching and developing new designs.

(Efforts as entrepreneurs)

Mrs. Viengkham studied business and marketing at a college in Sydney for six months in 1999. In 2003, she went to Bangkok to study fabric design. When pursuing various studies, it is important to read many books, and Mrs. Viengkham often reads books on lifestyles, management strategies, and marketing.

In 2003, Mrs. Viengkham began taking Japanese language lessons for an hour and a half each Saturday and Sunday, accompanied by two staff members of Phaeng Mai Gallery and her twelve year-old daughter. This clearly shows that she attaches a great deal of importance to the Japanese market.

[Observations]

Weavers of high quality silk fabrics in Vientiane all produce their fabrics using traditional craftsmanship. However, they can be roughly separated into those who create designs suited to foreign markets and those who adhere to designs that are appropriate to traditional uses in Laos. Phaeng Mai Gallery represents the former.

As stated in underlined portion (1), Phaeng Mai Gallery consciously and strategically focuses on the Japanese market and is developing products that offer suitable designs in the appropriate price range. It stays abreast of changes in market trends and the trends of its competitors, and opts to take a specific differentiation strategy in response to those changes. This is described in underlined portion (3). In this sense, Phaeng Mai Gallery is an extremely entrepreneurial weaver of silk fabrics.

Furthermore, as shown in underlined portion (2), in order to gain entry into overseas markets, much time and cost must be spent on collecting information.

3. Summary and Conclusion

In the past two years, we interviewed as many as 90 entrepreneurs, asking them how they started and developed their business. From the results of those interviews, we derived four different paths to becoming an entrepreneur. In the previous section, we examined case studies of five entrepreneurs representing the four entrepreneur types. From those case studies, we can draw the following conclusions.

Firstly, the path to becoming an entrepreneur begins with the “discovery of the market.” [Case 1] to [Case 4] addressed domestic demand. In [Case 1], the entrepreneur’s experience as a trader in a *talat* (market) and the governmental policy of promoting import substitution served as the catalyst to start the business. In [Case 2], the experience in the wholesale trade of imported household goods led to the new business, in [Case 3] it was the experience gained by working in a small workshop, and in [Case 4] it was the experience as manager of a governmental pharmaceutical depository. In contrast to these cases, [Case 5] addressed overseas demand. The weaver of traditional Lao fabrics participated in an exhibition held in Tokyo, and this provided an opportunity to seek markets overseas. However, in all cases, previous experience enabled the entrepreneurs to start their new business.

Secondly, the entrepreneurs' sensibility and acumen allowed them to apply their previous experiences to their new business. Exposure to foreign countries also nurtured their sensibility and acumen. In [Case 1], the entrepreneur visited Malaysia, a production country of palm oil, and in [Case 2], the entrepreneur went to Thailand to acquire products. In [Case 3], the entrepreneur purchased machinery from Thailand and Vietnam, and in [Case 4], studied pharmacy in France. In [Case 5], the entrepreneur visited Japan to participate in an exhibition and Australia to study marketing. There is no doubt that the exposure to foreign countries fostered the entrepreneurs' sensibility and acumen that led to the idea of their new businesses.

Thirdly, "mobilization of technology" is necessary to realize a new business idea. There are two aspects to technology: theoretical knowledge and practical training. [Case 3] is an example of how these two factors combined to allow "mobilization of technology" at a higher level. In this respect, technical education offered in technical schools has great significance, as seen in [Case 1] and [Case 3].

The fourth conclusion is that "mobilization of technology" is achieved by outsourcing various technologies. Put differently, this means that a "division of labor among companies" is an effective means of mobilizing technology. The relationship between [Case 1] and [Case 2] is an example of this. In order to produce a certain product, it is necessary to combine various types of technologies. However, it is difficult for a small or medium-sized company with little capital strength to internally possess all the necessary technologies. By procuring a part of a process or a component from another company, even small-scale companies can produce complex products. Needless to say, however, such a division of labor among companies can be achieved only if there are groups of companies possessing various different elemental technologies. In other words, industrial diversification is the basic premise.

Finally, there are cases where traditional craftsmanship can be effectively applied to new businesses. The history and culture of Laos cultivated such traditional crafts as silk fabrics, cotton textiles, wood products, and rattan products. [Case 5] showed that large business opportunities could be attained by linking traditional craftsmanship with the "discovery of the market" overseas. At the same time, however, it must be remembered that efforts should still be made to preserve the traditional craftsmanship in its original form so as not to lose sight of the true origin of traditional crafts.

(Policy Implication for SME Development in Laos)

Based on the above discussion, let us now consider implications for the development of small and medium-sized enterprises (SMEs) in Laos. As previously mentioned, industrial diversification is essential for the Lao economy to become robust, and entrepreneurship is indispensable to achieving industrial diversification. Through our observations of a large number of case examples, we have seen that entrepreneurship is further vitalized as entrepreneurs voluntarily work to enhance their sensibility and acumen. Thus, it is foremost important to consider "what policies can do to help entrepreneurs enhance their sensibility and acumen."

From this perspective, we would like to propose the following specific programs.

The first is the dispatch of an overseas mission representing the industrial world. The objective of the mission would be to stimulate the entrepreneurial spirit of entrepreneurs by providing them the opportunity to compare their productivity with that of people in the same trade overseas. The ASEAN/CEPT framework will lower trade barriers among the ASEAN countries. For Lao companies, this means that their competitors will not only include domestic companies, but also other companies within the ASEAN region, and their potential market will expand from the domestic market to all of ASEAN. Placed in such a broad arena, Laotian entrepreneurs must urgently gather information on who and where their competitors are, what kind of facilities they use and how they produce their products, and they must use this information to formulate a competitive strategy for the future.

The second proposal is the holding of a domestic exposition under industrial policy. Its first objective would be to “enhance overall quality and improve production methods by judging and evaluating articles entered in the exhibition and inciting competition among the exhibitors.” The second objective would be to “develop and expand the market by disseminating and sharing technical information embodied in manufactured goods and products to inspectors and exhibitors alike through the exhibit of articles and samples.”

The third is the improvement and expansion of technical education. In order for Laos to pursue industrialization, it needs engineers. Conventionally, engineers acquired training opportunities abroad, but in recent years, there seem to be less people who go abroad to study science and technology. As such, engineers also need to be fostered within Laos, and from this perspective, it is necessary to systematically improve and expand technical education in the university, high schools, and technical schools.

These three programs can be expected to support the voluntary efforts of entrepreneurs to “discover the market” and “mobilize technology.”

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3. Market Performance of Micro-Enterprises

Akihiko OHNO

Summary

This report highlights the importance of business linkage (clientization or *kha patcham*) for the robust development of micro-enterprises based on the unique data set gathered from a total of 173 micro-enterprises in Vientiane Municipality via a structured questionnaire.

Major findings are summarized as follows.

1) Current Markets

Micro-entrepreneurs perceive that their markets are competitive, and that their major competitors are not foreign products but domestic enterprises. They consider their businesses rewarding, and consequently have a strong intention of business expansion. Lao micro-enterprises target the domestic markets while remaining significantly segregated from foreign products. In addition, they utilize domestic materials more than large-scale enterprises do.

Prospects of sales growth were split into two: increasing and unstable. Those who perceive future sales unstable have fewer intentions for business expansion. Uncertainties about the future would deter investment, and thus hamper development.

2) Constraints

Micro-entrepreneurs cited uncertainties in terms of price fluctuations as the most serious detriment to their business, followed by a dearth of funding.

3) Relationships with Suppliers and Customers

Micro-entrepreneurs purchase materials from regular suppliers (*kha patcham*), 63% in number and 78% in value terms. *Kha patcham* relations provide micro-entrepreneurs trade credit in several ways. For example, 43% of micro-entrepreneurs purchase materials on credit. In turn, they sell to their *kha patcham* customers on credit.

We observed that *kha patcham* relationships serve as a device not only to ease financial constraints but also to smoothe transactions. In other words, *kha patcham* can be a powerful device that substitutes for banks.

4) Vulnerability of *kha patcham*

Kha patcham relationships are vulnerable to economic fluctuations. The economic turbulence in the

late 1990s was not merely transient disturbance, but rather undermined the economy by collapsing *kha patcham* relationships.

Conclusion

Credit crunch is nearly a universal phenomenon for micro-enterprises everywhere in the world. Establishing banks targeting micro-enterprises often fails, since such a banking system easily loses its economic validity. Thus, we should pursue an alternative way to ease the financial constraints of micro-enterprises.

The development of the economy, or micro-enterprises, can be realized in tandem with market formation. This paper suggests that micro-entrepreneurs have created *kha patcham* relationships so that they can simultaneously reduce credit crunch as well as the frictions inherent in business transactions. Needless to say, the stabilization of a macro-economy is important in promoting micro-enterprises. Introduction of legislations to assure and maintain healthy *kha patcham* relations is required. In addition, the introduction of modern accounting is advised in order to emancipate the micro-entrepreneurs from hit-or-miss accounting practices.

3. Market Performance of Micro-Enterprises

Entrepreneurship in developing countries has recently gained substantial attention as motivating energy for economic development, especially in the countries on the road toward a market economy. The massive failure of state-owned enterprises and market-distorting policy interventions have resuscitated interest in the private sector. In the context of economic development in the Lao PDR the creation of micro-enterprises is considered essential for the establishment of a robust industrial base, since the emergence of large-scale enterprises would encounter serious difficulties in the regime of AFTA/CEPT.¹

The development of micro-enterprises is often discussed as supporting industries that supply parts and components for large-scale industries. The Lao economy, however, has yet reached a stage requiring supporting industries. Most of enterprises employing more than 100 employees in the Lao PDR are confined to garments and wood processing, which do not rely on domestic SMEs or micro-enterprises for parts and components. In fact, the overwhelming majority of enterprises registered in the Lao PDR are micro-enterprises employing fewer than 10 employees.

Micro-enterprises in the Lao PDR are expected to play a distinguished role in economic development. Firstly, they produce products for local people using a less capital intensive technology. The products are differentiated from the products of foreign large-scale manufacturing industries as we will soon see. In addition, as Anderson (1982) suggests, the available empirical evidence has implied that, historically speaking, a significant part of the growth of large-scale enterprises was rooted in the expansion of once-small firms through size distribution.² Thus the emergence of micro-enterprises would provide promising ground for indigenous development of the industrial sector in the Lao PDR.

The micro-enterprises of the Lao PDR have unique characteristics that influence their growth path. Firstly, most of micro-enterprises have emerged in recent years after economic liberalization (see, Appendix) and, thus, do not have substantial forward or backward linkages. They are on the way to establishing linkages. Secondly, the formal banking system is dysfunctional. The micro-enterprises are totally barred from the formal capital market.

¹ There is no clear distinction between micro and small enterprises. The Manufacturing Industry Law defines small factories as those with 10-50 employees and machinery with power between 5 to 50 HP. As most of the factories surveyed in this paper employ fewer than 10 employees, this paper use the term *micro-enterprise* instead of *small enterprise*.

² Anderson, D. (1982) "Small Industry in Developing Countries: A Discussion of Issues," World Development, 10(11), 913-948.

How markets emerge, why they continue to exist, and how they function are critically important issues for an economy in transition to a market economy. This paper empirically examines how a micro-enterprise's ties with its suppliers as well as with its consumers play a critical role in market formation. This would provide fundamental insights for formulating policies compatible with entrepreneurs' behavior.

Our analysis is based on the unique data set gathered from a total of 173 micro-enterprises in Vientiane Municipality via a structured questionnaire. Of the 173 enterprises, 103 are food manufacturers and 70 are non-food. In this report data are presented for both groups.

1. Current Markets

The data on current market conditions where micro-enterprises operate are extremely scarce in the Lao PDR. In this section we try to envisage the state of markets for micro-enterprises through the market perceptions of micro-enterprise entrepreneurs (hereafter, micro-entrepreneurs).

A greater part of micro-entrepreneurs respond that there are many competitors and that the number is on the increase (Table 1 and 2). This is a welcome sign. We moved on to the next question asking about their major competitors. Contrary to our expectation, the major competitors are not foreign products at this moment, but products of domestic enterprises including both large-scale enterprises and micro-enterprises (Table 3). This implies that the markets for micro-enterprises are segregated from foreign competitors at present.³ In other words, the micro- enterprises might have survived in niche markets where they can exercise their comparative advantages. This *raison d'être* of domestic micro-enterprises is less assured for large-scale enterprises that are obliged to compete with foreign products on an equal footing especially in the AFTA/CEPT regime.

Table 1 Number of Competitors (%) N=173

	Many	Some	Several	None	Total
Food	43.1	35.3	12.7	8.8	100.0
Non-Food	38.6	30.0	22.9	8.9	100.0
Total	41.3	33.1	16.9	8.7	100.0

³ 88.29 % of sales of our sample enterprises are secured in Vientiane Municipality, 5.71 % in other provinces of Laos, and 6.13% for foreign markets.

Table 2 Changes in the Number of Competitors (%)

	Increasing	Decreasing	No Change	Total
Food	75.2	2.0	22.8	100.0
Non-Food	65.2	7.2	27.5	100.0
Total	72.2	4.1	24.1	100.0

Table 3 Major Competitors

	Not Competitor	Moderate Competitor	Competitor	Strong Competitor	Total
Domestic Micro-Enterprises	22.8	19.9	36.3	22.6	100.0
Dom. Large Enterprises	30.4	13.1	25.0	31.6	100.0
Thai Products	57.5	10.2	15.6	16.8	100.0
Chinese Products	67.9	10.9	11.5	9.7	100.0
Vietnamese Products	62.0	16.3	11.4	10.2	100.0

When asked if “my business is *rewarding* when compared to other occupations that I might take up”, more than 90 percent of respondents made a positive response (Table 4). Consequently, the micro-enterprise entrepreneurs have a strong intention of business expansion (Table 5).

Table 4 Rewarding Business (%)

	Yes	Somewhat Yes	Somewhat No	No	Total
Food	49.5	44.7	3.9	1.9	100.0
Non-Food	45.7	34.3	14.3	5.7	100.0
Total	53.8	39.3	5.2	1.7	100.0

Table 5 Intention of Business Expansion (%)

	Intend to Expand	Intend to Maintain Status Quo	Intend to Reduce	Don't Know	Total
Food	58.3	23.3	2.9	15.5	100.0
Non-Food	76.8	11.6	0.0	11.6	100.0
Total	65.7	18.6	1.7	14.0	100.0

As will be discussed later, the micro-enterprises can hardly rely on external funds, especially banks. Thus, they have to self-finance for business expansion. The proportion of net profits diverted to investment or retained for future investment (hereafter, saving ratio) in the past year was 29.03% (SD=28.31) on average. Confining the data to 154 out of 173 respondents (89.02%) who made an investment or retained profit for investment, the proportion was 35.30 % (SD=27.46).

Table 6 Future Sales Prospects (%)

	Large Increase	Increase	No Change	Unstable	Decrease	Total
Food	6.8	32.0	4.9	53.4	2.9	100.0
Non-Food	11.4	40.0	7.1	37.1	4.3	100.0
Total	8.7	35.3	5.8	46.8	3.5	100.0

As is well known, uncertainties about the future would deter investment, and thus hamper development. Prospects of sales growth made by respondents were split into two: increasing and unstable (Table 6). Table 7 shows that the saving ratio declines as the respondents perceive that future sales are unstable and not promising (Table 7). The ratio also corresponds to business expansion intentions (Table 8).

Table 7 Sales Prospects Investment Ratio

	Large Increase	Increase	No Change	Unstable	Decrease	Total
Total	41.1	32.1	27.8	25.1	18.8	100.0
Investor*	(30.7)	(30.8)	(31.9)	(25.0)	(24.4)	(23.3)

Investor denotes those who invested or retained profit for investment (N=154).

Table 8 Intention of Business Expansion and Investment Ratio

	Intend to Expand	Intend to Maintain Status Quo	Intend to Reduce /Don't Know	Total
Food	58.3	23.3	18.4	100.0
Non-Food	76.8	11.6	11.6	100.0
Total	65.7	18.6	15.7	100.0
Investor	(33.7)	(22.9)	(12.1)	(23.3)

In conclusion, the data reveal that micro-entrepreneurs recognize their overall growth, but that it is constrained by uncertainty in the economy. We will see this in more details in the next section.

2. Constraints on Micro-Enterprises

The micro-entrepreneurs face several business constraints. Respondents were asked to what extent fourteen plausible constraints were obstacles for their business operation. Since constraints pertaining to suppliers and consumers will be discussed in the next section, they are not listed in the table. The results are shown in Table 9 in order of severity.

It is worth noting that top three constraints concern uncertainties in terms of price fluctuations, followed by the dearth of funding. These results are similar to those obtained from the Lao-German Small Enterprises Development Project.⁴ The survey revealed that the current problems faced by small and medium enterprises differ from those encountered when the enterprise was first started.⁵ Though financial problems are most critical at the initial stage, marketing problems become much more important over time.

Table 9 Obstacles to Businesses (%)

		Not Obstacle	Minor Obstacle	Mod. Obstacle	Obstacle	Severe Obstacle	Total
1	Unstable Exchange Rate of Kip	13.9	13.9	16.9	30.7	24.7	100.0
2	Inflation	11.5	10.9	23.6	30.3	23.6	100.0
3	Unstable Price of Materials	13.8	12.0	30.5	26.3	17.4	100.0
4	Money Shortage (Working Capital)	20.0	17.0	20.0	18.2	24.2	100.0
5	High Material Prices	10.7	13.1	30.4	26.2	19.6	100.0
6	Low Technology Level	18.7	18.7	28.3	20.5	13.9	100.0
7	High Imported Material Prices	39.9	11.1	16.3	15.7	17.0	100.0
8	Unstable Material Supply	27.4	25.0	21.3	14.0	12.2	100.0
9	Insufficient Demand	22.2	21.0	32.7	15.4	8.6	100.0
10	Seasonal Demand Fluctuation	21.8	18.2	25.5	18.2	16.4	100.0
11	Difficulty in Obtaining Sufficient Imported Materials	55.2	11.0	11.7	9.1	13.0	100.0
12	Difficulty in Obtaining Sufficient Domestic Materials	34.3	25.4	18.3	11.2	10.7	100.0
13	Changing Government Policy	35.2	26.7	19.4	10.3	8.5	100.0
14	Strict Government Regulations	41.5	18.9	21.3	9.8	8.5	100.0

Micro-entrepreneurs often complain of not being able to borrow capital from formal banking institutions. In practice, it is very unlikely that micro-enterprises procure fund from formal banking institutions in the Lao PDR.

Economic theories suggest that information asymmetries and agency costs may explain why micro-enterprises are rationed out from the formal capital market even though they are performing on a

⁴ Nicholas Minot, Small and Medium Enterprises in the Lao PDR: The Results of a National Survey, Lao-German Small Enterprise Development Project, Lao PDR Ministry of Industry and Handicraft of Lao PDR, 1996.

⁵ Our survey revealed that 25.7% of the respondents sold their property to procure funds for starting up their businesses. In addition most of the respondent self-financed the start-up capital.

reasonably high profit basis. On the other hand, economics also claim that large-scale enterprises overcome this problem by disclosing information about the form to banks. A number of empirical studies on the developed economies have revealed that enterprises with firm association with banks are less likely to be liquidity constrained. However, in the Lao PDR the banking system are dysfunctional and loaning out to micro-enterprises is hardly expected. Taking the banking system of Lao PDR into account, bank lending to micro -enterprises can not be expected in the foreseeable future. ⁶ Experiences of many countries tell that establishing banks targeting micro-enterprises often fails, since such a banking system easily loses its economic validity.

This would not imply the establishment of the banking system for micro-enterprises in the Lao PDR. Credit crunch associated with micro-enterprises is nearly a universal phenomenon even in the developed world. Under a credit constraint, micro- enterprises try to establish the mechanisms that substitute for bank borrowing. We will see how Lao micro-entrepreneurs strategically behave to solve credit crunch.⁷

3. Relationships with Suppliers: Clientization as Trade Credit

The micro-enterprises purchase materials from various sources: shops in Talaat account for 28.9%, Lao Traders 24.1%, manufacturers 33.1% and others 19.9% in numbers. The average number of suppliers the sample micro-enterprises deal with is 4.69, of which 2.96 (63.38%) are regular suppliers known as *kha patcham* in the Lao language. In value terms, 78.66% of materials are purchased from *kha patcham*.

Kha patcham relationships provide micro-entrepreneurs several services. A remarkable feature is that input suppliers not only sell goods, but also extend trade credit in several ways. Forty-three percent of micro-entrepreneurs reported that they purchase materials on credit. It is mostly short-term credit (Table 10) and 89.7% of those who enjoy trade credit answered that no interest is charged.

Table 10 Credit Terms (%)

< a Week	< a Month	< 3 Months	> 3 Months	NA	Total
36.1	42.2	10.8	7.2	3.6	100.0

Another form of trade credit is delayed payment. We asked if the suppliers accept delayed payment when the micro-entrepreneurs are short of money. Approximately half of them responded that their suppliers allow delayed payment either always or sometimes.

⁶ Only 23.8% (18.6% of food enterprises and 31.4 of non-food enterprises) do bookkeeping. Keeping accounting records would be necessary for micro-enterprises to access bank financing. This would also provide a basis for tax collection.

⁷ This paper does not dereference micro-finance schemes for micro-enterprises. In Vientiane municipality there is a micro-finance group (saving group) targeting micro-enterprises.

Table 11 Deferred Payment in case of Money Shortage (%)

Always	Sometimes	Occasionally	Rare	Total
13.1	40.6	16.9	29.4	100.0

Kha patcham relationships carry out several functions. Table 12 shows which of the listed aspects are benefits gained from *kha patcham* relationships. Micro- entrepreneurs believe *kha patcham* relationships reduce transaction costs in price as well as guarding against deceptive quality. Securing a stable supply of materials is also an important benefit coming from *kha patcham* relationships. Thus, the micro-entrepreneurs exert an effort to remain on good term with their material suppliers (Table 13).

Table 12 Benefits from Kha Patcham Suppliers

	Yes	Mod.Yes	No
Honest Prices	74.7	20.5	4.8
Honest Quality	75.8	18.2	6.1
No Need to Negotiate	51.5	33.3	15.2
Stable Supply	73.8	20.1	6.1
Deferred Payment	60.4	32.9	6.7

Table 13 Effort at Remaining on Good Terms with Suppliers

	A Lot	Yes	A Little	Not Much	Total
Food	24.8	45.5	21.8	7.9	100.0
Non-Food	28.6	58.6	11.4	1.4	100.0
Total	26.3	50.9	17.5	5.3	100.0

The question which we must consider is what factors promote *kha patcham* relationships. In light of market competitiveness, when the micro-entrepreneurs perceive it is easy to find alternative suppliers, they can enjoy purchases on credit and deferred payment during money shortages (Table 14).

Table 14 Association between Market Competitiveness and Trade Credit

	(Spearman's rho)	
	On Credit	Deferred Payment
Alternative Suppliers (Easy=1, Difficult=4)	0.163*	0.242**
Purchase On Credit (Yes=1, No=0)		0.551***

Note: *** P<0.1%, **P<1.0%, * P<2.0%

We have observed that *kha patcham* relationships serve as a device not only to ease financial constraints but also to smooth transactions. This is because the *kha patcham* relationship generates trust between the micro-entrepreneurs and their suppliers. However, it should be noted that the trust discussed here is not unconditional. Nearly 80% of respondents agreed with the statement that “*Suppliers tend to take advantage of our problems. Thus, we have to be cautious in dealing with them*” (Table 15). Therefore, the micro-entrepreneurs exert efforts to establish *kha patcham* relationships with their suppliers to ensure their business transactions by reducing transaction costs associated with dishonest price and quality. In addition, the micro-entrepreneurs can react to the poor behavior of their suppliers as Table 16 indicates; they inform fellow businesspersons about a poorly behaving supplier and warn them to exercise caution.

Table 15 Suspicion of Suppliers (%)

	Agree	Mod. Agree	Mod. Disagree	Disagree	Total
Food	34.7	37.6	15.8	11.9	100.0
Non-Food	47.1	37.1	4.3	11.4	100.0
Total	39.8	37.4	11.1	11.7	100.0

Table 16 Sanctions as a Countermeasure against Poor Supplier Behavior (%)

	Yes	No	Total
Food	67.3	32.7	100.0
Non-Food	75.0	25.0	100.0
Total	119	50	100.0

Note: In response to the question “*When you suffer from poor supplier behavior, do you inform your fellow businesspeople about it so that they should be careful about the supplier?*”

Furthermore, the *kha patcham* relationship is not a bona fide intention, but an intention based on profit maximization. This is well manifested by the response to the statement “*If another supplier offered me cheaper prices, I would most certainly take them on, even if it means dropping the present supplier*” Most micro-entrepreneurs would not hesitate to change suppliers when offered cheaper prices.

Table 17 Pursuing Cheaper Prices (%)

	Yes	Mod. Yes	Mod. No	No
Food	35.3	45.1	5.9	13.7
Non-Food	45.7	31.4	10.0	12.9
Total	39.5	39.5	7.6	13.4

In sum, the *kha patcham* relationship between the micro-entrepreneurs and their suppliers is often of a type that anthropologists may categorize as “generalized reciprocity”. Based on this relationship, both contracting parties can achieve business transactions without much suffering frictions associated with transaction costs. In addition, the micro-entrepreneurs can ease their financial constraints.

4. Customer Relationship

Customers in terms of sales are as follows: 32.78% for wholesalers, 46.43% for retailers, 12.59% for retailers run by family/relatives, and 8.20% for domestic manufacturers. Customer relationships are the inverse of supplier relationships 63.00% of sales go to *kha patcham*.

It is notable that the micro-entrepreneurs sell a relatively larger portion of their products to *kha patcham* customers on credit, while they sell to non-*kha patcham* customers mostly on a cash-and-carry basis (Table 18). The micro-entrepreneurs provide trade credit substantially more to *kha patcham* customers. In addition, the micro-entrepreneurs exert efforts to maintain *kha patcham* customers as shown in Table 19.

Table 18 Sales patterns between *Kha Patcham* and Non- *Kha Patcham* (%)

	Pre-Paid	On Credit	Cash	Total
Kha Patcham	7.28	42.24	50.95	100.0
Non Kha Patcham	9.44	12.22	80.13	100.0

Table 19 Maintaining *Kha Patcham* Customers (%)

Give a discount					
	Yes	Mod. Yes	Mod. No	No	Total
Food	32.7	35.6	21.8	9.9	100.0
Non-Food	37.7	39.1	14.5	8.7	100.0
Total	34.7	37.1	18.8	9.4	100.0
Sell on credit when requested					
Food	32.0	39.0	20.0	9.0	100.0
Non-Food	22.1	45.6	20.6	11.8	100.0
Total	28.0	41.7	20.2	10.1	100.0
Serve <i>Ken Jai</i> to customers					
Food	32.0	39.0	20.0	9.0	100.0
Non-Food	22.1	45.6	20.6	11.8	100.0
Total	28.0	41.7	20.2	10.1	100.0
Deliver product on time					
Food	37.6	47.5	12.9	2.0	100.0
Non-Food	29.4	48.5	16.2	5.9	100.0
Total	34.3	47.9	14.2	3.6	100.0

Micro-entrepreneurs notice that treacherous actions are subject to sanction (Table 20)

Table 20 Recognition of Sanction by Customers (%)

	Yes	Mod. Yes	Mod. No	No	Total
Food	28.3	42.7	30.4	8.7	100.0
Non-Food	37.7	31.9	17.4	13.0	100.0
Total	32.0	38.4	19.2	10.5	100.0

Note: In response to the question “Do you think that you would loose many customers when you have trouble with one customer?”

5. Trust and Its Collapse

Establishing *kha patcham* relationship requires mutual investment from sellers as well as buyers. In the course of recurrent transactions, trust is engendered between them. Trust is a type of expectation that alleviates the fear that one’s exchange partner will act opportunistically. Hence, trust works as “an important lubricant of a social system”.

Recent literature has revealed that even without formal sanction mechanisms or direct monitoring, good conduct can be expected when trust checks partners’ opportunism. Formal sanction mechanisms on trade are *de facto* absent in the Lao PDR. Trust entails informal sanction mechanisms that range from village ostracism, a bad reputation and/or humiliation, to the simply termination of business relationships. In our context, as we have discussed, bad reputation and termination of business relationships seem to be effective sanctions.

It will be useful to make a distinction between two types of trust: process-based trust and community-based trust. Process-based trust arises from long-term recurrent transactions. Under recurrent transactions, a rational profit maximizer will establish cooperative relations as long as repeated transactions offer benefits that outweigh those obtained by one-shot opportunistic behavior. This process is referred to by Geertz (1978) as *clientization* or *kha patcham* in this paper.

Community-based trust is assumed to be reliable because of the social sanction mechanisms behind the similarity, such as ethnicity. Once trading parties ascertain that they share a social similarity, this trust emerges immediately without recurrent transactions. In the Lao PDR it is often observed that trading parties are from the same province, and the poor behavior of a particular person travels swiftly to the members of the community as rumors or bad reputations.

Since process-based trust is attached solely to a trading pair, the cheated partner will sanction opportunistic behavior by means of terminating the relationship. Thus, a trading party would enhance the value of recurrent transaction by making efforts to remain on good terms with their material suppliers as was seen in Table 12, and by providing several services to retain *kha patcham* customers as was discussed

in Table 18.

Since trust in trade is calculative by nature, it may decline as the level of punishment decreases. In the Lao PDR, the deterioration of *kha patcham* relationships was brought about by macro-economic instability in the latter half of the 1990s. The currency turmoil in Southeast Asian countries since July 1997 is a major cause of the deterioration. The baht was depreciated from 25 baht against the US dollar to nearly 50 baht by the end of 1997. The kip was depreciated sharply against the dollar with wide fluctuations, from one US dollar being equivalent to 940 kip in August 1996, 2,150 kip in December 1997 and 2,450 kip in March 1998. It was further depreciated later as one US dollar being equivalent to more than 10,000 kip in the early 2000s.

This extreme fluctuation of price makes it difficult to maintain long-term contracts, since the value of materials or products transacted on credit varies substantially over time. The *kha patcham* relationship is very vulnerable to economic fluctuations: an increase of uncertainties. The network of transactions, i.e., the market mechanism, was severely damaged. Thus, the economic turbulence in the late 1990s is not a mere transient disturbance, but it deteriorated the economy by undermining the *kha patcham* relationship. This is mainly why the entrepreneurs claimed instability as their most serious problem. Policy makers should recognize that macro-imbalance would hamper economic development.

Conclusions

This paper addresses the issue that micro-entrepreneurs are suffering from instability of business circumstances and capital shortage, and that they cope with these difficulties by establishing client relationships with both suppliers and customers.

We have observed that micro-entrepreneurs have run their businesses vigorously without explicit government interventions. This implies that they have been endowed with a sufficient competitive edge in their markets. The Lao PDR often claims a dearth of entrepreneurship for economic development. However, it should be noted that there is, in fact, affluent Lao entrepreneurship in the field of micro-enterprises. Policy makers should not neglect this rich entrepreneurial resource in their development policies.

Non-market institutions have been the object of growing attention for their potential in coping with market failure. In the developing world, an overwhelming majority of economic transactions occur between members of a particular group that share common cultural traditions. Our paper suggests that micro-entrepreneurs have created trust in the form of *kha patcham* relationships so that they can simultaneously reduce credit crunch as well as the frictions (transaction costs) inherent in business transactions. We also asserted that trust is easily deteriorated by economic turbulence as was experienced in the late 1990s. The stabilization of a macro-economy is thus important in promoting micro-enterprises.

Appendix

Basic Responders Data

Gender: 57.8% Male (Food 62.1%, Non-Food 51.4%)

Average Age: 43.27 (Food 42.44, Non-Food 44.49)

Manufacturing Skill Acquisition (%)

	School	Parents/R elatives	Self-Study	Friends	Others	Total
	4	34	38	18	9	103
Food	3.9%	33.0%	36.9%	17.5%	8.7%	100.0%
	10	16	31	10	3	70
Non-Food	14.3%	22.9%	44.3%	14.3%	4.3%	100.0%
	14	50	69	28	12	173
Total	8.1%	28.9%	39.9%	16.2%	6.9%	100.0%

Business In heritage

	Inherited from Family	Start by Oneself	Succeeded from Others	Total
Food	59.0%	39.0%	2.0%	100.0%
Non-Food	43.8%	51.6%	4.7%	100.0%
Total	53.0%	43.9%	3.0%	100.0%

Year Established

(%)

<=91	92	93	94	95	96	97	98	99	00	01	02	03	04
34.1	2.9	3.5	3.5	6.4	4.0	6.9	6.9	8.1	12.1	5.8	6.4	7.5	1.7

4. The Distribution System in Laos: The Current State and Challenges

Mari NINOMIYA

Summary

Whether the domestic manufacturers in Laos will be able to grow further in the future or not would depend on how far they would be able to cultivate the market and strengthen their marketing abilities. The formation of a wide-area sales network requires a huge amount of marketing expense. The foreign manufacturers have built their own nationwide sales networks by means of their agencies, but it is difficult for the small-scale, single-product domestic manufacturers to build their own independent sales networks.

If the marketing abilities of domestic manufacturers are to be strengthened, it is time for the appearance of a wholesale business that could make an assortment of the products of multiple manufacturers. Wholesaler would engage the retailers in aggressive sales promotion activities involving the products of other companies. Presently, The Lao domestic distribution system does not distinguish between retailing and wholesaling; there are no large-scale wholesale-only merchants. However, a business that fulfils the role of wholesaler does not have to be a wholesale-only merchant. Thought must be given to transforming the Lao distribution system through the cultivation of businesses that would take on the function of wholesalers.

First of all, an environment must be created that could encourage the appearance of businesses that would take on the function of wholesalers. I have called the foundation needed to activate this kind of commercial activity, the 'distribution infrastructure'. Here by distribution infrastructure I mean the provision of an environment that facilitates business transactions between traders and in which business networks can expand further. It is important that this environment should be prepared and that, from among the traders of Laos, businesses should be cultivated that would take the initiative in performing the function of wholesalers.

Enterprises with the latent potential to take on the function of wholesalers are first of all the agencies for foreign manufacturers and businesses already engaged in the import-export trade. Gathering together information on agencies all over the country and information on businesses engaged in the wholesale trade, and making this information available to the domestic manufacturers, would help in the opening up of sales routes.

In the search for business entities ready to take on the function of wholesalers, attention should also be paid to the merchants in the Talat. Having understood the complex business relationships between the shops in the Talat, we must give consideration to the cultivation within the Talat of businesses that would take on the function of wholesalers. Elevating the function of the Talat will indirectly contribute to the creation of a base for the domestic manufacturers' marketing activities. There is no doubt that a

distribution system that has developed through the brisk activities of the traders will also function as an infrastructure for the marketing activities of the manufacturers.

However, for retailers to take on the function of wholesalers, the retailers' business management skills must be improved. To some extent, a retailer builds up the skills needed to run a retail business through its activities in the Talat; but different skills are needed if the retailer is to take on the function of a wholesaler. This is because as the volume of merchandise handled increases, skills such as stock control and sales promotion towards the retailer become necessary.

In addition, the development of the wholesale business involves the need for retailers with the desire to expand their sales. If the retailers do not expand their sales, the businesses taking on the function of wholesalers have no arena in which to carry out their activities. The retailers need to be given as much stimulus as possible to promote a revolution in marketing methods that will encourage their growth.

It would be a good idea to give the retailers some information on diverse sales methods, such as describing to them the business methods of agencies in areas all over the country. Another method would be to make it so that the retailers can exchange information with each other and engage in business exchanges on their own initiative. The manufacturers' agencies already mentioned have mastered the modern business management techniques passed on to them by the General Distributors. It is conceivable that a trader passing on to other traders the skills it has already adsorbed would accelerate the formation of a modern class of traders. On top of that there will further be a need for specialist education in retail shop management, such as business management and inventory control.

4. The Distribution System in Laos: The Current State and Challenges

I. Introduction

In a recent field study, we carried out a survey on Lao living necessities, such as everyday goods, processed foods and beverages. Presently, almost all the everyday goods consumed there are imported from mainly Thailand, China, and elsewhere, but it became clear from the survey that domestic Lao manufacturers of these items are rapidly becoming more established. Of those everyday items, Lao entrepreneurs are ‘discovering’ domestic substitute products for which a certain level of domestic demand can be expected and which compare favorably with imports in terms of cost, and are gradually expanding their production.

However, with the enhancement of free trade within ASEAN leading to AFTA, not only direct competition with ASEAN enterprises but also with other foreign enterprises, due to their wanting to enter, has the potential of threatening the survival of domestic enterprises. What problems must the newly galvanized domestic manufacturers overcome? What are the essential elements that would allow them to gain competitive advantage over their foreign enterprises? Without an analysis of these issues, it would probably not be possible to overcome the fierce cross-border competition that would be expected in the future.

The key to the survival and development of the domestic manufacturers lies in the domestic distribution system. This is because the question of whether or not domestic manufacturers will be able to enjoy further growth in the future would depend on how far they would be able to cultivate sales markets. Introducing the latest manufacturing equipment and producing items of superior quality would be to no avail if there were no proportionate markets to absorb the volume of goods produced. The issue facing these domestic manufacturers, which are still small in scale and in the process of expanding production, is how far they are able to expand their sales networks.

A prerequisite for the expansion is the scale of the market. The domestic Lao market is small: the population of 5.2 million is too tiny in comparison with those of neighboring countries, and the urban population is only about 700,000. Even now, the domestic Lao market is fragmented and does not take the form of a unified one. Of course, potential customers are not limited to the domestic market. Once the framework of AFTA becomes a reality, since intra-ASEAN goods will move free of tariffs, exports would be possible in the future. Nevertheless, before anything else, it is important to expand the sales routes within the domestic market, since the experience of building domestic sales networks will prove very useful when it comes to opening up markets for the rest of ASEAN.

This paper begins by discussions of the present state of the distribution of Lao consumer goods and how their manufacturers have established sales routes. It goes on to analyze the Talat (market), which is essential to Lao distribution: in addition to being retail outlets, shops wholesale domestically, and here enhancement is of vital importance to the invigoration of the Lao distribution structure. The paper ends with a discussion of the policy issues.

II. Distribution of Consumer Goods

1. Distribution by Manufacturers of Consumer Goods

We conducted an interview survey on the distribution channels for everyday goods (detergents, shampoos and soap), processed foods (e.g. cooking oils), soft drinks and beer (domestic brands only). Questions are centered on how both foreign-based and domestic manufacturers built up the distribution channels. In this section, I report on 3 cases.

(a) Case 1: Company ‘ A_{gd} ’, a General Distributor for Company ‘ A_F ’, a foreign-based manufacturer of cleansers¹.

Most of the A_F products which A_{gd} deals are toothpaste, toothbrushes and soap and comprise the bulk of those distributed by A_{gd} .

When Company A_F entered the Lao market, Company A_{gd} , a domestic enterprise within Vientiane Municipality was designated as its general distributor. The Managing Director (MD) of A_{gd} was a Thai, aged 46, who secured the position because of his experience as a business manager in Thailand², where he had built a marketing network for A_F . According to him, the present state of the Lao market is very similar to that of the Thai market 20 years ago.

At present, marketing by A_{gd} is carried out through the following three types of distribution channels.

- Type 1: $A_{gd} \rightarrow \text{SD (Sub-Distributor)} \rightarrow \text{JSD (Junior Sub-Distributor)}$
 $\rightarrow \text{Wholesaler (W)} \rightarrow \text{Retailer (R)}$
- Type 2: $A_{gd} \rightarrow \text{SD} \rightarrow \text{W} \rightarrow \text{R}$
- Type 3: $A_{gd} \rightarrow \text{W} \rightarrow \text{R}$

¹ The account that follows is based on what I was told by the Managing Director of A_{gd} in an interview held on 23rd August, 2004.

² At the time, Thailand was the base for marketing to the Indonesian Peninsular and China.

A_{gd} set up only one branch in Pakse; and in other areas, A_{gd} designated relatively large retail outlets to act as SDs (Sub Distributors) of A_{gd} as in type 2. Today A_{gd} has 7 SDs, but not in all areas³. Where there has been no SD, products are distributed by requesting several relatively large-scale retailers to act as agents, as in type 3. In the above depiction, these are designated as Ws (wholesalers), but they are in fact intermediary traders in charge of distribution to other retailers, rather than true wholesalers.

A_{gd} promotes the best of the agents to SD. For example, the distribution channel in Xiengkhuoang follows that of type 3. Distribution is effected through 4 agencies, and the MD says that in the near future he wants to make one of these into an SD. In searching for an SD, he is looking for excellent retailers who are knowledgeable of the local market. He told me that an important point in building a sales network was distinguishing between retailers who were excellent and those who were otherwise. He observed keenly the capability in running the shop of the retailer, including the character of the proprietor. He says that he has learned from long experience what he needs to observe.

Once A_{gd} has selected an excellent retailer as an SD, A_{gd} has to impart to the retailer the knowledge needed to carry out the work of an SD. As the General Distributor, A_{gd} provides education on how to keep accounts, receive and place orders, display goods, how to prepare business plans, and so on. The SD is also told that the essence of management rests on being ‘Punctual’, ‘Respectful’ and ‘Active’. In addition, A_{gd} receives from A_F 2% of the annual takings for sales promotion expenses; A_{gd} uses this money to produce promotional goods, which are distributed to the SDs.

A_{gd} provides the SDs with one month of credit for the settling of accounts. This is possible because A_F extends a longer period of credit to A_{gd} . According to the MD of A_{gd} , the biggest risk for a General Distributor is having the accounts receivable (the cost of merchandise) turn into bad debts; 0.5% to 1% of annual sales become bad debts.

The gross profit which an SD, or dealer under an SD can receive is 10% of the retail price. Of this, the retailer takes 2%, with the remaining 8% being shared by the SD and other distributors, such as the JSDs. Understandably, fluctuations in the retail price can alter the amount of profit accruing to the agency.

A_{gd} has also started to use the distribution channels set up for A_F to sell the products of another foreign-based manufacturer who makes a product category that is different from that of A_F (i.e. dairy products). It is also conducting negotiations with foreign-based manufacturers (from Thailand and Japan), dealing in toilet paper, tissues, kitchen cleansers, and the like, who are asking for their products to be handled.

³ There are SDs in Attapeu, Savannakhet, Thakhek, Pakxanh, Luang Prabang, Oudomxay and Luangnamtha.

(b) Case 2: Company B_F , a foreign-based manufacturer of general everyday goods, and Company B_{gd} , a general distributor for B_F ⁴

B_F products handled by B_{gd} are shampoo, soap, liquid soap, laundry detergent, kitchen cleansers, household detergents, instant beverages, cooking oils, seasonings (such as soy sauce)

The company that became B_{gd} was established in the late 1940s. Initially, it handled imports of cement, rice and foodstuffs, and in the 1960s, it began to expand its business into many different fields, including management of a sawmill, a hotel, and tire regeneration plant, tractors and farm machinery distribution, car repairing, and Lao silk production. Since 1975, it has continued to import everyday goods, while at the same time being involved in government development projects, such as the construction of rice storage silos and bridges. In joint ventures with foreign enterprises, the Company established a Japanese automobile dealer in 1992 and a motorcycle lamp assembly plant in 1995.

In 1995, B_F made the company its General Distributor (B_{gd}) within Laos. In that year, B_{gd} established three new branches in Laos to distribute the products of B_F ⁵. In areas far from these, the best shop in the area was promoted into an agency. The importation of everyday goods had been continuing all along, but that was the first time B_{gd} built a nation-wide sales network. Before then, the imported items were loaded onto lorries, which took a week to tour all around, peddling the goods. The vendor dived into the largest shop in the Talat and sold its items for cash. When it came to building a nationwide sales network, B_{gd} exploited this information, as it accumulated experience gained throughout the country.

B_{gd} gave the agencies instructions on the basics of business management, how to display merchandise, keep accounts, deal with the banks and so forth. B_{gd} also bought fax machines for them, as they had none. From then on, B_{gd} grew together with the agencies, which led to increased turnover. B_{gd} now has some 30 agencies throughout the whole country.

However, in 2001, changes in the management policy of B_F resulted in restrictions on the handling of its products by B_{gd} within Vientiane.⁶ B_F sought new partners in each of the other provinces, and as a result concluded agency contracts with 6 new partners. Because of this, B_{gd} was forced to close one of the three branches it had opened. The other two branches were made into subsidiary companies, and they switched their line of business to import - export trade.

⁴ B_F is an unusual foreign-based manufacturer in that it has had a Representative Office in Laos for the past 7 years (with 7 employees as of 2004). The account given here is based on interviews held with the Business Manager of B_F on the 2nd April 2004, with a director of B_{gd} (employing 136 as of 2004) on the 5th August 2004, and with the proprietors of retail shops in Talat handling its products.

⁵ Located in Pakse, Savannakhet and Luang Prabang.

⁶ In the same year, a plant for B_F products was established, financed 100% by B_{gd} , with an initial capital of US\$600,000.

However, the partners with which B_F had concluded agency contracts did not possess the management abilities expected of an agency, thus B_F had no alternative but to cancel its contracts with several of the agencies. In the end, B_F revived the agency contracts it had with the two subsidiaries of B_{gd} . Today, B_F is distributing its products through its seven regional agencies,⁷ three of these which are, as already stated, B_{gd} and its two subsidiaries.

(i) The Nature of transactions carried out between B_F and B_{gd} , and between B_{gd} and the regional agencies.

The Laos offices of B_F simply lodge their orders directly with its headquarters in Thailand; they do not maintain any stock at all. Goods are sent by lorry directly from Thailand to the regional agencies. Transportation costs are borne by B_F . Transportation to northern Laos costs more, but since it is the policy of B_F to charge the same price everywhere in Laos, the wholesale price asked of the regional agencies is the same throughout the country. Half of the sales of B_F products in Laos are effected in Vientiane Municipality.

Transactions between B_F and B_{gd} are carried out in Baht, and payment is made in cash after ten days. In other words, the regional agencies, including B_{gd} , bear risk in selling B_F products within Laos. At the time of the currency crisis in 1997, although B_{gd} incurred losses of US\$700,000, no financial assistance was offered by B_F .

B_{gd} caters for its security, by requiring deposits from its regional agencies, but then provides them with credit for periods of 7 to 21 days. Thus, B_{gd} grants its regional agencies a longer period for credit relative to the period of grace for payment that it receives from B_F (10 days). B_{gd} 's activities also include providing the finance for the operations of the distribution organization under it⁸.

(ii) Sales promotion

The promotion of sales by B_{gd} of B_F products by B_{gd} consists of paying rebates to those retailers who display in their shelves the multiple B_F products in the same fashion as shown in a sample photograph. B_{gd} can pay up to US\$100 per month in rebates to a single shop. Consequently, B_F products are displayed in neat arrangements and in prominent positions in the shops in the Talat. Not surprisingly, the display style of B_F products is the same in every shop, but those of other manufacturers is left up to the discretion of the shop proprietor.

B_F has three Regional Distribution Managers, who supervise the purchasing and stock control of the regional agencies and provide training in new sales promotions. Unlike A_F however, B_F does not pay sales promotion expenses directly to its General Distributor, B_{gd} . B_F merely offers the ideas, but it is B_{gd} that

⁷ The regional agencies are located in Pakse, Savannakhet, Takhek, Luang Prabang, Luangnamtha and Bokeo.

⁸ See the ONO report in SME group. Merchants also can grant credit and can be a substitute for a bank.

provides the retailers with sales promotion expenses.

According to the Lao Business Manager of B_F , the Lao consumer market is ‘still immature’. Cleansers for different purposes, hair-care products, and instant and processed foods have yet to really get through to the consumer. Only a small part of B_F product lines has been introduced into Laos. For this reason, in 2004 ‘direct marketing’ was introduced, whereby cooking parties demonstrating the use of B_F seasonings (e.g. mayonnaise) and cooking oils are held in rural areas. Each week, visits are made to between 20 and 30 villages outside Vientiane.

(iii) Other products handled by B_{gd}

Like in the case of A_{gd} , B_{gd} makes use of the sales network created for B_F products to act as the domestic General Distributor for 9 other foreign-based manufacturers. B_{gd} handles a total of one hundred items, including processed foods, tires and lighting fixtures. While some manufacturers leave all aspects of marketing to B_{gd} , other manufacturers direct B_{gd} to apply ideas that have been successful in other countries. However, it does not necessarily follow that marketing methods successful in other countries will go down well in Laos.⁹ Sales promotion techniques need to be adapted depending on the product, and the product may also need to be sold by a different type of retailer. Using its domestic network, B_{gd} combines a variety of methods to open up markets for each manufacturer, at the same time building up a unique store of know-how.

(C) Case 3: the domestic manufacturers¹⁰

We also conducted an investigation on the marketing methods of the domestic manufacturers of import-substitute consumer goods. One company is producing kitchen cleansers, another is producing palm oils and furthers two soft drinks.

Half of the import substitute consumer goods produced by domestic manufacturers goes to retailers within Vientiane Municipality. If they aim to expand their sales, the question they would face would be how to build sales networks that would allow them to sell to a more geographically extended market.

⁹ For example, B_{gd} has a business dealing with a certain foreign general electrical manufacturer. The goods handled by B_{gd} are limited to fluorescent lights and lamps. Hitherto, this general electrical manufacturer has been successful by providing various sales incentives such as complimentary trips to large electrical appliance shops corresponding to sales of the manufacturer’s products. The same practice was tried in Laos, but fluorescent lights and lamps are not sold in domestic electric appliance shops there, but rather in ones dealing in general supplies. For a general supplies shop, the sales of fluorescent lights and lamps account for an insignificant proportion of gross takings, so this kind of sales incentive was not effective.

¹⁰ Although I was unable to include it in this report, one of the largest domestic enterprises, Lao Brewery Co., Ltd., and the Sensavang Food & Plastic Co., Ltd., which is Case 1 in the Matsushima Report, have sales networks that cover the whole of Laos. The Lao Brewery has 41 franchise shops throughout the country.

Today, the domestic manufacturers distribute goods in Vientiane directly to the retailers by lorry. For retailers in other cities, distribution is effected via regional retailers, but generally they are distributed directly. Unlike in the case of the foreign-based manufacturers, most of the domestic manufacturers have just begun to produce only a single item, with very few producing two or three items.

The investigation revealed that a number of retailers within the Talat handle import-substitute products. In the retail shops, items manufactured in Thailand, China, Vietnam, etc., are laid out separately within the cramped store space. Domestic items are usually placed in a corner of the shop. The display space is extremely bad: most prominently placed in the centre of the shop are the products of the foreign-based general manufacturers, neatly arranged and kept dust free. This is probably due to the sales promotion tactics described above.

Those in charge of the shops said: ‘When the sales representative calls, if the product is selling well, we buy in more stock, but if goods remain unsold, naturally, we don’t buy in more stock’. In other shops I was told that ‘We do carry domestically-produced items, but we are out of stock’. In other words, merchandise cannot be replaced because the sales representative has not called.

2. A comparison of the marketing strategy of domestic manufacturers and foreign manufacturers

In this section, I shall deal with the difficulties domestic manufacturers are faced with.

Domestic manufacturers and foreign manufacturers are different in following 2 points: product lines and the way to distribute. Single item domestic manufacturers dealing directly with retailers are handicapped, comparing with foreign manufacturers. Finally, I will focus on wholesale business in order to overcome their handicap,

(a) Single-item domestic manufacturers and foreign manufacturers with multiple product lines: the disparity in the influence of single-product lines and the difference in sales promotion in the retail shop.

As just stated, the type of item produced by the domestic Lao manufacturers of consumer goods is generally limited to a single one, and rarely exceeds 2 or 3. Sales activities towards the retailer is basically carried out through the sales talk of sales persons, but since the proceeds to be gained from a single retailer are meagre, the amount of money that can be invested in sales promotion for each retailer must necessarily be kept low. On the other hand, the foreign-based manufacturers entering the Lao market have abundant ranges of products; hence the sales volume per individual retailer is high. This means that, companies like in the case of B_F , it is possible for them to engage in sales promotion whereby rebates are paid according to the proportion of shelf space taken up by their products. It follows that the products of the domestic manufacturers, who account for only a small proportion of the retailer’s takings and provide

little in the way of sales incentives, are relegated to a corner of the sales display.

The domestic manufacturers have no option but to perform better in terms of production costs if they are to become competitive. However, while the domestic manufacturers may have the edge over their foreign counterparts in, say, transportation costs; it is no easy task for them to offer competitive prices in the shops. The foreign manufacturers are able to put together a product portfolio in accordance with their market strategy, given the multiplicity of their products. In other words, it is possible for them to lower prices on certain products in order to beat a rival, while maintaining profitability through raising the prices of their other products; the domestic manufacturers, with practically a single product, cannot do so without deterioration in their earnings.

What should be emphasised is that price competition with the foreign manufacturers is unavoidable, since they are dealing with the same products. With a combination of aggressive promotion in the retail shops and competitively low prices, it is possible for the foreign manufacturers to force the import-substitute goods off the retail shelves. How can the marketing power of the domestic manufacturers be improved so that some of them can hold their own against the foreign manufacturers? Let us consider this more by comparing the two.

(b) Domestic manufacturers deal directly with retailers; foreign manufacturers go through agencies: the burden of marketing expenses and working capital

The domestic manufacturers deal directly with the retailers. Dealing directly with the retailer for single products involves considerable marketing costs and also requires considerable working capital. Let us look here at the specific marketing costs borne by the manufacturer. First of all, in order to place the product in the retail shop, the manufacturer's sales representative must visit the retail shops one at a time and make his sales pitch. Assuming that he is successful in persuading the shop to carry the product, since the domestic manufacturer operates on the direct distribution method once business dealings with the retailer are under way, the manufacturer's sales persons must call on the shop in person in order to have just one product placed, handling everything from the receipt of the order, delivery to the collection of payment for the merchandise. If the retailer pays in cash in advance, funds can be collected quickly, but if payment is not to be collected until the time of the next order is placed, the collection of funds will be delayed by that much. The manufacturer needs to have a working capital to cover this.

The foreign manufacturer, on the other hand, can place multiple types of products on the market, possesses the know-how to build a sales network and employ indirect distribution through a system of agencies. The general distributors shoulder all the marketing risk, and provide some credit to those distributors under them that have insufficient working capital. The agencies also handle sales promotion on behalf of the manufacturer.

However, as we saw in the case of A_F and B_F , the foreign manufacturers must find, for themselves, distributors with the ability to form nation-wide sales routes for their products. It is also essential for the General Distributor to educate the regional agencies and improve their business management capabilities. Even a foreign manufacturer with international marketing experience needs to incur considerable cost in order to build a sales network to cover the whole of Laos.

In this paper, I selected for consideration only those foreign manufacturers that may be considered to have been comparatively successful in their entry into the Lao market. On the other hand, foreign manufacturers who were unable to find a good general distributor in Laos, ended in hurriedly retreating from the market, or are having great trouble expanding their sales. It can be said that entry into the Laotian market by a foreign manufacturer depends on the competence of the general distributor in charge of marketing for its success. However, if the formation of a nationwide sales network has been carried off successfully by the General Distributor, that sales network becomes a business resource for the manufacturer, and an obstacle to the entry of rival manufacturers into the market.

(c) Where are the business entities to play the part of wholesaler?

Considering the situation in this way, if the marketing power of domestic manufacturers producing only a single item is to be strengthened, it is essential that there should exist a real wholesale business: create a line-up of the multiple products of several manufacturers and engage the retailers in aggressive sales promotion activities. However, the Lao domestic distribution system does not distinguish between retail and wholesale; there are no large-scale wholesale-only merchants. However, a business entity that fulfils the role of wholesaler does not have to be a wholesale-only merchant. What business entity has the potential to discharge the function of a wholesaler?

Of the existing business entities in Laos, we should perhaps look first at the manufacturers' agents. The nationwide sales network of a particular manufacturer ought to be an obstacle to market entry for rival manufacturers that fall into the same category; but as we saw in the case of A_{gd} and B_{gd} , the sales networks are open to the manufacturers of items that fall into other categories. In that sense, the nation-wide sales network of one manufacturer should be seen as a sales network that can be shared by manufacturers of products in other categories. Again, traders already involved in import and export could also take on this task.¹¹

A further point that should be noted for the expansion of sales routes for the domestic manufacturers is the function of the Talat, which is the base for regional distribution. Let us now consider the function of the Talat.

¹¹ For example, in Thailand too, there are not a few local businesses that started out as trading companies. Even the CP (Charoen Pokphand) Group, one of the largest business enterprises in Thailand, was originally a trading company importing seeds and fertiliser from China.

III. The Lao Retailers at Present

1. Business conditions for retailers in the Talat

As of 2004, there are 209 permanent or semi-permanent Talats within Laos. Numbers vary depending on the province, but every province has at least one Talat.¹² Of these 209 Talats, 65 are within Vientiane Municipality. Growth and extension are proceeding apace in regions throughout the country, 153 Talats are scheduled for new opening, expanding or refurbishing.¹³

Interview surveys were conducted mainly in Talat Sao and Talat Khuadin.¹⁴ Talat Sao and Talat Khuadin are located adjacent to the centre of Vientiane Municipality. There is a bus terminal in the area, and of the many Talats, these two are large in scale and are very well served by transport facilities. There are 600 tenant shops in Talat Sao.

What kind of management are the shops in the Talat operated under? Here is what materialised:

(a) Shop floor area

A single plot in the Talat measures between 9m² and 16m². Storerooms and shops are in the same space. Some shops commence business on a single plot, accumulate capital and gradually expand floor space by buying up business rights to neighbouring plots.¹⁵

(b) Items stocked

The list that follows is a typical assortment to be found in one household goods shop¹⁶: Laundry detergent, dishwashing liquid, shampoo, rinse, soap, body shampoo, toilet paper, insecticide, insect bite lotion, nail polish, nail clippers, exercise books, pens, rulers, writing materials, dry-cell batteries, padlocks, vinyl bags, belts, umbrellas, hats, sugar, salt, MSG, instant coffee and other Nestle products, edible oils, coffee beans, fruit juice, cigarettes, matches, lighters, footballs, badminton sets, cosmetics, perfumes (carried only in shops inside the arcade). Although all retail shops seem to have this range of

¹² As of August 2004, data from the Ministry of Commerce, Internal Trade Department. While Sekong province has 26 Talats, Champasak Province has 1, Borikamxay Province has 2 and Savannakhet has 3.

¹³ (ibid.) Of these 153 Talats, 44 are in Huaphanh Province and 31 in Xiengkhuang Province

¹⁴ The interviews were conducted in three phases, in August 2003, March and August 2004 and January 2005. Basically the method adopted was to ask questions in the shop for about 10 minutes, but a total of 19 interviews went on for over an hour each. For the sake of comparison, interview surveys were also conducted in Talat Thongkhankham, Talat That Luang, Talat Simuong and Talat Nongdouang (located about 40 minutes by car from the centre of Vientiane).

¹⁵ For example, in 1995 the business rights for one 9m² plot in Talat Sao was being traded for US\$13,000.

¹⁶ Items stocked in a household goods shop in Talat Khuadin in August 2004.

goods, only some shops operate this kind of general retail business, others sell large amounts of a specific product wholesale. This kind of shop is the wholesaler/retailer that deals directly with the manufacturer of the product (or the manufacturer's agent), as I mentioned in the previous section. It may prove instructive to consider the case of a retailer that sells school exercise books wholesale, and see how it came to start up handling wholesale business.

(c) Case 4: Shop 'C', an everyday goods shop in Talat Khuadin¹⁷

(i) Line of Business of Shop 'C', and the career of the proprietor

Shop 'C' operates out of 2 plots in a single-storey shack outside the Talat Khuadin building. It is a typical everyday goods shop of the type often seen in the Talat, carrying the kind of merchandise described above, but it also purchases school exercise books directly from the manufacturer and sells them wholesale.

The proprietor of Shop 'C', an everyday goods shop in the Talat Khuadin, is a woman who was born in Xiengkhuoang. At the age of 23, in 1969, she moved to Vietnam because of the war. There she finally managed to graduate from high school. In 1975, she returned to Laos, but her home had been burned down during the war. In 1978, she moved to Vientiane and while she had no experience in commerce, she got a relative to let her have some merchandise, and began to peddle rice dumplings and sweets. In 1980, she obtained a small shop in Talat Lane, where she dealt in all kinds of items, including chilli, garlic and ice. Twice during the 1980s, she lost all her stock to fires in Talat, so had to leave Talat Lane, but in 1991 she opened a shop in Talat Khuadin with a floor space of only one square metre, where she dealt in stationary. This was because stationary is something people use every day, and she thought that it was a line of merchandise essential for the development of the country. Takings at first were meagre, but since there were no other shops in Talat Khuadin dealing in stationary, as the demand for stationary grew, she was gradually able to increase the scale of her business.

(ii) The move to school exercise books¹⁸ – Expansion of scale through direct transactions with a printing company.

Six or seven years ago she took the plunge and decided to purchase school exercise books directly from the printer. When buying wholesale, it is possible to buy as few as 100 books at a time, but when dealing directly with the manufacturer, the smallest lot is 1,000 books. This means that the sales risk is greater,

¹⁷ Because it is located adjacent to a bus terminus, a lot of the shoppers at Talat Khuadin are from rural areas. The time of the interview survey (August) was just before the start of the new school term, and there a lot of school aged children from the rural districts who had come up with their parents to purchase supplies for the new school term seen.

¹⁸ In the Talat, school exercise books are piled high not only in the everyday goods shops but also in clothing shops and shoe shops. Exercise books can be bought singly, but they come 20 to the set, and bulk purchases are a little cheaper. When they buy school notebooks, everyone buys a set of 20.

but the input price is lower, and she reckoned that this gave her the potential for higher profits. Her gamble paid off, and in the first year she was able to sell 20,000 exercise books.

At present, her clientele is growing and takings are rising steadily. From January to August 2004, she sold between 400,000 and 500,000 exercise books. She buys in stocks of 10,000 to 20,000 at a time before the start of a new school term. Since the printers cannot always keep up with demand, she now has dealings with four printing companies. The date for payment to the printers is 5 days after receipt of the merchandise.

Shop 'C' sells wholesale to all the shops in Talat Khuadin that handle school exercise books. For example, the other shop in front of Shop 'C' selling price of 20 exercise books is 17,000Kip (or 1.7 in USD). Whether the buyer is a retailer or a member of the public, if the same number of books is being purchased, Shop 'C' does not change its selling price. The other shop price in the Talat Khuadin is between 18,000K and 20,000K. Shop 'C's shop price is also the wholesale price. Sometimes a middleman may come from a rural area and pay cash for his purchases, which he will then take to sell to stationers in the rural areas. When the shop undertakes to dispatch an order, 500K is added to the price for P&P, so that 20 exercise books then sell for 17,500K. In response to requests from customers, the shop also handles stationary such as ballpoint pens and paperclips. For regular customers, the proprietor will sometimes wait two or three days for payment.

From July to September, before the start of the new school term, sales of school exercise books account for 80% of the sales for the period by Shop 'C'. During this period, people come from far away to purchase school exercise books. School notebooks are a 'seasonal item', which can be sold in large quantities from July to September; outside of this period, sales of account for about 50% of the shop's total sales.¹⁹

(iii) Handling items other than exercise books

Retailers operating in premises larger than a single plot and with sales of considerable size receive visits three times a week from the foreign manufacturers' agents and the domestic manufacturers' sales persons. On those occasions, the shop proprietor will look around the shop and place an order for items that are out of or low in stock. However, there is a minimum lot order when purchasing from the manufacturer's agent. The size of the minimum order varies from item to item, and can be anything from half-a-dozen items to one box.

¹⁹ Examples of retailers-turned-wholesalers like Shop 'C' are an everyday goods shop with 90% of its sales in only cosmetics, and an electrical implements shop dependent for 40% of sales on a clientele (Kha Patcham) of only 7 shops, located in Talat Sao and Talat Khuadin.

Apart from the manufacturer's sales persons, another frequent visitor is the 'peddler', who brings with him merchandise or samples. There are Lao peddlers who go to Nong Khai in Thailand every day to stock up, as well as foreign peddlers from China, Vietnam, and other countries, who come round regularly with lorries loaded up with merchandise. From these peddlers, it is possible to purchase items in single units. It is also possible to place orders for items to be brought the next time they visit. Because of all the different trade dealers who pay direct visits to the shop, it is possible for the proprietor to buy stocks of all kind without ever having to leave the shop. The stock may be paid for in a number of ways: immediately in cash; in the evening for a morning delivery, in cash; and when the next order is placed. For regular clientele, the favored method is to pay 2 or 3 days later for purchases from an agent just like an everyday goods shop does, and one week later for stock laid in from a peddler.

The purchasing of stock depends on intuition, watching how items sell and replenishing products that sell well. The shop proprietor does not keep a ledger: the only record that she has is a copy of the order form filled in by the sales representative; the shop does not prepare an organized record of individual transactions. It is possible to place orders over the phone, but this entails the shop having a list of merchandise, specifying product numbers and keeping a record of the order; so basically they do not like to use this kind of bothersome method. No stocktaking is done either, so the proprietor does not know the total value of her stock.

2. Analysis

Let us take one more look at the process whereby Shop 'C' came to deal wholesale in school exercise books.

Shop 'C' noticed the potential for school exercise books, and began to sell them retail. Basically, dealing directly with the manufacturer and buying in bulk provides a bulk-purchase discount, but since purchasing funds are limited, it is not possible initially to deal directly with multiple manufacturers. However, Shop 'C' began to deal directly with the manufacturer when sales of school exercise books increased, and started to sell exercise books wholesale to retailers (in this instance, stationary shops).

One shop seizes the opportunity for increased sales, and lays in a large stock of one type of product. From the point of view of the other shops in the Talat, this means that that shop has become a 'supplier' of that particular product. From the point of view of the manufacturer, it means that the shop has effectively become a 'sales outlet' for their product.

As far as the retailer is concerned, procuring exercise books from Shop 'C' expands the retailer's product line-up and allows it to seize the opportunity for increased sales. If the transactions continue, after a while the retailer will become one of Shop 'C's' regular customers, and as such will be able to get a

postponement on payment for purchases. This provides an opportunity for the retailer to expand its business transactions with a particular enterprise. The possibility also arises for Shop 'C' to become a trader handling all kinds of merchandise wholesale, not just exercise books.

As far as the printing company selling its product wholesale to Shop 'C' is concerned, exercise books are a seasonal item, difficult to market. The period during which there is a demand for school exercise books is short, only three months, on top of which there is a spike in demand immediately before the start of the new school term. However, there are limits to the production capacity of the printing company, and it is difficult to respond promptly to demands from the shop. For this reason, Shop 'C' now has business dealings with a number of printing companies.

At the same time, Shop 'C' cannot maintain its operations only through wholesale dealing in school exercise books. The sales are heavily dependent on school exercise books, but the period from October to June is when sales of exercise books drop by half. It secures an income during this period by operating as a general retailer.

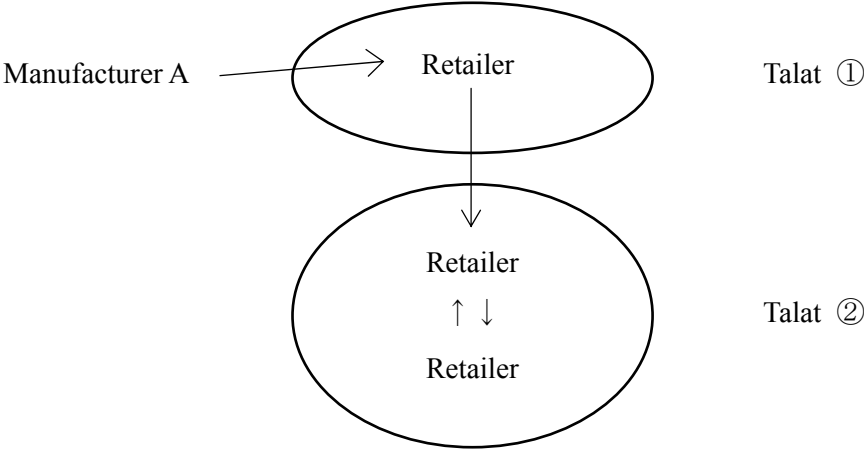
There are fluctuations in the sales of individual items handled by the retailer. Sales of many items differ depending on whether it is the dry season or the rainy season, and sales are also affected by all kinds of environmental factors, including annual events. The retailers need to deal in as many different kinds of merchandise as possible if they are not to be affected by the sales of individual products. This is probably another reason why the shops in the Talat tend to have a 'general store'-type product lineup.

It is also not that difficult for a 'general store' retailer to operate, if it is located within the Talat. The reason for this is that within the Talat it is possible to purchase stock of any kind at any time. Shops within the Talat have an extremely detailed grasp of what kind of products other shops have, and from which dealers. If a product for which there is an order is out of stock in the shop, it is an everyday occurrence for the proprietor to go to a neighboring retail shop and procure the item there and then. In the Talat, there were clothing shops that carried exercise books because it is possible to buy on the spot no matter how much or whatever the item is. It could be said that the horizontal trading between retailers means that each shop shares part of the stock of merchandise, so that the Talat as a whole reduces the stock burden on the individual shop, i.e. the Talat is one large commercial gathering in which small-scale shops are organically bonded together.

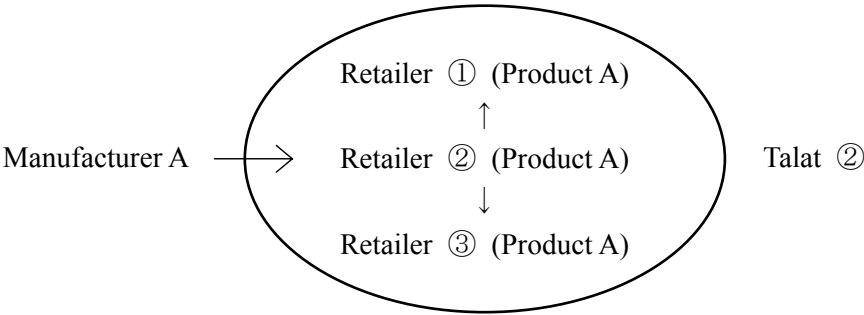
Taking another look at the actions of the main actors in terms of the process for the development of the Talat distribution system, one gets something that looks like the following chart.

Chart 1: Process for the development of a distribution system in Laos

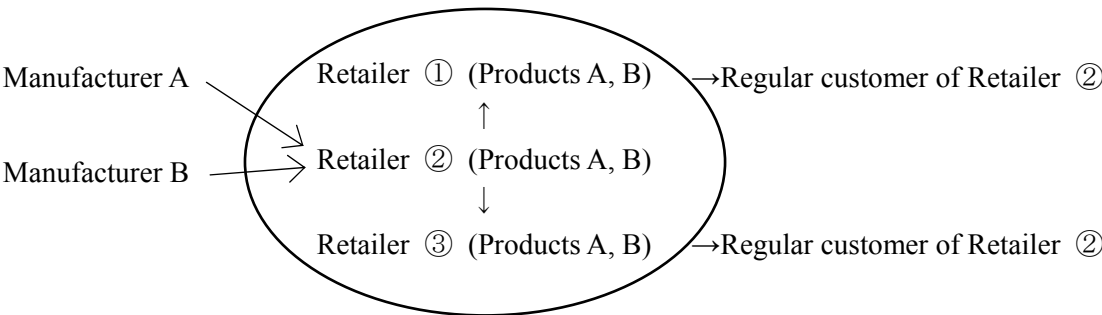
1. Start to buy a particular product from other agencies



2. Manufacturer delivers directly to the retailer, which becomes an agency



3. Retailer takes on the function of a wholesaler - Retailer ② turns into a wholesaler



The complex trading relationships shown in 1 and 2 above illustrate the present situation in the Talat. 3 illustrates a situation in which a product line-up of items from multiple manufacturers has been put together and is offered to other retail shops. This stage has not yet been fully reached in Laos, but there is every possibility that this kind of process will lead to the development of a distribution organization that will take on the function of the wholesaler.

IV. Lessons to be drawn from this Survey

For the rapidly up-and-coming domestic consumer goods manufacturers, how to improve sales ability is an important issue. The formation of a wide-area sales network necessitates a huge amount of marketing expense. The foreign manufacturers have built their own nationwide sales networks by means of agencies. It is difficult for the small-scale, single-product domestic manufacturer to build an independent sales network. The time is ripe for the appearance of businesses ready to take on the function of wholesalers, and carry the products of the domestic manufacturers in their product line-up. How best to create the kind of environment that would encourage the appearance of businesses ready to take on the function of wholesalers in the Laotian distribution system? For the present, let us call the foundation needed to activate commercial activity, the ‘distribution infrastructure’.

Distribution infrastructure usually refers to physical-distribution facilities and information systems. However, when stating the distribution infrastructure needed to activate commercial activity here, one does not mean just this kind of tangible infrastructure. Simply laying roads and building modern buildings without considering the intangible mechanisms that will enable transactions to be carried out smoothly between traders will not encourage the development of a distribution system. The provision of an environment in which each individual trader can expand his own business network is the most important issue in the construction of a distribution infrastructure.

As shown in the paper, a trader’s business network is not something that is built over night; it grows gradually, as business is conducted day by day. And as for the cultivation of businesses that will take on the function of wholesalers, it is probably most realistic to make the most of the activities of existing operators. The first thing that comes to mind is for the existing manufacturers’ agencies to be put to good use by the domestic manufacturers of a different category of product. They could also use businesses already engaged in the wholesale trade. Gathering together information on agencies all over the country and information on businesses engaged in the wholesale trade, and making this information available to the domestic manufacturers, would help in the opening up of sales routes.

In the search for businesses ready to take on the function of wholesalers, attention should also be paid to the merchants in the Talat. Having understood the complex business relationships between the shops in the Talat, we must give consideration to the cultivation within the Talat of businesses that will take on the function of wholesalers. Elevating the function of the Talat will indirectly contribute to the creation of a base for the domestic manufacturers’ marketing activities. There is no doubt that a distribution system that has developed through the brisk activities of the traders will also function as an infrastructure for the marketing activities of the manufacturers. I will set out below the points necessary for the provision of a ‘distribution infrastructure’.

1. Improvement of the business management skills of retailers in the Talat

For retailers to take on the function of wholesalers, the retailers' business management skills must be improved. For example, Shop 'C', which I discussed as a case study, has no idea of the total value of the stock it has in hand. Data the proprietor does have a handle on are monthly and daily takings, and the rough profit on each item. Bills for merchandise are paid by putting cash from sales in a box, and taking cash out of the box when the representative calls to collect the money due. No record is kept of cash receipts and disbursements. The business is basically run hand-to-mouth; stock is bought in with funds on hand, and when the goods are sold the takings are used to buy in the next batch of merchandise. Even a shop like Shop 'C', which deals wholesale in large volumes of a specific product, is no different to a mom-and-pop store when it comes to business management skills.

To some extent, a retailer builds up the skills needed to run a retail business through its activities in the Talat. However, different skills are needed if the retailer is to take on the function of a wholesaler. The volume of goods handled is much larger, and skills are needed to accomplish all kinds of tasks: the accurate and prompt taking and placing of orders, stock control suited to the specific characteristics of the product (for example, for foodstuffs freshness control is essential), sales promotion towards the retailers, etc. All these varied tasks are the work of an agency and also the work of a wholesaler; the wholesale industry requires the skills to accomplish these tasks accurately and promptly.

Long-distance business transactions inevitably generate credit risks with regard to the squaring of accounts. A manufacturer cannot feel secure expanding business with a retailer whose financial situation is not sound. In order to be able to check that there is not too much stock in hand compared to sales and that appropriate profit levels are maintained, the introduction of book-keeping is essential. As the analysis in the Ono Report shows, the credit extended to a retailer from higher up the distribution chain is essentially the same as receiving a loan of funds with which to procure merchandise, and is of extreme importance to the operation of a retail shop.

2. Transfer of business skills within the distribution system – the exchange of information

The development of wholesale business involves the need for retailers with the desire to expand their sales. If the retailers do this, they cannot provide the businesses, taking on the function of wholesalers with an arena in which to carry out their activities. The retailers need to be given as much stimulus as possible to promote a revolution in sales methods that will encourage their growth. It would also be a good idea to give the retailers some information on diverse sales methods, such as describing to them the business methods of agencies in areas all over the country. Another method would be to make it so that the retailers can exchange information with each other and engage in business exchanges on their own initiative. The manufacturers' agencies already mentioned have mastered the modern business

management techniques passed on to them by the General Distributors. It is conceivable that a trader passing on to other traders, skills he or she has already adsorbed would accelerate the formation of a modern class of traders. On top of that there will further be a need for specialist education in retail shop management, such as business management and inventory control.

3. Future issues

According to my interview survey, the retail shops in the Talat are independent businesses, but in fact all the relatives – parents and children, siblings – each independently run their own different type of shop on the same or adjacent plots in the Talat. However, each tiny retail shop is run independently, and there is no attempt to work together to operate a retail store with larger sales through relatives each chipping in capital. In addition, even if the retail shop in the Talat produces significant profits, no commercial moves are made to expand as a retail business; in some cases the business switches over to manufacturing, or the profits are invested in some other business, such as real estate.

Many entrepreneurs have acquired business experience in the Talat, accumulating the initial capital to start up in business. However, at the present time there do not appear to be any enterprises that are growing as retailers by adopting some innovative sales technique. Why is this? Are there factors preventing growth in the retail trade? I was not able to analyze these factors in the present survey, but they are issues that should be investigated in the future.

5. Wood Processing Industry

Chareune INTHAVY
Konethong PHOUNIKHOM

I. Country Profile and Potentials

Comparing with other Asian countries as well as other countries in the world, Lao PDR is said to be a country with abundance of natural resource such as land, forest, rivers, mining resources and so on, which can be potentially utilized for future economic development. These can be briefed as follows:

- Country land area : 236,800 square kilometers,
- Forest cover : 40% of country land area
- Rivers having potentials for building hydroelectricity dam with 30,000 MW and more.
- Mining resources include: gold, copper, zinc, tin, lead, gypsum, coal, limestone, iron, bauxite, potassium, precious stone and others.

Although Lao PDR has plentiful natural resources, the people are still poor; economic fundamental is still weak; development speed is still slow, not yet being able to catch up with the leap of development in the globalization world. This is due to a lack of development experience after the end of the war, despite Lao Party and the government has put much effort in adjusting economic development mechanism in each period. Experiences in utilizing technology in production process of economic sectors are not adequate, particularly in industrial sector where such utilization is still at primary stage; with only some industrial activities such as processing factories for service purposes, wood processing factories, mining platform and some others that utilize a certain level of technology.

Since the initiation of open door policy launched by the government and the start of international cooperation in 1986, together with untapped development potentials in the country, domestic and foreign investment and production have been increasing in some sectors. The economy grows progressively, showing by the average GDP growth rate of 6 - 6.5 percent per year. In fiscal year 2003 - 04, industrial sector covered 26.6 percent of GDP, service sector 24.4 percent and agriculture / forestry sector 48 percent, of which wood industrial activities covers 20 percent of agriculture / forestry sector.

The decree of the VIIth session of the fourth Central Party Meeting determined clearly in the industrialization and modernization policy of the party that electricity industry, **wood and agro processing industry**, tourism industry, mining industry and construction material industry are prioritized development sectors while the others are key supporting sectors. With this regard, Industrial and handicraft sector are responsible for realizing and implementing such policy under close direction of the Party and the government.

Although Lao PDR is a poor country in the world, but, as mentioned before, it is abundant of natural resources, particularly forestry covering majority of total land area. Moreover, Lao PDR is also deposited with mining resource and rivers, which have potentials for electricity development as well as country development. Wood processing industry is one important sector in Lao economy, accounting for 40 percent of export value and creating more than 22,000 jobs for Lao multiethnic people. The Party and government policy is to encourage modernization and integration of wood processing industry in order to increase productivity, value added of wood product and conversion factors. From the past to present, the focus of private investment in wood industry is only on wood processing industry such as those producing sawn wood and flooring wood. For industries that produce finished wood products such as housing furniture, utensil furniture and parts, there are very few. Moreover, the supply of wood materials for the processing process in the factory is not yet adequate since there are more wood processing factories than the quota of natural wood supply that the government approved in each year. This means that the government has the policy to reduce natural log cutting every year in order to preserve environment and prevent environmental impact to ecology and biodiversity system for its sustainable existence. However, the use of planted wood for supplying factories is very limited.

From the past 10 years, natural tree cutting for socioeconomic development of the Lao PDR is of concerning high level. If the trend continues, it is believed that in the next decade Lao forestry situation will certainly be on crisis. Therefore, the party and the government have put efforts in reducing natural tree cutting despite its importance to national economic development. Of the most important is the government policy to adjust number of wood factories of any types based on the Prime Minister Order No. 15/PM, dated 3 August 2001, on the ban of log export to foreign countries, gradually reduction of processed wood (sawn wood), promoting production of finished wood products or at least semi finished wood product for export.

Based on the survey conducted by the International Mekong River Committee on tree cutting in the Lao PDR, it is estimated that on average tree cutting reached 10,000,000 m³ per year, of which only 300,000 m³ were supplied to factories while the rests are uncontrolled forestry exploitation where the worst case is shifting cultivation. The government strategy on socioeconomic development to 2020 has set the target that shifting cultivation activity will be basically finished by 2005 and completely stopped by 2010.

This report is the result of study and survey by Small and Medium Enterprise (SME) Working Group (Wood Processing Industry Unit) in Bolikhamsay Province, Khammuan Province, Savannakhet Province, Sayyaboury Province, Oudomsay Province, Luangnamtha Province and Champasack Province. The study and surveys are supported by intellectual Cooperation Project between Lao and Japanese governments (MAPS II project). The result of the study is derived from the survey and the stock of data available in Statistical Planning Division of the Ministry of Industry and Handicraft; Some data are from the result of studies by international organizations in Lao PDR such as UNIDO, International Mekong River Committee; Some are the result of surveys on small, medium and large factories by Ministry of Industry and Handicraft; And some are export data from Ministry of Commerce, Ministry of Finance and so on.

All these are important database for the formulation of this final report, which is characterized by scientific and technical aspects together with economic and social vision, problem solving approaches and other aspects.

The members of SME Working Group (Wood Processing Industry) conducted the survey on any types of small and medium wood processing factories such as furniture factories, sawmill factories, crafting factories, Eagle wood ('Ketsana') perfume distilling factories, rattan and bamboos factories and others in almost all districts in Northern, Middle and Southern region of the country, particularly districts that have wood exploitation and processing in 7 provinces such as Bolikhamxay, Khammuan, Savannakhet, Champasak, Sayyaboury, Oudomsay and Luangnamtha. In general the survey aimed to collect data and information for the formulation of policy framework of the government for the promotion and development of small and medium enterprises who are fundamental economic task forces that create jobs and generate income for multiethnic people.

The Wood Processing Industry Team of SME Working Group comprise of 5 members as follows:

- | | |
|--------------------------------|--|
| 1. Mr. Chaleun Inthavy | Deputy Chief of Cabinet, Ministry of Industry and Handicraft, Head of Working Group |
| 2. Dr. Leeber Leebuapao | Deputy Director, National Economic Research Institute, Committee for Planning and Investment, Deputy Head of Working Group |
| 3. Mr. Phonsavanh Inthalangsy | Head of Planning Division, Secretariat Department, Prime Minister Office, Member - |
| 4. Mr. Konthong Phounikhom | Deputy Head of Statistic Planning Division, Ministry of Industry and Handicraft, Member |
| 5. Mr. Sengphachan Simangkhara | Officer, National Economic Research Institute, Committee for Planning and Investment, Member |

Moreover, there are a staff from Industry and Handicraft Department of each province and a staff from District Industrial Office of each district accompanying the survey team.

II. Objectives and Methodology:

For the successful implementation of the project on Macroeconomic Policy Support for social and economic development of the Lao PDR or Intellectual Cooperation Project between Lao and Japanese government, phase II (MAPS II), and for implementation of Agreement Decree of the Committee for Planning and Cooperation, the objective of the project is to conduct survey on some provinces that are focal areas of wood exploitation, wood production / processing and wood selling, particularly natural wood in order to study untapped potentials, advantages and disadvantages or challenges for development

of wood processing industry at the national level. Particularly, the survey aimed to search for problems, obstacles and conveniences together with untapped potentials to find the way to maximize efficiency and resource used for the sake of the nation, and to find solution to the problems and obstacles. The study will also try to minimize disadvantages, turning them to be new potentials, in order to create mass potentials supporting wood processing industry to grow productively with acceptable quality to the market, in line with socioeconomic development policy of the government and consistent with current real situation of the country. The core objective of the study is to increase production of wood industry to be diversified, to ensure that quantity and quality meet domestic demand and to create more value added for export in order to increasingly bring foreign income to the country. The aim is to promote utilization of modern technology in wood processing production in order to industrialize and modernize the sector in line with the Party and government policy. Moreover, the study will touch on labor productivity in wood processing sector, the provision of labor income, marketing and market expansion, issues on environmental protection and impact of factory environment, issues on management and facilitation policy and issues on investment quality and volume. In addition there will be a study on ideas and behavior of investors to capture the trend on how they will expand the business and operate in the future if they do not make any progress, especially when the government has policy to reduce the use of wood from natural forest and finally close the forest. Regarding this, the team is trying the answer the question on how the investors will plan to improve and adjust their production process in response to the government policy.

III. Survey Results and Problem Analysis

The one year survey under MAPS II project started from the end of 2003 and completed in the end of August 2004. The survey revealed many complex issues which are different in each region and province of the country. Some issues are the same and some different based on real situation of each locality. Some problems have been solved or solving, some sectors are being promoted and enhanced to make them operate smoothly and flexibly in consistence with market mechanism. Particularly concerns are to find solution to issues of production chain, marketing channel, income generating for investors, government budget, non-transparent operation of the business, which are the hope of the study team as well as the government. For the survey method, the team distributed questionnaires to respondents (entrepreneurs) one day in advance in order to provide them the time to understand and provide requested information. Then the team interviewed again to get complete information as targeted in the questionnaire. For entrepreneurs who have not much time for interview, they would provide information through the team's agencies in each locality and the agencies could ask for more information for clearer understanding from the entrepreneurs by using telephone, which received good cooperation and coordination from both local authorities and entrepreneurs. This method provided us information as targeted. This survey focused on some important issues to make analysis and seek for causes of problems, positive and negative side of the issues. It is understood that, in the near future, there will be an appropriate improvement and upgrading of product quality in wood processing sector in order to enable the sector to compete with foreign country

and to maximize benefit to the country. Therefore, this requires government policy to promote appropriate investment by considering technical standard and advanced technology utilization as important principles. At the same time, more attention should be paid on seeking for sources of funds and mobilization of advanced technology from foreign country, adapting it to wood processing and production. Some important issues that we focus on are as follows:

- Material
- Productivity
- Technology
- Marketing
- Labour and human resource development

3.1) Material

Almost 97 percent of wood processing factories and other wood plants nationwide relies on the nature or logs from natural forest to supply their production. This is based on log allocation from authority of each locality in accordance with annual log cutting quota approved by the government. In Lao PDR, there are many types of materials or natural logs scattered in whole country, which are different in each region. Some regions have abundant of hard wood, some have soft wood and some have lots of bamboo that are suitable for producing paper mill and other handicraft products. Most of wood are concentrated in Middle region provinces such as Xayyaboury, Bolikhamxay, Khammuan and Savannakhet. The woods that received highest demand from the market are first grade hard woods such as *pterocarpus macrocarpus* (May Dou), merbau or *Afzilia xylocarpa* (May Teakha) and *Xylia kerri* (May Deng); and second grade wood such as keruing or *Dipterocarpus alatus* (May Nhang), *Vatica cineria* (May Xy) and mershawa or *Anisoptera* (May Bak). Moreover, there are other types such as Aromatic wood or *Cunninghamia sinensis* (May Longleng), *Hopea odorata* (May Khen), May Champa Pa, pine (May Pek) and others. For planted trees, there are Eucalyptus and others. After interviewing with entrepreneurs in provinces, the team acknowledged that the most concerns of entrepreneurs is an inadequate material (logs) supply which, particularly, can meet only 60 percent of the demand. The allocation management of log quota to factories is not regular and unclear. Log volumes allocated between provinces and provinces and between factories and factories are different. In some case, big factories received fewer quotas than small factories. In some provinces, those who do not involve with wood business have log quota and try to sell it to the factories. Moreover, there is illegal log export, which is a result of domestic material supply shortage, and export of processed wood which is not semi finished wood product as determined by the government, resulting in the loss in value added or receiving value added at a minimum level. Currently, the government is trying to address these issues. At the same time, the government announced the policy on reduction of natural tree exploitation and reduction but maximization of wood usage which is very important measures for the future. For example, in 2003 the government approved 300,000 m³ wood exploitation, 270,000 m³ in 2004 and only 150,000 m³ in 2005. This signals that there is a need to make a study and a plan to response to such situation for future continuous production, with particular concerns

on source of materials supplying the factory. The best option is to pay attention on tree plantation and maintenance of existing planted tree. Since the past, forest planting areas are relatively very small. The government should clearly classify allocation between government and private sector or investors. This means that tree plantation for production purpose should be handled by investors under the law, and the government should be responsible for plantation of forest. The government social and economic development strategy for 2020 clearly determined that the forest areas shall increase to more than 500 thousand hectares.

Moreover, wood usage resulted in lots of wastes. This undermines value added of wood products. Therefore, there should be a study on how to exploit all benefits from materials. For example, wood materials should be used from the root up to the leave. This means that there should be a study on which part of the material being suitable for producing what product. The study should also include product design and market demand for the product. Then we can mobilize domestic and foreign investors to invest in producing such product. On macro level, there should be encouraging measures such as promotion policy, upgrading of technical management, assisting producers in getting access to appropriate and adequate fund, marketing support for capacity expansion and competitiveness, seminar, training, consulting and so on.

3.2) Productivity

Large sized wood processing industry is mostly consisted of primary wood factories such as: sawmill, slicing factory, wood drying factory and so on. 95 percent of those mentioned factories' output is exported, instead of supplying to forward industries for the creation of value added. As a result, government had issued a license for business operations in this particular field, regardless of the potentials of wood supply for forward production lines. At present, government have realized a significance of chain production, which starting from primary stage till finished stage of production at same or different factories, of which possess strong financial status, service system, expertise and technology. The quality of products should be accepted in the international market. In fact, the productivity of wood product is still low and is not yet satisfied the consumer's needs, in particular, the finished products of secondary wood processing factories. Thus, almost 90 percent of wood products could be only available in domestic market due to lack of competitiveness in international market. Investment for research and design could not still respond to need, which generate an efficiency and usefulness of industry operation. Entrepreneurs do not consistently implement production factors, face with a shortage of investment funds, still utilize obsolete machineries (according to the survey, it is the fact that 70 percent of factories have not installed new advanced machineries), and are inexperienced in venture management. However, these constraints could be rectified if both government and businesses seriously contribute great effort in the improvement of wood processing industry in terms of financial assistance, production and market access, aimed to achieve high waste minimization; the development of secondary wood processing factory as well as upgrading of labor skill. These mentioned issues are vital for accelerating productivity of wood processing industry. In fact, certain furniture groups have been

actively only organized and operated in Borikhamxay and Champasack. In contrast, furniture ventures are individually run in other provinces. Small and medium sized enterprise (less than 30 employees) covers main proportion in the secondary wood industry. Wood products of both primary and secondary wood industries are mainly made by hard wood. In case of using soft wood as input, it tend be those kinds of logs, which are widely accepted and favored in the public. Other kinds of wood materials have not economically utilized. It is found that one Japanese invested wood-processing factory in Khammouan has taken Pin wood as a material to produce chopstick, spoon and others, in order to export to Japan. In this regard, various studies and experiments should be undertaken to identify quantity and usefulness of all kinds of tree existing in the forest and then economically define a way to utilize them. In developed countries, mixed wood materials are broadly utilized through advanced production process, to transform the quality of invaluable wood materials to high quality of wood. In conjunction with this, the following issues should be considered:

We really believe that Lao PDR would gain revenue over 10 times larger than current income received from wood industry, if large quantity of exported wood including log and timber has domestically processed in secondary wood factories with advanced technologies during a decade. There are total 187 primary wood factories according to the survey of seven provinces and record of division of planning and statistic (Ministry of Industry and Handicraft). *See Appendix*

3.3) Technology:

Most of the wood industries (particularly secondary wood factories) still have with obsolete machinery at their disposal. Some machineries have been used for over 20 years since the beginning of venture, with little or no re-investment going on to improve the productivity, due to limited budget. However, in responding to government's policy certain wood processing factories (30 percent of total wood processing factories) have introduced new technology in order to enhance the productivity. In addition, the privatization program is promoted as a pathway to attract more foreign investment, aimed to resolve the issue of outdated machineries. Simultaneously, both domestic and foreign investors are allowed to operate ventures with advanced technologies. Till now, even these particular policies have not been satisfactorily achieved, but some certain wood processing factories have generally begun to improve their production. Wood processing factories installed with advanced machinery are largely categorized in primary industry, which are able to produce semi-finished output such as parquet, Packsain (flooring) wood, slicing wood and so on. It is however not satisfied result and consistent to the shortage of raw materials, resulting from the government's attempt in annual reduction of wood quota. As a result, individual factory is able to produce only 50-60 percent of its capacity. This could lead to inefficiency of investment, which is due to lack of detailed study in the factory's master plan. Some factories has the capacity of 10,000 m³- 20,000 m³ per annual, but quota for log is given average 50 m³ – 5,000 m³.

In addition, technical knowledge and production management is still weak. This was evaluated the factory's health and safety standard, rules and quality control. Most of factories are in shortage of skilled machine operators as well as weak technical management, resulting low productivity and efficiency.

By having new regulations on prohibition of log export, reduction of wood processing export and terminating an agreement on fiber mould at the end of 2004 together with altering of international environment on wood production, it is a signal to all wood processing industries to implicitly apply new technologies into their production process. In other word, wood producer are required to come up with new way of production in terms of nice design, waste minimization and value added. Thus, there is a need for the introduction of new technological production. Otherwise, industry could not compete in the market due to low competitiveness. Because, quality of product is a key factor to match with the market need. Eventually, industries could not be survival in market unless competitiveness is created. This particular challenge leads industries to actively evaluate real business situation and to make a decision based on venture's potentials, even firm would encounter with some constraints at early stage.

3.4) Marketing

Market is considered as crucial issue, to determine the sustainability of business venture. From the past, even foreign market for Lao wood supply is still narrow, but most of wood export products have been produced by primary wood industry (sawn wood). Worse than that, large quantity of logs was exported in 2001, this gained revenue is not really worthy with a loss of valuable natural resources and environment. Main market destinations for Lao wood products are ASEAN countries, Japan, Taiwan, Korea, Hong-Kong, European countries and others. Especially, largest markets are Thailand and Vietnam. 95 percent of wood export products has low value added. The export products of secondary wood processing industry are relatively very small. Furthermore, its product quality standard is not comparable to foreign made, in particular furniture products (Except souvenir made by wood and sculpture products).

In fact, Lao PDR has great potential in developing secondary wood processing industry (finished wood products) regarding to richness of natural forest (producing forest area) compared to neighboring countries. It is also comprised of variety of trees in the forest, which have not been studied their features and economical benefits of utilization. Simultaneously, a policy on forest plantation would provide an opportunity to accomplish the sustainable wood supply in the future. In addition, Lao people has unique traditional handicraft skills. If it combines with new technology, it will possibly produce Lao stunning and high value added wood products. Potential markets for Lao finished wood products such as furniture and sculpture products could be US, Japan and European countries. More importantly, being given NTR by government of United State on 3/12/2004 is fruitful opportunity for Lao export products, especially US is largest market to import wooden furniture products in the world. Therefore, government of Lao PDR must speedily open up the market and build up competitiveness of Lao products by diligently negotiating with those mentioned countries for more foreign markets. Importantly, finished wood products should be included in Inclusion List of AFTA scheme. Moreover, Lao PDR should work hard for accession to WTO membership, strengthen trade relation with European countries as well as with ASEAN and GMS members in order to expand Lao export markets.

A key success for market expansion is to attract both domestic and international customers, in particular advertising and disseminating information on the quality, design, price and function of products

as well as services and other facilities through media channels such as TV, radio, website and participating furniture and handicraft trade fairs and international trade exhibitions. Individual business association or company could organize this marketing activity according to each firm's condition and appropriateness. This could also facilitate Lao PDR integrating into international market. Thus, strong coordination between government and business (including Chamber of Commerce and Industry) should be emphasized pushing up market expansion successfully.

In the past, export markets of local wood products depend on country's geography and transport routes, for instance; export of northern region would set off to China, Taiwan, Hong Kong and Vietnam. Production is based on the potentials of market. For example; in Luangnamtha and Oudomxay, Para rubber tree and teak tree are prevalingly planted due to proper climate alongside great Chinese market potentials. As for central and southern areas, targeted export destinations are ASEAN and EU, which covers approximately 81 percent of total export.

In sum up, it could be said that export wood products and other export products of Lao PDR are still not diversified with high value added and have low competitiveness. (See appendix 2)

3.5) Labor and human resource development:

Human resource development included the development of technicians and expertise must be taken as a key factor strengthening the industrial development, in particular the development of wood processing industry. Wood industry should have proper policy of human resource development responding to the growth of industry in each development stage. According to the survey, 60 percent of employed labor do not graduate from any schools, most of them only learn how to carry out works at the real workplace. Some factories have recruited foreign labors from Vietnam, Malaysia and Thailand.

Education development and labor training should emphasize in terms of technical aspects, marketing, management, product design and market access. However, limited training curriculum and trainer should be resolved by assistance of foreign countries and international organizations where have better experience and lesson. To upgrade productivity of secondary wood processing industry, it is required more qualified and skilled technicians and staffs than those employed in primary wood industry. Significantly, government should be hand in hand with private sector to sincerely develop skills of labors; government agencies need to play a central role to ensure that both parties are given the benefits. Government should establish more schools or training centers to produce qualified human resource as well as being a agency to coordinate with other organizations including foreign agencies or being designer of in trend products mixed with Lao traditional style, in order to attract more both domestic and foreign customers.

In addition, factories should establish the recruited exam looking for both domestic and foreign skilled mechanics, marketers, product designers and managers based on fair industry's policy, being consistent to rule and regulation and responding to industry's available technological machinery. A goal of this is to upgrade the capability of production reaching international standard and consistent to industrial production criteria.

Wood factory groups or associations should also be established to integrate small production units into common production network. This leads to more efficient production allocation as similar model implemented in developed nations, aimed to strengthen production process and avoid waste production. Specially, the board of management should be set up to be an industry representative in coordinating with other organization and consisted of a representative from government side.

IV. strengths and constraints:

Strengths:

Wood processing industries greatly contribute over 22,000 jobs for the society, which enhance people's income and gradually reduce illegal labor migration to neighboring countries and risks. Industry could also play a role in the poverty reduction, foreign income earning and influence the progress of national and local economy step by step.

Constraints:

- ◆ Some wood factories have a capacity of 10,000 m³ – 20,000 m³ per annual, but they are allocated wood quota approximately 50 m³ – 5,000 m³.
- ◆ In some local areas, wood producers could gain no wood quota or small amount of quota as a result of uncommitted to the duty of forest re-plantation imposed by the authority. In contrast, non-wood producers are given a quota instead. This obviously indicates the inefficient or non targeted wood allocation.
- ◆ Several wood producers have complained about duplicated fee collection, particularly wood transport fee.
- ◆ Illegal wood export still exists even there is the prohibition of government.
- ◆ Forest plantation has not properly treated so that approximately 60 percent of planted trees could not be survival.
- ◆ Business people have not provided well cooperation in some local areas. Especially, producers hesitate or get confused about the administration system, whether which organizations between Industry agency and agriculture and forestry agency is administrative party. This means the unclear task allocation made by the government
- ◆ The rules and regulations are not strictly enforced, leading to existing of gap and non-transparency.

V. Recommended measures and policies:

To develop wood processing industry as potential industry based on its constraints and challenges in order to improve technological production process and to ensure quality of output, policies and measures should be implemented as followed:

- ◆ Public management should be improved efficiently. Government should clearly define proper administrative right among sectors including Ministry of Industry and Handicraft, Ministry of Agriculture/Forestry, Ministry of Commerce and Ministry of Finance in wood administration. At the same time, industry's task allocation should be commonly discussed to avoid unorganized or non-

focused production activities, eventually resulting inefficient performance and production gap. For example, tree plantation and treatment, forest management, quota allocation and log cutting are the responsibility of Ministry of Agriculture and Forestry, while tree transportation should be undertaken by Ministry of Communication, Transport, Post and Construction (MCTPC). Ministry of Industry and Handicraft provides supervision in terms of production while product distribution is accountability of Ministry of Commerce; and lastly tax collection is a job of Ministry of Finance.

- ◆ Business environments including promoting policies, rules and working procedures of managing organizations should be rectified directly, efficiently and transparently. Tax system should be fair.
- ◆ Labor development should be strongly emphasized to improve labor productivity and to respond to highly advanced technologies, leading to building up industry competitiveness.
- ◆ Wood processing products should be more diversified with high quality
- ◆ Sustainable forest resource allocation should be paid an attention including forest plantation and wood manufacturing.
- ◆ Wood input should be minimized, but it still maintains high output (high productivity) and high value added through utilizing advanced technologies.
- ◆ Wood business group or association particularly in secondary wood industry should be established aimed to strengthen firm's financial and marketing status and to achieve waste minimization.
- ◆ Primary wood industry should gradually decrease by transforming it to be full functioned factories including secondary wood production activities. It aims to produce finished and value added products. This could automatically terminate some unproductive factories and slip away from directed wood sawn factories, which could result negative impacts.
- ◆ New investment on the establishment of sawn factories must be one utilizing planted tree. It means that, before its establishment, it is required to lease areas for tree plantation or to possess the sources of wood supply.
- ◆ Sawn or timber factories which have drying process in according to international standard, are required to sufficiently supply its output to secondary wood factories with proper types of wood input.
- ◆ The utilization of waste woods to be commercial products should be promoted.
- ◆ Measure on the reduction of log quota of natural forest areas should be strictly applied. At the same time, plantation for Eucalyptus tree, 'Katintaepa' tree (Acacia Mungium), Para rubber, teak, 'Ketsana' tree (Eagle Wood) and other woods should be largely promoted to be as materials supplied to wood processing industries in the future.

Wood Export from each province from 2001 to 2003

Table 2.A Fiscal year 2000- 01

Year	Provincial Code	Province	Export Destination	Numbers (Kg)	Value (US\$)
2000 - 01	01	Vientian Capital	Hongkong	4.00	245.00
			USA	545.00	800.00
			Vietnam	193.00	965.00
	02	Phongsaly	China	23,625.00	1,281.25
	03	Luangnamtha	China	374,748.00	39,838.50
			Thailand	1,290,721.00	187,965.84
	04	Oudomxay	Taiwan	300.00	1,500.00
			Thailand	119,367.00	51,829.22
Vietnam			32,244.00	4,647.76	
05	Bokeo	China	38,857.00	6,642.18	
		Japan	32.00	240.00	
		Thailand	1,779,718.80	236,000.91	
06	Luangprabang	China	2,000.00	750.00	
		Thailand	7,000.00	1,875.00	
07	Huaphanh	China	2,000.00	860.00	
		Taiwan	360,000.00	83,674.00	
		Thailand	50,988.00	33,167.00	
		Vietnam	954,614.00	129,498.77	
08	Xayyaboury	Australia	28,409.00	10,000.78	
		China	1,240,239.00	203,775.22	
		Hongkong	431,736.00	68,700.29	
		Thailand	11,722,624.90	2,028,038.03	
		Vietnam	937,735.00	118,688.91	
09	Xiengkhuang	Vietnam	2,732,621.40	461,546.35	
10	Vientiane Province	Thailand	1,140,927.00	367,888.27	
11	Bolikhamxay				
2000 - 01	12	Khammuan	Hongkong	487,155.00	126,398.08
			Japan	347,617.00	163,711.34
			LS	108,563.00	17,277.24
			Taiwan	58,887.00	16,568.64
			Thailand	129,977,008.12	17,256,268.28
	Vietnam	35,120,771.00	3,924,413.00		
	13	Savannakhet	Thailand	10,044,437.29	1,320,814.20
			Vietnam	4,144,116.00	712,832.56
	14	Saravanh	Thailand	7,853,597.00	1,264,857.00
			Vietnam	2,755,089.00	483,537.34
15	Sekong	China	21,930.00	3,289.50	
		Thailand	3,710,878.00	444,682.50	
		Vietnam			
16	Champasack	KK	13,156.44	26,854.08	
		KP	43,313.44	68,635.88	
		KR	15,988.50	11,286.00	
		MY	17,244.00	2,414.16	
		Taiwan	36,234.00	4,348.00	
		Thailand	34,874,654.21	15,284,206.85	
Vietnam	704,470.00	107,694.00			
17	Attapeu	Thailand	13,475,102.00	1,222,663.98	
		Vietnam	10,911,845.00	1,287,539.44	
Total				277,993,305.10	47,790,710.35

Source: Custom Department, Ministry of Finance

Table 2.B Fiscal Year 2001- 02

Year	Provincial Code	Province	Export Destination	Numbers (Kg)	Value (US\$)
2001 - 02	01	Vientian Capital	China	10,661.00	3,198.30
			ES	5,000.00	3,250.00
			France	69.00	491.38
			Japan	757,825.00	451,121.63
			KP	10,264.00	1,450.00
			Singapore	3,208.92	2,830.80
			Taiwan	71,973.00	11,622.96
			Thailand	16,030,342.60	3,299,602.02
2001 - 02	03	Luangnamtha	China	1,350,067.00	240,424.30
			Thailand	421,931.00	42,024.32
2001 - 02	04	Oudomxay	China	1,589,198.00	423,547.38
			Thailand	35,926.00	13,109.00
			Vietnam	226,307.00	42,315.50
2001 - 02	05	Bokeo	China	651,871.00	37,131.96
			Thailand	3,936,686.59	558,178.82
2001 - 02	06	Luangprabang	Thailand	58,864.00	5,738.00
			Vietnam	217,439.00	9,955.99
2001 - 02	07	Huaphanh	Vietnam	163,181.42	23,860.87
2001 - 02	08	Xayyaboury	China	210,923.00	68,493.96
			Hong Kong	86,327.00	35,633.16
			Taiwan	189,400.00	48,685.49
			Thailand	8,198,695.20	2,172,765.88
			Vietnam	69,823.00	23,868.46
2001 - 02	09	Xiengkhuang	Thailand	336,845.00	28,406.98
			Vietnam	5,410,418.20	780,924.94
2001 - 02	10	Vientiane Province	China	470,676.00	89,459.67
			Japan	36,000.00	3,960.00
			Thailand	574,891.00	130,912.01
			Vietnam	92,018.00	13,802.70
2001 - 02	11	Bolikhamsay	LA	625,669.00	95,263.67
			Thailand	11,980,277.00	1,558,337.67
			Vietnam	8,614,527.44	1,153,854.06
2001 - 02	12	Khammuan	China	101,551.00	9,997.52
			Japan	282,095.04	74,630.18
			Taiwan	102,514.00	25,033.87
			Thailand	54,164,892.78	11,430,217.44
			USA	7,556.00	1,208.96
2001 - 02	13	Savannakhet	Thailand	28,056,624.79	5,360,849.99
			Vietnam	62,416,309.00	11,101,323.15
2001 - 02	14	Saravan	China	52,567.00	8,148.00
			Japan	88,717.00	14,249.66
			Thailand	10,760,227.00	1,629,965.76
			Vietnam	16,461,857.50	3,356,301.70
2001 - 02	15	Sekong	Thailand	15,786,380.00	1,971,155.51
			Vietnam	3,744,228.00	604,318.86
2001 - 02	16	Champasack	AU	66,481.00	14,625.82
			China	1,120,223.00	320,330.20
			Japan	687,491.00	196,582.67
			South Korea	135,087.00	82,726.20
2001 - 02	17	Attapeu	MY	202,258.00	44,871.62
			NL	40,298.00	8,059.60
			Thailand	73,460,928.07	14,791,510.62
			Vietnam	2,036,668.00	640,229.75
2001 - 02	17	Attapeu	Thailand	12,891,766.00	1,689,316.09
			Taiwan	17,957.00	1,436.56
			Vietnam	25,119,789.00	2,276,332.88
Total				387,295,085.55	70,206,324.34

Source: Custom Department, Ministry of Finance

Table 2.C Fiscal Year 2002 - 03

Year	Provincial Code	Province	Export Destination	Numbers (Kg)	Value (US\$)
2002 - 03	01	Vientiane Capital	Japan	127,360.00	63,459.34
			Thailand	57,008,625.18	10,647,551.80
	03	Luangnamtha	China	323,332.00	73,293.09
			Thailand	4,042,410.00	441,542.35
	04	Oudomxay	China	167,966.00	35,572.09
			Singapore	3,300.00	2,145.00
			Thailand	206,868.00	29,890.63
Vietnam			55,415.00	12,843.82	
05	Bokeo	China	663,691.00	49,193.65	
		Thailand	2,529,916.00	409,153.71	
06	Luangprabang	France	62.50	12,570.85	
		Thailand	129,814.00	6,158.15	
07	Huaphanh	Thailand	71,422.00	10,199.55	
		Vietnam	731,004.66	53,551.21	
2002 - 03	08	Xayaboury	China	177,727.00	62,433.56
			Taiwan	102,706.00	23,843.60
			Thailand	7,973,870.01	1,927,543.92
			Thailand	152,378.00	48,425.80
	09	Xiengkhuang	China	163,127.00	36,082.32
			Thailand	116,346.00	11,867.29
			Vietnam	1,210,379.28	168,217.65
	10	Vientiane Province	China	47,523.00	11,880.75
			Thailand	366,218.00	77,950.91
	11	Bolikhamsay	HT	42,754.00	6,818.30
			Thailand	4,203,422.15	616,061.14
			Vietnam	4,015,429.92	705,271.90
	12	Khammuan	China	101,273.00	8,357.18
			Japan	485,876.32	125,046.62
			Thailand	169,756,929.90	13,921,681.81
			Vietnam	3,800,511.44	687,933.02
13	Savannakhet	Thailand	66,834,434.56	13,280,506.65	
		Vietnam	13,680,373.00	2,427,504.58	
14	Saravan	Thailand	11,222,371.80	1,688,917.86	
		Vietnam	3,591,239.00	527,937.49	
15	Sekong	Thailand	19,956,552.22	2,512,178.45	
		Vietnam	1,658,120.00	262,981.93	
16	Champasack	AS	28,027.89	8,408.10	
		China	163,588.00	68,928.35	
		Japan	50,924.00	10,184.80	
		KH	172,313.00	100,290.31	
		MY	968,770.00	197,679.30	
2002 - 03		Taiwan	37,009.00	7,401.80	
		Thailand	58,580,389.37	10,604,221.29	
		Vietnam	3,459,873.00	1,040,862.96	
		USA	539,025.00	257,854.46	
		17	Attapeu	China	124,285.00
		Thailand	13,518,763.00	1,490,374.54	
		Vietnam	13,668,859.63	1,804,050.47	
Total				467,032,574.83	66,598,441.04
Total (3 years)				49,700,493.63	5,367,922.79

Source: Custom Department, Ministry of Finance

Table 1: List of Primary Wood Processing Factories (Sawmill, Plywood factories), Total: 187 factories (6 pages)

No	Company Name	Investor Name	Location		Year of Establishment	Power of Machine (HP)	Form of investment	Labour (person)	Capital Production (1000k)	Capita* (1000k)	Capita (\$)
			Village	District							
1	Bannhor Sawmill	M.r. Maithy	Nhor	Bounnua		250 HP	Local				
2	No. 6 Phuatsep ha Sawmill	Thongkham Kovdr	Hongleui	Namtha	1988	250	Foreign (Thailand)	100	2,565,000	433,569	
3	Xieng Kok Sawmill	Khamphan Xych	Xieng kok	Long	1991		Domestic Private	65	1,040,000	324,285	
4	Namphar Sawmill	M in Sivitlay	Nam nern	Vienphoukha		112.50	Domestic Private	35	2,250,000	135,708	
5	Oudomkaseth Sawmill	M.r. Boun nhai	Dornheuang	Parkbeng	1994	375.50	Domestic Private	35		1,948,000	
6	Phommaly Sawmill	Mai Phommaly	Bor	Xai		220	Domestic Private				
7	Dedanou Wood Processing	Deth a nou	Huay khum	Xai		145.5					
8	Sinodom Sawmill	Oubkham Inthongsy	Nalienmai	Huayxai		300					
9	Nammar Sawmill		Nammar	Houaysai		326.5	State enterprise	50	78,000	180,000	
10	Kornteuane Sawmill	Surn Khamseng	Kornteuane	Parktha		67					
11	Ban Dane Sawmill	M.s. Horn	Ban dane	Huayxai		219	Domestic Private	36	55,244	88,000	
12	Wood Hadicraft	Chanheng	Phakham	Huayxai		58	Domestic Private	65	120,200	185,000	
13	Chanthanom Sawmill	M.s. Chanthanom	Naxang	Luangprabang		332	Domestic Private	15	25,000	68,000	
14	Vansay Sawmill	Vansay	Khokva	Luangprabang		9	Domestic Private	14	35,000	57,000	
15	Donechor Sawmill	Thongsavai	Dorncho	Luangprabang		120	Domestic Private	12	35,000	46,000	
16	Khammoun Sawmill	M.s. Khammoun	Nalung	Luangprabang		55	Domestic Private	12	25,000	98,000	
17	Chanthavong Sawmill	M.s. Chanthavong	Bongvane	Luangprabang		24	Domestic Private	13	45,000	240,000	
18	Air Sithiphorn Sawmill	Air Sithiphorn	Nongkhyel	Ngoi		80	Domestic Private	15	38,000	150,000	
19	Namleip Sawmill	Boun Kong	Namleip	Xayaboury		520	Jointventure	40	354,000	370,500	
20	Sengsouvan Sawmill	Sengsouvan	Thabak	Xayaboury		1,045	Domestic Private				
21	Outhin Sawmill	Outhin Thongkam	Thadeua	Xayaboury		280	Jointventure	46	115,000	104,000	
22	Nampouy Sawmill	Somxay	Nampouy	Phieng	1990	863.5	Jointventure	75		10,464,000	
23	Khokkhouane Sawmill	Phouk Duangta	Kengsao	Paklay	1997	95	Domestic Private	35	510,000	205,000	
24	Vanith Sawmill	Vanith	Senglai	Paklay	1996	250	Domestic Private	55	120,000	1,130,000	
25	Khok O Wood Processing	Kham Khith	Namsong	Paklay	1995	951.5	State enterprise	106	3,273,000	1,381,900	
26	Naborn Sawmill	M.s. Somphorn	Nabone	Kanethao	1990	152.5	Domestic Private	46		148	
27	Vang-abzang Sawmill	Thama Chaikuang	Phonxai	Botene	1995	150	Domestic Private	25		3,537,274	
28	Parklay Wood Processing	Nophalak	Senglay	Paklay	1997		Domestic Private	36		2,420,000	
29	Khokbouban Wood Processing	M.s. Bouavan	Nasack	Paklay	2000		Domestic Private	45		450,000	
30	Bamboo Processing	Jern Phong	Kanethao	Kanethao	2000		Joint...(Taiwan)	150		18,986,000	
31	Naxaikham Sawmill	Boun Nhai	Nasaikham	Hongsai	1998	232	Domestic Private	34	1,102,010	1,707,000	
32	Nasavang Furniture	Patanaketp houdoi	Nasavang	Paklay		85					
33	No.1 Sawmill		Nampouy	Paklay		310					
34	Lanexangphathana Factory		Phieng	Xayaboury		469					
35	Panlong Wooden manufacturing	Fam ngok long	Houakhang	Samneua	2001		Lao-Viet Joint vent	20	1,105,000	3,219,166	
36	Houap han Phathana		Sleuy	Samneua							
37	Parquet-flooring Factory	Sisomphou	Latgorn	Pek	1998	235	Domestic Private	12	469,000	805,000	
38	King Keo Sawmill	Bouathong	Phon ngam	Pek		413					

Source: From the survey of 7 provinces and data from Statistic Planning Division of Ministry of Industry and Handicraft

Table 1: List of Primary Wood Processing Factories (Sawmill, Plywood factories), Total: 187 factories (6 pages)

No	Company Name	Investor Name	Location		Year of Establishment	Power of Machine (HP)	Form of investment	Labour (person)	Capital Production (1000k)	Capita* (1000k)	Capita (\$)
			Village	District							
39	Oudomsuk Sawmill	Chandy	Phonsavan	Pek	1999	85	Domestic Private	12	331,000	925,000	
40	S.Vongmonty Sawmill	Soukhaseum. V	Phon ngam	Pek	1997	125	Domestic Private	11	1,064,000	634,000	
41	S.Phanthavong Sawmill	Soukhaseum. P	Lee	Pek		34	Domestic Private		600,000	844,250	
42	Thian sin Wood processing Co.		Mai	Xaisomboun		990.5	Domestic Private	55	8,950,000	1,299,999	
43	Thavieng Sawmill	Kham Phay	Dong	Thathom		228	Domestic Private				
44	Meuang Phoum Sawmill	Paserth	Phonpha	Phoum		330					
45	Winzerntai Wood processing	W inserntai Co.,	Nonsavang	Viengkham		681.5 F					
46	Leangphathong Wood Processing	Leangphathong Co.	Namuang	Phonhong		585.5 F					
47	No. 2 Wood Processing	Xay Inthilath	Nonsavang	Phonhong		788.5					
48	Saha Lao-Malay sia		Phonmy	Phonhong		165					
49	Phounsavath Wood processing	Phounsavath	Namcheng	Phonhong	1997	432	Domestic Private	150	252,000	450,000	
50	Phounsavath Wood processing	Phounsavath	Namcheng	Phonhong	2000	359	Domestic Private	30	900,000	1,200,000	
51	Keovienkham Wood processing	Loumkham	Kurn	Thoulakhom	1991	515.5	Domestic Private	50	560,000	727,000	
52	No.3 Sawmill	Kuang Khamdeng	Nonsavang	Viengkham	1993	793	Domestic Private	80	421,015	1,200,000	
53	Viengsamphan Sawmill	Khien Luangkhot	Km 46	Phonhong		278					
54	Lao-Xoun UN Co.,	Somvang	Nasanglek	Thoulakhom		636					
55	Kasy Sawmill	Phongsavan	Phouxai	Kasy		163					
56	Xanakham Sawmill	Phouthone	Tark ded	Xanakham		84					
57	Muang Met Sawmill	Mrs. Bouakham	Namhuang	Met		73					
58	Longxan Sawmill	Seng Luangnam	Khonevath	Longxan		455					
59	Bouavanh Sawmill	Mrs. Bouavanh	Nam Lik	Phonhong		136					
60	Khouanta timber processing Co.,		Thongpong	Sikhot		940.75					
61	Lao-Rich House		Nabe	Sikhot		815					
62	Lao-IKITO Co.,		Km 10	Hatxayphong		755					
63	Challenger Co.,		Km 10	Hatxayphong		855					
64	l May Co.,		Km 10	Hatxayphong	1987	2,176.5	SOE	229			
65	Plywood Km10		Km 10	Hatxayphong	1987	1,135	Taiwan Rental	470	8,125,000	3,440,000	
66	Km 14 Paquet-flooring		Km 14	Hatxayphong		920					
67	Boualapha Wood processing	Leangphathong	Nabong	Xaithany		1,033					
68	Hometime Sawmill		Vernkham	Xaithany							
69	Sayseng Wood processing	Xaiseng	Ilai	Naxaythong		618.6					
70	Saymoungkhoun Sawmill	Kibo	Xaimunkun	Naxaythong		137.5					
71	Chengsavang Sawmill	Phetsamone	Chengsvang	Naxaythong		332					
72	Youthavong Sawmill	Bounhak	Phonsavan	Pakngum		332.9					
73	Naxone Sawmill		Naxone	Pakngum		420					
74	Ban Phao Sawmill	Lao-Viet Co.,	Phao	Pakngum		208					
75	Phialat Sawmill	Bounchan Boualaphan	Phialart	Sangrthong		297					
76	Pak ngum Sawmill	T hongveun	Somsavath	Pakngum		330					

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Source: From the survey of 7 provinces and data from Statistic Planning Division of Ministry of Industry and Handicraft

Table 1: List of Primary Wood Processing Factories (Sawmill, Plywood factories), Total: 187 factories (6 pages)

No	Company Name	Investor Name	Location		Year of Establishment	Power of Machine (HP)	Form of investment	Labour (person)	Capital Production (1000k)	Capita* (1000k)	Capita (\$)
			Village	District							
77	December Sawmill	Dr. Bouaphane	Nonkhylek	Sikhot		440					
78	Nonkhylek Parquet	Phouangphet	Nonkhylek	Sikhot		134					
79	Khounmysai wood processing		Donoun	Xaythany		126.8					
80	Thongthip wood processing		Houakhoua	Naxaythong		45					
81	Somboun wood processing	Somboun	Houakhoua	Naxaythong		181					
82	Amkha wood processing	Amkha	Nongkanku	Naxaythong		77.5					
83	Sonevilay wood processing		Dongsavath	Sisatanark		134					
84	Sithy sone wood processing		Dongsavath	Sisatanark		75.5					
85	Km 5 wood processing	Thongsavanh	Chommany	Xaysetha		115					
86	Keota wood processing		Donoun	Xaythany		350					
87	Khambai Sawmill	Vilachith	Phosy	Sikhot							
88	Limsinghuat Sawmill		Nabe	Sikhot							
89	Vientiane Sawmill			Vientiane City							
90	9-1 Sawmill			Vientiane City							
91	Vurnkham Sawmill			Vientiane City							
92	Bouaket Sawmill	Ang Zeng Sieng	Phonxay	Paksan	1957	140	Private	105	1,550,070	171,514	
93	Phoudoi-Lerangthong Co.,	Yet Insiengmai	Sisaat	Paksan	1995	665	SOE+JVC	103		600,000	
94	Sayp houluang Sawmill	Southern Chanthavong	Sisavath	Bolikhhan	1998	415	Private	75	714,541	605,100	
95	No. 989 Sawmill	Patana Ketpoudoi	Km 20	Khamkeut	1989	804	SOE	187			
96	Changing Lamber Co.,	Lin Siel Pheng	Houyoy	Khamkeut	1995	398.5	FDI	570	200,000	62,500,000	
97	Paksan wood processing			Paksan		540	Private				
98	Khamphout Sawmill	Mrs. Khamphout		Pakkading		2,067	Private				
99	Khonmixay wood processing	Khonmixay	Thongnoi	Paksan	2003		Private	32		1,597,965	
100	Nancy wood processing	Phorn Sack	Souksavan	Thakhek	1988	1,364.7	Private	277		1,597,965	
101	Lao-World Group Plywood	Vong Jek Meng	Km 7	Mahaxay	1995	1,665	Jointventure	472		448,312,670	
102	Lao-Chine Chip board			Thakhek		4,888	Jointventure			1,597,965	
103	Sivathana Sawmill	Orng-Art	Nongbokam	Thakhek		600	Private	141	100,000	5,931,270	
104	P&O Wood Industry	Sojota	Km 6	Thakhek		450	Jointventure	182	13,200,805	3,481,940	
105	Mingmeuang Wood Industry	Bouathong	Kokhai	Thakhek	1999	462.5	Private	23	850,710	292,681	
106	Youth Economic Dev. Co.,		oudomvilay	Thakhek		295					
107	No.1 Phatanaket Phoudoi	KPID	Natan	Thakhek		973.9					
108	Namela Wood Industry		Natan	Thakhek		350					
109	Nakai Chip board			Nakai		953					
110	AA Wood Processing			Thakhek		260					
111	Keokongjai Wood processing	Mr. Amkha	Phahoi	Xaibouatong	2003	105	Domestic Private	25		700,000	
112	Mekhong Sawmill	Mr. Saisamouth	Santisouk	Thakhek	1997	565	Domestic Private	24	311,927	208,431	
113	Phathanaphong Sawmill	Mrs. Khankeo	Pakdong	Thakhek	1996	804	Domestic Private	30		185,267	
114	Khammouane Phathana Sawmill	Mrs. Manivan	Santisouk	Thakhek	1996	445	Domestic Private	244	5,468,000	577,419	

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Table 1: List of Primary Wood Processing Factories (Sawmill, Plywood factories), Total: 187 factories (6 pages)

No	Company Name	Investor Name	Location			Year of Establishment	Power of Machine (HP)	Form of investment	Labour (person)	Capital Production (1000k)	Capita* (1000k)	Capita (\$)
			Village	District	Provinces							
115	90 Group Sawmill	Mr. Khamkeokab	Km 6	Thakhek	Khammouane	1995	342	Domestic Private	126	600,420	1,312,484	
116	No. 4 Sawmill	Mr. Boualieu	Houynangly	Thakhek	Khammouane	1996	793	Domestic Private	134	107,935	2,798,287	
117	2 December Sawmill	Mr. Phasouth	Santisouk	Thakhek	Khammouane	1991	416	Domestic Private				
118	Yommalath Sawmill	Mr. Khampha	Phathoung	Yommalath	Khammouane	2003	150	Domestic Private	52		3,000,000	
119	Thakhekrai Sawmill	Mr. Keovongsa	Laophoxai	Thakhek	Khammouane	2000	202	Domestic Private	109	144,095	475,381	
120	No. 1 Sawmill	Mr. Khemp heth	Santisouk	Thakhek	Khammouane	1990	370	SOE	56		28,986,000	
121	Boualapha District Sawmill	Mr. Senglavane	Boualapha	Boualapha	Khammouane	1998	794	Domestic Private	31		953,440	
122	PhathanaMahaxai Sawmill	Oudom	Mahaxai	Mahaxai	Khammouane	1992	382.5	Domestic Private	22		178,502	
123	Lao Industrial .Dev . Co.	Nisiyama	Chomthong	Thakhek	Khammouane	1996	286.31	Japanese Investor	40		413,250	
124	Simoukda Wood processing	Mr. Khamphou		Thakhek	Khammouane		120					
125	Nakai Sawmill	Khamhoung	Udomsavang	Nakai	Khammouane	1994		SOE	60		1,242,752	
126	Vilayvone Wood Processing	Mr. Vilavone	Vangkoung	Sep on	Savannakhet	2004	2,105	Domestic Private	50			
127	Sepon District Sawmill	Mr. Salika	Phonevilay	Sep on	Savannakhet	2001	416.5	Domestic Private	35			
128	Meuang Nong Sawmill	Mr. Tiengphet	Kengluang	Nong	Savannakhet	2002	65	Domestic Private	18			
129	Phanasavan Sawmill	Paserth Sithanyalat	Parkbor	Khanthabouly	Savannakhet	1989	508	Domestic Private	40			
130	Phahoung Sawmill	Mr. ZuaZuKang	Naseng	Khanthabouly	Savannakhet	2000	600	Domestic Private	22	1,001,000	2,100,000	
131	Saylatana Sawmill	Mr. Siphaseuth	Km 27	Seno	Savannakhet	2001	1,436	Domestic Private	50			
132	Km 10 Sawmill	Mr. Kilixai	Dongnakhom	Khanthabouly	Savannakhet	1996	508	Domestic Private	15	1,001,000	2,100,000	
133	Km 4 Sawmill	Thep Lathanasavan	Phonsavangai	Khanthabouly	Savannakhet	1988	775	Jointventure	115		38,656,000	
134	Km 5 Sawmill	Mr. Ve Soulin	Phonsavangai	Khanthabouly	Savannakhet	1991	211	Domestic Private	50		4,024,000	
135	Latanasavan Sawmill	Mr. Phouvang	Donghen	Artspangong	Savannakhet	1992	570	Domestic Private	85		1,941,000	
136	Lanxangphattana Sawmill	Mr. Xayaseng	Non sa ath	Phin	Savannakhet	2001	213	Domestic Private	60			
137	Vilabouly Sawmill	Mr. Khamsak	Kengluang	Vilabouly	Savannakhet	1990	39.5	Lao-Viet Join vent	20			
138	Km 11 Sawmill	Mr. Hatsady	Dongnakhom	Khanthabouly	Savannakhet	2004	215	Domestic Private	30			
139	Km 12 Sithat Sawmill	Mr. Sithat	Dongnakhom	Khanthabouly	Savannakhet	1992	423	Domestic Private	20	1,001,000	2,100,000	
140	Km 12 Souphy Sawmill	Mr. Souphy	Dongnakhom	Khanthabouly	Savannakhet	1996	510		30			
141	Tekzeng Sawmill	Mr. Tekzeng	Km 3	Khanthabouly	Savannakhet							
142	Km 13 Sawmill	Phouthone Sasy	Dongnakhom	Khanthabouly	Savannakhet							
143	Phongsavan Sawmill	Mr. Ort	Km 3	Khanthabouly	Savannakhet	2002	567	Domestic Private	40			
144	Km 6 Maisavan Sawmill	Mr. Somphong	Nonsavang	Khanthabouly	Savannakhet	1987	985	Domestic Private	120		5,997,905	
145	Champhone Sawmill	Mr. Khamsouk	Dongnonkun	Khanthabouly	Savannakhet	1997	325	Domestic Private	40			
146	Phoonsakda Wood processing	Mr. Naksyda	Nachan	Champ hone	Savannakhet	2003	113	Domestic Private	40			
147	Bandong Wood processing	Mr. Syheng	Dong	Phin	Savannakhet	2002	127	Domestic Private	35			
148	Lengpatana Wood processing	Mr. Leng Svanvaly	Km 5	Khanthabouly	Savannakhet	1999	259	Domestic Private	30			
149	DAFI Wood processing	Vilong Khoty otha	Nat hat	Khanthabouly	Savannakhet	1989	521	Domestic Private	280		141,900,000	
150	SV Wood processing CO.,		Naseng	Khanthabouly	Savannakhet	1988	692	SOE	200		55,203,000	
151	Lao-Viet Wood processing	Mr. Thongleuan	Thongsavang	Phin	Savannakhet		707.5					
152	Naseng Sawmill	Mrs. Sisouphan	Dongkamluang	Khanthabouly	Savannakhet	2004	450	Domestic Private	120			

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No	Company Name	Investor Name	Location		Year of Establishment	Power of Machine (HP)	Form of investment	Labour (person)	Capital Production (1000k)	Capita* (1000k)	Capita (\$)
			Village	District							
153	Khabong Wood processing	Mr. Khabong Bountong	Dansavane Km 2	Sep on Salavan	2003	555	Domestic Private	23	5,910,785	2,950,000	
154	Salavan Wood processing	Noy Nalong	Laongam	Salavan	1987	514	SOE+FDI	105	1,915,101	650,000	
155	Lao ngam Sawmill	Mr. He Mixai	Mixay	Khongxedon	1990	266	Lao-Viet Join vent	32	1,715,101	847,000	
156	Khongxedon Sawmill	Mr. Vilaisack	Nongpho	Vapry	1987	89	Domestic Private	39			
157	Vapry Wood processing	Mr. Khonemany	Nonsoung	Laongam		158					
158	Laongam Wood processing	Xeno	Xeno	Lakonp-heng		255					
159	No. 4 Sawmill	Choum panhasack	Km 12	Bachiong		297.5					
160	Maisackthong Sawmill	Souvan Dadara	Lomsackneua	Bachiong		185.5	Domestic Private	35	1,200,000	1,246,000	
161	Souban Sawmill	Khamboung	Km 12	Bachiong		503	Domestic Private	120	3,560,000		
162	Xokannouy Sawmill	Mrs. Manlat	Km 12	Bachiong		384.5	Domestic Private	180	2,800,000		
163	Sisoumang Sawmill	Chorn Khamavong	Km 12	Bachiong		217.5	Domestic Private	120	1,800,000		
164	Khamphavong Sawmill	Pheuy Boutviseth	Km 12	Bachiong		477.5	Domestic Private	160	5,000,000		
165	Kokkhamthep Sawmill	Xeng Laochaleun	Km 12	Bachiong		459	Domestic Private	25	6,000,000		
166	Nong habath Samill	Mr. Meng	Houyset	Bachiong		930	Domestic Private	141		152,000,000	
167	Asia-Inter Wood processing	Bounthan Silavong	Nongkok	Bachiong		279.25	Domestic Private	100	3,352,000		
168	Bachiong Samill	Sleumxai	Houa Xe	Xnasomboun		160	Domestic Private	92			
169	Xanasomboun Samill	Lian Kouming	Nonsavanh	Phonthong		1,945	Chinese Taiwan	160		52,000,000	
170	Phonthong Km 4 Sawmill	Khoumni Sokthavy	Km 48	Patoumphone	2001	770	Domestic Private	94		106,849,000	
171	Km 48 Sawmill	Ki Hanxana	Vernkhand	Moulap amok		186.5					
172	Moulap amok Sawmill	M euan Vornalath	Nasukhuma	Sukhuma		423					
173	Soukhoumma Sawmill	Somp-heth	Phiengdy	Khong		1,325	SOE	86	1,250,000		
174	Phiengdy Wood processing	Souan Poukasing	Sibunheung	Bachiong		676	FDI (Thailand)	160	2,100,000		
175	Santiphab Wood processing	Air Sming	Km 12	Bachiong		1,159					
176	Km 12 Wood processing	Dilerth	Km 12	Bachiong		1,047					
177	Km 12 Dilerth Wood processing	Mrs. Phongsavan	Thap ho	Khong		175.5					
178	Phongsavane Sawmill	Mr. Youn Pek	Nonmixay	Xekong		250	Domestic Private	97	326,350		
179	Xekong Development Sawmill	Bounthan Silavong	Chakout	Lamam		220	Domestic Private	36	235,126		
180	Km 18 Thatang Sawmill	Thongkhane	Phon	Thatang		730	Domestic Private	65	205,116		
181	Ban Phon Wood processing	Khamsene	Nongbong	Lamam		95					
182	Nongbong Wood p rocessing	He Naphoulao	Thahin	Samakkhyxai		85	Domestic Private	30	752,000		
183	Hemixai Sawmill	M eng Phongchlean	M euangkao	Xaisetha		1,121	Domestic Private	80	1,115,212		
184	Xaisetha Sawmill	Khambao Silavong	Km 3	Samakkhyxai		493	Domestic Private	76	118,750		
185	Silavong Wood processing	Choung Dong	K amnakong	Xaisetha		279	Domestic Private	35	425,000		
186	Choung Dang Wood processing		Hat xaikhao	Xaisetha		1,205					
187	Tree Anole Wood processing										

Source: From the survey of 7 provinces and data from Statistic Planning Division of Ministry of Industry and Handicraft

6. Report on Survey Result of Supporting Sector of Agro processing Industry

(Focusing on the export potentials of Lao agro processing products,
particularly fruits and vegetables)

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Thong PHOUMMATHEP

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Thongdam KHOUN-OU-DOM

Sa SIRIPHONG

Summary

This report presents the results of the study and research based on the survey on business units in supporting sector of the food processing industry, which are family based, small to medium scale and invested-in domestically. The research deeply emphasizes the export potentials of Lao agro processing products, particularly fruit and vegetables, which could potentially be developed as chemical free or decontaminated products, since the Lao PDR has good natural conditions in terms of geography, weather, season, flat cultivated land areas, plateaus, upland areas and valleys. These products are highly demanded by foreign markets such as the European Union, Japan and other countries in the region and around the world.

In this report, there is a review of main sub-sectors such rice, sugar, coffee, meat, fish, flour and noodle, which are produced and processed in the Lao PDR and have potential to be developed in the future. Among these products, some were produced and exported to foreign markets, particularly rice and coffee. Moreover, a review of imported food products is made to seek products that should be domestically promoted as import substitutes. Therefore, it is necessary to conduct a study on how to create an appropriate mechanism which could be used as an important supporting tool to physically promote and develop production.

Therefore, the objective of this study is to formulate an appropriate and consistent policy to support, promote and develop small and medium enterprises, especially those that are in the supporting sector for agro processing industry. This is meant to gradually build capacity of commercial production for import substitution and move toward export oriented production in the long-term. At the same time, this also aims to create employment opportunities for people's income generation in accordance with the government policy target on poverty reduction. Once appropriate the policy and mechanism are in place, it then enables us to mobilize and promote investment in both the government and private sectors, including the general population, farmers and foreign investors, in production with quality and standards met by market demand. One more important factor is technical, funding and other forms of support and

assistance from domestic and foreign institutions, including international organizations, in physical production. If this is realized, it will provide a good condition and opportunity for people to generate income and progressively reduce poverty, which in turn will realize the government policy on poverty reduction.

From the physical study of the real situation, constraints and challenges were observed. Policy recommendations, together with proposals and action plans, could then be summarized as the followings:

- Constraints and Challenges

From the survey, constraints and challenges for small and medium enterprises are observed, especially for supporting units of the agricultural food processing industry. These constraints and challenges are as follow:

1. Business units are mostly characterized by small and family based units with constraints in many aspects, mainly in terms of education—specialization level, vocational level—funding, experience/labor skill, power in trade negotiations and limitation on business expansion, as they are not yet self-sufficient. If demand or purchasing power of the domestic market is low, these business units operate with difficulties, leading to an inability to meet tax obligations by law.
2. Access to bank financing mechanisms is limited since they cannot borrow if there is no collateral; terms of borrowing is short; and interest rate is high. This affects business activities for which the benefit shall be realized after a long term period. Most investments for business startup are from small amounts of self-funding, but the lack of working capital requires borrowing from a financial institution.
3. Many business units are not registered, operate scatteredly by general people and lack the correct accounting system. This is because they are family businesses operated in a traditional manner, with low profits for just self sufficiency, without planning and development. Therefore, they cannot even calculate their cost of production, profit or loss.
4. In general, production relies mainly on imported materials attached with transportation expenses, resulting in a high cost of production and inability to compete, which is inconsistent with the policy to promote domestic production. At the same time, each material import takes a long time for the documentation process, especially the process to acquire the 1% import tax, which requires that businesses located in provinces submit documents to the Customs Department, the only body to approve such a tax.

For the service units, they are mainly involved with the trading of imported ready goods. Import-export companies are the only sale representatives of foreign companies. From the survey, it could be said that the number of import companies is more than 80%, while those for export covers only 10 to 20%. Most export products are non-timber products, beans, cassava, rice, sugar palm fruits,

papaya, job's tear and so on. These products are not yet processed and lack added value. There is only one company named Lao Agro Industry Co. in Vientiane Province that produces canned fruits and vegetables as processed products, such as preserved garlic, sugar palm fruits in syrup, preserved mango, baby corn preserved in salty water, rambutans in syrup, preserved cabbage, bamboo shoots in water and so on.

5. Product quality is low. Production volume is small and so is market size, resulting in the inability to be industrialized and commercialized.
6. There is no system division of labor characterized by the links between “producer –sellers” with contracts and guarantees in terms of quantity, quality and price.
7. There is a lack of supporting, promoting and enhancing mechanisms. The capacity of concerned sectors for best practices of investment promotion is not enough and there is a lack of particular knowledge on the supporting sector for the food processing industry.
8. At present, there is no food producers’ association. This makes promotion and benefit negotiation tasks difficult. However, Dr. Sisaliaw Savaingsueksa, a consultant of Lao Farmer Product Co. Ltd., has initiated a proposal to establish a food producers’ association.
9. Policy and regulation changes, which occurred very often, hinder business operations. In general, these changes may increase the cost of production through factors such as tax, customs, weight check and so on.

- **Policy**

These agricultural processing business are surrounding and supportive to industrial production, and there is potential for future development, if there is support from institutions and sectors concerned, both public and private, in terms of:

1. Provision and transfer of technology including professional techniques through training and seminars provided for entrepreneurs, managers, as well as technicians, mainly on management—administration, finance—accounting, sanitation, food security, standards and product quality improvement, marketing, property right, entrepreneurship and others.
2. Arrangements to provide appropriate mechanisms and regulations that are supportive of and promote production and service growth continuously and substantially. Particularly, we should create a comprehensive production mechanism with the linkage of “**agriculture – manufacturing industry – trading service**”. This means that the agricultural sector should pay attention to promoting farmers to produce with assured quantity and quality, in order to supply to processing industrial factories. The industrial and handicraft sector must make efforts to promote industrial units, enabling them to produce products with certified quantity, quality and standards, for supplying to the commercial and service sector that, in turn, widely and increasingly distributes these products for social consumption through advertisement,

mobilization and promotion of domestic product consumption.

3. Arrangement of division of labor with suitable targets in the process of marketing and product collection with appropriate warehouses, particularly creation of a labor division mechanism that is characterized by the linkage of “**producer – products collector – seller**” with contracts and guarantees in terms of quantity, quality and price. This means that division of labor must be clear in the sense that the group of producers has the duty to produce and that of collectors and the sellers has duty to collect produced goods and sell to the market under the agreed contract.
4. The support and promotion of wide use and consumption of domestic resources and products respectively.
5. Creating favorable conditions for business operations, particularly creating and mobilizing people’s interest to legally invest or start businesses in diversified sectors, *especially to transform traders in finished goods to industrial producers.*

- **Recommendation**

In order to enable improvement and development of weak business units so that they can grow substantially and continuously, and, on the other hand, to create conditions favorable for those who are interested in investing or becoming an entrepreneur in a new business, there must be supports from both public and private institutions and sectors concerned, in order to realized industrialization policy of the government, particularly on the following aspects:

1. The provision of long-term credit with low interest rate and without too great a requirement of collateral. And, the process of getting the loan should be improved and streamlined to make it easier and ensure benefits for both sides (lender and borrower).
2. The necessity to transfer knowledge on techniques and management to the country in order to prepare for entry to ASEAN. At the same time, the government and the National Chamber of Commerce and Industry recognize the need to support the establishment of a producers’ association in order to mobilize contribution and participation in the implementation of the Law on Food. For the marketing, especially in the aim to penetrate the foreign market, it is important is firstly to recognize the necessity to improve quality, standard and sanitation of both industrial and agricultural products, which requires product design, determination of a brand name, registration of a trademark and standard certification of products in order to create consumer satisfaction and confidence.
3. Arrangement of a suitable mechanism that is supportive of and promotes the continuous and substantial growth of production and services, through the creation of a legal system appropriate and compliant with the real situation and conditions of the country, particularly the exception of the import tax during the first 3 to 5 years period for new entrepreneurs; determination of appropriately low customs rate; advertisement; weight check; and mobilization of people to use and consume domestic products.

4. Time is the fundamental factor in supplying the chain of products that are easily deteriorated, especially fruit and vegetable. In order to shorten as much as possible the time between production and consumption, development of public goods is of the most necessary to enable farmers to supply their products to market and/or factories on time.

- **Action Plan**

In order to improve and address constraints and challenges, and to achieve government policy, the following action plans are proposed for implementation. These are:

1. Creation of a strong and capable approval and certification system for quality and food safety that is coherent at the national, foreign and regional level. Particular emphasis is on strengthening the sector concerned with increasing trainings and disseminating lessons on many aspects including training on productivity and quality improvement for agro processing industry;
2. Formulation of regulation for contract farming agricultural production;
3. Determination and development of regulations on protection of origin and of property rights;
4. Development of quality standard for agricultural products and promotion of post-harvest technology;
5. Study on the possibility to create a unified accounting system for small and medium-sized enterprises;
6. Study on how to mobilize people's recognition of quality which is one method of improving management of product quality after harvesting for farmers, distributors, wholesalers and retailers;
7. Improvement of the public utility system to be convenient and fully cover the distance between production site and markets and/or processing industrial factories.

6. Report on Survey Result of Supporting Sector of Agro processing Industry

(Focusing on the export potentials of Lao agro processing products, particularly fruits and vegetables)

1. Introduction (Background)

This report is the result of the research surveys and data collection on the real situation of the supporting sectors of the food processing industry in which production is family-based, small and medium size units that are classified as domestic investment units. The surveys were conducted over two periods. The first period, from 8 December 2003 to 24 January 2004, was the survey on production units of the food processing industry in Champasack, Savannakhet and Vientiane Capital. The second period, from 9 to 28 August 2004, was the survey in districts that have borders with Savannakhet, Khammuan and Bolikhamxay Province, on service units that deal with cross-border trade, grow agricultural crops, rear animals and are involved in fisheries, all of which supply food and will potentially supply raw materials to food processing industrial factories in the future.

From the two surveys, the working group member studying the supporting sector of the agricultural food processing industry agreed to focus the study on export potentials of Lao agro processing products, particularly focusing on fruits and vegetables, which have a high potential to develop as chemical free or decontaminated products, since the Lao PDR has good natural conditions in terms of geography, weather, season, flat cultivated land areas, plateaus, upland areas and valleys. These products are highly demanded by foreign markets such as the European Union, Japan and other countries in the region and the world.

This study is part of the implementation of Intellectual Cooperation Project Phase II on Macroeconomic Policy Support for Socioeconomic Development of the Lao PDR, which is the cooperation project between the Lao and Japanese governments, as well as Japanese International Cooperation Agency or JICA. The study is also under the framework of small and medium enterprise promotion based on the Prime Minister Decree No. 42/PMO, dated 20 April 2004, on Promotion and Development of Small and Medium Enterprise, in which the implementation of this decree is currently initiating.

To achieve the goal, there is a need to mobilize and promote investment of both the public and private sectors, including people, farmers and the foreign private sector that are involved in production and with quality and standards met by market demand. All of these will be conducted under an appropriate policy to support such promotion and development. Another important thing is the support and assistance from domestic and foreign institutions including international organizations in terms of technical, funding and other supports in physical commercial production. If this is realized, it will provide a good condition and opportunity for people to generate income and reduce their poverty progressively, which in turn will realize the government policy on poverty reduction.

In addition to the development potentials mentioned above, it is necessary to invest and develop fruit and vegetable production for supply to some existing industrial processing factories, which have high demand for raw materials both in terms of quantity and quality, particularly Lao Agriculture and Industry Co. Ltd.,

Bajiang Products Co. Ltd., Lao Farmer Products Co. Ltd., World Group Co. Ltd. (producing canned fruit and vegetable) and other small factories located in big cities nation wide.

Therefore, this report focuses on the study of the real situation and the possibility to develop fruit and vegetable production in Lao PDR, both in terms of quantity and quality. Fruits and vegetables are considered to have high potentials for supply to domestic and foreign markets, and to be raw materials for industrial processing factories.

2. Objectives

The objective of this study is to formulate an appropriate and consistent policy to support, promote and develop small and medium enterprises, especially those that are in the supporting sector for the agro processing industry. This is meant to gradually build the capacity of commercial production for import substitution and move toward export oriented production in the long-term. At the same time, this also aims to create employment opportunities for the income generation of people in order to improve their living standard, through which the aim is to achieve the target of government policy on poverty reduction.

3. Survey Methodology and Data Collection

During the survey and data collection process, questionnaire forms were used and some entrepreneurs were interviewed. Moreover, the report utilizes statistics from many sources including important government documents. Then, collected data were analyzed using a computer program as a tool. The survey was conducted in two periods:

- The first survey was conducted in 2 provinces and in the capital: Champasack Province, Savannakhet Province and Vientiane Capital. The survey was on food processing units, totaling 55 samples; and
- The second survey was conducted in 5 districts along borders such as Khanthaboury and Sepone districts of Savannakhet Province; Thakhek district of Khammuan Province; and Khamkert and Paksan districts of Bolikhamxay Province. The survey was on service units, totaling 45 samples, that deal with cross-border trade, grow agricultural crops, rear animals and are involved in fisheries, all of which supply food and will potentially supply raw materials to food processing industrial factories in the future.

4. Brief background of the agricultural food processing industry in the Lao PDR

Agricultural processing industries producing food products in the Lao PDR are still at a low level of production within the industrial system. Most production units are of small size and family based units in which the utilization of equipments, techniques and technology is still at low level compared to that of neighboring countries. The number in this category of industry is over 6,000 units, of which the largest

number are rice mills, followed by factories producing drinking water, ice-cream, noodles, meat and meat-balls, sweets, roasted coffee, fruit-juices, etc.

The number of production units of larger size in the food industry is very limited. These units could be listed as follows: Daoheuang Trading Company Limited, Lao Beer Company Limited, Lao Soft Drink Co. Ltd., Gold Coin Co. Ltd., Lao Whiskey Company Ltd., Vangthep Co. Ltd., Savanh Kaona Agriculture Co. Ltd., Industrial Agricultural Manufacturing Co. Ltd., Lao Farmers Products Co. Ltd., Vientiane Slaughterhouse, etc.

5. Scope of study

After the two surveys, we collected data and information of up to 100 samples, which included production units such as those that deal with slaughterhouses, rice mills, noodle, meatball, sweets and sauces processing products, fish sauce, soy sauces, skin and roast coffee beans, bread, alcoholic processed drinks, processed fruit, tea, processed cow milk; import-export enterprises dealing with ready food products, cross border trade enterprises, fish pond and river fish aquaculture, poultry, pig rearing (for pork and pig breeding), grocery shops selling food products in the general market, fruit and vegetable plantations, and Japanese rice farming.

5.1. Main sub-sector revision

5.1.1. Rice

Rice has been a main dish for Lao people since the ancient era. Moreover, rice is used in the preparation of a variety of drinks and food, mainly alcohol drink, noodle, rice noodles and sweets. Therefore, it could be said that rice is not only produced for daily food and as exports in terms of agricultural processed products, but also as an important raw material for industrial processing factories.

Lao PDR has an exceptional diversity of rice varieties such as glutinous or non-glutinous rice, and has been planted in general areas from the northern to the southern part of the country, especially the flatland areas along the Mekong River. Rice production has an increasing trend, especially seasonal and irrigated rice, since there has been development of the irrigation system, the use of new production technology and fertilizers, as well as the use of a new breed that has higher productivity. For upland rice production, the trend is declining both in terms of cultivated areas and productivity. This is due to government policy to stabilize shifting cultivation practice and degradation of soil quality.

Table 1 : Planted areas, productivity and average yields of rice production from 1996 - 2000

Type of rice	Planted area		Productivity		Yields	
	average	Annual growth	Average	Annual growth	Average	Annual growth
	(1000 ha)	(%)	(1000 ha)	(%)	(1000 ha)	(%)
Seasonal rice	433.4	5.3	3.1	2.3	1,335.8	7.7
Irrigated rice	55.3	46.5	4.1	2.8	228.2	50.6
Upland rice	153.1	-3.2	1.6	0.6	246.4	-2.7
Total	641.9	5.1	2.8	3.8	1,810.5	9.2

Source: Agricultural statistics 2000, Planning Department, Ministry of Agriculture and Forestry

5.1.2. Sugar

Market demand for sugar consumption varies between 25,000 and 40,000 tons each year, while the domestic production can meet only 2% of the demand. Sugarcane is the main source of sugar production in the Lao PDR and can be planted in all regions of the country. However, at present sugarcane plantations for supplying sugar to factories are located only in Vientiane Capital and some provinces next to Vientiane Capital. For some provinces in the North, production at sugarcane plantations is for export to China. Although Lao PDR has potential to plant sugarcane for sugar processing factories, productivity is still at a low level, approximately 25 – 40 tons/ha, compared with 100 tons/ha in Thailand. Moreover, the sugar extraction rate of the factories is also very low, only 7% of sugarcane.

5.1.3. Coffee

Today coffee has become one of the main export products and source of foreign revenue of the Lao PDR, where the main external market is the European Union. Although coffee is suitable to be cultivated in regions with cool weather, most of coffee trees are planted on the Boloven plateau of Champasack Province and only a small number is planted in provinces in the Northern region of the Lao PDR.

5.1.4. Meat

Meat is the main source of protein for Lao people. People especially cook meat for their daily food. Animals are mostly slaughtered in local abattoirs, with the meat going “fresh” to the local market without packing in a freezer or freezing room. Meat processing for ready food products is practiced in only a small number of small and family based businesses.

The Lao PDR has the potential to promote animal rearing, particularly along plateau areas of Xiengkhuang Province and the flatland areas of the southern provinces. Therefore, if there is practical promotion, this will become a meat supplying source of the region in the future.

Table 2 : Livestock population in the Lao PDR, 1996-2000

(1,000)	1996	1998	2000	Growth rate (%)
Buffalo	1,212	1,093	1,028	-2.91
Cattle	1,186	1,127	1.1	-0.81
Pigs	1,772	1,464	1,425	-3.37
Poultry	11,656	12,111	13,094	2.92

Source: Master Plan Study of Agricultural Development, Ministry of Agriculture-Forestry/JICA 2001

5.1.5. Fish

Most of the fish consumption in the Lao PDR is of river fish, especially from the Mekong River and its branches including the dam reservoir and other reservoirs. Moreover, fish is also grown by farmers in ponds, rice paddy fields and as river aquaculture. Sea fish is imported from foreign countries, especially Thailand and Vietnam, in the form of fresh, frozen or dried fish, which is mostly limited for consumption in restaurants.

The preservation, transportation and primary processing mostly lack hygienic control. In particular, ice that is used to preserve fish for transport is made of the natural reservoir water or the fish is transported by general transport cars or open containers are used.

5.1.6. Flour and noodle

Flour used for cooking food is mostly made from rice. Wheat flour, cassava starch, sago and others are not widely used since production of crops for these kinds of flour is limited.

Production of noodle, especially rice noodle is based on traditional methods, such that production is for consumption within a short period of time, and it is not possible to keep for long time. Mostly, production is from family based business in the house of producers.

5.1.7. Imported food products

Lao PDR relies highly on the import of food products, especially ready products such as canned products, condensed milk, sugar and others, which consumes a lot of foreign exchange. Most of the food is imported from Thailand, Vietnam and China.

Table 3 : Estimation of processed food imports (Year 1998)

Food products	Imports (Million US\$)
Sugar	4.4
Condensed milk	2.2
Seasoning powder	2.1
Cakes and confectionary	1.7
Animal feed	1.5
Fresh milk	0.9
Ovaltine	0.9
Vegetable oil	0.8
Canned fish	0.8
Salt	0.7
Instant coffee	0.7
Others	6.2
Total	22.9

Source: Ministry of Commerce

6. Detailed study on fruit and vegetable which are export potentials for the agricultural food processing industry in the Lao PDR

6.1. Supplying raw materials

6.1.1. Domestic raw materials

In the Lao PDR, there are many sources of raw materials for the development of the food processing industry. Particularly, some fruits and vegetables can be produced in particular season, such as coffee, tamarind, orange, Mak Mun, mango, sugar palm fruit, lungan, rambutan, ginger, job's tear, papaya, cassava, etc., and some can be grown in all seasons such as coconut, banana, vegetables (Chinese cabbage, cabbage, lettuce, corn including cob, aloe, tomato, cucumber, eggplant, chilly, pumpkin, peanut, soybean, tea, sugarcane, etc.). These fruits and vegetables are widely produced nationwide depending on natural conditions such as: geography, weather, season, and land area including flatland, plateau and valley. Cultivated areas for short-term industrial crops are still limited, so there is not enough potential to develop the crops as raw materials for food processing industry.

On the other hand, yield is still low. Some fruit and vegetable production is still limited to family production, and has not yet become industrial or commercial production. Therefore, this is still limited in terms of quantity and quality, which is then not able to supply the need of the processing industry. The cause of this limitation is from the fact that production is conducted without targets and plans based on the market mechanism. Preservation techniques after fruit and vegetable are cultivated are at a low level. There is no practical supporting and promoting mechanism by government sectors concerned and/or certain production units.

Table 4: Some statistics on cultivated areas and average yield of fruit and vegetable cultivation in the Lao PDR (From 1997 to 2001)

Vegetables and fruits	Unit of measurement		Northern region	Central and Southern region	Total area
Rice	Area	Ha	199,583	718,151	917,734
	Productivity	Ton/Ha	2.45	2.7	
	Yield	Ton	474,080	1,942,420	
Corn	Area	Ha	25,335	19,621	44,956
	Productivity	Ton/Ha	2.04	3.65	
	Yield	Ton	52,480	71,642	
Vegetable - fruit	Area	Ha	7,440	90,801	98,241
	Productivity	Ton/Ha	2.6	6.8	
	Yield	Ton	16,300	616,841	
Vegetable with head	Area	Ha	8,585	9,265	17,850
	Productivity	Ton/Ha	4.55	7.38	
	Yield	Ton	40,700	68,400	
Soybean	Area	Ha	1,700	1,856	3,556
	Productivity	Ton/Ha	0.72	0.97	
	Yield	Ton	1,198	1,804	
Peanut	Area	Ha	6,040	7,658	13,698
	Productivity	Ton/Ha	0.86	1.41	
	Yield	Ton	5,550	10,827	
Sugarcane	Area	Ha	2,410	4,221	6,631
	Productivity	Ton/Ha	24.6	37.54	
	Yield	Ton	63,550	158,486	
Coffee	Area	Ha	70	32,130	32,200
	Productivity	Ton/Ha	0.41	0.80	
	Yield	Ton	30	25,770	
Tea	Area	Ha	35	365	400
	Productivity	Ton/Ha	0.42	0.36	
	Yield	Ton	15	135	
Total area :					1,135,266

Source : Annual Statistic 2001, National Statistic Center ; Master Plan on Development of Industry and Handicraft in 8 Northern provinces of the Lao PDR, Ministry of Industry and Handicraft.

In Table above we can see a low average number. Therefore, in order to develop the agricultural processing industry, first of all we must pay attention to development of raw materials in the agricultural sector, expanding cultivated areas, utilizing science and technology advantages in agricultural production, building and improving the irrigation system to ensure adequate water supply to cultivated areas which will enable integrated farming and increase productivity, aiming at ensuring sufficient supply of raw materials to the food processing industry and reducing the import of raw materials, food and ready food products from foreign countries in the future.

In the projection for 2010, rice production will reach 1.8 – 1.9 million tons ; corn 700 – 800 thousand tons ; casava 100 – 120 thousand tons ; soybean 1.5 – 2 thousand tons ; sugarcane 250 – 300 thousand tons, all of which will be sources of raw materials to supply the processing industry.

6.1.2. Imported raw materials

From the survey, most of food processing industrial units use imported raw materials from foreign countries for their production. Some import directly from foreign countries, accounting for 7% of the raw materials structure; and, for small-family based units, they use raw materials that are sold in the domestic market, including domestic raw materials and imported ones such as flour, weatflour and ingrediences, accounting for 72%. For imported materials that import-export companies imported, it covers 21%. Details could be seen in Figure 1 below.

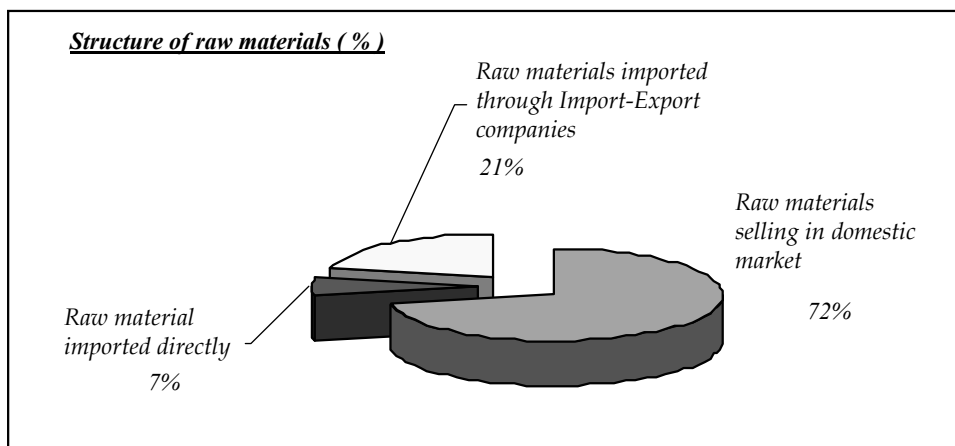


Figure 1: Raw materials structure

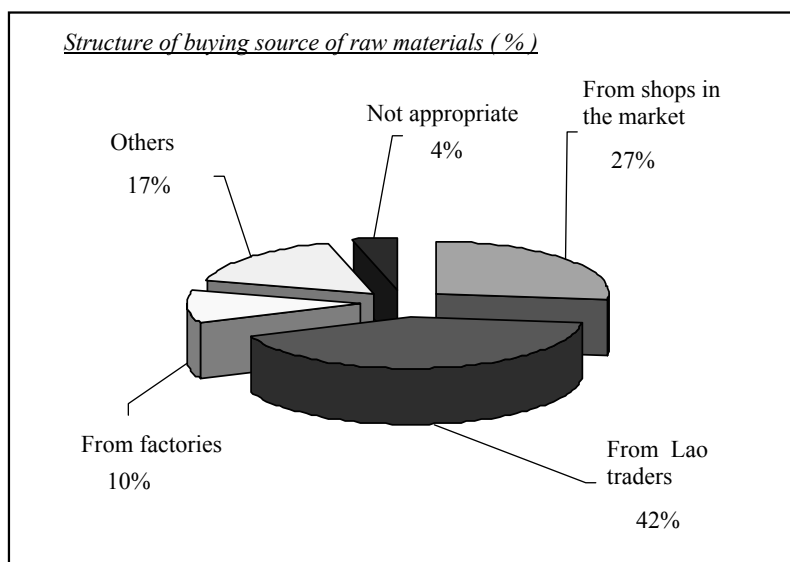


Figure 2: Main sources of raw materials

Figure 2 shows the main buying sources of raw materials of industrial processing units. From the survey, 42% of these units bought from Lao traders, 27% bought from shops in the market, 10% bought from factories and 17% bought from other places.

6.1.3. Preservation after cultivation

At maturity or during the harvesting period, agricultural products will be harvested. Some products could be used directly for the production process and some products need to be temporarily stored before being transferring to the food manufacturing process. However, storage of agricultural products, especially fruits and vegetable, has been practiced through a traditional, simple method or technique, such that products could not be stored for longer periods of time. At the same time, quality also deteriorated, so it then could not be used for production of processed food. Most storage equipment and facilities are made of wood which has no ventilation or cooling system. Therefore, the quality of fruit and vegetable is likely to have deteriorated, and some stored products turn bad because of insects and rats. Therefore, harvested agricultural products are basically stored for self consumption while the rest is distributed to sell in the market without any processing. This is because market system is not good enough.

Examples of how to store some agricultural products: vegetables and fruits

Coffee: After harvesting, the skin will be peeled or brushed off. Then it will be fermented before being dried in the sun or steamed as required. Then it will be stored in warehouses that are free of moisture.

Cassava: Cassava is a secondary crop that could be partly substituted for rice. Particularly when there is a scarcity of rice, cassava can be eaten instead of rice, but it cannot be stored for long period of time (uncooked cassava). Therefore, in order to store for longer periods of time, cassava must be sliced to thin pieces, then dried in the sun or with machines to evaporate the moisture. After that it can be ground into flour and stored in appropriate container for longer usage or to be processed as animal feed. Therefore, to industrially process cassava, there must be a factory fully equipped with machines such as washing machines, slicing machines, drying machines, grinding machines, pressing machines, filling machines and others.

Corn: After corn is harvested, its skin will be peeled or brushed off to get only the corn seeds, which are then dried in the sun or steamed as required before filling bags and storing them in warehouses that are free of moisture. Corn can be used as a raw material for manufacturing corn flour, animal feed and others.

Peanut, Soybean and Sesame...: The storage is similar to that of rice and cassava. That is to dry or steam before filling in bags and then storing them in a place that is free of moisture. This type of products can be raw material for processing vegetable oil, soy sauce, soy milk and soybean flour. The skin after the extraction of oil can also be used to produce animal feed.

Sugarcane: Sugarcane can be kept for a certain period of time. If it is kept for a long time, its quality worsens and its weight decreases. Sugarcane is a raw material for producing brown sugar, white sugar and other types of sugar based on purpose of usage. Sugar waste could also be used to produce alcoholic drinks.

Fruits: Fruit can be stored in a cool container or in the traditional way for longer usage and sale in other season that its price is better. Fruits are raw materials for the production of sweets (coconut sweets, orange sweets, etc.) and fruit juice, both with pieces of fruit or only juice (orange juice, coconut juice, alcoholic fruit juice and others).

6.1.4. Transportation

Transportation of fruit and vegetable to the market or manufacturing factories is considerably convenient, especially in the central and southern parts of the country, which are covered with flatlands and have an improved and developed road network, compared with northern part, which is mostly covered with mountains. However, many difficult places are widely scattered throughout the country, particularly in rural and remote, mountainous and plateau areas without certain access to roads, which make it difficult for people to transport their products to market or selling places. From this situation, production by people in those areas is mostly traditional since there are many constraints and there is no support from the external sector. This constitutes a very low level of people's income in these areas compared to areas with a better road network. For other aspects of transportation, in general, people or farmers who produce vegetables and fruits utilize transportation with a simple technique to store and protect the products. Transportation cost is sometimes high because of long distance, inconvenience and high fuel price. Domestic and foreign transportation costs are still very high, as Lao PDR is a landlocked country, depending only on foreigner services, making the cost of production high and leading to an inability to compete with foreign products with better conditions.

6.2. Production

Planting of fruits and vegetables can be seen in almost all provinces of Lao PDR, but plantation depends on type of land and areas suitable for such fruits and vegetables. Moreover, Lao PDR has the potential to produce chemical-free fruits and vegetables which are highly demanded by foreign markets, especially the European Union, Japan and other countries. This chemical-free production must be supported and promoted for practical production nationwide.

In general, production by the farmer is on a natural, traditional, small and family basis. The production is for self consumption. While only some small remaining amount is sold to the market. Large scale production such as large scale farming, agricultural cooperatives or production system is still limited, since there is no comprehensive "***agriculture-industry-commercial service***" mechanism. At the same time, there is a small number of processing factories nationwide, all of which use traditional techniques which cannot be sustainable for farmers. As these farmers use a low level of technology, their production is limited both in terms of quantity and quality and cannot meet the demand of the processing industry. In other word, some farmers and industrial units have not recognized the importance of production and service technology, leading to a low level of quality: no activeness, no incentives, and no customer confidence.

From this situation, it could be said that the supply of many types of agricultural and industrial products cannot meet consumer demand. This is due to a lack of appropriate design for the targeted market in each period or season. Product quality and standards are still at low levels, as are the quality of raw materials, technique used, technology adapted, goods inspection process and others.

6.3. Finance (Accounting, access to credit, collateral)

From the survey, business units finance their production through their own funding from the small amount of the family’s revenue. Together with no experience in borrowing from financial institutions, this is a constraint to a willingness to expand in business. Moreover, the accounting system is not properly used, leading to an inability to commercially determine cost, profit, and loss, and to accumulate capital for business expansion. In addition, some entrepreneurs are not willing to provide real data on their finance and accounting to avoid commitment to tax and customs payment. Therefore, the data reported by some entrepreneurs is in the sense that they are running a business without profit. As a result, we cannot prove the situation, as there is no accounting system and records of business revenue and expenditure.

The survey indicated some figures and issues as the following:

- More than 70% of units finance their business by their self funding. But that is not enough for business operations, especially for working capital and business development, which then requires borrowing from a financial institution.
- Bank borrowing is characterized as short-term with high interest rates, and with the requirement of collateral. Lending rates for industrial production activities range from 10 – 28% per year; 7 – 24% per year for commercial services; and 7 – 20% per year for animal, poultry and fish rearing.
- More than 70% of the surveyed business units have no accounting system, making it difficult to commercially evaluate the business.
- Some business activities cannot borrow from the bank since there is no government guarantee. Therefore, informal borrowing with high interest rates ranging from 5 – 15% **per month** is widely used.

Details on investment of production units can be seen from the following tables:

Table 5: Type of funding for business startup

Type of funding	%
Self funding	77.1
Borrowing	6.3
Don’t know	16.7
Total	100.0

Table 5 indicates initial investment in business establishment. From the survey, 77% of business units use their self funding for business startup while only 6% borrow from financial institutions.

Table 6: Financial statement

	Making balance sheet?	Selling their own assts to start the business?	Saving for future investment?
	%	%	%
Yes	25	16.7	33.3
No	75	83.3	66.7
Total	100.0	100.0	100.0

Column 1 of Table 6 shows accounting practices of surveyed businesses. Only 25% of the businesses make records using the accounting system, while 75% has no accounting system. Column 2 indicates how businesses finance the initial investment. It shows that 16.7% of the businesses sell their own assets to startup the business, while 83.3% finance the business startup by saving or accumulation from other businesses. Column 3 shows whether businesses save their money for other investments or not. It is shown from the survey that only 33% save for future investment and almost 67% have no saving.

Table 7: Borrowing when money is running short (%)

Frequency	Borrowing from relative	Borrowing from friends
Every time	2.1	4.2
Often		2.1
Sometimes	29.2	16.7
Not so often	29.2	18.8
By themselves (Never)	39.6	58.3
Total	100.0	100.0

Figures in Table 7 show ratios of borrowing from relatives and friends for business operations when the financial status is illiquid and when it is necessary.

6.4. Capacity building for entrepreneurs, managers, technicians and other staff

Most of entrepreneurs have never passed lessons on how to start and run a business. They have only learnt from experience inherited from parents, relatives and friends. At the same time, education level of most entrepreneurs is still low. Details on education level of entrepreneurs is based on the survey, which can be seen in Table 8.

Table 8: Education level of entrepreneurs

Education level	Male	Female
	%	%
Never attend school	2	12.7
Completed primary school	34	32.6
Completed lower secondary school	21	20.7
Completed upper secondary school	14	13.3
Completed primary vocational school	3	2.7
Completed intermediate vocational school	17	11.3
Completed university level	4	4.0
Higher than university level	1	0.7
Others	4	2.0
Total	100.0	100.0

Literacy rate of female entrepreneurs is higher than the national average rate (which is only 47%). From the survey, 87% of surveyed female entrepreneurs are literate as can be shown in Table 8 above.

Most female entrepreneurs have primary education level (32.7%), lower secondary level (20.7%) and upper secondary level (13.3%), accounting for 66.7% of the surveyed samples. Table 8 shows that number of male entrepreneurs who attended the interview is higher than that of female. Female entrepreneurs who have no education account for 12.7%. From the survey of small and medium-sized enterprise in 1996, the percentage of female business owners with no education was 22%. Therefore, this shows that number of illiterate female entrepreneurs has decreased two times. Moreover, this report shows that number of illiterate female is 6 times higher than that of illiterate male.

Table 9: Source of business knowledge of entrepreneurs

	%
From school	8.3
From parents and relative	37.5
By themselves	16.7
From friends	20.8
From others	16.7
Total	100.0

Table 9 shows percentages of entrepreneurs who learnt or drew from experiences about business operations from different places. The figure shows that only 8% of entrepreneurs learnt from school. This is considerably low compared to the percentage of those who learnt from parents and relatives, which is more than 37%.

6.4.1. Strengthening the supporting sector for small and medium enterprises at national level

The Ministry of Education has focused on expanding primary education and increasing access to technical and vocational training. This includes improvement of learning techniques, quality and management of education, and increasing the importance of education. Currently, the Ministry of Education is implementing Project on Primary Education Development for Girls and Education Development Project Phase II, by integrating gender issue in the primary education curriculum.

There are 29 government vocational schools in Lao PDR which provide education to 15,495 students (males 6,017 and females 9,378), 39 private technical training schools, with 9,370 students (males 5,289 and females 4,081) (Ministry of Education, Annual Report 2002). These schools provide technical training on techniques, administration, computer, accounting, and others.

The Ministry of Education has a plan to develop and improve the teaching textbooks for vocational schools, including development of a new training course on administration. Moreover, 3 new vocational schools will be built in Xiengkhuang, Oudomxay and Bokeo Provinces.

- ***General education and vocational training***

The government of the Lao PDR has made substantial progress in improving education for all people. This is shown by an increase in the percentage of literate people from 47.9% for females and 73.5% for males in 1995 (National Statistic Center, 1995) to 60.9% for females and 77.0% for males in 2001 (Ministry of Education, Annual Report 2002). However, illiteracy still remains, especially among females living with poor families and ethnic minorities. There are 3 types of educational institutions providing technical and vocational training in the Lao PDR such as vocational school (Level 1), technical school (Level 2), and university. Most female students are vocationally trained in specific subjects such as cooking, sawing, secretaryship and accounting. Male students are mostly trained in subjects such as carpenter, mechanics, electronics, electricity, sculpting and engineering. For higher levels of technical education, the number of female enrollment decreases.

Nowadays, there is a high and urgent demand for the capacity building of staff who deal with the task of small and medium enterprise promotion, staff of existing institutions (for example: National Chamber of Commerce and Industry and Lao Trade Promotion Center), and mass organizations (such as Lao Revolutionary Youth Organization, Lao Women Union, Lao Labour Union, National Front for Construction), in order to enable them to implement necessary policies and regulations, make a plan, provide consultation services and coordinate with concerned Ministries and government organizations. This capacity building and development should be conducted at central, provincial, municipality, special zone and district level, in order to ensure that women and people with fewer opportunities can benefit from such development.

6.4.2. Technicians and skilled labour

From the survey, it is found that the majority of the labour force has only a general education level and some business units have labourers with education lower than the primary level, which is a factor contributing to a lack of consciousness, responsibility, attention to production issue, safety, quality and others. Moreover, the main labour force has not been trained in knowledge related to plantation-cultivation, maintenance, food processing, management, administration, finance and accounting.

Table 10: Education level of staff by sex (%)

Education level	Male	Female
	3.5	5.5
Never attended school	47.5	35.2
Completed primary school	25.7	28.1
Completed lower secondary school	19.3	19.6
Completed upper secondary school	0.5	2.0
Completed primary vocational school	2.5	3.5
Completed intermediate vocational school	1.0	5.5
Completed university level	0.0	0.5
Higher than university level	0.0	0.0
Others		
Total	100.0	100.0

Table 10 shows percentages of both male and female labourers or staff, who have different levels of education in the business units.

6.5. Information

Most of units that deal with processing goods use traditional ways of production. They lack knowledge of the information system, information management and communication and coordinating system, which is constraints to improvement and development of any activities of entrepreneurs, and hinders access to new market. From the survey, businesses that frequently receive information cover only 8.3% while those with no access to information account for 62.5%.

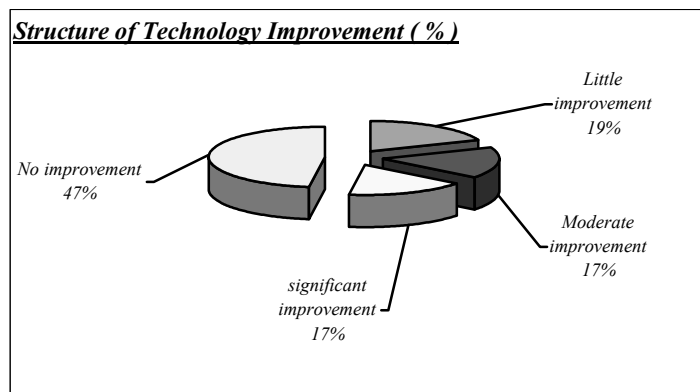
Table 11: The need of information for business operation

Frequency	%
Every time	8.3
Often	10.4
Sometimes	14.6
Rarely	4.2
Never	62.5
Total	100.0

6.6. Technique, technology and sanitation

Since farmers have not recognized the importance of technology for processing the product after it was harvested, particularly concerning quality and safety issues, this makes their income decrease and threatens the health of the community in general. From the view of integration into ASEAN, there are many challenges that we are facing, such as the fact that good exhibition is arranged by the standard and quality level of products. Farmers and entrepreneurs who deal with processing products have not yet recognized the principle of sanitation and safety. Managers of companies look over their commitment by law to follow some hygienic standards. The figures on improvement of technology for production within 1 year are as follows. 19% of the units improved their technology a little bit, 17% improved very significantly and 47% have never improved. The rest, 17% of units, fell into the category of those who improved their production technology at a moderate level. Details can be seen in the following figure.

Figure 3: Structure of technology improvement within 1 year



- Some pictures of Technology and equipment used for agricultural processing production

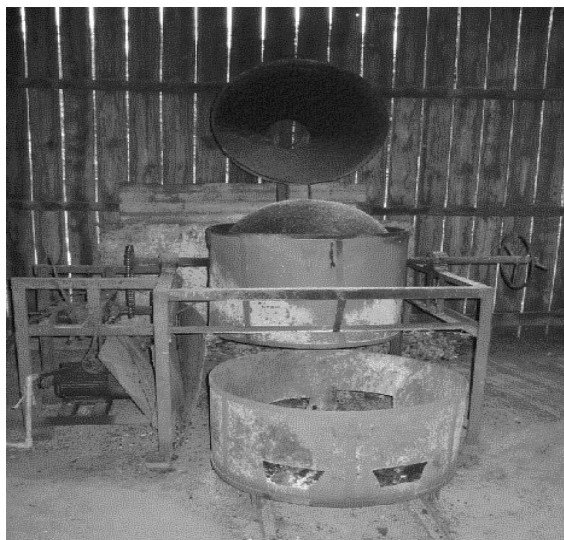


Figure 4: Pan for frying coffee

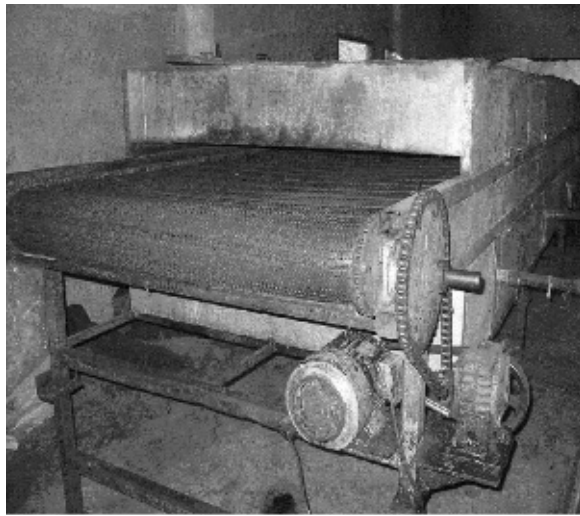


Figure 5: Rice noodle production equipment



Figure 6: Noodle production method

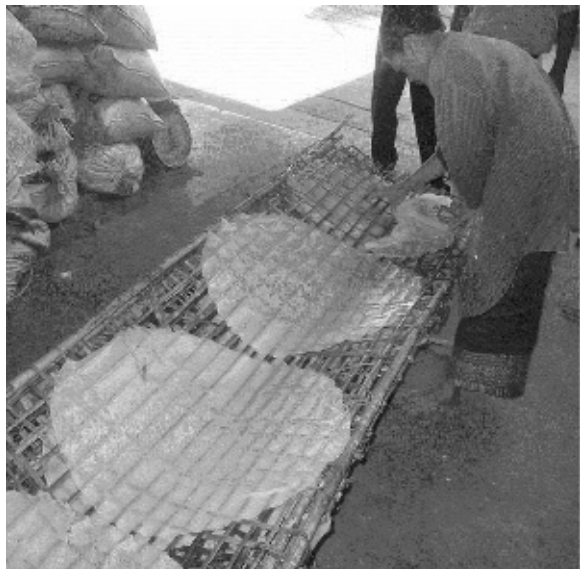


Figure 7: Drying rice noodle



Figure 8: Sweet production equipment

6.7. Marketing

Marketing of current agricultural products, particularly fruits and vegetables, is conducted in the traditional way of trading. Farmers with small scale production bring their fresh products to sell in the market immediately after being harvested. For the producer with medium to large scale production, there will be an intermediate trader going to purchase their products during harvesting period.

Marketing scope of this type of agricultural products is scattered within villages and districts next to each other, and there is fruit and vegetable trading once after a long period of time. Therefore, prices in the market show the difference between regions. Price differences in regions or villages is due to the fact that farmers spend their lives in agricultural production and are satisfied with doing such practices in remote areas which are difficult to access. There is no expected high demand for products in the town. And there are other constraints such as the lack of transportation, poor road condition and high transportation cost.

In terms of marketing information and facilities, processed fresh food to be sold in markets is not kept in cool places or storing room. There is no or little information for producers, especially in newspapers, radio or television. Traders in the market including food enterprises are the sources of marketing information. Prices in the market are controlled by the intermediate trader.

Therefore, there is a need to improve the marketing system, access to the market in rural areas, and good exhibition. Moreover, wholesale markets should be established and trade barriers should be removed.

For ready products that are already industrially processed, most consumers prefer foreign products. At the same time, market size and capacity are very small compared to purchasing power, belief, confidence and customer service. Market scope is mostly within villages and districts where the companies or production units are located. Markets of other provinces or foreign markets are a big challenge to gain access.

For the foreign market, based on the survey in agricultural processing industry, there are a number of

products (rice, coffee, tea) that are especially outstanding, as they have traditional methods of production and a historical manner of consumption that make them fresh and special. The demand from the international market, with the determination of rule of origin, for these products is increasing, especially from European Union and Japan. Based on regulations of WTO to protect product origins, protection of origin at national level is the primary condition to gain protection at international level. Issuing the name and protection of origin for food products is widely conducted in Southeast Asia.

7. Constraints and Challenges

From the survey, constraints and challenges for small and medium enterprises are observed, especially for supporting units of the agricultural food processing industry. These constraints and challenges are as follows:

1. Business units are mostly characterized by small and family based units with constraints in many aspects, mainly in terms of education—specialization level, vocational level—funding, experience/labour skill, power in trade negotiations and limitation on business expansion, as they are not yet self-sufficient. If demand or purchasing power of the domestic market is low, these business units operate with difficulties, leading to an inability to meet tax obligations by law.
2. Access to bank financing mechanisms is limited since they cannot borrow if there is no collateral, terms of borrowing is short, and interest rate is high. This affects business activities for which the benefit shall be realized after a long-term period. Most investments for business startup are from small amounts of self-funding, but the lack of working capital requires borrowing from a financial institution.
3. Many business units are not registered, operate scatteredly by general people and lack the correct accounting system. This is because they are family businesses operated in a traditional manner, with low profits for just self sufficiency, without planning and development. Therefore, they cannot even calculate their cost of production, profit or loss.
4. In general, production relies mainly on imported materials attached with transportation expenses, resulting in a high cost of production and inability to compete, which is inconsistent with the policy to promote domestic production. At the same time, each material import takes a long time for the documentation process, especially the process to acquire the 1% import tax, which requires that businesses located in provinces to submit documents to the Customs Department, the only body to approve such a tax.

For the service units, they are mainly involved with the trading of imported ready goods. Import-export companies are the only sale representatives of foreign companies. From the survey, it could be said that the number of import companies is more than 80%, while those for export cover only 10 to 20%. Most export products are non-timber products, beans, cassava, rice, sugar

palm fruits, papaya, job's tear and so on. These products are not yet processed and lack added value. There is only one company named Lao Agro Industry Co. in Vientiane Province that produces canned fruits and vegetables as processed products, such as preserved garlic, sugar palm fruits in syrup, preserved mango, baby corn preserved in salty water, rambutans in syrup, preserved cabbage, bamboo shoots in water and so on.

5. Product quality is low. Production volume is small and so is market size, resulting in the inability to be industrialized and commercialized.
6. There is no system of division of labour characterized by the links between “producers -sellers” with contracts and guarantees in terms of quantity, quality and price.
7. There is a lack of supporting, promoting and enhancing mechanisms. The capacity of concerned sectors for best practices of investment promotion is not enough and there is a lack of particular knowledge on the supporting sector for the food processing industry.
8. At present, there is no food producers’ association. This makes promotion and benefit negotiation tasks difficult. However, Dr. Sisaliaw Savaingsueksa, a consultant of Lao Farmer Product Co. Ltd., has initiated a proposal to establish a food producers’ association.
9. Policy and regulation changes, which occurred very often, hinder business operations. In general, these changes may increase the cost of production through factors such as tax, customs, weight check and so on.

For issues mentioned above, there is a need to make priorities in order to improve and adjust in accordance with time, opportunity, the real situation and internal and external factors.

8. Policies

These agricultural processing businesses are surrounding and supportive to industrial production, and there is potential for future development, if there is support from institutions and sectors concerned, both public and private, in terms of:

1. Provision and transfer of technology including professional techniques through training and seminars provided for entrepreneurs, managers, as well as technicians, mainly on management—administration, finance—accounting, sanitation, food security, standards and product quality improvement, marketing, property rights, entrepreneurship and others.
2. Arrangements to provide appropriate mechanisms and regulations that are supportive of and promote production and service growth continuously and substantially. Particularly, we should create a comprehensive production mechanism with the linkage of “**agriculture-manufacturing industry-trading service**”. This means that the agricultural sector should pay attention to promoting farmers to produce with assured quantity and quality, in order to supply to processing

industrial factories. The industrial and handicraft sector must make efforts to promote industrial units, enabling them to produce products with certified quantity, quality and standards for supplying to the commercial and service sector that, in turn, widely and increasingly distributes these products for social consumption through advertisement, mobilization and promotion of domestic product consumption.

3. Arrangement of division of labour with suitable targets in the process of marketing and product collection with appropriate warehouses, particularly creation of a labour division mechanism that is characterized by the linkage of “**producer – products collector – seller**” with contracts and guarantees in terms of quantity, quality and price. This means that division of labour must be clear in the sense that the group of producers has the duty to produce and that of collectors and the sellers has duty to collect produced goods and sell to the market under the agreed contract.
4. The support and promotion of wide use and consumption of domestic resources and products respectively.
5. Creating favorable conditions for business operations, particularly creating and mobilizing people’s interests to legally invest or start businesses in diversified sectors, *especially to* transform traders in finished goods to industrial producers.

9. Recommendations

In order to enable improvement and development of weak business units so that they can grow substantially and continuously, and, on the other hand, to create conditions favorable for those who are interested in investing or becoming an entrepreneur in a new business, there must be supports from both public and private institutions and sectors concerned, in order to realize industrialization and modernization policy of the government, particularly on the following aspects:

1. The provision of long-term credit with low interest rate and without too great a requirement of collateral. And, the process of getting the loan should be improved and streamlined to make it easier and ensure benefits for both sides (lender and borrower).
2. The necessity to transfer knowledge on techniques and management to the country in order to prepare for entry to ASEAN. At the same time, the government and the National Chamber of Commerce and Industry recognize the need to support the establishment of a producers’ association in order to mobilize contribution and participation in the implementation of the Law on Food. For the marketing, especially in the aim to penetrate the foreign market, it is important is firstly to recognize the necessity to improve quality, standard and sanitation of both industrial and agricultural products, which requires product design, determination of a brand name, registration of a trademark and standard certification of products in order to create consumer satisfaction and confidence.
3. Arrangement of a suitable mechanism that is supportive of and promotes the continuous and

substantial growth of production and services, through the creation of a legal system appropriate and compliant with the real situation and conditions of the country, particularly the exception of the import tax during the first 3 to 5 years period for new entrepreneurs; determination of appropriately low custom rate; advertisement; weight check; and mobilization of people to use and consume domestic products.

4. Time is the fundamental factor supplying the chain of products that are easily deteriorated, especially fruit and vegetable. In order to shorten as much as possible the time between production and consumption, development of public goods is of the most necessary to enable farmers to supply their products to market and/or factories on time.

10. Action Plan

In order to improve and address constraints and challenges, and to achieve government policy, the following action plans are proposed for implementation. These are:

1. Creation of a strong and capable approval and certification system for quality and food safety that is coherent at the national, foreign and regional level. Particular emphasis is on strengthening of the sector concerned with increasing trainings and disseminating lessons on many aspects including training on productivity and quality improvement for agro processing industry;
2. Formulation of regulation for contract farming agricultural production;
3. Determination and development of regulations on protection of origin and of property rights;
4. Development of quality standard for agricultural products and promotion of post-harvest technology;
5. Study on the possibility to create a unified accounting system for small and medium-sized enterprises;
6. Study on how to mobilize people's recognition of quality which is one method of improving management of product quality after harvesting for farmers, distributors, wholesalers and retailers;
7. Improvement of the public utility system to be convenient and fully cover the distance between production site and markets and/or processing industrial factories.

Attachment 1: Reference

1. Food processing Sector in Lao PDR, UNIDO Integrated Program for Lao PDR.
2. Main Report, Master Plan Study on Integrated Development in Lao PDR, Volume I.
3. Statistic Year Book 2001, National Statistic Center.
4. Master Plan for Industry and Handicraft Development in 8 Northern provinces of the Lao PDR, from 1999 to 2010.

7. Current Situation On Cotton and Silk Production in the Lao PDR

Kham ouan HOUNGDOUANGCHANH
Lueane VONGPRANAKHONE
Onesy BOUTSIVONGSACK
Oudom LOUANGKHOTH
Kaesorn MANIVONG
Ouloun SENGTA, (an additional member)

Summary

The actual survey and study in research on Feasibility of Silk and Cotton production, mulberry planting and silkworm raising, silk rearing and weaving activities in 5 provinces, where people have the most active cotton and silk production as follow :

- **Northern region**: 3 provinces: Huaphanh, Xiengkhuang, and Luangnamtha.
- **Central region**: 1 province : Borikhamxay
- **Southern region**: 1 province: Champasack.

The survey aimed at studying the potentials for development of the silk and cotton production in each province in order to have precise and detailed references fro further studying and facilitating SMEs activities based on the real conditions and to help them develop and earn higher income. By doing so, it is expected poverty will be reduced step by step.

It is found in this survey that in these 5 provinces the cotton and silk production businesses account for not less than 40% of all business units (according to actual survey). Especially in Huaphanh province (Xamtay and Sobbao districts), the silk and cotton businesses account for the highest percentage of about 80% of all business units, if compared with other provinces.

The current production of the raw silk in Laos is about 100 tons/year, while the actual demand is about 300 tons/year. Hence, about 200 tons/year are needed to be imported from the neighboring countries (according to the statistic of Ministry of Commerce). Nevertheless, the survey indicates that Laos has a comparative advantage in terms of the location and abundance of land compared to the neighboring countries. It is expected that Laos will be able to produce sufficient volume for domestic demand. In addition, Lao handicraft products also have a great potential for export.

1. Products:

Main products from cotton and silk fabric are Lao silk skirt, silk clothes, mattresses, pillow, blankets, curtains / hanging, mosquito-net, scarf, table cloth, hanging fabric for interior decorations, bags and gift items for souvenir made by cotton and silk, etc. These products are naturally or chemically dyed products which are available for the domestic and foreign markets.

2. Raw material:

The production of cotton and silk as raw material in Laos is very basic and using domestic and foreign seeds, however, using foreign seeds are still on the experimental stage (with low investment). Therefore, it has a lower effectiveness compared to the one in the neighboring countries. It is required to improve the effectiveness, especially improving technology and production procedure, for example : the thickness of silk thread, the strength, the length, and the endurance. In the regard, it needs to improve the production procedure, technique in rearing, weaving, but at the same time, to maintain the tradition and culture of the local people.

3. Lesson learned from the survey

Problems and challenges on expanding cotton and silk business are the followings:

1. Provinces, where the survey was conducted, have long experiences in the cotton and silk production, which is still in a scattered manner. The findings of the survey shows that Houaphanh province, Luangnamtha province, Borikhamxay province and Champasack province have high potential in producing cotton and silk, which can be upgraded for export.
2. Generally, the products are sold at local place in the villages, within province and the provinces nearby or directly purchased by the merchants in the Morning Market in Vientiane Capital. At the same time, some businesspeople/producers are exporting their products to other countries such as Japan, Singapore, European countries and others.
3. Competitiveness of the Lao entrepreneurs is still low. The entrepreneurs have problems in mobilizing fund to establish and to expand their businesses because most of them lack of knowledge on financial management and lack of asset. In addition, a special credit system for SMEs is absent and the existing banking system does not have particular policy for these business activities, but still uses general policy.
4. The consultation between the government and the private sectors are not done in a regular basis due to an insufficient cooperation mechanism and there are not clear and detailed roles between the government and the private sector in terms of formulating policy, planning and setting regulation and business approach, etc..., which are not yet in line with each other and become a barrier in facilitating the sustainability and expansion of the businesses. Generally, some macro

agencies do not pay attention to this activity as much as it should.

5. The revenue from the cotton and silk production are merely additional earnings, which helps to upgrade the living standard of the local people in some areas. However, in other areas, it becomes the main earnings. However, for most families, the earnings from weaving are relatively low and not sufficient for their household expenditure. In this case, the production does not aim for export.

4. Main Challenges and identified difficulty issue

1. Insufficient fund (lack of support, the majority of the producers financed themselves by using their own saving). The producers cannot access to the banks' loan because of high interest rate, short loan period and most producers have very low level of knowledge on financial management, insufficient collateral.
2. Markets and demands are increasing; especially Lao naturally dyed cotton and silk. However, the domestic production does not meet the demand in term of quantity and quality and cannot substitute the imported products yet.
3. Lack of service institutions that offer necessary business development services such as training, information, product testing and certification and others.
4. The transportation for export is very costly including high fees and tax. It would be better to provide incentive by exempting 100% of tax.
5. Lack of national expert in sericulture.
6. The technology to improve each step of production process is also basic (mulberry planting, on silk worms race cover, worm feeding, silk reeling, weaving, design, finished products). It is required to upgrade.
7. Lack of skill labor and quality standard.

5. Policies and Guidelines:

To meet the demand of cottage handicraft and industry development, particularly, of the entrepreneurs as below:

1. To better facilitate businesses: to approve the small and medium enterprises' role, review, improve and integrate the regulations on the sector management and facilitation to make them more consistent, more transparent and reasonable;

2. To improve the information disseminating system on laws and regulations through the Chamber of Commerce and Industry and mass media.
3. To publish essential journals for businesses using simple tools and methods.
4. To enhance and improve capability of the officials at the central, local and the Chamber of Commerce in formulating and implementing laws.
5. To enhance competitiveness of the domestic businesses through projects and supporting activities and to give the business development services in all aspects.
6. To upgrade technical staff and leaders to be able to achieve the targets as well as to implement the project on promotion and development of the cottage handicraft and industry.

6. Recommendations:

To build the rural weaving groups activities.

Increase more the mulberry plantation in the suitable areas (as Luangnamtha, Xiengkhuang & Houaphanh)

Wide-ranging market.

Use more local raw materials in order to substitute the import.

Quality and productivity improvement for silk and cotton in Lao PDR

At control level, the SME Development Advisory Council will be set up as a public, business and private partnership. The council will be chaired by the vice prime minister in charge of economic affairs. Membership of this council consists of representative from line ministries, the other ministries and agencies concerned, SME owners or managers and community leaders.

7. Current Situation on Cotton and Silk Production in the Lao PDR

I. Overview:

Handicraft in Lao PDR has experienced three development phase since the country's independence in 1975. During the first decade (1975-1985), handicraft was only for domestic consumption, with the export market becoming the prime target for handicraft only after privatization and foreign investment promotion was introduced in the country. However, the statistics do not show the satisfactory results in the export during this second period (1986-1995). Since 1995, the handicraft products are being increasingly interested by both domestic and export markets, especially silk products. Approximately 80% of Laotians live in the rural areas and engaged in farming and handicraft production activities. In the other hand, the government included the promotion of handicraft as one of the eight priorities for the government's economic development policy.

Handicraft products such as cloth, the *sinh* (Lao skirt) and scarf weaving, etc. is one of the economic potentials in our country for many years using domestic raw material such as cotton and silk. This activity is an essential component of the Lao people's life. In addition, handicraft production became an element of our culture. In the past, the production of the items such as *Sinh*, cotton and silk fabric, pottery, silverware, gold jewelry, bamboo, rattan, wood sculpture and traditional food processing, etc were produced to meet the domestic demand only.

In this open-door period, Lao handicraft has played an important role and has become widely popular products in Asia-Pacific Region and European countries. Lao naturally dyed silk and cotton products are for both domestic consumption and export, generating better incomes for the Lao people. The cotton and silk production groups have been established in many provinces, namely:

- **Silk handicraft production groups:**

Huaphanh Province (Samtai, Samneua, Sobbao and Vienxay district),

Luang Namtha Province (Namtha, Sing and Long district),

Xieng Khouang Province (Phonesavanh, Phoukood and Kham district),

Bolikhamxay Province (Khamkeuath, Phakkading, Phakxane and Thaphabath district),

Champasack Province (Pakse, Phonthong, Pathomphone and Sanasomboon district)

And others provinces.

- **Cotton production groups:**

Luang Prabang, Xayaboury, Oudomxay, Savannakhet, Champasack, Xekong and others provinces as well.

These groups produce handicraft items, which are inherited, unique and competitive products. They have been developed by skill training that promoted natural dye techniques using roots, seeds and leaves in combination with new techniques to improve the quality.

The overall handicraft sector development, especially the cotton and silk production is expected to be further expanded. However, the data is not accurate and not sufficient to provide a precise assessment due to irregular data collection. Nevertheless, all agencies at the macro level, especially those in the industry and handicraft sector, have established specific projects that are seriously involved with promoting, encouraging and strengthening handicraft production to become one of the potential areas in the national economic structure.

The Government gives priority to developing and promoting small and medium enterprises (SMEs) because they have a great potential in strengthening the national economy. Today, cotton and silk production plays an important role in the international stage. Hence, the Lao government has asked for support from many countries in the world to provide technical assistance to analyze and to find out the appropriate solutions and policies in development, which shall encourage the sustainable economic growth in Lao PDR.

II. Objective:

The objective of the survey is to collect data on overall situation of small and medium enterprises, especially those in cotton and silk production throughout the country in order to formulate appropriate policies to promote the business operation and expansion, especially the cotton and silk production and processing, mulberry tree planting as these businesses are contributing to poverty reduction for ethnic people as outlined on the Government policy.

III. Survey Method:

A survey was conducted on cotton and silk production, mulberry planting and silkworm raising, silk rearing and weaving activities in 5 provinces, where people have the most active cotton and silk production:

- **Northern region:** 3 provinces (Huaphanh, Xieng Khuang and Luang Namtha)
- **Central region:** 1 province (Bolikhamxay)
- **Southern region:** 1 province (Champasack)

The survey aims at studying the potentials for development of the silk and cotton production in each province in order to have precise and detailed references for further studying and facilitating SMEs activities based on the real conditions and to help them develop and earn higher income. By doing so, it is expected poverty will be reduced step by step.

It is found in this survey that in these 5 provinces the cotton and silk production businesses account for not less than 40% of all business units (based on actual survey). Especially in Huaphanh province (Samtai and Sobbao district), the silk and cotton businesses account for the highest percentage, if compared with 4 provinces.

A. Implementation Measure:

1. Collect data of the production units-160 in collaboration with provincial concerned agencies by using questionnaires and interviews guideline to craftsman and household producers.
2. Conduct interview with entrepreneurs / local actors on the production sites, market and other selling places based on the specific questionnaire.
3. Conducted meeting and field surveyed with the local officials concerned, especially the Department of Industry and Handicraft of each province. Reviewed the existing document/statistics which related to silk and cotton products.

B. Main Content of Interview:

- Background and decision in selecting this business
- Basic information on the owners/producers.
- Business data and its environment.
- Point of view of business owners/producers in general.
- Data on raw material / input supply for production.
- Data on sales and clients/marketing.
- Experience on bargaining with material suppliers and others.
- Financial statement (revenue-expenditure) of entrepreneurs / producers.
- General questions on competition and social activities of businesspeople/ producers.

C. Survey team:

The survey team consists of 5 people namely:

No	Name of team members	Position and Organization	Position in Survey
1	Mr. Kham ouan HOUNGDOUANGCHANH	Deputy Director General, Department of Handicraft, Ministry of Industry and Handicraft	Team leader
2	Mr. Lueane VONGPRANAKHON	Deputy Director General, Department of State Owned Banks and Financial Institution Management, Bank of Laos.	Deputy
3	Mr. Onesy BOUTSIVONGSACK	President of Garment Group, Chamber of Commerce and Industry	Member
4	Mr. Oudom LOUANGKHOT	Deputy Director of Handicraft Center, Ministry of Industry and Handicraft	Member
5	Ms. Kaesorn MANIVONG	Department of State Owned Banks and Financial Institution Management, Bank of Laos	Member
6	Mr. Ouloun SENGTA	Technical officer of the Department of Handicraft	is an additional member to support the team in accomplishing the task as specified on the plan

IV. Overview of cotton and silk production in Lao PDR at present:

The findings of the industry and handicraft survey that was held in 1999 by the Ministry of Industry and Handicraft and UNIDO show that the family and small-sized production and handicraft businesses accounted for 98.1%, the medium-sized ones consisted of about 1.5% and the large enterprises – only 0.4 % of the total enterprises . The labor force that is employed by the small enterprises is about 57%, medium size is about 36% and large size is only 7%. *(Source from the Statistic-Planning Division of the Ministry of Industry and Handicraft).*

The cotton and silk production sector is growing very fast compared to the past and becomes relatively popular worldwide. In general, silk products are characterized as indigenous ones. According to the survey that has conducted in FY2003 between the Ministry of Industry and Handicraft jointly with ADB based on household-level activities. Figures are still unreliable, but the number of producers has been estimated at 3,000 units producing silk and there are about 8,500 weavers across the country. The main producing areas are in Houaphanh province, Xiengkhuang province, Lauangnamtha province and Borikhamxay province. The raw material is produced for their own use, not for commercial purpose. The main market is Vientiane Capital and their local areas. However, nowadays, the international market such as Japan and European countries has shown a higher interest on the products.

The Lao Handicraft Association (Lao Handicraft Group) is the representative or a representing agency for the handicraft and commercial businesspeople such as handicraft producers, cotton and silk producers; however, it does not mean that the Association is responsible for all aspects in the production. The main task of this Association is to promote the products in the domestic and export markets. However, it is not strong enough in terms of human resources and sector development. In this regard, it is required to give priority to the quality improvement and to the international market exposure. In the local areas of each province which they have potentials, we had established the Handicraft Promotion Enterprises and Handicraft Groups and take responsible for representative agency of entrepreneurs or producers in Lao PDR.

Based on these production factors, combined with the higher structural value (good collecting, supervision technique, inter-province taxes, non-quality costs and standard), the trading companies have 2 marketing strategies:

1. Sell on domestic market appropriate priced fabrics with relatively low income to weavers
2. Target export markets with higher quality fabrics that ensure a good remuneration to producers

V. Content of the survey:

1. Source of raw material:

The production of cotton and silk as raw material in Laos is very basic and using domestic and foreign seeds, however, using foreign seeds is still on the experimental stage (with low investment). Therefore, it has a lower effectiveness compared to the one in the neighboring countries. It is required to improve the effectiveness, especially improving technology and production procedure, for example: the thickness of silk thread, the strength, the length, and the endurance. In this regard, it needs to improve the production procedure, techniques in rearing, weaving, but at the same time, to maintain the tradition and culture of the local people. And the government pays attentions to develop and promote of using the domestic raw materials.

The current production of the raw silk in Laos is about 100 tons/year, while the actual demand is about 300 tons/year. Hence, about 200 tons/year are needed to be imported from the neighboring countries (*According to the statistic of Ministry of Commerce*). Nevertheless, the survey indicates that Laos has a comparative advantage in terms of the location and abundance of land compared to the neighboring countries. It is expected that Laos will be able to produce sufficient volume for domestic demand. In addition, Lao handicraft products also have a great potential for export.

2. Main products:

Main products are cotton and silk fabric, Lao silk skirt, silk clothes, mattresses and pillow, blankets, curtains/hanging, mosquito-net, scarf, table cloth, hanging fabric for interior decoration, bags and gift items for souvenir made by cotton and silk, etc. These products are naturally or chemically dyed products, which are available for the domestic and foreign markets.

- Huaphan Province: Samneua and Samtai areas are reputed as a strong traditional weaving center that provides Vientiane workshops with many young weavers. Samneua textiles show a variety of techniques and reflect local weavers' artisanship.
- Xienkhouang Province: The Thai deng and Tai Krao ethnic groups use elaborate designs to produce fabrics that are more expensive. Most of the weavers are contracted by Vientiane traders.
- Luang Namtha Province: Twelve Thai Lao villages were producing skirts and scarves for domestic use. Weaving activity in this area is on a sharp decline except in one village where a Japanese trader has organized production to ensure export to Japan. Some villages of the Lu ethnic group specialize in ancient designs in the Chinese style. They produce furnishing fabrics and blankets.

3. Production tools, technique, technology:

Most of the production tools are characterized as locally made and inherited from generation to generation. Recently, they have been better developed such as weeding tools for mulberry plantation and for feeding silkworms, rearing, weaving tools and tools for natural dye. As the result, the quality of the

handicraft items has been continuously improved. The indigenous techniques in mulberry plantation and silkworm raising have been gradually improved as well.

4. Marketing:

Generally, products are sold directly in the villages, provinces or directly purchased by the merchants in the Morning Market in Vientiane Capital and other provincial markets. At the same time, some businesspeople/producers are exporting their products to other countries such as Japan and others. There are different selling methods as the followings:

- Direct selling in market (producing and selling by walking around, some producers have regular retailers in Vientiane capital.)
- Some are producing and selling by themselves at their own place.
- Some are selling at the show rooms abroad.
- Other methods: still searching for better approaches.

5. Finance:

Generally speaking, most of the handicraft entrepreneurs do not have any accounting system and sufficient fund to start the business. Some are illiterates and running businesses without knowing whether they make profit or loss because they do not know how to calculate.

6. Entrepreneurship development:

- There are some training courses held domestically and abroad.
- Learning by attending domestic and international exhibitions and study tours.
- Reading textbooks, learning from experts, listening and watching related news.

7. Information system (entrepreneurs' access to information):

- Set up handicraft information network system in order to provide information regularly and widely and to help the businesses in formulating precise and clear plan.
- Set up regular bottom-up reporting system
- Regularly visit local areas to solve problem of inaccurate information or statistics.

8. Standard, quality and productivity improvement:

Handicraft production, especially, cotton and silk production needs to meet certain standard requirement. Raw material of silk production needs to upgrade quality. At present, under the support of ADB, Ministry of Industry and Handicraft focuses on upgrading silk to meet international standard.

VI. Survey's assessment:

Problems and challenges on expanding cotton and silk production are identified as the followings:

- Competitiveness of Lao entrepreneurs is still low. The Lao SMEs have problems in mobilizing fund to establish and to expand their businesses because most of them lack of knowledge on financial management and lack of assets as collateral. In addition, there is lack of specific credit system for SMEs and the existing banking system follows the general credit policy without having specific policy for the sector.
- Consultation between the government and the private sector is not done in a regular basis due to insufficient cooperation mechanism. There are not clear and detailed roles between the government and the private sector in terms of formulating policy, planning and setting regulation and business approach, etc. These practices are not yet in line with each other and become a barrier in facilitating the sustainability and expansion of the entrepreneurs. Generally, some agencies at the macro level do not pay attention to this activity as much as they should.
- In the provinces, where the survey was conducted, the cotton and silk production has been carried on but still in scattered manner and without widely organizing the production groups. On the other hand, weaving and producing handicraft products that present the unique features and the finest skills of the ethnic people, have become popular. It is noticed that there are potentials in the mulberry plantation and silkworm raising businesses by using both local and improved varieties. The findings of the survey show that Houaphanh province, Luangnamtha province, Borikhamxay province and Champasack province have the potential in producing cotton and silk, which can be upgraded for export.
- In some areas, the revenue from weaving cotton and silk production and silk rearing are the additional earnings, which helps to improve the living standard of the local people. On the other hand, in other areas, it becomes the main earnings of the local people. Despite that fact, the earnings from weaving for most families is still relatively low and not sufficient for their household expenditure. Moreover, the production of the handicraft products does not aim for export yet.

VII. Main Challenges and Identified difficulty issue:

1. Insufficient fund (lack of support, the majority of producers financed themselves by using their own saving). The producers cannot access to the banks' loan because of high interest, short loan period and most producers have very low level of knowledge on financial management, insufficient collateral.
2. Markets and demands are increasing; especially Lao naturally dyed cotton and silk. However, the domestic production does not meet the demand in terms of quantity and quality and can not substitute the imported goods yet.
3. Lack of service institutions that offer necessary business development services such as training, information, product testing and certification and others.

4. The transportation for export is very costly including high fees and tax. It would be better to provide incentive by exempting 100% of tax.
5. Lack of national expert in sericulture.
6. The technology to improve each step of production process is also basic (mulberry planting, on silk worms race cover, worm feeding, silk reeling, weaving, design, finished products). It is required to upgrade.
7. Lack of skill labour and quality standard.

VIII. Policies and Guidelines:

To meet the demand of cottage handicraft and industry development, particularly, of the entrepreneurs as below:

- To better facilitate businesses: to approve the small and medium enterprises' role, review, improve and integrate the regulations on the sector management and facilitation to make them more consistent, more transparent and reasonable;
- To improve the information disseminating system on laws and regulations through the Chamber of Commerce and Industry and mass media.
- To publish essential journals for businesses using simple tools and methods.
- To enhance and improve capability of the officials at the central, local and the Chamber of Commerce in formulating and implementing laws.
- To enhance competitiveness of the domestic businesses through projects and supporting activities and to give the business development services in all aspects.
- To upgrade technical staff and leaders to be able to achieve the targets as well as to implement the project on promotion and development of the cottage handicraft and industry.

IX. Recommendations:

- To build the rural weaving groups activities.
- Increase more the mulberries plantation in the suitable areas (as Luangnamtha, Xiengkhouang & Houaphanh)
- Wide-ranging market.
- Use more local raw materials in order to substitute the import.
- Quality and Productivity improvement for Silk & Cotton in Lao PDR.
- At central level, the SME Development Advisory Council will be set up as a public, business and private partnership. The council will be chaired by the vice Prime Minister in charge of economic affairs. Membership of this council consists of representative from line Ministries, the other Ministries and agencies concerned, SME owners or managers and community leaders.

8. Regional Study on SME Development in Savannakhet Province

Sengphachanh SIMANGKHALA

Summary

This regional study on SME development in Savannakhet evaluates the existence and development of SMEs in the manufacturing and handicraft industries sector. This paper comprises five chapters: Chapter I introduces the purpose of this paper and Chapters II, III, IV and V provide a general overview of Savannakhet, the current situation of the manufacturing and handicraft industries, a regional statistics survey their respective conclusions and recommendations. Chapter III and Chapter IV present the main content. Based on the current situation of the manufacturing and handicraft industries in Savannakhet, SMEs are under developed. Small and medium-sized factories accounted for 99.68% of the total number of factories in 2003-04, an increase of 6.02% from 2002-03. Manufactories accounted for 73.75% of all factories, an increase of 4.58%, and small manufactories accounted for 97.70%, an increase of 4.84% from 2002-03. Labor in industry and handicraft increased by 0.9% in 2003-04, and local labor accounted for 96.76%, representing an increase of 0.18%. The production value of manufacturing accounted for 34.53% of the total production value that showed an increase of 87.05% from 2002-03. The rapid increasing of production value of manufacturing in 2003-2004 come from there are many medium manufactories such as steel factory, cement factory, fertilizer factory and so on was built and produced in this year. Manufacturing accounted 72.7% of total sales in the domestic market, an increase of 29.78%, but in the external market, manufacturing accounted for only 7.11%, a decrease of 28.77% from 2002-03. To support SME development, I conducted a survey on SMEs in the manufacturing and handicraft industries in 109 samples by questionnaire. I then divided the data into two categories: Non-food and Food, 68 and 41 samples, respectively. A total of 67.0% of the respondents were male, and the average age was 44 years old. A significant percentage of the respondents, 37.5%, graduated from senior high school, and 72.5% were born in Savannakhet Province. A total of 59.6% inherited a business from their family, and 37.6% of the respondents were engaged in another business before starting up their own business, and the majority of them were engaged in general trading in Savannakhet. A total of 41.3% acquired manufacturing skills through self-study, and regarding business establishment, 75.7% of the respondents procured capital by themselves, and some of them sold property to start up their businesses. For business conditions after start-up, the number of workers increased slightly to 8.25 persons on average in 2004, an increase from 2003 and 2002, when there were 6.19 and 5.14 workers, respectively. However, 68.8% of the respondents reported that it was difficult to find skilled workers, and 18.3% reported that they found it very difficult to find skilled workers. For procuring materials and selling products, 30.3% and 28.4% purchased materials from manufacturers and Lao traders, respectively; 41.72% of their products are sold in the Savannakhet Province. In addition, 37.6% and 31.2% reported

they had some and many competitors, respectively, and 13.8% reported that small domestic enterprises are strong competitors on the Savannakhet market. On the other hand, after starting up business, 15.6% reported that they faced severe constraints and a shortage of working capital. However, respondents reported in 2004 that average net profit was 43.5 million kip in 2003, an increase from 2002 when the net profit was 10.0 million kip. Regarding the future of the business, 67.9% of the respondents reported that they intended to expand business, 19.3% reported that they would maintain the present level, and only 2.8% intended to reduce business. Therefore, most respondents thought that they would expand, but 57.8% estimated that business growth would very unstable, while 24.8% and 5.5% estimated that business would increase and increase greatly, respectively.

The current situation and a regional survey show that SMEs in Savannakhet are developing little by little and intend to expand business in the future. However, regarding business conditions after starting up, financial funds are still needed when there is a shortage of working capital. Management training, marketing and production technology are very necessary to improve competitiveness in both the domestic and the external market. Information on industrial diversification can reduce SMEs competing with each other; in particular, a dispatch mission will provide them with the opportunity of comparing their productivity. On the other hand, exhibitions and trade fairs will help them develop production methods to expand the market.

8. Regional Study on SME Development in Savannakhet Province

Chapter I: Introduction

Economic reform in Lao PDR started in 1986 when the New Economic Mechanism (NEM) was adopted and steps were taken towards a market-oriented economy. Under NEM, the Lao government promoted the development of the private sector, deregulating price and production controls. Since then, the Lao economy has attained steady growth under prudent economic policies. However, after the Asian economic and financial crises in 1997, the Lao economy experienced a notable slow-down with high inflation and devaluation of the national currency, and foreign direct investment, which flourished in 1992-1996, has stagnated.

Based on the real situation of SMEs in Savannakhet in which legal regulations are supported, the mechanisms, policies and measures as well as the real development of this sector, this study makes certain recommendations for improving measures and policies to support SME development. In addition, the study offers recommendations to SMEs to upgrade their autonomy as well as their efficiency, using support resources through international economic integration and globalization, particularly ADB and six Mekong riparian countries. The study also maps out a framework of development for the Greater Mekong Sub-region (GMS). Located in the center of GMS, Lao PDR has been integrated into various development programs proposed for GMS. One of the spearhead programs is the East – West corridor, connecting Da Nang in Vietnam and Mawlamyine in Myanmar via Savannakhet Province in Lao PDR. Cooperation among the GMS countries has accelerated, particularly since Lao PDR joined ASEAN in 1997¹.

The regional study evaluates the existence and development of current enterprises. Through this study, we will grasp the real SME situation in Savannakhet Province, the development, environment, obstacles, general ideas, and awareness of opportunities and threats to international economic integration.

We used a case study in regional Savannakhet Province because Savannakhet is located in the center of region, connecting the capital, Vientiane, to the south of Laos, the East - West corridor, connecting Thailand to Vietnam and Vietnam to Myanmar. A particular reason is that the Special Economic Zone is located in Savannakhet; the objectives of this zone are to use its advantageous grounds and strategic location to attract and promote investment, and particularly to create jobs and promote the skills of Lao manual workers.

¹ Final report on Special Economic Zone Development in border areas (Savannakhet Province).

This paper comprises five chapters: Chapter I introduces the purpose of the paper, particularly the purpose of the regional study. Chapter II presents and overviews Savannakhet Province including location, land area, population, and labor force and so on. Chapter III focuses on the current regional situation of SME development in Savannakhet, particularly SMEs in manufacturing. In addition, the development process of this sector is explained. Chapter IV presents regional statistical analysis of data collected from more than 100 cases of SMEs in Savannakhet Province. This chapter demonstrates the development process of the cases to support the real current situation of SMEs in the regional Savannakhet Province. Finally, Chapter V presents conclusions and recommendations.

Chapter II: Overview of Savannakhet Province²

1. Location: Savannakhet Province is located in the south-central part of Lao PDR at latitude 17 degrees 07 seconds north and 16 degrees 0.5 seconds south, and longitude 106 degrees 7.2 seconds east and 104 degrees 3.6 seconds west. It is about 499 km from Vientiane Capital by National Road Number 13.

2. Land area: Savannakhet Province is the largest in the country. It has a total land area of 21,774 km², covering 9.2% of country's total area; agricultural areas cover 6,774 km², and forest areas cover 15,000 km². The total lowland areas below the Sebangfai, Sebanghieng and Sechamphone Rivers cover 59%, and the highland areas in the East and West cover 41%.

3. Population: Savannakhet Province is the most populated province in the country. It has a total population of 833,900, accounting for 14.68 % of population in the whole country, an increase of 2.8% from 2002 comprising 51% women in 2003. The average population growth rate is 2.5% per year; the average density is 35 people per km². There are 3 major ethnic groups: Lao, Phouthai and Brou. As for the occupations of the population, 82% are farmers (75% produce rice, 7% cultivate the land), 19% have other occupations, 0.46% are unemployed, and the rest are disabled.

4. Labor force: The average age range of the labor force is 15 – 60 in Savannakhet, where 52% of the total population lives, and where 15.14% of the country's labor force aged 15 – 59 lived in 2003 (these figures include government officials, farmers, merchant and workers).

5. Administration: Savannakhet Province is divided into 15 districts of 1,542 villages and 125,955 households in 2003. The center of the province is Khanthabouly District.

6. Borders: Savannakhet Province has boundaries with many other provinces. It has boundaries with the North in Khammuan Province, with the South in Saravan Province, with the East in Quang Tri and Quang

² Promotion policies for FDI in Savannakhet, Lao PDR, Savannakhet, Planning and Investment Department.

Binh Provinces of Vietnam, and with the West in Moukdahan, Amnatchareun, Oubonrachthani and Nakhornphanom Provinces of the Kingdom of Thailand, where the Mekong River runs 200 km along the border with Thailand.

7. Road: Currently, Savannakhet has almost 800 roads, stretching 4,813.94 km; there are 6 national roads of 607 km total length, 14 provincial roads of 831, 21 km, 326 local roads of 3,312.84 km, and 47 municipal roads of 62.89 km.

The main national roads running through Savannakhet Province:

- **National Road Number 9:**

National Road Number 9 is Savannakhet's most important road, both strategically and economically. It connects the East and the West, via National Road Number 13 in Outhoumphone District (Seno). On National Road Number 9, telecommunication facilities will be fully installed.

- **National Road Number 13:**

National Road Number 13 runs vertically through Savannakhet and links with Saravan, Champasak, Xekong, Attapu Provinces, Oubonrachthani (Thailand) and Cambodia in the South, to Khammuan, Borlikhamxay, and Vientiane Capital in the North. This road has recently been improved.

- **Mekong River Bridge:**

The second international Mekong River Bridge has been under construction since the end of 2003 and will be completed in 2006. This bridge is being constructed using a loan of US\$ 72.90 million from the Japanese Government. This bridge is located 5 km from the center of Savannakhet.

8. Electricity prices: Savannakhet has completed the installation of a high-voltage line across the Mekong River from Moukdahan, Thailand, to Savannakhet. The electricity prices are as follow:

- Home user 0 - 50 Kwh = 39 kip / month h
 1 - 100 Kwh = 88 kip / month
 1 - 200 Kwh = 132 kip / month
 200s Kwh = 287 kip / month
- Government organization = 265 kip / Kwh / month
- Consulate and international organization = US\$ 0.0969 / Kwh / month
- Entertainment = 395 kip / Kwh / month
- Irrigation = 110 kip / Kwh / month
- Industries = 265 kip / Kwh / month
- Commercial/Services = 316 kip / Kwh / month.

9. Water supply prices:

- Home user 1 – 30 m³ = 130 kip
31 – 40 m³ = 140 kip
- Government organization = 170 kip / m³
- Businesses = 200 kip / m³
- Factories = 300 kip / m³

10. Land concessions:

- Land for agriculture US\$ 3 – 9 / ha / year (varies by zone)
- Land for mineral surveys US\$ 0.5 – 1 / ha / year (varies by zone)
- Land for mining US\$ 3 – 12 / ha / year (varies by zone)
- Land for forestry and rubber US\$ 1 – 7 / ha / year (varies by zone)
- Land for industry US\$ 5 – 12 / ha / year (varies by zone)
- Land for construction US\$ 3 – 10 / ha / year (varies by zone)
- Land for tourism US\$ 5 – 20 / ha / year (varies by zone)
- Fishery in municipal areas 100,000 kip / fishing net.

11. Major rivers: The Mekong River is essential to Savannakhet Province; it is connected to many rivers, including the Sebangfai River, 239 km, the Sebanghiang River, 338 km and the Selanong River, 115 km. Of these, there are many important rivers such as the Sechamphone, Sexamxoi, Sebangnounge, Sepol, Sekok and Senoy Rivers.

12. Economy Development³:

The Gross Domestic Product (GDP) in 2003-2004 of Savannakhet Province was 3,471.36 billion kip. The GDP growth rate of 7.76% decreased from 2002-03 where there was a GDP growth rate of 12% (although the value is 3,206.65 billion kip less than 2003-04).

Table 1: Structure of GDP

Structure of GDP	2002-03	2003-04	Growth rate
Agriculture and forestry	54.86	53.11	(3.18)
Industry and handicraft	18.49	22.29	20.55
Service	23.07	22.21	(3.72)
Import tax	3.59	na	na

³ Socio-economic development plan, 2002-03 and 2003-04, of Savannakhet Province, Savannakhet, Planning and Investment Department.

In 2003-04, in the structure of GDP, agriculture and forestry accounted for 53.11% (a decrease from 2002-03 that accounted for 54.86%), the industry and handicraft sector accounted for 22.9% (an increase from 2002-03 that accounted for 18.49%) and the service sector accounted for 22.21% (an increase from 2002-03 that accounted for 23.07%). GDP per capita in 2003-04 was 4.27 million kip, an increase from 2002-03 of 3.99 million kip.

Chapter III: Current Situation of Manufacturing and Handicraft Industries in Savannakhet⁴

This chapter presents data on the current situation of SMEs, particularly SMEs in the manufacturing and handicraft industries. The data below show the development process in 2002-03 and 2003-04. The main figures here explaining development are the number of factories, the number of workers, production value, and so on.

1. Factory

Table 2: Total number of factories

	Total Factory	Large Sized	Accounting for	Medium Size	Accounting for	Small Sized	Accounting for
2002-03	2,947	10	0.34%	86	2.92%	2,851	96.74%
2003-04	3,124	10	0.32%	89	2.85%	3,025	96.83%
Growth	6.01%	0.00%		3.49%		6.10%	

The total number of factories in 2003-04 was 3,124; compared to 2002-03, there was an increase of 6.01%. Large factories accounted for 0.32% in 2003-04, and their number has not changed, 10 factories. There were 89 medium-sized factories, accounting for 2.85%, an increase of 3.49%, and there were 3,025 small factories, accounting for 96.83%, an increase of 6.10% from 2002-03.

Table 3: Number of manufacturers and handicraft factories

	Total Factories	Manufactory	Accounting for	Handicraft factory	Accounting for
2002-03	2,947	2,203	74.75%	717	24.33%
2003-04	3,124	2,304	73.75%	789	25.26%
Growth	6.01%	4.58%		10.04%	

There were 2,304 manufactories in 2003-04, accounting for 73.75% of the total number of factories, an increase of 4.58% from 2002-03. There were 789 handicraft factories, accounting for 25.26%, an increase of 10.04% from 2002-03.

⁴ Industry and Handicraft development plan, 2002-03 and 2003-04 of Savannakhet Province, Savannakhet, Industry and Handicraft Department.

Table 4: Number of medium-sized and small manufacturers and handicraft factories

	Total Manufactories	Large Sized	Accounting for	Medium-sized	Accounting for	Small Sized	Accounting for
2002-03	2,203	7	0.32%	49	2.22%	2,147	97.46%
2003-04	2,304	7	0.30%	46	2.00%	2,251	97.70%
Growth	4.58%	0.00%		-6.12%		4.84%	
	Total Handicraft factories	Large Sized	Accounting for	Medium-sized	Accounting for	Small Sized	Accounting for
2002-03	717	0	0.00%	18	2.51%	699	97.49%
2003-04	789	0	0.00%	22	2.79%	767	97.21%
Growth	10.04%			22.22%		9.73%	

There were 46 medium-sized manufactories in 2003-04, accounting for 2% of the total manufactories, and the number decreased by 6.12% from 2002-03. While there were 2,251 small manufactories, accounting for 97.70%, an increase of 4.84% from 2002-03. There were 22 medium-sized handicraft factories in 2003-04, accounting for 2.79% of the total handicraft factories, an increase of 22.22% from 2002-03. There were 767 small handicraft factories, accounting for 97.21%, an increase of 9.73% from 2002-03.

2. Labor

Table 5: Number of workers

	Total Labor	Local labor	Accounting for	Foreign labor	Accounting for
2002-03	9,036	8,806	97.45%	230	2.55%
2003-04	9,117	8,822	96.76%	295	3.24%
Growth	0.90%	0.18%		28.26%	

The total labor force was 9,117 persons in 2003-04, an increase of 0.90% from 2002-03; the local labor force was 8,822 persons, accounting for 96.76%, an increase of 0.18%, and the foreign labor force was 295 persons, accounting for 3.24%, an increase of 28.26% from 2002-03.

Table 6: Number of workers in manufactories and handicraft factories

	Total Labor	Labor in Manufactories	Accounting for	Labor in Handicraft factories	Accounting for
2002-03	9,036	5,424	60.03%	1,653	18.29%
2003-04	9,117	5,418	59.43%	1,648	18.08%
Growth	0.90%	-0.11%		-0.30%	

The labor force in manufactories in 2003-04 was 5,418 persons, accounting for 59.43% of the total labor force, which was a decrease of 0.11% from 2002-03. On the other hand, the labor force in handicraft factories was 1,648 persons, accounting for 18.08% of the total labor force, a decrease of 0.30% from 2002-03.

Table 7: Number of domestic and foreign workers in manufactories and handicraft factories

	Labor in Manufactories	Local labor	Accounting for	Foreign labor	Accounting for
2002-03	5,424	5,371	99.02%	53	0.98%
2003-04	5,418	5,359	98.91%	59	1.09%
Growth	-0.11%	-0.22%		11.32%	
	Labor in handicraft factories	Local labor	Accounting for	Foreign labor	Accounting for
2002-03	1,653	1,625	98.31%	28	1.69%
2003-04	1,648	1,561	94.72%	87	5.28%
Growth	-0.30%	-3.94%		210.71%	

The local labor force in manufactories was 5,359 persons in 2003-04, accounting for 98.91% of the labor force in manufactories, a decrease of 0.22% from 2002-03. On the other hand, the foreign labor force in manufactories was 59 persons, accounting for 10.9% of the labor force in manufactories, an increase of 11.32%. The local labor force in handicraft factories was 1,561 persons, accounting for 94.72%, a decrease of 3.94% from 2002-03. On the other hand, the foreign labor force was 87 persons, accounting for 5.28%, an increase of 210.71% from 2002-03.

3. Production

Table 8: Production value

	Total Production value	Manufacturing value	Accounting for	Handicraft	Accounting for
2002-03	791,229,114,000	160,657,070,000	20.30%	13,099,537,000	1.66%
2003-04	870,311,115,000	300,504,000,000	34.53%	18,817,000,000	2.16%
Growth	9.99%	87.05%		43.65%	

The total production value in 2003-04 in the industry and handicraft of Savannakhet Province was 870,311,115,000 kip, and increase of 9.99% from 2002-03. The production value of manufacturing was 300,504,000,000 kip, accounting for 34.53%, an increase of 87.05% from 2002-03 that is very high rate. The rapid increasing of production value of manufacturing in 2003-2004 come from there are many medium manufactories such as steel factory, cement factory, fertilizer factory and so on was built and produced in this year. In addition, the production value of handicrafts was 18,817,000,000 kip, accounting for 2.16%, an increase of 43.65% from 2002-03.

Table 9: Total sales in domestic market

	Total sales in Domestic market	Manufacturing	Accounting for	Handicraft	Accounting for
2002-03	159,470,806,000	119,186,277,000	74.74%	14,731,497,000	9.24%
2003-04	212,771,108,150	154,681,000,000	72.70%	19,228,000,000	9.04%
Growth	33.42%	29.78%		30.52%	

The total sales in 2003-04 of industry and handicraft of Savannakhet Province in the domestic market was 212,771,108,150 kip, an increase of 33.42% from 2002-03. The total sales in manufacturing in the domestic market was 154,681,000,000 kip, accounting for 72.70%, an increase of 29.78% from 2002-03. Furthermore, the total sales of handicraft were 19,228,000,000 kip, accounting for 9.04%, an increase of 30.52% from 2002-03.

Table 10: Total sales in external market

	Total sales in External market (US\$)	Manufacturing (US\$)	Accounting for	Handicraft (US\$)	Accounting for
2002-03	68,929,587.57	5,785,375.30	8.39%	105,966	0.15%
2003-04	57,968,859.53	4,121,201.53	7.11%	193,698	0.33%
Growth	-15.90%	-28.77%		82.79%	

The total sales of industry and handicraft of Savannakhet Province in the external market (exported) in 2003-04 was US\$ 57,968,859.53, a decrease of 15.90% from 2002-03. The total sales in manufacturing in the external market were US\$ 4,121,201.53, accounting for 7.11%, a decrease of 28.77%. Moreover, the total sales of handicraft in the external market were US\$ 193,698, accounting for 0.33%, an increase of 82.79% from 2002-03.

Table 11: Total money contributed to the government budget

	Total money contributed to Government budget	Manufacturing	Accounting for	Handicraft	Accounting for
2002-03	46,621,946,700	18,018,053,000	38.65%	451,496,850	2.51%
2003-04	49,169,000,000	28,967,000,000	58.91%	397,000,000	1.37%
Growth	5.46%	60.77%		-12.07%	

The total money in industry and handicraft of Savannakhet Province contributed to the government budget was 49,169,000,000 kip in 2003-04, and increase of 5.46% from 2002-03. Manufacturing contributed 28,967,000,000 kip to the government, accounting for 58.91%, and an increase of 60.77%. On the other hand, the handicraft sector contributed 397,000,000 kip, accounting for 1.37%, a decrease of 12.07% from 2002-03.

The figures above show that SMEs in Savannakhet Province have developed year by year. However, they still need government support, and they particularly need information for finding new products and new markets. Moreover, as shown in the table above, the total sales in the external manufacturing market are decreasing. Only handicraft sales are increasing in the external market, but the value is smaller when compared to the manufacturing value of sales in the external market.

Chapter IV: Regional statistic survey analysis on SMEs in Savannakhet

This chapter is the main focus of the paper; I show and explain statistics that I collected using 109 samples in the manufacturing and handicraft industries to the support current development situation of SMEs above. I also show the development process of SMEs, such as the careers of the respondents, type of business, business performance, finance, the market and the future of the business.

1. Definition of Small and Medium-sized Enterprises in Laos⁵

Small and Medium Enterprises, or SMEs, are independent enterprises that are legally registered and operate according to the laws of Lao PDR. They are classified into the following size categories:

- Small enterprises are those with an annual average of fewer than nineteen employees, or total business assets of less than two hundred and fifty million kip, or an annual turnover of less than four hundred million kip.
- Medium-sized enterprises are those with an annual average of fewer than 99 persons, or total business assets of less than one billion two hundred million kip, or an annual turnover of less than one billion kip.

2. Study methodology and characteristics of the samples

SMEs operating in the manufacturing sector in the center of Savannakhet Province, Khanthabuly and some Outhoumphone districts are the object of this research. The 109 samples have been considered and advised on by the Director of Industry and Handicraft of Savannakhet Province, and they account for 3.50% of the total 3,114 factories (small and medium-sized). Most of the research methodology in this paper statistically summarizes and analyzes data collected through the 109 samples. The raw data collected is quantitatively analyzed by questionnaire distribution to the owners of manufactories, with the officers of Industry and Handicraft of Savannakhet Province.

3. Data analysis

After the 109 questionnaires are collected, the raw data is inputted and analyzed by Excel and SPSS programs. The data are divided in 2 groups: Non-food and Food.

⁵ Decree on Promotion and Development of Small and Medium Enterprises, No 42/PO, issued on April 20, 2004 (Lao PDR).

Table 12: Data groups

		Non-food	Food	Total
Non-food	Count	68	0	68
	%	100%	0	100%
Food	Count	0	41	41
	%	0	100%	100%
Total	Count	68	41	109
	%	62.4%	37.6%	100%

‘Non-food’ is the group that produces garments, socks, electric wire, concrete, bricks, and notebooks and so on. There are 68 cases in the Non-food group, accounting for 62.4% of the total.

‘Food’ is the group that produces bread, cake, ice water, drinking water, Lao noodles and so on. There are 41 cases in the Food group, accounting for 37.6% of the total.

4. Career of business owners

Here, I consider the backgrounds of the respondents, such as gender, age, status, education and birthplace.

Table 13: Gender of respondent

		Male	Female	Total
Non-food	Count	53	15	68
	%	77.9%	22.1%	100%
Food	Count	20	21	41
	%	48.8%	51.2%	100%
Total	Count	73	36	109
	%	67.0%	33.0%	100%

The analyzed results show that 67.00% of the respondents are male and 33.00% are female. Of the males, the Non-food group account for 77.90%, while the females in the Food group account for 51.20%. The majority of the respondents are male, who operate in Non-food businesses more than females, who tend to operate in Food businesses.

Table 14: Age of respondent

	Mean	N	Minimum	Maximum
Non-food	44.6	68	23.0	88.0
Food	42.8	41	23.0	64.0
Total	44.0	109	23.0	88.0

The average age of the respondents is 44 years old. The average age of the Non-food and Food groups is almost the same at 44.6 and 42.8 years old, respectively. The average minimum age of the Non-food (e.g., the metal furniture industry) and the Food groups (e.g., small cake factories) is the same at 23 years

old. The average maximum age in the Non-food group is 88 years old in the rice mill factory business, while in the Food group, it is 64 years old in the noodle factory business.

Table 15: Status of respondent

		Married	Single	Total
Non-food	Count	63	5	68
	%	92.6%	7.4%	100%
Food	Count	37	4	41
	%	90.2%	8.9%	100%
Total	Count	100	9	109
	%	91.7%	8.3%	100%

A total of 91.7% of the respondents are married, and 8.3% are single. In 91.7% of the married respondents, the Non-food and Food groups account for 92.6% and 90.2%, respectively, while the single respondents account for 7.4% and 9.8% in the Non-food and Food groups, respectively.

Table 16: Education of respondent

		No Education	Primary School	Junior High School	Senior High School	Vocational School	University and Above	Total
Non-food	Count	0	5	18	14	9	5	51
	%	0	9.8%	35.3%	27.5%	17.6%	9.8%	100%
Food	Count	2	7	5	19	3	1	37
	%	5.4%	18.9%	13.5%	51.4%	8.1%	2.7%	100%
Total	Count	2	12	23	33	12	6	88
	%	5.4%	13.6%	26.1%	37.5%	13.6%	6.8%	100%

The education level of the respondents is not very high: 37.5% attended senior high school, and in the Food group, 51.4% attended high school. A total of 26.1% of the respondents attended junior high school, and in the Non-food group, 35.3% attended junior high school. Only 6.8% of respondents graduated from university or above. However, 13.6% of the respondents attended primary school and 13.6% attended vocational school, and in Non-food group, 17.6% attended vocational school. Of these, 5.4% of the respondents received no education. From data presents education level is not very high, but can be operating business.

Table 17: Place of birth of respondent

		Savannakhet	Other provinces in Lao PDR	Abroad	Total
Non-food	Count	45	16	7	68
	%	66.2%	23.5%	10.3%	100%
Food	Count	34	6	1	41
	%	82.9%	14.6%	2.4%	100%
Total	Count	79	22	8	109
	%	72.5%	20.2%	7.3%	100%

As for the birth place of the respondents, 72.5% were born in Savannakhet, 20.2% were born in other provinces in Laos and moved to Savannakhet to operate business, and 7.3% were born abroad such as in Vietnam, China, Thailand, Cambodia, Korea, Japan and Hong Kong, and some of these have become Lao citizens as well as Vietnamese, Chinese and Cambodian citizens.

5. Business career

Table 18: Year of establishment of sample factory

Year	80	85	86	87	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04	na	Total
N	1	1	1	1	2	4	6	7	6	4	9	5	5	5	2	10	13	6	5	6	10	109
%	0.9	0.9	0.9	0.9	1.8	3.7	5.5	6.4	5.5	3.7	8.2	4.6	4.6	4.6	1.8	9.1	12	5.5	4.6	5.5	9.1	100%

The establishment of the sample factories started from 1880 to 2004, and the average year of establishment is 1996. Factories established more than 10 years ago (1980-1994) account for 28.3%, those established 6-10 years ago (1995-99) account for 28.4%, and those established up to 5 years ago (2000-04) account for 34.5%; data on the remainder are unavailable.

Table 19: Registered factory

		Yes	No	Total
Non-food	Count	67	1	68
	%	98.5%	1.5%	100%
Food	Count	38	3	41
	%	92.7%	7.3%	100%
Total	Count	105	4	109
	%	96.3%	3.7%	100%

The survey shows 96.3% of registered factories; only 3.7% are not registered. The factories not registered operate as family businesses in the food industry such as noodle factories and alcohol factories, and the rest began business in 2004.

Table 20: Inherited business from a family member

		Yes	No, I started the business by my self	No, I succeeded from another	Total
Non-food	Count	35	29	4	68
	%	51.5%	42.6%	5.9%	100%
Food	Count	30	8	3	41
	%	73.2%	19.5%	7.3%	100%
Total	Count	65	37	7	109
	%	59.6%	33.9%	6.4%	100%

The figure shows that 59.6% of the respondents inherited their business from a family business, 33.9% started up by themselves, and Non-food group accounts for 42.5% and Food group accounts for 19.5%, and only 6.4% succeeded from another person. In 6.4% of those who succeeded from another, the Non-food group accounts for 5.9%, and includes bricks, paper holders and socks (Japanese-owned factories) and the Food group accounts for 7.3%, and includes bread factories, noodle factories and coffee processing factories. The average age of the respondents who inherit from a family business is 7.7 years old. The minimum number of years to inheritance from the family is one year, which is a drinking water factory, and the maximum is 24 years, which is a noodle factory.

Table 21: Engaged in another business before starting up the present business

		Yes	No	Total
Non-food	Count	28	40	68
	%	41.2%	58.8%	100%
Food	Count	13	28	41
	%	31.7%	68.3%	100%
Total	Count	41	68	109
	%	37.6%	62.4%	100%

Before starting up business, 37.6% of the respondents were engaged in another business. The majority were engaged in general trading in Savannakhet. The experience gained from general trading was effective training for starting a manufacturing business. However, 62.4% of the respondents were not engaged in another business; they started this business first, and have developed their business step by step through experience in conducting real business.

Table 22: Acquiring skills in manufacturing technology

		Through Schooling	Through Parents/relatives	Through Self Study	Through Friends	Through Others	Total
Non-food	Count	11	13	30	12	2	68
	%	16.2%	19.1%	44.1%	17.6%	2.9%	100%
Food	Count	1	17	15	7	1	41
	%	2.4%	41.1%	36.6%	17.1%	2.4%	100%
Total	Count	12	30	45	19	3	109
	%	11.0%	27.5%	41.3%	17.4%	2.8%	100%

For skill in the manufacturing technology of the respondents, 11.0% acquired skill through schooling, and Non-food group accounts for 16.2% while Food group accounts only for 2.4% that it means skill through schooling is very necessary for Non-food group to accumulate the basic of production technology, and 27.5% acquired skill through parents or relatives. However, of those who acquired skill from school and parents, recommendation and experience through others such as friends and factories are also important in acquiring skill. A total of 17.4% acquired skill through friends. Acquiring skill from real business performance step by step is a very important aspect with 41.3% accumulating skill from real

doing business. Only 2.8 % acquired skill through other sources.

6. Finance

6.1 Start-up Expenses

In 1996, average businesses start-up expenses were 677,059,596.50 kip. These expenses include machinery, land, building and so on. The Non-food group spent more than 10 times more than the Food group in starting up business. The maximum cost of business operation in the Non-food group is Sokdy Lao-China smoke factory that spent 15,750 million kip on starting, while the minimum cost of business operation in the Food group is a Lao noodle factory that spent only 200,000 kip on starting.

6.2 Capital Procurement

On starting business, 75.7 % procured money by themselves. A total of 69.1 % had capital, and 30.9 % had money and asked for money from family, relatives or friends. Those who had capital that they spent on business start-up accumulated money through general trading. However, of the money accumulated through general trading, 17.4 % sold their property to start up business, e.g., 36.4% sold land, 27.7 % sold gold and assets, and the rest sold animals.

Making up balance sheets is very important in business management. Balance sheets can help us understand how businesses are planned, particularly concerning revenue, expenditure and saving to expand the business. However, only 31.1% of businesses make up balance sheets, indicating that not many understand their importance. In the Non-food group, the majority that set up balance sheets employing accountants, while in the Food group, balance sheets tend to be set up by oneself.

When operating business with a shortage of money to purchase materials, money is sometimes borrowed from family, relatives, friends, moneylenders and banks. Therefore, it is possible to borrow money from many sources in theory, but in practice, it is difficult. The survey shows that only 1.8% can always get financial help for their business from friends, 60.6% can sometimes get help, and 37.6% can rarely get help. A total of 3.7% can always get financial help from relatives, 6.4% can often get help, 52.3% can sometimes get help, and 37.6% rarely get help, which means they have to solve the problem by themselves.

Saving money for future investment is very important for expanding business. Here, 67.0% saved money for future investment, and the majority are in the Non-food group. A total of 73.2% saved an average of 9.2 million kip per year, 23.2% saved an average of 1.4 million baht per year, and the rest saved in US\$. A total of 44.0% saved money in a bank because it is more secure, 21.1% saved money at home because it is easier to access, and the rest saved money in other ways such as buying gold, animals, land, etc.

7. Business conditions after start up

7.1 Workers

Table 23: Average number of workers

	2002			2003			2004		
	N	Min	Max	N	Min	Max	N	Min	Max
Non-food	6.26	1	45	7.79	1	55	10.47	1	60
Food	2.94	1	10	2.83	1	8	3.31	1	12
Total	5.04	1	45	6.19	1	55	8.27	1	60

The figure shows that the average number of workers increased to 8.27 persons in 2004, from 2003 and 2002 when there were 6.19 and 50.4 persons, respectively. The figure shows that the number of workers in both the Non-food and Food groups increased in the same way.

Table 24: Finding skilled workers

		Very Easy	Easy	Difficult	Very Difficult	Total
Non-food	Count	0	8	49	11	68
	%	0	11.8%	72.1%	16.2%	100%
Food	Count	1	5	26	9	41
	%	2.4%	12.2%	63.4%	22.0%	100%
Total	Count	1	13	75	20	109
	%	0.9%	11.9%	68.8%	18.3%	100%

Therefore, the number of workers is increasing year by year, but finding skilled workers is not easy. The survey shows 68.8% said that it was difficult to find skilled workers, and 18.3% said that they found it very difficult. Only 11.9% said that it was easy, and 0.9% said that it was very easy to find skilled workers. Of those who found it difficult to find skilled workers, finding satisfactory workers was also difficult. A total of 73.4% and 19.3% said that it was difficult and very difficult, respectively, to find satisfactory workers. Only 7.3% said that it was easy to find satisfactory workers.

There is a difference in the salaries of permanent workers in the Non-food and Food groups of SMEs in Savannakhet. Salary on average is 1.4 million kip per month (in the Non-food group, it is 1.7 million kip, while in the Food group, it is 0.9 million kip), while casual workers on average in both groups receive the same at 15,258 kip per day (in the Non-food group, it is 15,730 kip, and in the Food group, it is 14,380 kip).

7.2 Market

Table 25: Place of purchasing materials

		Shop in the Market	Lao Trader	Manufacturers	Other	Total
Non-food	Count	14	14	23	17	68
	%	20.6%	20.6%	33.8%	25.0%	100%
Food	Count	4	17	10	10	41
	%	9.8%	41.5%	24.4%	24.4%	100%
Total	Count	18	31	33	27	109
	%	16.5%	28.4%	30.3%	24.8%	100%

On average, 74.83% purchased production materials from domestic sources. A total of 30.3% were purchased from manufacturers; in the Non-food group, this accounted for 33.8%, and in the Food group, it accounted for 24.4%. The figure also shows that 28.4% is purchased from Lao traders; in the Non-food group, it accounted for 20.6%, and in the Food group, it accounted for 41.45%. In addition, 16.5% purchased materials from a shop in the market; in the Non-food group, it accounted for 20.6%, and in the Food group, it accounted for 9.8%. The rest purchased materials from other sources.

Concerning payment conditions, 51.4% purchased materials by cash. When short of working capital, 35.8% never accepted delayed payment from a supplier, and 44.0% sometimes accepted delayed payment. A total of 48.6% can purchase materials on credit, but 58.5% can receive credit for less than one month, and 24.5% can receive credit for less than one week. However, they can purchase materials on credit, but they have to pay an average of 14.86%.

Table 26: Place for selling products

No	Place	Non-food	Food	Average	Sharing market %
1	In Savannakhet	84.69	84.59	84.65	41.72
2	In Vientiane	30.45	5.50	26.62	13.12
3	In other areas of Laos	21.25	42.67	25.53	12.58
4	Export directly	38.33	0	38.33	18.89
5	Export Indirectly	31.67	26.07	27.75	13.67

41.72% of the products are sold in and around Savannakhet Province in both the Non-food and the Food groups while 13.12% and 12.57% are sold in Vientiane Capital and in the other areas of the Lao PDR, respectively. However, they still have an external market; 18.89% export directly. The products for export directly include in Non-food only such sport wear, socks, and peanut oil and so on and 13.67% of them export indirectly to external market.

Table 27: The number of competitors in the Savannakhet market

		Many	Some	A Few	None	Total
Non-food	Count	22	19	15	12	68
	%	32.4%	27.9%	22.1%	17.6%	100%
Food	Count	12	22	5	2	41
	%	29.3%	53.7%	12.2%	4.9%	100%
Total	Count	34	41	20	14	109
	%	31.2%	37.6%	18.3%	12.8%	100%

In the Savannakhet market, 31.2% said that they have many competitors, and 37.6% said that they have some competitors. It means most of them produce and sell products only in the center of the province. Savannakhet certainly has the biggest population, but the majority of people live in rural areas.

Table 28: Types of competitor

%	Not a competitor	Moderate competitor	Competitor	Strong competitor	Total
Domestic small enterprise	31.2	33.0	22.0	13.8	100
Domestic large enterprise	32.1	31.2	25.7	11.0	100
Thai product	45.0	21.1	23.9	10.1	100
Chinese product	63.3	21.1	9.2	6.4	100
Vietnamese product	62.4	19.3	12.8	5.5	100

The figure shows that small and medium-sized enterprises in Savannakhet compete with each other. They produce the same kinds of products such as drinking water, bricks and so on, and sell them in the same market. Of these, large domestic enterprises also compete with them. However, Thai, Vietnamese and Chinese products are also competition, although not very strong. The figure shows that Thai products are strong competitors at 10.1%, but less strong than small and large domestic enterprises.

7.3 Constraints on business performance

Table 29: Constraints on business performance

No	%	No Obstacle	Minor Obstacle	Moderate Obstacle	Major Obstacle	Severe Obstacle	Total
1	Can't get sufficient materials	38.50	29.40	18.30	11.90	1.80	100
2	Price of materials is too high	10.10	20.20	37.60	24.80	7.30	100
3	Can't get sufficient imports goods	33.00	22.00	22.00	20.20	2.80	100
4	Price of imports materials is too high	14.70	11.90	29.40	33.90	10.10	100
5	Unstable supply of materials	24.80	26.60	25.70	12.80	10.10	100
6	Unstable price of materials	10.10	22.00	35.80	22.00	10.10	100
7	Shortage of money for materials	23.90	18.30	19.30	22.90	15.60	100
8	Insufficient demand	23.90	24.80	23.90	19.30	8.30	100
9	Seasonal demand fluctuation	13.80	22.90	29.40	26.60	7.30	100
10	Changing of government policies	46.80	22.00	20.20	8.30	2.80	100
11	Strict government regulations	40.40	34.90	19.30	3.70	1.80	100
12	Inflation	7.30	21.10	41.30	18.30	11.90	100
13	Unstable exchange rate of kip	5.50	20.20	29.40	31.20	13.80	100
14	Low technological level	19.30	24.80	30.30	19.30	6.40	100

SMEs in Savannakhet Province face several business constraints. In this paper, I asked to what extent fourteen plausible constraints were obstacles in their business performance. The top obstacle is shortage of working capital at 15.60%. However, based on business environment, here, 13.80% and 11.90% of respondents reported unstable of exchange rate of kip and inflation were also obstacles for manufacturing business respectively because they pushed to the price of materials unstable particularly the price of import materials. The figure show, the price of materials is too high is obstacle to SMEs because it make supply of materials unstable. The producer can not produce and sell product continuing.

7.4 Business revenue

In terms of sales, the average net profit of SMEs in Savannakhet is through growth. In 2001, the average net profit of business is 10.8 million kip, particularly in the Food group. However, in 2002, their net profit decreased to 8.7 million kip on average because they spent more money for new machinery, repairing machinery and so on in this year. However, in 2003, the net profit recovered to 43.5 million kip, particularly in the Non-food group, a net profit of 54.3 million kip on average, an increase from 2002 when the net profit was 10.0 million kip, while in the Food group, the profit was 30.0 million kip, an increase from 2002 when the net profit was 7.02 million kip.

8. Future business plans

Table 30: Planning to expand production capacity

		Intend to expand	Maintain the present level	Intend to reduce	No idea	Total
Non-food	Count	51	8	3	6	68
	%	75.0%	11.8%	4.4%	8.8%	100%
Food	Count	23	13	0	5	41
	%	56.1%	31.7%	0	12.2%	100%
Total	Count	74	21	3	11	109
	%	67.9%	19.3%	2.8%	10.1%	100%

The majority of respondents, 67.9%, reported that they intend to expand their business, particularly in the Non-food group, at 75.0%. A total of 19.3% intend to maintain business at the present level, with the Food group accounting for 31.7%. However, only 2.8% of the respondents intend to reduce business, and 10.1% of them had no idea about whether they would expand their business.

Table 31: Estimation the growth of business in the future

		Large increase	Increase	No Change	Very Unstable	Decrease	Total
Non-food	Count	3	22	4	36	3	68
	%	4.4%	32.4%	5.9%	52.9%	4.4%	100%
Food	Count	3	5	4	27	2	41
	%	7.3%	12.2%	9.8%	65.9%	4.9%	100%
Total	Count	6	27	8	63	5	109
	%	5.5%	24.8%	7.3%	57.8%	4.6%	100%

Therefore, the majority of respondents reported that they intend to expand their business, but 57.8% of them reported that their business growth was very unstable, and 7.3% reported that their business would not change in the future. However, 24.7% and 5.5% reported that their business will increase and greatly increase, respectively, because 57.8% and 10.1% said that their production technology is the same and more advanced, respectively, than their competitors, and they save 36.43% of their net profit on average for re-investment. However, for the SME market in Savannakhet, 61.5% and 35.8% of the respondents reported that the number of competitors would increase and not change, respectively. Only 2.8% reported that the number of competitors would decrease in the future.

Chapter V: Conclusions and Recommendations

The regional statistic survey analysis presented in Chapter IV reveals that:

1. SMEs in Savannakhet can procure their own capital when starting up business, and some of them sell property to start up business. However, the results of the survey show that SMEs facing

constraints in the form of shortage of working capital. There is a lack of financial institutions for support them and at the same time SMEs don't have collateral to borrow money from the bank. To solve this problem, creating financial institutions to support operating business of SMEs is essential.

2. SME owners have experience from engaging in general trading and developing their own business little by little, but they need further knowledge on how to manage systems, manage marketing channels and mobilize production technology. Thus, the creation of training and seminar centers as well as vocational schools is very necessary to upgrade competitiveness in both the domestic and external market.
3. SMEs in Savannakhet compete with each other, which mean that they lack support information about industrial diversification, particularly market niches (new products and new sources to reduce competition in the same market). The creation of information centers will be useful for SMEs to develop their business.
4. SMEs in Savannakhet plan to expand their business in the future, so dispatching missions representing domestic and overseas industries will provide the opportunity of comparing their productivity. On the other hand, exhibitions and trade fairs will help enhance the overall quality of the products and develop production methods to expand into new markets.

Agriculture and Rural Development WG

1. Summary for the Agriculture and Rural Development Working Group

Koji TANAKA

Agricultural and rural development is undoubtedly the basis for the economic and social development of Lao PDR, as the majority of the population lives in rural areas and the agricultural and forestry sector still occupies about 50% of the GDP. However, although the agricultural sector of Lao PDR has shown a remarkable growth even after the economic crisis in Southeast Asia, it still has considerable constraints on the development of agriculture under the circumstance of developing market-oriented economy.

The Agriculture and Rural Development Working Group of the MAPS II, consisting of Japanese experts and Lao officials from NERI and the Ministry of Agriculture and Forestry, therefore, focused its activities on exploring possible ways for solving the constraints faced by the agricultural sectors. However, since the Group could not cover all the aspects related to agricultural and rural development, it was formed with a limited number of research teams for investigating some selected subjects such as export-oriented agricultural commodities, rural finance, land-allocation program and agro-ecotourism.

In addition, in the course of implementing these group studies, one more subject was set as a supplementary study, i.e., a preliminary study on local products with a scope of collecting relevant information for promoting the One District One Product (ODOP) project. In this report, the results obtained from these studies jointly conducted in various regions of Laos mainly in 2003 and 2004 are compiled.

1. Surveys on export-oriented agricultural commodities

The research team dealing with export-oriented agricultural commodities carried out the surveys by focusing on some selected commodities, such as aromatic rice, yellow cattle and buffalo, maize, raw cotton and spun cotton, livestock fodder, and the textile industry, in order to examine the international competitiveness of these commodities and to clarify the constraints on production and export expansion.

(1) Aromatic rice

Regarding the aromatic rice, the surveys were conducted in Savannakhet province and they revealed that the competitiveness of Lao aromatic rice was not necessarily weak in comparison with those in Thailand and Cambodia. And, in order to promote its export, the surveys conclude that the present overvaluation of the exchange rate should be corrected and that more effective production systems including post-harvest processing should be introduced.

(2) Livestock raising and feed industry

The surveys on the international competitiveness of yellow cattle and buffalo were also conducted in Savannakhet province, where the largest number of cattle and buffalo are raised in Laos. Although the

exports of these livestock reportedly amounted to more than 200,000 heads, many of them are reported to have been exported through informal channels. As this fact indicates, Laos has a great potential to increase livestock exports. However, in order to materialize this potential, the surveys pointed out the needs for employing the following strategies: 1) improvement of the productivity of grass cultivation and feeding techniques, and introduction of concentrated feed in the areas where the mixed-farming systems are adopted, 2) introduction and promotion of group rearing to establish large-scale beef enterprise in the hill and highland areas, 3) improvement of the institutional frameworks for preventing epidemics such as foot-and-mouth disease, 4) improvement of the quality of vaccines, and 5) abolishment of the export-licensing system and removal of the non-tariff import barriers in Thailand.

In relation to animal husbandry, the survey team conducted an investigation on the feed industry. A state-owned feed producing enterprise was established in 1982, and it was privatized in 1993. Even though the feed company uses local raw materials, it still imports those mainly from abroad. The share of imported raw materials account for 30 percent in terms of quantity, but this shows a sharp contrast if compared with the share in terms of production cost, accounting for 70 percent. Despite such a current situation, the production cost analysis estimates that the competitiveness of live fodder production is not low. However, it suggests that for further development the following strategies should be put into practice: 1) to ensure stable supply of raw materials such as maize and sugarcane by promoting contract cultivation and upgrading the shipping network, 2) to secure supply of imported dried fish and nutritional supplements and to work on quality improvement, and 3) to link the fodder industry to the developing beef cattle industry.

(3) Maize production

Maize is also an important export-oriented crop in Laos. In fact, it has already been exported to a considerable extent to China and Thailand. Taking this situation into consideration, the surveys were conducted in three provinces, Luang Phabang, Xayaboury and Oudomxay, in order to understand the production systems, examine their sustainability, and analyze the impact of an increase in maize production on poverty alleviation and stabilization of shifting cultivation. Based on the comparative cost analyses, the crop was identified to be highly profitable and globally competitive. However, in relation to the sustainability of its production, many constraints were pointed out, such as decrease of soil fertility, lack of market information, limited available lands for cultivation, and inadequate grain-quality control. In particular, as the case in Xayaboury indicates, an expansion of maize cultivation without using fertilizers brings about a serious decline of soil fertility and, as a consequence, it is suspected that further expansion will encroach on the protected forests. In order to sustain the present condition of production and export, the surveys conclude that the government needs to pay more attention to providing market information and new technologies, and to introducing and extending alternative farming methods such as mixed cropping with beans.

(4) Cotton production and textile industry

The surveys on cotton were conducted in both Luang Phabang and Savannakhet with the aim of elucidating the present situation of cotton production and proposing an outlook for the development of cotton production and export. Cotton cultivation in Laos showed a regional difference between the northern and the southern Laos. In the north, as a component of shifting cultivation, the cotton is grown on mountain slopes once a year in the rainy season, while it is grown in the south twice a year; in upland fields in the rainy season and on the inside of river banks in the dry season after the recession of river water. Since the demand for cotton production in Thailand far exceeds the supply, Lao cotton production has a potential to develop further as a means of increasing income in rural economies. Despite the drawback in terms of materials for the modern textile industry, the Lao cotton with short fiber length can still be used in medical supplies, hotel linens, textiles such as Oxford cloth, making it ideal for domestic import substitution. As local varieties such as *fai nyai* and *fai tun* have already been used for high-quality, commercialized and exportable traditional fabrics, the further increase in exports can be expected.

In relation to cotton production, silk and cotton weavers at Vientiane were investigated in order to examine the global competitiveness of hand weaving industries. The analysis reveals that the hand weaving industry has a potential to develop the export industry insofar as the weavers keep using traditional materials and techniques, and suggests that the government should take the following policy supports in order to increase the export and domestic sales; 1) securing the raw materials, 2) establishing a brand and expanding sales channels, and 3) developing cooperation and collaboration between and among relevant government authorities and private agencies.

2. Surveys on rural finance

The research team dealing with rural finance conducted several case studies in northern, central and southern Laos in order to understand the function of a rural saving group (case study 1), to find the relationship between the transformation of agricultural practices and villagers' financial activities (case study 2), and to analyze the financial problems under the unstable market environment (case study 3).

(1) Potentials for saving mobilization (case study 1)

The team conducted surveys in a fairly flat 147-household village in Vientiane Municipality that is centered on paddy-rice farming and alcohol breweries. It analyzed the village-level saving group that had been growing and developing rapidly there since it was established in September 2000, and investigated the potential for saving mobilization. Based on the results obtained, the team's report noted that in the less than four years since the group's founding, they have successfully mobilized over 200 million kip (20 thousand dollars) in savings; that due to extremely high demand for loans in the village against this amount with a 4 percent monthly interest rate, all of the saved money had until fairly recently been loaned out, and only lately has there begun to be surplus funds available; that some sort of integration will be required as some of the village's saving groups recently started to have surplus funds; and that there emerged a good opportunity for rural saving mobilization for the Lao government. The report also

discusses the drastic reduction in standing rice sales being a result of the introduction of saving groups.

(2) Expansion of maize cultivation and its impact on rural finance (case study 2)

The case study 2 was conducted at a 91-household village in Houn district in Oudomxay Province, which has engaged in slash-and-burn upland rice cultivation and livestock husbandry ever since it moved down from the mountains and was re-established in a valley in the latter half of the 1970s. Since 2000 the village began cultivating maize for export to China. The report discusses how much the increased income from maize cultivation has affected the villagers' financial activities, including consumption, investment, savings, and borrowing. Villagers, obtained a large amount of cash income from maize cultivation, invested it in production assets, such as power tillers, as well as using it to purchase consumer durables such as radio-cassette players, small rice mills, and motorbikes. Although bank savings have not increased in the study village, it is particularly notable that the APB Houn-district service sub-unit has seen a significant jump in cash deposits, especially time deposits. The economic prosperity brought about by the introduction of maize relies upon the stability of upland rice cultivation and maize cultivation in permanent upland fields, both without fertilizer. The key lies in the successful stabilization of slash-and-burn fields.

(3) Rural finance under a highly commercialized economy (case study 3)

The case study 3 analyzed the financial problems under an unstable market environment (i.e. one with large price fluctuations) in three villages in the Bolaven Plateau that rely on the production of commodities for exports such as coffee, beef, and cabbage. The surveys found that as villagers expanded their coffee fields following the "coffee boom" of the late 1990s, the APB also engaged in proactive lending; portions of APB loans were extended in-kind (rice for consumption) in order to prevent standing coffee sales. Following a collapse in prices, however, the APB's loans defaulted, causing severe problems in the form of nonperforming loans that turned out to be the APB's Achilles' heel. Merchants also dealt in farm loans during the coffee boom, and they too are faced with the difficulties in collecting on their debts. Ever since the APB stopped offering loans, the village's upper strata (i.e. coffee merchants) have been lending money to the lower strata at high fixed interest rates.

Furthermore, there has been some trade friction between Laos and Thailand on the issue of cabbage exports. The Lao government's response is not being effectively transmitted to the village level, leading to confusion and, eventually, huge losses suffered by farm households.

(4) Finance for rural development in Laos

Based on the results of the three case studies, the report of the team for rural finance offers some comments about the current ADB-led initiative to reform the APB. First of all, the APB's performance is acknowledged to be better than expected, in terms of both the saving mobilization (resulting in improving the deposit/loan ratio) and the accumulation of nonperforming loans. Second, although the reporters recognize a necessity to separate the fiscal issues from the financial ones, by getting rid of the APB's

so-called policy lending, they raised questions about the move toward purely commercial banking, departing from the special bank for agricultural development. Having perceived the actual conditions in Lao villages, the report suggests that withdrawing from non-banking services, such as the distribution of seeds and chemical fertilizers, is not always the right direction to take.

Also, the ADB, acting as a micro-financing agency in the APB's stead, is considering developing credit unions that could serve a fairly wide area; the report points out, however, that the ADB does not intend to establish credit unions by integrating village-level saving groups, as described in detail in Chapter 1, and recommends that the existence and significance of these flourishing saving groups at the grassroots level must receive further attention for the establishment of micro-financing institutions.

3. Surveys on the land-allocation program

Since the launch of the land-allocation program, it has had a strong impact on the agricultural and agrarian conditions of the local communities. However, since it is not yet clear to what extent the program has been implemented and to what extent the program has had positive effects on the stabilization of shifting cultivation, the team for investigating the land-allocation program conducted case studies in Luang Phabang and Oudomzay provinces in 2003 and 2004 in order to understand what types of land-use patterns have developed and how the allocated lands have been actually utilized following the program's implementation.

Through the case studies in five sample villages, both negative and positive impacts could be observed. What was commonly observed is the introduction of market-oriented crops, among which job's tear and commercial crops such as vegetables played a remarkable role in providing economic advantages to the local people. However, despite their advantages, it was also observed, particularly in the case of job's tear, that the program did not succeed in decreasing swidden agriculture because the slash-and-burn method was still applied to its cultivation. Furthermore, it is also a general observation that the mountainous areas in northern Laos have faced more difficult conditions derived from the lack of accessibility to markets. Although the local people put forth efforts to introduce alternative crops, it is still very difficult for them to completely stop utilizing shifting cultivation and live on commercial crop cultivation alone, because the diversification observed in crop introduction is not equipped with a basis of marketability.

Although the problems and limitations generated by the land-allocation program were observed, the distinctive geographical and cultural conditions of northern Laos still have considerable potential and competitiveness in the agricultural sector. In order to make use of this advantage, the government should be proactive in providing alternative technologies and promoting agricultural products with additional values, such as "*Thammasaat* product of Northern Laos" or "organic product from Northern Laos." More comprehensive and intensive surveys on the effects of the land-allocation program should be conducted in order to understand the actual conditions of the local communities. Provision of market information and utilization of experienced farmers and merchants are "both sides of the coin" that help develop market-oriented agricultural production. Local government institutions are expected to promote collaboration with such local pioneers, who have accumulated the knowledge and technologies necessary

for developing and diversifying agricultural production.

4. Surveys on agro-ecotourism

In order to understand the current situation of ecotourism and to explore the possible future development of agro-ecotourism, the team conducted surveys in Luang Phabang province which has a great potential for developing tourism thanks to its richness in nature and cultural heritages. The surveys revealed that the number of tourists coming to Luang Phabang had increased rapidly from 1997-2003: from only 30,769 tourists in 1997 to 99,150 in 2003. As this indicates, tourism is considered to be the main driving force for economic development in Luang Phabang.

The surveys were basically conducted to know the actual situation of the conditions of accommodation for tourists and their interests, including the lodging and boarding conditions, tourism destination, preference of foreign tourists, and the tour programs prepared by local tour-conducting agencies. With regard to agro-ecotourism, the surveys revealed that the word “agro-ecotourism” is quite new concept for the local tour-conducting agencies. They supposed that the tourists might not be interested in “agro-tourism” in Laos, since the agriculture in Laos is practiced in subsistence manners and not yet developed. However, to the contrary, the interviews with 277 tourists revealed that the majority of them were interested in agro-tourism in different ways. Most of the tourists to Laos coming on their own are medium income people, who seek leisure, knowledge and experiences concerning nature, culture and ways of living of the Lao ethnic groups, and a half of the interviewed tourists expressed their interests in learning current agricultural techniques that are practiced by the local people, and sharing a short stay with Lao farmers for 3 to 4 days to explore their ways of living.

5. Surveys related to the One District One Product project

As a supplementary program, the surveys on local products, such as agricultural products, handicrafts and cottage industry products, were organized as a part of activities conducted by the Agriculture and Rural Development Working Group, consisting of two types of surveys: the sample surveys and the inventory surveys. The former were carried out by the NERI researchers and the latter were in collaboration with a Japanese expert and researchers from NERI and National University of Laos.

The sample surveys were conducted in Phone village, Phone Hong district of Vientiane province, in order to collect relevant information related to the promotion of One District One Product (ODOP) project in Laos. Selecting rattan work, which is well-known among Vientiane people, as a sample, the surveys analyzed the production process and marketing systems, and explored the problems and constraints the villagers faced.

The inventory surveys consist of several case studies carried out in a number of sample districts in the northern, central and southern Laos. Based on the information obtained from the interviews with the concerned district-level officers and village elders, all the potential villages in each district were surveyed in order to find out and identify expectable local products. The results of the surveys are in the process of being edited, and it is expected that a book-style inventory containing the photographs of expected ODOPs and the information of their production and marketing conditions will appear soon.

2. The Potential Capacity for Expanding Exports and the international Competitiveness of Agricultural Produce and Processed Agricultural Goods

Seiichi FUKUI
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Summary

1. Objectives and Overview of Survey

Objectives: To examine the competitiveness of agricultural products and agro-processed goods which may have potentials for export expansion and import substitution and can contribute to the sustainable development of Laos, as well as to examine the appropriate policies for export expansion of those products.

Overview: Surveys were conducted in March, May, and July of 2004.

Focus: Aromatic rice, maize, cotton, hand-weaving industry products, animal feed

2. Major findings

1) Aromatic rice

Analysis: If we compare production costs by official exchange rate, we find that the production cost of aromatic rice in Laos was higher than that of Thai and Cambodian aromatic rice. This indicates that Lao aromatic rice does not have global competitiveness under the official exchange rate. However, if the overvalued official exchange rate is corrected, Lao aromatic rice gains competitiveness compared to Thai aromatic rice. Furthermore, if rice farming in Laos is transformed from subsistence to commercial, Lao aromatic rice can be exported to Thailand, since its production cost can be lower than that of Thai aromatic rice and there is little difference in taste and aroma.

2) Yellow Cattle and Buffalo

Around 200 thousand head of yellow cattle and buffalo are estimated to be exported annually. If the following policies are implemented to overcome difficulties with export expansion, the export of cattle and buffalo can be increased.

- a) For lowland rice growing areas, we recommend improving cattle-raising technologies for the purpose of increasing the productivity of beef production by introducing fodder and purchased animal feed. For hilly and upland areas, large-scale cattle farming technology should be established to fully utilize abundant grass resources.
- b) To prevent cattle epidemics such as foot and mouth disease, we recommend establishing an

epidemic prevention and quarantine system. In addition, vaccine quality should be improved.

- c) To reduce trade barriers, the export license system and non-tariff barriers in Thailand should be abolished.

2) Maize

Analysis: Maize production for animal feed is highly profitable. In particular, F1 yellow maize has global competitiveness. This variety of maize is already exported to China and Thailand in increasing amounts. However, from a sustainability viewpoint, we must exercise caution when expanding maize production for commercial purposes. In Sayaboury province, maize cultivation without fertilizer or pesticide has been increasing on gently sloping land, but the existing farmlands have already begun to lose their fertility, and the fields are expected to expand into protected woodlands as well. Also, the prevalent use of pesticides and chemical fertilizers in Oudomxay province brings with it concerns about reduced soil fertility. Promulgating farming methods that preserve the soil's nutrients will most likely be the key to sustainable development and export expansion of maize production.

3) Raw cotton and cotton products

Analysis: Local varieties of raw cotton are more suited to the hilly regions than are modern varieties. Among the local varieties, dry-farmed cotton such as *fai nyai* have low production costs and can be seen as globally competitive. Its short fiber length is a drawback, but the cotton can still be used in medical supplies, hotel linens, textiles such as Oxford cloth, and so on, making it ideal for domestic import substitution. Furthermore, *fai nyai* and *fai tun*, local varieties of raw cotton, have already been woven and exported as high-quality traditional fabrics.

4) Hand weaving

Analysis: Both silk and cotton hand weaving industries have export competitiveness. Products made of local silk and cotton yarn, using local techniques and featuring traditional Laos designs and colors, are especially popular with Laotian expatriates and foreign tourists. These products command high prices and have relatively low production costs, thus they offer a high profit margin. To increase the export and domestic sales of such items, we focus on:

- i. Establishing a brand and expanding sales channels;
- ii. Securing raw materials (especially local silk and cotton yarn); and
- iii. Coordinating among and thereby de-sectionalizing the administrations of each of the relevant government agencies.

5) Animal feed

Analysis: At present, the domestic animal feed industry is essentially monopolized by a single

company. Based on production costs, the estimated competitiveness is high; however, for further development, the following strategies must be put into practice.

- i. Contract farming and road network expansion should be promoted to ensure a stable supply of raw materials such as maize and sugarcane.
- ii. As the domestic market for animal feed is limited, the development of the livestock industry, especially the beef industry, is needed to expand the domestic market for animal feed.
- iii. A supply of imported raw materials such as dried fish and nutritional supplements should be secured to improve the quality of animal feed.

2-1. Introduction ; Trends in Agricultural Development

Seiichi FUKUI

In the first phase of economic policy support, the prematurity of making rapid progress in agricultural modernization in Laos was emphasized by the difficulty of organizing Laotian farmers, who still cultivate at a subsistence-level, and the limited administrative capacity of the Lao government.

In particular, because of the fact that cost-effective irrigation facilities are difficult to build and efficient ones are difficult to operate (Fukui [2002], Sukegawa [2002]), agricultural development must aim at improving traditional means of irrigation for the time being. The most appropriate agricultural development strategy for the time being is to support organically linked, environmentally friendly agriculture, livestock husbandry, and forestry, while aiming for improvements in productivity and profitability.

In lowland wet-rice cultivation, the aim is to improve the profitability of rice cultivation and raise the productivity of livestock rearing through medical inspections and the prevention of epidemics within the framework of a traditional system where farmers combine rice cultivation and cattle rearing. In highland agriculture, measures have been proposed such as encouraging the production of very profitable crops within the framework of traditional agricultural techniques (including slash-and-burn) where sustainability is paramount.

Also, utilizing domestic resources of producible agricultural goods as raw materials to propel the development of traditional industry, in the sense that it can vitalize traditional techniques and make use of domestic resources, is an appropriate course for industrial development strategy, considering current circumstances in Laos, and a strategy for expanding exports of silk and cotton textiles has been proposed (Ohno [2002]).

In this essay, we shall first verify the international competitiveness of the agricultural produce, processed agricultural goods, and textiles that can reputedly be expected to become either promising exports or possible replacements for imports based on policy recommendations in the first phase. Then, we shall analyze the causes and consider countermeasures in cases where difficulties arise in expanding exports or replacing imports in spite of a potential competitiveness.

There is a vigorous demand abroad for agricultural goods and international prices are high. Aromatic Rice, which brings farmers prices 30-40% higher than the native glutinous rice; Yellow cattle, which are in great demand as an export; the rising demand for maize for use as livestock feed; and the textile and cotton spinning industries, which show promise for increased demand, will be all be discussed as examples.

We shall also analyze the international competitiveness of processed agricultural goods, including livestock feed, which is essential to the development of the nascent stockbreeding industry, and silk and cotton goods in the textile industry.

2-2. Aromatic Rice

Seiichi FUKUI

1) Overview of the regions surveyed and representative farmers

Surveys were conducted twice during the first phase, in 2000 and again in 2001. When the survey on rice farming villages was conducted in Savannakhet province, a number of the farmers were already producing aromatic rice during the monsoon season (Thai KDML 105), the price for which was approximately 40% higher than for glutinous rice (KDML 105 1100 kips/kg, glutinous rice 800 kips/kg.). One of the reasons is thought to be that climatic and soil conditions in Savannakhet province closely resemble those of the Northeastern aromatic rice-producing region of neighboring Thailand across the Mekong river, making it an ideal agricultural environment.

Therefore, this region was chosen for the survey on aromatic rice, specifically, 5 villages in the 2 counties of Khanthabouli and Champhone in Savannakhet province. The square area of the wet-rice fields, water supply conditions, and the number of households in each village are shown in Table 1.

While parts of these regions are irrigable, wet-rice cultivation relying on the monsoon rains is the primary form of agriculture, with rice cultivation typically being the principal means of livelihood in lowland farming villages.

We sampled 48 households as targets for our survey of farms getting their livelihood from aromatic rice.

It is a form of agricultural business in which rice cultivation is the primary form of grain farming, combined with cattle rearing and other types of animal husbandry where rice culture supports livestock rearing and vice versa.

The average size of farms is just over 4ha. There is very little hiring of help, and if there is, most of it is on a debit and credit basis among relatives. Accordingly, the labor market could not be described as particularly advanced. (Table 2)

Holding of fixed agricultural property (water buffalo, yellow cattle, tractors, pumps, threshing machines) are shown in Table 3. Every farm has, on average, large-headed livestock, and close to half of the households have tractors. The average worth of fixed agricultural property owned by a household is approximately \$1,000 or more, and is thought to represent assets greater than yearly earnings. (Table 3)

As for work off the farm, there is one person in each household who works in a job off the farm, and while day-wage labor is relatively rare, Savannakhet province enjoys the special distinction of having many factory workers, which reflects its importance as an area where the government seeks to attract industrial development. (Table 4) Nevertheless, if the standard monthly wage of \$20-40 is calculated as daily earnings, these earnings are roughly equivalent to day wages.

The above-mentioned income structure of the farming household, including land, fixed property, and the wage scale, as shown in Table 5, averages \$750 per household. Of this, rice cultivation accounts for 60%, a third of which is estimated to be income derived from aromatic rice. (Table 5)

The average area for the cultivation of aromatic rice is 0.56 ha, which represents a seventh of the total land area and a fifth of the area devoted to rice culture. Although the profitability per land area of aromatic rice is thought to be some two times that of indigenous strains, the land area devoted to its cultivation is still small.

2) The international competitiveness of aromatic rice

Here we shall use the production cost per unit weight and Domestic Resource Cost (DRC) as the competitiveness index.

The production costs for aromatic rice that we obtained through interview surveys is shown in Table 6.

For the sake of comparison, we have converted prices to Thai Baht and also included the result of interview surveys conducted in Surin province in Northeastern Thailand and in neighboring Cambodia between the border of Laos and Northeastern Thailand.

According to these figures, the production costs for Laos, evaluated by the official exchange rate, are higher than for Thailand or Cambodia. The main reason for this is the high cost of labor. What drives the high cost of labor is that the relative cost of machinery is high in comparison to Thailand and Cambodia, and though the mechanization of cultivation and threshing operations is behind the curve, with the adoption of labor-saving technology not yet advanced, wages for agricultural labor could hardly be called low. (Table 7)

Nevertheless, the result is that when there are no fluctuations in currency markets, as well as the markets for goods and services, this is justified, but to the extent they fluctuate, it is not. Therefore, using methods like the one below, we estimated the real equilibrium exchange rate and used it to recalculate production expenses.

For the method used to estimate the real equilibrium exchange rate, various methods were devised, but in this essay, we adopted a method based on the elasticity approach (See Sadoulet and de Janvry [1995]) with the data we were able to obtain.

In the elasticity approach, the real equilibrium exchange rate is defined as the real equilibrium exchange rate determined at level D^* of a certain allowable trade imbalance. If the actual level of trade revenues and expenditures exceeds D^* , the observed real exchange rate (RER) is greater than the real equilibrium exchange rate (RER^*). The amount of exports E^* at the real equilibrium exchange rate and the amount of imports M^* are calculated from the observed amount of exports E , amount of imports M , export elasticity ϵ_E , and import elasticity ϵ_M according to the formula below.

$$E-E^*/E = \epsilon_E (RER-RER^*)/RER \quad M-M^* = \epsilon_M (RER-RER^*)/RER$$

From this formula and $D-D^* = (M-M^*)-(E-E^*)$, the real equilibrium exchange rate is expressed as a function of the real exchange rate, trade revenues and expenditures, allowable imbalance of trade revenues and expenditures D^* , observed amount of exports, amount of imports, export elasticity, and import elasticity.

$$RER^* = RER[1+(D-D^*)/(\epsilon_E E - \epsilon_M M)]$$

When using this type of formula, how to set the level of D^* as well as export elasticity and import

elasticity becomes extremely problematic.

On the question of D^* , Garcia and Llamas [1989] hypothesize the level at 2% of GDP every fiscal year. Also, import elasticity ϵ_M is estimated in the -0.1 to -2.0 range, and export elasticity ϵ_E is hypothesized to be 1 (Sadoulet and de Janvry [1995], Khan and Ostry [1992]).

The result of these estimates is shown in Table 8. Using the real equilibrium exchange rate when the Kip is most conspicuously overvalued, recalculating the production costs of aromatic rice yields production costs for Laotian aromatic rice higher than those of Cambodia but lower than those of Thailand. This means that, if corrected for overvaluation, Laotian aromatic rice is still sufficiently competitive in international markets.

International competitiveness, however, cannot be judged by comparisons of simple production costs considering non-trade commodities.

In this essay, "Domestic Resource Cost (DRC)" will be used as an index of international competitiveness in considering this point.

DRC is defined below as a means of gauging international competitiveness by measuring how much foreign currency can be saved utilizing domestic resources.

$$\text{DRC} = \frac{(\text{Non-trade commodity production} - \text{Cost per unit})}{(\text{Shadow-price of production}) - (\text{Production of trade commodities} - \text{Cost per unit})}$$

If $\text{DRC}/\text{Shadow Exchange Rate} > 1$, then it is not internationally competitive, but if $\text{DRC}/\text{Shadow Exchange Rate} < 1$, then it is judged to be internationally competitive. Here, the Shadow Exchange Rate (SER) is a limited exchange rate that balances the supply and demand of foreign exchange.

Ordinarily, the shorthand method of "Conversion Factor (SCF)" below is used in estimating SER.

$$\text{SER} = \text{Official Exchange Rate}/\text{SCF}$$

Here, the $\text{SCF} = (M+X)/M*(1+Tm)+X*(1-Tx)$

M; amount of imports, X; amount of exports, Tm; import tariff rate, Tx; export tariff rate

In this essay, we shall estimate the DRC/SER for Laotian aromatic rice using the overvalued nominal exchange rate and then compare with the figures for Thailand and Cambodia.

Comparing the results shown in Table 8 using the official exchange rate, we can see that the DRC of Laotian aromatic rice is larger than that of the other two countries, meaning that its international competitiveness is low.

The foregoing analysis of production costs, however, suggested that overvaluation of the exchange rate affects the index. In cases such as Laos, where overvaluation cannot be explained by fluctuations in the exchange rate due to tariffs (cases where macroeconomic policy and inflation impact the exchange rate), other methods are needed to sufficiently correct for overvalued exchange rates. Therefore, in this essay, the previously estimated real equilibrium exchange rate is calculated using the revised DRC.

Values for the revised DRC values are shown in Table 8. Whereas in the case of Laos the exchange rate is thought to be overvalued, a surplus of exports in Thailand's case is thought to devalue the rate.

Therefore, while the DRC for Laos is lowered to 0.68, Thailand's, by contrast, is raised to 0.81. Thus, similarly to the analysis of production costs, this shows that Laos's aromatic rice is internationally competitive when compared to that of Thailand.

3) The bottleneck in promoting import and export substitutes, and development strategy

In the case of Laos, the fact that insufficient adjustments were made when devaluing the exchange rate in response to inflation from the time of Asia's economic crisis in 1998 is thought to be tied to the overvalued exchange rate. This is considered one of the causes of weakening international competitiveness, not only where aromatic rice is concerned, but for other products of Laotian manufacture. Although the estimates in this essay must be treated cautiously, since they have been estimated based on oversimplified hypotheses, they show that it is necessary to devalue the exchange rate by 0.5%–25%.

In addition, Thai Mali aromatic rice is sold in the market in Vientiane, but the market price is 60% higher than for Lao Mali aromatic rice (Thai Mali is 8,000 Kip/kg., Lao Mali is 5,000 Kip.kg (surveys in March and July 2004)). However, neither the aroma nor the flavor can compare (JICA expert Takashima), and this, along with its appearance, the establishment of the Lao Mali brand and other means suggests that it will be possible to export and sell at a somewhat higher price. In order to do that, financial aid for improving private sector post-harvest rice-polishing facilities, the supply of prime quality Lao Mali seed (reconsideration of the Lao=IRRI project, reevaluation of traditional varieties), and setting up a certification system for the establishment of the Lao Mali brand are a few of the plans being considered.

Furthermore, the fact that farmers have not escaped from subsistence agriculture is a hindrance to the efficient production of aromatic rice. In spite of the gross income from aromatic rice being greater at all levels than other varieties, the fact that farmers do not specialize in aromatic rice but only devote a fraction of arable land to its cultivation supports this assertion. Of course, it is impossible to force farmers to take certain actions, but the introduction of case studies in practical farming by the Ministry of Agriculture and Forestry's information dissemination service and other measures may prove best for encouraging the production of aromatic rice.

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2-3. Export Expansion of Yellow Cattle and Buffalo ; Constraints and Policy Strategies

Seiichi FUKUI

1) Present Situation of Production and Trade

The number of yellow cattle and buffalo in Laos is estimated to be around 2.5 million heads from LECS 3 and the other statistics. The expenditure for domestic meat consumption is 134,000 kips (LECS3). From this figure, we can infer that domestic consumption of beef meat is at most 37,520 tons which is equivalent to around 60,000 heads of yellow cattle or buffalo. If we assume reasonably that the farmers sell at least 300,000 heads, we can say at minimum 240,000 heads of yellow cattle and buffalo can be exported. We can not say positively that all these have been exported, but the report of AICAF [1991] that 160,000-260,000 heads are annually exported is not necessarily overestimated (Table 1).

According to the official trade statistics, the number of live cattle and buffalo export of live cattle and buffalo is 15,000—20,000 heads. The difference between this figure and the estimated number of export can be explained by non-registered exports. Most of these are exported to Thailand, but due to non-trade barriers such as a quota system and export licensing system, many live animals are exported informally. As mentioned earlier, such exports reportedly amount to 160,000-260,000 animals annually in AICAF [1991] report, and the potential export demand is extremely high (Lao PDR [1998]).

This fact is not inconsistent with the fact findings of Hara and Shuto [2004] who estimated the export of live animal from Laos to Thailand by using not only export statistics of Laos, but also import statistics of Thailand.

The number of yellow cattle and buffalo differs in different provinces. The larger numbers of yellow cattle and buffalo are raised in Savannakhet and Champasak provinces (Table 2).

This is because the low land rice growing area is blessed with the favorable conditions for rice-cattle mixed farming, the location is convenient for traffic, and the gently sloping and plateau areas in the eastern part are blessed with such suitable conditions for large scale cattle farming as a rich endowment of with natural grass resource and a relatively flat plain area.¹⁾

2) Farming Practice and Global Competitiveness

The explanation in this section is based on field surveys in Savannakhet province where the largest number of yellow cattle and buffalo are raised. Here, we describe the production and marketing of yellow cattle and buffalo and examine the global competitiveness of cattle and buffalo production.

The Cattle and buffalo farming can be classified into the crop and livestock mixed farming in the lowland area and the large scale cattle farming in the upland area.

In the former case, water buffalo are used for land preparation and transportation and meat production, while cattle are raised only for meat production. Large livestock such as water buffalo and cattle also play an important role as safety assets in the event of a crop failure, and as a source of organic fertilizer. Thus, the interaction between the rice sector and the livestock sector is characteristic of the traditional lowland

farming in the central and southern areas. The farmers usually give cattle grass grown in at small forests, bush and fallow fields (rainy season) and rice straws (dry season) as feeds, and use cattle dung and rice straws as manures. This can be said to be an sustainable organic agriculture by taking an organic material cycle into account.

Thus, water buffalo and yellow cattle are raised by efficiently using natural resources in Laos. Water buffalo are used as draught animals and safety assets, while yellow cattle are mainly used as safety assets. Their fodder is mainly coarse feed such as by-products of crop farming, grass from fallow land, and forest undergrowth, and their excreta are used together with crop by-products as fertilizer. In this way, natural resources and by-products from other types of agriculture on the same farm are used as fodder, and the livestock are raised mainly through grazing. Because cattle sheds house few animals, and are simple structures made by fencing in part of the homestead, stock-raising costs are very low.

According to a field survey in Savannakhet, our sample farmers were raising 7-8 heads of yellow cattle and buffalo. The average farm size is 3.8ha, but they did not plant rice in all the plots. The farmers usually diversified their farm land into rice farming, vegetable farming, fallow land and small forest. Thus the cattle- raising is combined with the crop farming. (Table3)

Regarding raising method, in the wet season, during the day, the family members take the cattle out to graze on grassland (forest, pasture, fallow paddy land, etc.), and at night brings them back to the homestead. In the dry season, during the day the cattle graze on mown grass or paddy fields after the harvest near the homestead, and at night they are brought back to the homestead. Feed is grass feed and vegetable waste only. In the wet season, the feed is mostly natural grass, and in the dry season, farmers feed cattle on natural grass mixed with rice straw. In addition to natural grass and rice straw, vegetable waste is sometimes supplied, but purchased feed is not used.

Vaccinations to prevent epidemics are administered without fail once per year. The cost is 1,000 kips per vaccination. And the shadow prices of family labor and rice straw are also low because the imputed costs of elder persons and children who usually take care of cattle are very low and the opportunity cost of rice straw of which opportunity cost is low. In addition, the simple bamboo and timber cattle sheds can also be constructed by farmers themselves, so that production costs are extremely low.

In Laos, much unused grassland, forest land, and wasteland still remain, and there is an abundance of grass resources. Also, not only in traditional lowland rice areas, but even in irrigated areas where double cropping is possible, cattle- raising is not hampered by insufficient availability of grass feed.

The farmers usually sold the cattle after they had raised them for four or five years. The selling price was 500,000kips—2million kips for yellow cattle and 1million kips-3 million kips for buffalo. The price depends on live weight.

As mentioned above, the production costs of cattle were very low. Therefore, if we calculate the profits of rice and cattle mixed farming, the profitability of such farming was very high, although the production costs of rice itself were relatively high.

In the case of large scale cattle- raising in the upland area, farmers were usually grazing cattle on natural grass during all field in whole seasons. The raising methods varied from crop and cattle mixed

farming to large scale cattle farming, but the technologies are more extensive than the ones in the lowland area. In the upland area which is located distant further away from Thailand, such extensive forms of farming technologies are more efficient. Also in this area, the production cost of cattle was kept low due to the efficient use of family labor and natural resources.

Thus, the cattle and buffalo production have global competitiveness in terms of production cost and profitability. But it is questionable if marketing of cattle and buffalo is efficient.

In the lowland area, the cattle and buffalo were mainly sold for the domestic market. The domestic market channel is as follows. (see See Fukui [2002], Table 6)

The small farmers sell cattle and buffalo to licensed brokers and/or Provincial Food State Enterprise Savannakhet (PFSES; the public food corporations) who visit villages to purchase. The brokers and PFSES transport the purchased animals to the private slaughterhouse that are licensed to operate. Only one slaughter house is admitted to be established in each district. And 25 individual brokers were admitted to be licensed. PFSES is authorized to issue the license. The slaughtered cattle and buffalo are sold to the market retailers and wholesalers who visit the slaughterhouses. The scale of retailers and wholesalers are small and they have to visit there everyday because they do not have cold strage.

In the case of cattle for export, the PFSES and three private export companies, which hold export licenses, purchased cattle and buffalo directly from farmers and export them.

In the domestic market, there was not any restriction except for license systems and judging from our fact findings, that merchants determined their prices comparing them with the prices of competitors and market margins were not large;, the market prices were competitively determined even though the market was still small (Table 4 and Fukui op cit). The export licensing system, however, might allow the licensed exporters to gain the monopolistic profits. If it was the case, the export licensing system kept farm-gate prices lower than the prices in free trade and reduced the global competitiveness of the cattle and buffalo sector.

3) Constraints and Development Policies

The Cattle and Buffalo sector may be considered as one of the few agricultural products with high potential for increasing exports, by utilizing the advantages of low costs due to organic use of resources and grazing.

But there is only a limited room to increase the number of cattle and buffalo largely in the lowland rice growing area. Therefore, in order to increase farm-household income, farmers have to increase the revenue per head. On the other hand, there exists much room to expand cattle farming in gently sloping hilly and plateau areas where the grass feed resource is still abundant. In order to expand the export of cattle, the technologies of large scale cattle farming suitable for such upland areas, should be established. In addition, the government has to establish quarantine and an preventing epidemic prevention system, and to make the border trade system more efficient.

The more detailed policy recommendations are as follows;

- (1) In hilly and plateau areas where there still remain rich grass resources, the technologies for large scale cattle farming such as monitoring system, and securing grass feed and water in dry season should be established. Especially, in the Boroven Plateau where the annual rain fall is sufficient for growing grass, even in the dry season, we can expect large scale cattle farming to develop.
In order to increase the value- added of cattle and buffalo in lowland rice growing areas, they need to introduce fodder grass, to use purchased assorted feed²⁾ and to improve the management technologies.
- (2) It is said that the production of vaccine is enough for demand at the moment, but vaccine for FMD relies on imports. As the factory is old, they need to improve production facilities for vaccine production.
- (3) Qualified veterinarians are limited (less than 100 persons). To cover the shortage, they are training VVWU, but only half are effective. They need to rear animal doctors urgently.
- (4) Quarantine stations at the border are placed in the customs of the Check Post. The staff members who have quarantine skills are completely short and the fact is that they check the documents but do not check animals themselves.
- (5) They have an export licensing system for livestock, but this system might cause inefficient smuggling and lowering of the farm-gate price. Therefore, they should abolish the system and instead they should establish export customs systems in order to secure tax collection. In addition, the Thai government imposes an import tariff on livestock imports from Laos. In order to reduce it, the Government of Laos should also try to negotiate with Thai government.

[Notes]

- 1) According to provincial office of MAF in Savannakhet, the rgrass land area is around 500,000 ha.
- 2) There is some evidence which shows that the use of purchased assorted feed is profitable. (Table 5)

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Table1 Current Situation of Cattle and Buffalo in Lao PDR

1 Number of Cattle and Buffalo (1000heads)	2,565
2 Domestic Consumption of Meat (1000kips)	134
3 Estimated Number of Cattle and Buffalo for Domestic Consumption (1000heads)	60
4 Export of Live Animal (1000heads)	15-20

(Source) 1. LECS3.

2 LECS3

3 Author's estimation

4 Author's estimation from trade statistics

Table2 Number of Cattle and Buffalo by province (1000heads)

	Cattle	Buffalo
Lao PDR	1,365	1,200
North		
Phongsaly	19	39
Luangnamtha	25	32
Oudomxay	22	60
Bokeo	66	34
Luangprabang	66	55
Huaphanh	54	64
Xayabury	109	81
Central		
Vientiane C.	89	25
Xiengkhuang	109	73
Vientiane	116	81
Borikhamxay	38	39
Khammuane	80	100
Savannakhet	276	204
Xaysomboun SR	16	11
South		
Saravane	82	81
Sekong	9	24
Champasack	168	137
Attapeu	19	69

(Source)LECS3

Table3 Land Use and Livestock in Sample Farm Households

Farm Size (ha)	3.8
Planted Area of Rice (ha)	3.2
Fallow land and Others (ha)	1
Number of Cattle (heads/household)	6.1
Number of Buffalo (heads/household)	2.2

(Source) Author's Survey

Table4 Prices and Margins of Cattle and Buffalo

	Cattle	(%)	Buffalo	(%)
Farmgate Price	1,016,000	81	1,566,000	86
Transportaion Cost	40,000		46,000	
Tax and Fee	27,655		27,000	
Service Fee	17,300		12,200	
Price at Slaughter House	1,258,350	100	1,813,657	100
Net Profit	157,395	12.5	162,457	9

(Source) JICA Market Study on Agriculture and Fisheries Production in Lao PDR,
Final Report(September 2001)

Table5 Profitability of Feeding Cattle and Buffalo

		(%)
Buying Price (1000kips)	572	50.4
Feed Cost (1000kips)	256	22.6
Selling Price (1000kips)	1,135	100
Margin (1000kips)	307	27

(Source) Commission of the European Community,
"Livestock Market Monitoring Manual",1999.

2-4. Maize Production in the Northern Part of Lao PDR (Case Study in Luangprabang, Xayabury and Oudomaxay Provinces)

Sombounmy PHOMTAVONG

Summary

Recent market liberalization in Southeast Asia has improved farmers' competitiveness on regional and world markets in Lao agricultural products such as coffee, maize, rice, beans and so on. The results of the survey in Luangprabang, Xayabury and Oudomaxay provinces show that Keng Sao village in Parklai district, Xayabury province, has the lowest costs for maize production at around 125 to 388 kip/kg, and the second lowest costs for maize production are found in Udom village in Houn district, Oudomaxay province, at about 323 kip/kg. Thinkeo or No. 7 Village in Xieng Ngern district in Luangprabang province has the highest costs for maize production, at about 2,108 kip/kg.

This study is part of the Macroeconomic Policy Support Project Phase II (MAPS II) of the Agriculture and Rural Development Working Group under the supervision of Professor FUKUI Seiichi, Ph.D. Agricultural Science, Graduate School of International Cooperation Studies, Department of Economic Development and Policies, Kobe University. The aims of this study are to understand and assess the prospects for maize production in the region, examine the sustainability of maize production, and analyze the impact of maize production on poverty alleviation and stabilization of shifting cultivation. Furthermore, this paper will identify the constraints on export expansion and consider policies for future development of Laos maize products.

Analysis of comparative costs of maize production

The findings on the comparative costs of maize production are summarized in Table 1. As for the numbers in the table, 1 indicates the lowest production costs and 10 the highest.

Table 1 Ranking of villages in terms of lowest production costs in 2003

Name of Village Item	Luangprabang Province				Xayabury Province				Oudomaxay Province	
	No 11	No 7	No 6	Houay Hoi	Park Khem	Houay Luk	Na Hin	Keng Sao	Oudom	Don keo
Production cost per kg	8	10	9	4	5	6	7	1	2	3
Production cost per ha	3	10	9	1	4	7	8	6	9	5
Net profit per ha	3	2	1	7	5	6	4	10	6	7
Market price per kg	9	10	4	8	1	3	2	5	7	9
Yield per ha	1	3	2	4	5	8	6	10	7	8
Current input cost per ha	1	2	4	3	5	9	6	10	2	5
Labor input cost per ha	6	10	9	1	3	7	8	4		

Source: Survey in Luangprabang, Xayabury and Oudomaxay Provinces, 2004.

Remarks: where 1 is the lowest cost or profit of maize production and 10 is the highest cost of maize production.

The results of the survey show that the lowest cost of maize production per kilogram is in Keng Sao village, Park Lai district, Xayabury province, and the second lowest is in Oudom village in Oudomaxay province, where the amount is 125 kip/kg and 323 kip/kg respectively. The highest cost of maize production per kilogram is in No. 7 (Thinkeo) Village, Luangprabang province (about 2,108 kip/kg). The highest market price of maize is in No. 7 (Thinkeo) Village, Xieng Ngern district, Luangprabang province (956 kip/kg) and the lowest market price is in Park Khem village, Xayabury province (597 kip/kg). The highest yield per hectare is in Keng Sao village in Xayabury province (8.23 ton/ha) and the lowest in No. 11 village in Luangprabang province (1.58 ton/ha).

Conclusion and recommendations for the government

Maize production in Lao PDR has export potential and competitiveness with neighboring countries, because there is a very big demand in China and Thailand for agricultural products from Lao PDR. In addition, the northern region transportation network has been greatly improved in recent years with the completion of the North-South Corridor Project, which constructed a road link between Yunnan Province in the People's Republic of China and northeast Thailand through the north of Lao PDR. Other transport initiatives provide new opportunities for trade and tourism development¹.

¹ "Northern Region Development Strategy" Summary, Committee for Planning and Cooperation, ADB, February 2004.

There are some constraints on maize production in Lao PDR as follows:

- Agricultural land for maize cultivation is limited
- Soil fertility and soil erosion are the cause of concern in those regions
- Technology relating to genetics and hybrid varieties in Lao PDR is limited
- Quality control of maize production is still inadequate (high moisture content of Laos maize)
- Lack of market information for maize farmers

Recommendations for the government authorities concerned

The main serious problem for maize production in the study area is the gradual decline in soil fertility. It has a negative impact on the yield of farm products in the long run, so the government needs to encourage villagers to implement mixed crop cultivation in addition to bean species and promote minimization of production costs by the use of bio-fertilizer in the fields.

The government must place more emphasis on genetic development by establishing a laboratory to study this issue.

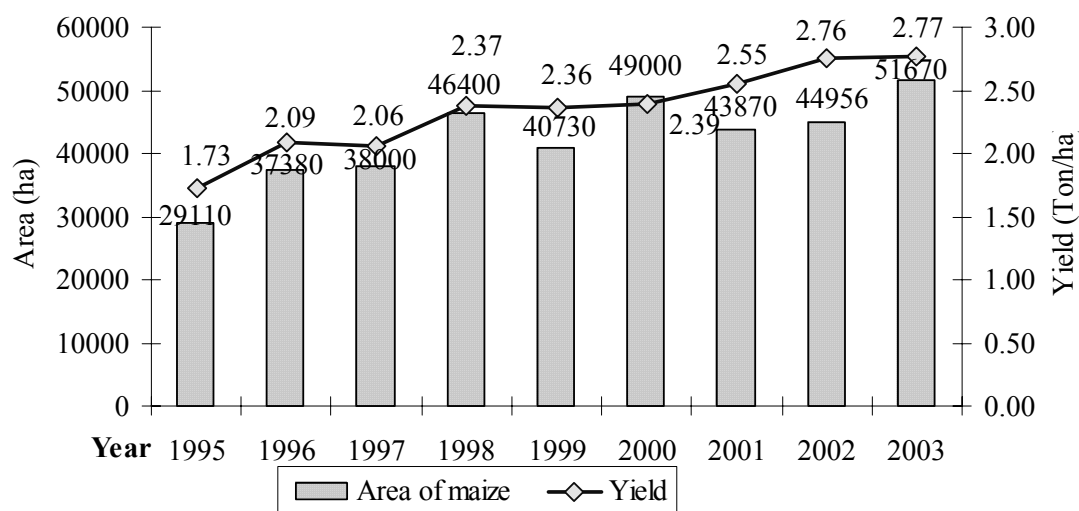
In order to improve the quality of maize products and market information, the government authorities should improve promotion activities for villagers and transfer new technology to villagers. It is necessary to establish a strategy to improve the quality and yield of maize products.

I. Introduction / Background

1. Background

Maize is the second most important cash crop in Lao PDR after rice and it is a major agricultural export product to Thailand and China in the north of Laos. Maize itself is very significant in terms of its nutritional benefits for humans and animals. In addition, maize production plays an important role in the provision of raw materials to support animal feed factories (maize is the basic ingredient of animal feed and represents 60% of the total composition)² at the domestic and national level. Maize is a cash crop, providing an alternative way for farmers in rural areas to raise their income and fight poverty. It also contributes to government policies such as poverty alleviation, cash crop promotion and stabilization of shifting cultivation.

Chart 1 Maize cultivation area and yield from (1995-2003)



Source: Agricultural Statistics Year Book 1975-2000, 2001, 2002 and 2003.

The situation of maize production in Lao PDR is similar to that of Asian countries such as Vietnam, Cambodia, Thailand and China in that maize production has increased dramatically during the last decade. Chart 1 shows the rise in maize production from 50.375 thousand tons in 1995 to 143.177 thousand tons in 2003, an impressive 15.8% annual average growth rate (Agricultural Statistics Year Book 1975-2000, 2003). This is the result of an increase in both area and yield of about 8.4% and 6.3% (annual average growth rate) respectively. During the last year (2003), maize production expanded a great deal mainly in the northern part of Laos.

²Director of Gold Coin (Tha Ngon) Animal Feed Company

2. Objectives of this paper

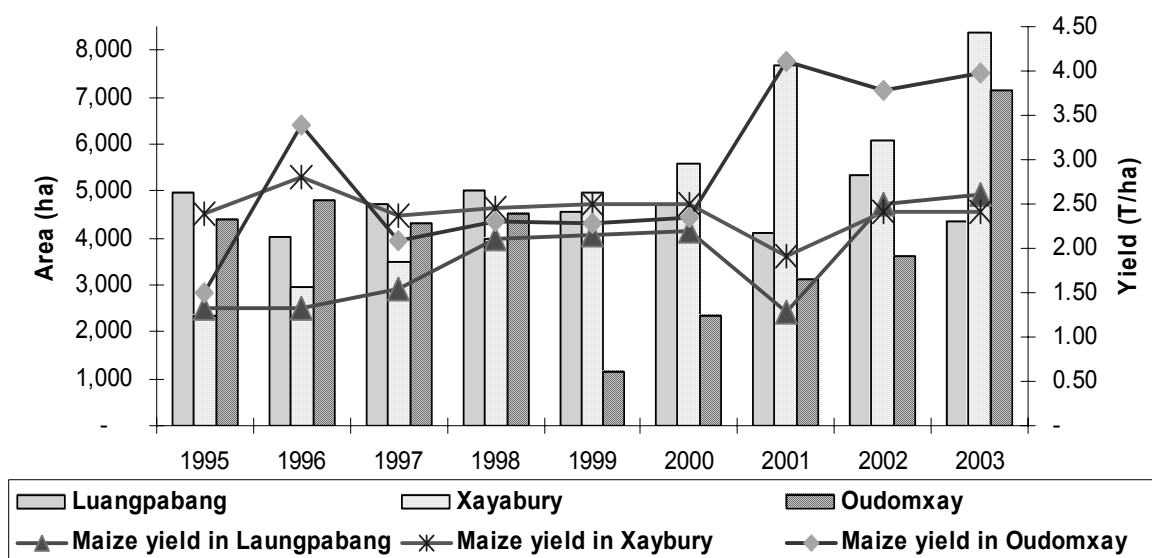
This study is part of the Macroeconomic Policy Support Project Phase II (MAPS II) of the Agriculture and Rural Development Working Group under the supervision of Professor FUKUI Seiichi, Ph.D. Agricultural Science, Graduate School of International Cooperation Studies, Department of Economic Development and Policies, Kobe University. The research topic is maize production in the north of Lao PDR, a case study in Luangprabang, Xayabury and Oudomaxay provinces. The main objectives of this paper are to obtain an understanding of the maize production situation, assess the prospects for maize production in the region, examine its sustainability and analyze the impact of maize production on poverty alleviation and stabilization of shifting cultivation. Finally, this paper will identify the constraints (if any) on export expansion and identify policies for the future development of maize production in Lao PDR.

3. Organization of this paper

This research paper consists of 4 parts. Part 1 introduces the background of the maize situation in Lao PDR, the objectives of this research paper and the potential of maize production in this region. Part 2 gives an overview of maize production in a case study in Luangprabang, Xayabury and Oudomaxay provinces, the research methodology, and the history and cost of maize production in selected villages. Part 3 presents the results of a comparison of production costs in the villages in the target provinces. The final part presents the conclusion and recommendations for the government to improve and promote maize production in Lao PDR.

II. Maize in Study Area (Luangprabang, Xayabury and Oudomaxay Provinces)

Chart 2 Maize cultivation area and yield in Luangprabang, Xayabury and Oudomaxay provinces

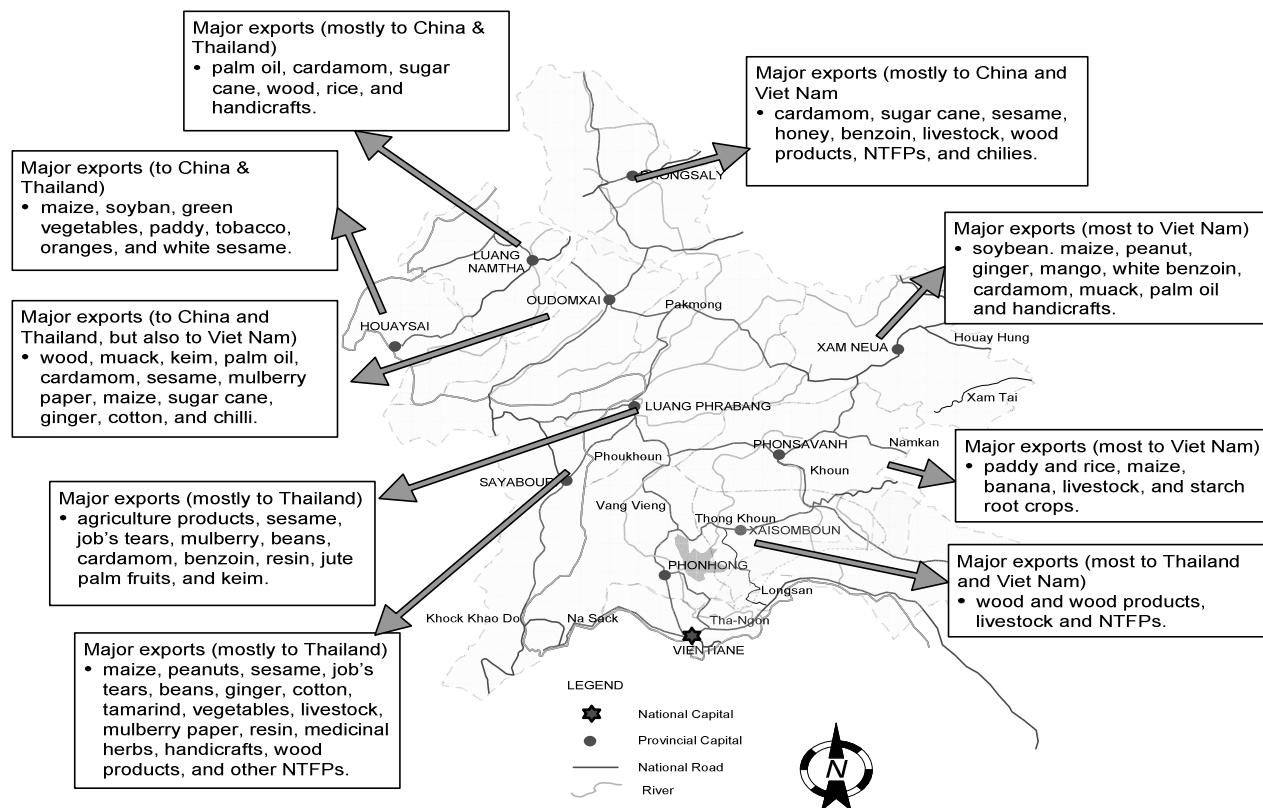


Maize cultivation in Xayabury province grew considerably from 2,347 ha in 1995 to 8,380 in 2003. More than 80% of maize products are sold or exported to Thailand, 10% are sold to the Gold Coin Company (Tha Ngon Animal Feed Factory) and the rest goes for household consumption. In Oudomaxay province, the maize cultivation area is the second largest in the country (after Xayabury province). The area was 7.16 thousand ha in 2003, an increase of about 97.9% over the 3.62 thousand ha in the previous year, and the average yield about 3.98 t/ha, an increase of about 5% over the previous year (3.79 t/ha) (Agricultural Statistics Year Book, 2003, Ministry of Agriculture and Forestry). Most of the maize produced in Oudomaxay province is exported to China. In Luangprabang province, more than 90% of the maize is used for household consumption (animal feed), especially in the three target villages in Xieng Ngern district, and the rest is sold at the Vientiane market or exported to China.

Agricultural production in the north of Lao PDR has high potential for exporting to neighboring countries (see map of major exports from northern Laos). In addition, the infrastructure in the north has improved, for example, the North – South Corridor project has constructed a highway link between China (Yunnan province) and Thailand through the north of Laos.

Figure 1 Map of major exports from northern Lao PDR

**Lao PDR: Northern Province Strategy Study:
Major exports by province.**



Source: “Northern Region Development Strategy” Executive Summary, Committee for Planning and Cooperation, ADB, February 2004

1. Methodology of survey

The descriptive method is mainly used for this research paper. The information and data regarding the production costs of maize were collected from field surveys in Luangprabang, Xayabury and Oudomaxay provinces, by selecting 4 villages³ in 2 districts of each province (except Oudomaxay province where only 2 villages in Houn district were selected). In Luangprabang province these are Ban (village) Thinkeo or Ban No. 7, Ban No. 11 and Ban No. 6 in Xieng Ngern district and Ban Houay Hoi in Nan district. The selected villages in Xayabury province are Ban Parkhem, Ban Houay Luk and Nahin in Kean Thao district and Keng Sao village in Park Lai district. In addition, data is also collected from the government authorities responsible for maize production (Provincial Agriculture and Forestry Office (PAFO) and District Agriculture and Forestry Office (DAFO)). The questionnaire form is the main tool used in this

³ The selected villages are based on suggestions from the Provincial Agriculture and Forestry Office (PAFO).

survey. In this paper, the cost of maize production in 2003 is used due to incompleteness of the maize cultivation season in 2004 during the study period.

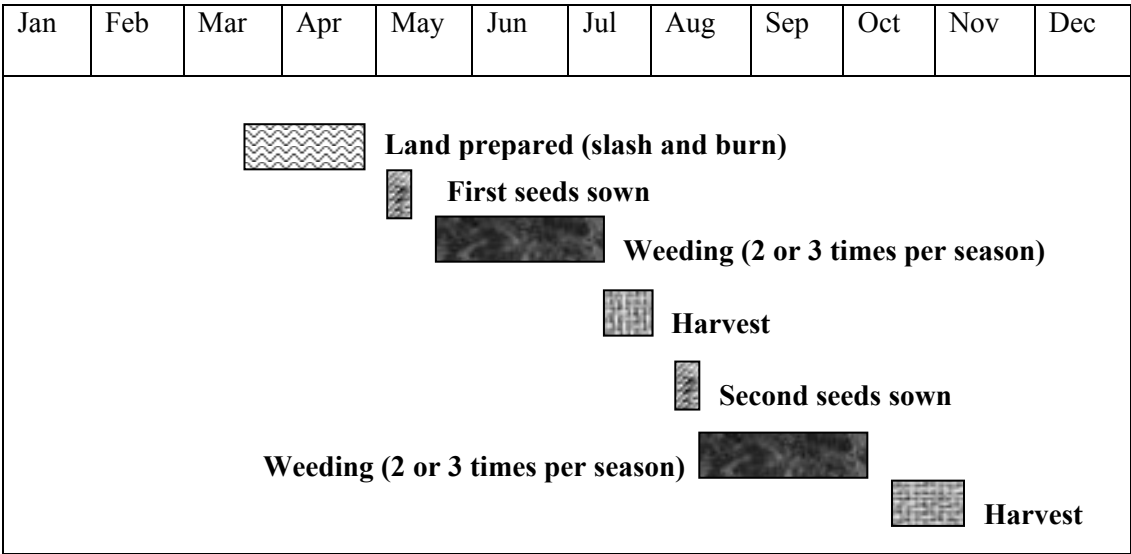
The reasons for selecting Luangprabang, Xayabury and Oudomaxay provinces as the sample provinces are as follows:

- According to the year book statistics for 2003, the area of maize production in Xayabury province is the largest (8,380 ha) in the entire maize cultivation in Lao PDR and Oudomaxay province is the second largest (7,163 ha).
- In comparing maize cultivation in these provinces, maize cultivation in Luangprabang province, especially cultivation of the hybrid variety, was only promoted to farmers in 2001, while in Xayabury province, maize production is the second most important cash crop for farmers after rice and the province has a long history of maize cultivation. In addition, some parts of Oudomaxay province are able to implement double cropping.
- Following consultation with the provincial and district authorities, we selected 2 districts and a total of 4 villages in each province (except in Oudomaxay province where only 2 target villages were selected). In each village, 10 households that are engaged in maize cultivation were selected (except in Ban Donkeo in Houn district, Oudomaxay province). The households were selected by the head of the village and district authority to be the interviewees.

2. Overview of history (general demographic data) and maize production of villages

Usually, the maize cropping system in Lao PDR is single cropping (once a year), but there are some areas along the riverbank (in Oudomaxay province) that can implement double crops. Normally, the first crop is seeded in late April or early May and harvested in July, and the second crop is sown in late July or early August and harvested in October or early November (as shown in the figure below).

Figure 2 Cropping calendar for maize cultivation in northern Laos (Luangprabang and Xayabury provinces)



Source: Survey in Luangprabang , Xayabury and Oudomaxay provinces

3. Ecological condition of target villages in Luangprabang province

For the purpose of calculating the cost of maize production in the villages, it was extremely difficult to collect price data for labor used in the fields at the different stages (land preparation, land clearing, seed planting or sowing, weeding and harvesting), because in the study villages most labor is provided under the labor exchange system, where villagers work together on preparing the land in neighboring fields. Under the labor exchange system, in some cases the owner of the land provides food at lunchtime, some owners provide food twice (lunch and dinner), and some households do not provide any food at all. As a result, it is very complicated to calculate the actual cost at each stage.

Based on the data available from the field survey, this paper established some assumptions to facilitate calculation of the cost of maize production. The first assumption is that man-days data for one hectare is used in the calculations. This means that the total amount of labor used in the field (including family labor) at each stage is accumulated. In addition, the labor wage is about 10,000 kip/person/day⁴. The second assumption is that the rental fee for a power tiller is 400,000 to 600,000 kip/ha (based on interviews with the heads of the villages). In this situation, we calculated two separate cases: in Case 1 the rental cost of the power tiller is 400,000 kip/ha and in Case 2 it is 600,000 kip/ha. For the land rental fee, the imputed cost from the survey in Luangprabang province of 460,000 kip/ha is used.

⁴ Based on the information from the survey, the labor cost in the villages in Luangprabang province is about 8,000 kip/person/day. For this rate the owner has to provide lunch for the laborers, and the rate of 10,000 kip/person per day is without any meals provided.

3.1. Ban Thinkeo or Ban No. 7, Xieng Ngern district, Luangprabang province

According to the head of village, Ban Thinkeo or Ban No. 7 was established about 150 years ago. At first, it consisted of only six households, which belonged to the Khamu ethnic group. From 1972 to 1975, the government constructed a road past this village, with the result that people migrated to this region. Until 2002, 10 households belonging to the Hmong ethnic group had migrated to this village, because of the government policy to stop opium planting in the north of Lao PDR. At the present time, Ban No. 7 consists of 134 households, of which 91.79% belong to the Khamu ethnic group, 7.46% to the Hmong ethnic group and the rest to the Lao Lum ethnic group. The total population is 784, including 339 women. 74 households participate in upland rice cultivation, 46 households have paddy fields (29.91ha; irrigated area: 21 ha), 129 households are engaged in job's tear cultivation (83.66 ha) and 54 households in soybean cultivation (21.66 ha). As for maize cultivation in this village, the planted area is about 3.95 ha (the villagers have just started planting maize by learning from the Hmong). The livestock in the village consists of 64 cows, 62 buffalos, 3,820 poultry, 502 pigs and 15 fishponds. The first occupation of the villagers is farming and the second is handicrafts, blacksmith work and NTFP (Non Timber Forest Product) collecting.

As for the survey through interviews of 10 selected households, the average household in this village numbers about 5.8 people with 3 people per household (age 15 to 55) engaged in labor. 70% of households started to plant maize in 2000, mixing job's tear with upland rice in their fields. At first, the main reason to plant maize was for animal feed, then in 2001, middlemen came to purchase the maize produced in the village. Each of the respondent households has their own agricultural land. The average is about 2.5 plots of land with an area of 2.36 ha per household. The main crops in this village are job's tear, upland rice and sesame. Animal raising is widely seen in the village, particularly chickens, pigs, cows, buffalos and goats. Since the main livelihood of the villagers is farming, all the villagers have basic farming instruments. In addition, only one household among the respondents has a power tiller. As for jobs off the farm, 10% of households participate in hand sewing (Hmong ethnic group) (sold in the USA) and 20% are blacksmiths (Khamu ethnic group), generating an average income of about 700 US\$ or 7,350,000 kip per year and 400,000 kip per year respectively.

The maize produced in this village is mainly for household consumption. According to the results of the survey, the average area of maize is about 0.62 ha per household, yielding about 2.57 tons per ha. This is very small compared to the average total land area of each household (2.36 ha), implying that maize may not be one of the main cash crops of the households.

In the maize cultivation season or agriculture season, maize crop cultivation consists of the following five stages:

First: *slash and burn* In this activity, more than 80% of farmers use the labor exchange system. This is

a very traditional system, mainly in the Khamu ethnic group. Usually, they will form a group of about 15 to 20 households whose fields are close together, taking about 1 or 2 days to fell the trees in the fields of each member of the group. Culturally, the owner of the field has to provide food (at lunchtime) for the laborers who come to help in the field. After all the trees in the members' fields have been felled, the farmers will leave the slashed trees until they are dry (about 3-4 weeks) and then they will start to burn the fields.

Second: *land clearing* This process will be started about 1 or 2 weeks after the fields have been burned. The villagers will clear the unburned wood and remove any small trees to facilitate sowing. Usually, for this process, the villagers will use only family labor and spend just 1 or 2 days.

Third: *planting* According to the survey, villagers usually use the labor exchange system for this activity, averaging about 7.63 persons per season and taking about 2.17 days. The main variety of maize seed in this village is traditional sweet corn and some is yellow corn. In addition, with regard to hybrid maize called LVN10 (Vietnamese variety), middlemen just came to promote this variety this year (2004).

Fourth: *weeding* 80% of the farmers interviewed use the labor exchange system and the average amount of labor exchange is about 9.29 people for 2.14 days per season. Farmers will usually perform this activity about 2 or 3 times per season. On the other hand, this activity is mainly performed by women.

Fifth: *Harvesting* The majority of villagers use the labor exchange system for this activity. The average labor exchange is about 14.6 persons per season.

Cost of maize production in Ban Thinkeo village

In fact, it is extremely difficult to calculate the labor cost at each stage, because in the labor exchange system some households provide food for the laborers twice and some households only once or not at all. From the results of the survey, based on interviews with the villagers, we obtained information that the fee for hiring labor in the village is about 8,000 kip/person/day (at this rate the owner has to provide lunch for the laborers) and about 10,000 kip/person/day (without food). For the calculations in this paper, we assumed a labor rate of 10,000 kip/person/day and man-days for this village. The maize in Thinkeo village can be planted only in the rainy season. Most of the maize produced is used for household consumption, for example, for feed for pigs, ducks, chickens and so on.

Table 2 Average cost of maize production in Thinkeo village

Item	Average
Area (ha)	0.6
Variety	Traditional
Total production (kg)	860
Yield (kg/ha)	1,536
Price (kip/kg)	956
Gross revenue (kip/ha)	1,467,460
Current input cost (per ha)	2,630
Seed	0
Fertilizer	0
Pesticide	2,630
Value-added	1,464,831
Labor cost	2,774,444
Labor input (man-days/ha)	277
Wages	10,000
Machinery cost (Case 1)	-
(Case 2)	-
Power tiller (Case 1)	-
(Case 2)	-
Threshing cost (kip/ha)	-
Land rent (kip/ha)	460,000
Profit	
(Case 1)	(1,769,614)
Cost of maize production (kip/ha)	
(Case 1)	2,237,074
Cost of maize production (kip/kg)	
(Case 1)	2,108

Source: Survey in Luangprabang province, 2004

Table 2 above shows the cost of maize production in Ban No. 7 or Ban Thinkeo village. The average area of maize cultivation and yield is about 0.6 ha and 1.54 ton/ha respectively. About 90% of the villagers use traditional varieties, which are selected from the previous season. Maize planting by farmers in this village is based on natural planting. This means that farmers do not apply any fertilizer in their fields. The major current input cost of maize production in this village is due to pesticide costs, namely Folidon or DDT (Dichlorodiphenyltri-chloromethane) to protect the maize seeds from insects and animals such as ants, mice and so on. Most of the cost of maize production in this village arises from labor costs, for which the average is about 277 person/ha/day or about 2,770,000 kip/ha. This figure is about 88.76% higher than the average gross revenue of the farmers.

In conclusion, the cost of maize production in Thinkeo village is estimated at about 2,108 kip/kg. This figure is about 121% higher than the market price (956 kip/kg). This means that maize cultivation in this village is disadvantageous to the maize farmers and is not competitive.

3.2. Ban No. 11, Xieng Ngern district, Luangprabang province

Ban No. 11 is the original village. In 1973 a road was constructed past the village, causing people (who live in the mountainous area) to migrate to the village and establish houses in this region. At the present time, Ban No. 11 has a population of 84 households. The total population is 530 people, including 272 women. In the village there are 2 main ethnic groups, namely Khamu and Lao Lum. The main ethnic group is Khamu, which accounts for about 96% of all households. The total area of the village is about 2,101 ha, consisting of 131.2 ha for upland rice cultivation, 7.6 ha for paddy fields, 19 ha for mulberry trees (Posa), 39.9 ha for job's tear, 12.4 ha for sesame and 7.1 ha for traditional maize. In 1997, the animal feed factory (Gold Coin Company Limited) came to encourage people in this region to plant maize and sell their maize products to the company. At that time, a small number of villagers participated with the company, but the market price of maize was very low, so the villagers were not interested in participating with the company. The livestock in the village consists of 12 cows, 20 buffalos, 1,919 poultry, 169 pigs and 16 goats. The main occupation of the villagers is farming and the second is handicrafts, blacksmith work and NTFP (Non Timber Forest Product) collecting.

Data from the survey

According to interviews with 10 households in the village, the average household numbers 6.9 people per household and the labor force (age 15 to 55) is about 3.7 people per household. More than 72% of the households started to plant maize in 2002, mixing it with job's tear and upland rice. The main reason for starting to plant maize in 2002 is that there was a market for maize at that time. In 2003 middlemen came to the village to promote maize planting and offer a guaranteed price of about 500 to 600 kip/kg. The average agricultural land of each respondent household is about 2.4 plots with an area of about 2.99 ha per household. The main crops in this village are job's tear and upland rice. Animal raising is widely observed in the village, particularly chickens, pigs, cows, buffalos and goats. Since the main livelihood of the villagers is farming, all the villagers have basic farming instruments. In addition, only one household among the respondents has a rice mill. The main income of the villagers comes from job's tear production.

Table 3 Cost of maize production in No. 11 village

Item	Average
Area (ha)	0.7
Variety	Traditional
Total production (kg)	1,175.8
Yield (kg/ha)	1,680
Price (kip/kg)	872
Gross revenue (kip/ha)	1,465,056
Current input cost (per ha)	33,333
Seed	33,333
Fertilizer	-
Pesticide	-
Value-added	1,431,723
Labor cost	1,324,444
Labor input (man-days/ha)	132
Wages	10,000
Machinery cost (Case1)	-
Power tiller (Case 1)	-
Threshing cost (kip/ha)	-
Land rent	460,000
Profit	(352,721)
Cost of maize production (kip/ha)	1,817,778
Cost of maize production (kip/kg)	1,082

Source: Survey in Luangprabang province, May 2004

Table 3 shows the cost of maize production in Ban No. 11. All the surveyed farmers use the traditional variety, with only 1 household among the respondents using the hybrid variety called LVN10 (from Vietnam). The farmer gets the (hybrid) maize seed from a middleman through the credit system. For example, in the rainy season, the farmer will get maize seed from the middleman (in 2003, the price was 20,000 kip/kg with an interest rate of 5% of the total credit per month) by credit. When the maize is harvested, the farmer has to sell the maize to the middleman who provided the credit at the market price at that time. The middleman will deduct the debt and interest from the total income of the farmer and the remainder will be given to the maize farmer.

The average area and production (yield) of maize in this village is about 0.7 ha and 1.68 ton/ha respectively. In 2003, the average market price for maize was about 872 kip/kg. The current input cost of maize production in this village is due to maize seeds, chemical fertilizers, pesticides and bags. The highest cost of maize production is the labor cost, which accounts for about 90.4% of the total gross revenue of maize production.

In conclusion, the cost of maize production in Ban No. 11 was estimated at about 1,082 kip/kg, about 24.08% higher than the market price (872 kip/kg). This means that maize cultivation in this village is disadvantageous to the maize farmers and is not competitive.

3.3.No. 6 or Phonexay village, Xieng Ngern district, Luangprabang province

The population of Phonexay village consists of 98 households. There are two ethnic groups, namely Khamu, which accounts for 81.63% (80 households), and Lao Lum, which accounts for 18.37% (18 households). The total population is 611, including 312 women. The main occupations of the villagers are farming and raising livestock. Based on information from the head of the village, in Phonexay village there are 20 households with a surplus of rice for the year, and 65 households with sufficient rice for the year, 10 households with a rice deficiency for less than 4 months and 3 households with a rice deficiency for more than 4 months per year. The cultivation area in Phonexay village consists of 18.71 ha of lowland paddy fields (that can be cultivated in the dry season) and the average yield is 3 t/ha. Teak garden accounts for 26.8 ha and upland rice 47.25 ha, and the yield is 700 ton/ha. The area of job's tear is 48.4 ha, sesame 5.07 ha, mulberry trees (Posa) 36.97 ha, maize 3.17 ha and soy beans 16.15 ha. In addition, animal raising is widely observed in the village, particularly chickens, pigs, cows, buffalos and goats, comprising 60 buffalos, 151 pigs, 991 poultry and 20 fishponds. Since the main livelihood of the villagers is farming, they all have basic farming instruments. The main income of the villagers comes from job's tear production.

Table 4 Cost of maize production in Phonexay village

Item	Average
Area (ha)	0.3
Variety	Traditional
Total production (kg)	577
Yield (kg/ha)	1,990
Price (kip/kg)	693
Gross revenue (kip/ha)	1,378,831
Current input cost (per ha)	85,067
Seed	-
Fertilizer	-
Pesticide	85,067
Value-added	1,293,764
Labor cost	2,634,333
Labor input (man days/ha)	263
Wages	10,000
Machinery cost (Case 1)	-
Power tiller (Case 1)	-
Threshing cost (kip/ha)	-
Land rent (kip/ha)	460,000
Profit (Case 1)	(1,800,569)
Cost of maize production (kip/ha) (Case 1)	3,179,400
Cost of maize production (kip/kg) (Case 1)	1,598

Source: Survey in Luangprabang province, May 2004

The figures in Table 4 show that all the maize farmers used the traditional variety in the last season. The average area of maize cultivation in this village is very small compared to other villages in the same district (Xieng Ngern district) at about 0.3 ha per household. Most of the maize produced is used for household consumption. The remainder the villagers sell to middlemen. The average yield of maize in Phonexay village is about 2 ton/ha and the market price in 2003 was about 693 kip/kg. All the maize farmers use a pesticide called “Sewin”⁵ to protect the maize against insects and animals such as ants, mice, etc. during sowing. Phonexay village is the same as Ban No. 7 and Ban No. 11 in that most of the cost of maize production is incurred for labor used in the fields at each stage (slash and burn, land clearing, sowing, weeding and harvesting). The average labor used in the fields is about 263 person/day/ha. The cost of labor for maize production in this village is estimated at about 2.60 million kip. This amount is about 90.74% higher than the gross revenue of the villagers (1.38 million kip).

In conclusion, the estimated cost of maize production in Phonexay village is about 1,598 kip/kg, but the average market price in 2003 was only 693 kip/kg. From this result, we can see that maize production in this village is disadvantageous to the villagers in terms of market orientation.

3.4. Houay Hoi village, Nan district, Luangprabang province

Houay Hoi village is located in the Thong Khang region, about 10 kilometers from Nan district. The village shares a boundary with Dan village in the north and with Pa Don village in the south. Houay Hoi village is the focus for development. In the past, the main occupation of the villagers was upland cultivation. When the government launched its policy for the stabilization of shifting upland cultivation, Houay Hoi village was also on the government list for village development. The aim was to eradicate shifting upland cultivation activity in the village. In 1993, a project for stabilization of shifting upland cultivation was introduced in the village. At first, the project aimed to encourage farmers in the village to plant job’s tear, soybeans and sesame for commercial cash crops as their main occupation. The second occupation was livestock raising (pig raising) as a substitute for upland rice cultivation in the village. At that time, the project provided technical assistance to the villagers and a pig-raising rota was set up in the target households. The pig-raising rota meant that when a household received the mother pig under the project, they had to raise the pig until the household had about 3 piglets. Then the household sent one piglet and the mother pig to the project (the other two piglets belonged to the household) and the project passed them to the next household for raising. During that time, this system seemed to be successful, but there were some constraints on food for feeding the pigs in the village. Consequently, the project tried to encourage the villagers to plant maize for feed for the pigs in the village. Since then, the farmers have been able to extend their maize cultivation.

⁵ This pesticide comes from Monsanto company in Thailand and is distributed by middlemen in the region.

Houay Hoi village consists of 136 households and has a total population of 608, including 312 women. There are two ethnic groups in the village, Lao Lum which account for about 52.21% and Lao Theng or Khamu which account for 47.79%. The area of agricultural production in Houay Hoi village consists of 167 ha for maize and only 85 ha for upland rice cultivation, and the yield is about 1 ton/ha. Paddy fields account for 7.5 ha with a yield of 2 to 2.5 ton/ha. The animals consist of 125 cows, 200 pigs and 2,720 poultry. The main income of the villagers comes from maize production.

Cost of maize production in Houay Hoi village

Houay Hoi village changed from maize cultivation for household consumption to commercial cash crop production in 2000. During that time, middlemen came to promote maize production, provide seed and collect the maize from the farmers in the village.

Table 5 Cost of maize production in Houay Hoi village

Item	Average
Area (ha)	1.7
Variety	Takdokkeo 4, LVN10, CP888
Total production (kg)	6,049.0
Yield (kg/ha)	3,622
Price (kip/kg)	794
Gross revenue (kip/ha)	2,816,537
Current input cost (per ha)	48,333
Seed	48,333
Fertilizer	-
Pesticide	-
Value-added	2,768,204
Labor cost	716,548
Labor input (man days/ha)	71.65
Wages	10,000
Machinery cost (Case 1)	400,000
(Case 2)	650,000
Power tiller (Case 1)	400,000
(Case 2)	650,000
Threshing cost (kip/ha)	-
Land rent (kip/ha)	460,000
Profit	
(Case 1)	1,251,111
(Case 2)	1,001,111
Cost of maize production (kip/ha)	
(Case 1)	1,624,881
(Case 2)	1,874,881
Cost of maize production (kip/kg)	
(Case 1)	449
(Case 2)	518

Source: Survey in Houay Hoi village, September 2004

Maize cultivation in Houay Hoi village can be undertaken only in the rainy season. Some farmers in the village use a power tiller for preparing the land. Therefore, in the case of Houay Hoi village, the following assumptions are made: the cost of the power tiller (Case 1) is about 400,000 kip/ha and (Case 2) 650,000 kip/ha.

According to interviews with 10 households that implemented maize cultivation last year, the average area of maize of the households in this village is about 1.7 ha and the yield is about 3.622 ton/ha. As for the seed variety, the majority of the maize farmers (70%) use Thadok keo 4 variety, a traditional variety from Thakdok keo in Vientiane. The villagers receive it under the village development project. 20% of farmers use a new hybrid variety from Vietnam called LVN10 and 10% use the CP 888 variety. This is also a hybrid variety from Thailand. The middleman who comes to collect the maize produced in the village provides both hybrid varieties. The main current input costs include the cost of maize seeds, especially for villagers who use the hybrid variety. Labor costs account for a high proportion of the gross revenue of maize production, with weeding and harvesting accounting for around 25%, and machinery costs in Case 1 and Case 2 accounting for about 14% and 23% of the gross revenue respectively.

In conclusion, the estimated cost of maize production in Houay Hoi village, in the case of renting a power tiller, is 449 kip/kg in Case 1 (400,000 kip/ha) and 518 kip/kg in Case 2 (650,000 kip/ha). Compared to the average market price of maize in 2003 of 794 kip/kg, the market price is about 76.84% higher in Case 1 and 53.28% in Case 2 than the cost of the maize produced by the farmers (profit).

Ecological condition of target villages in Xayabury province

Similar assumptions used for Luangprabang province are also used for Xayabury province. According to interviews with maize farmers and the heads of the villages, the cost of labor in this region is higher than in Luangprabang province at around 10,000 kip/person per day (with the owner providing food for the laborers) and 13,000 kip/person/day (not providing food). As a result, the labor wage is assumed to be 13,000kip/person/day and the tractor rental fee for land preparation 450,000 kip/ha and 650,000 kip/ha in this province. Land rental in this region is 540,000 kip/ha.

3.5. Park Khem village, Kean Thao district, Xayabury province

The total population of Park Khem village is 878, including 421 women, and the village consists of 168 households, with 189 people of labor age (15 to 55), including 58 women. Most of the villagers belong to the Lao Lum ethnic group. The agricultural land consists of 29.95 ha of lowland paddy fields, 61.62 ha for upland rice cultivation, 193.38 ha for maize cultivation, 60.62 ha for groundnuts and 65.51 ha for red beans.

According to interviews with 10 households in Park Khem village, Kean Thao district, the average number of family members in the village is about 4.5 persons per household, with 3.1 persons of labor age (15 to 55). The average farm plot and area is about 2.2 plot/household and 3.29 ha/household respectively.

Cost of maize production in Park Khem village

Due to the difficulties of estimating the production cost of maize, similar assumptions as in the case of Park Khem village were therefore made. First, we assumed the wage rate of family or exchange labor as 13,000 kip/day. Second, the rental fee for the tractor varies greatly between households depending on the difficulty of the field (sloping ground) and the negotiations between the farmer and the owner of the tractor. So we assumed that the cost of using a tractor for land preparation is equivalent to the rental charge of the machinery: 450,000 kip/ha (Case 1) and 650,000 kip/ha (Case 2).

Maize is the main cash crop of farmers in Park Khem village. The average net income (profit) from maize production in Case 1 and Case 2 is around 700,000 kip/ha and 500,000 kip/ha respectively (see Table 5).

Table 6 Cost of maize production in Park Khem village

Item	Average
Area (ha)	2.2
Variety	CP 888
Total production (kg)	8,285
Yield (kg/ha)	3,807
Price (kip/kg)	597
Gross revenue (kip/ha)	2,271,930
Current input cost (per ha)	137,187
Seed	288,530
Fertilizer	9,990
Pesticide	-
Value-added	2,134,742
Labor cost	875,484
Labor input (man days/ha)	67
Wages	13,000
Machinery cost (Case 1)	561,464
(Case 2)	761,464
Tractor (Case 1) (kip/ha)	450,000
(Case 2)	650,000
Threshing cost	111,464
Land rent (kip/ha)	540,000
Profit	
(Case 1)	198,571
(Case 2)	(1,429)
Cost of maize production (kip/ha)	
(Case 1)	2,073,358
(Case 2)	2,273,358
Cost of maize production (kip/kg)	
(Case 1)	545
(Case 2)	597

Source: Survey in September 2004

Table 6 shows the result of maize production costs from interviews with 10 households in Park Khem village, Khean Thao district, Xayabury province. The average area of maize cultivation and yield per household in this village is around 2.2 ha and 3.81 ton/ha respectively. Most of the farmers in this village use CP 888 variety distributed by middlemen in the region. There are two prices of maize seed: maize seed under the credit system (4 months) is about 29,000 kip/kg (including interest), and under the non-credit system it is about 25,000 kip/kg. Normally, the amount of maize seed used in the fields fluctuates greatly depending on the experience of the villagers and the damage caused by insects or animals in the region. For example, some maize farmers use about 3 or 4 seeds per hole and some farmers use more than 5 seeds per hole to ensure growth despite animals or insects or the growth rate problem. The current input cost is mostly accounted for by the cost of maize seeds, and some farmers use fertilizer in their fields during the planting stage. Labor costs also account for a high proportion of the gross revenue of farmers at about 38.54%. Machinery costs include the tractor rental fee and threshing fee, accounting for about 24.71% of gross revenue in Case 1 and 33.52% in Case 2. The tractor and threshing machine are also

provided by a middleman, and the threshing charge is about 26,500 to 30,000 kip/ton.

In conclusion, when we evaluated the difference between the market price and the cost of maize production in 2003, we found that the market price was 597 kip/kg, while the estimated cost of maize production in Park Khem village in the case of a tractor rental fee (450,000 kip/ha) in Case 1 and (650,000 kip/ha) in Case 2 was 545 kip/kg and 597 kip/kg respectively. We concluded that the farmers in the village still gain benefit (profit) in Case 1.

3.6. Houay Luk village, Khean Thao district, Xayabury province

The total population of Houay Luk village is 1,535, including 763 women, and it consists of 310 households, with 873 people of labor age (15 to 55), including 240 women. Most of the villagers belong to the Lao Lum ethnic group. The agricultural land consists of 83.53 ha for lowland paddies, 118.28 ha for upland rice cultivation, 226 ha for maize cultivation, 16 ha for groundnuts and 10 ha for job's tear.

Houay Luk village is located in Khean Thao district. From 1988 to 1996 the main crop of the village was cotton. The estimated cotton cultivation at that time was about 3,000 ha. Now, cotton is disappearing because of the very low price of cotton compared to other crops, so the villagers are shifting from cotton to maize and to other cash crops such as soy beans, red beans, sesame, etc.

Maize is the main cash crop of farmers in Houay Luk village. The average net income (profit) from maize production in Case 1 and Case 2 is about 1,008,254 kip/ha and 808,254 kip/ha respectively (see Table 7).

Table 7 Cost of maize production in Houay Luk village

Item	Average
Area (ha)	2.12
Variety	CP 888
Total production (kg)	11,383
Yield (kg/ha)	5,369
Price (kip/kg)	651
Gross revenue (kip/ha)	3,493,768
Current input cost (per ha)	449,977
Seed	449,977
Fertilizer	-
Pesticide	-
Value-added	3,043,791
Labor cost	1,440,568
Labor input (man days/ha)	111
Wages	13,000
Machinery cost (Case 1)	594,970
(Case 2)	794,970
Tractor (Case 1) (kip/ha)	450,000
(Case 2)	650,000
Threshing cost	144,970
Land rent (kip/ha)	540,000
Profit	
(Case 1)	468,254
(Case 2)	268,254
Cost of maize production (kip/ ha)	
(Case 1)	3,025,514
(Case 2)	3,225,514
Cost of maize production (kip/kg)	
(Case 1)	563
(Case 2)	601

Source: Survey in Kean Thao district, Xayabury province, September 2004

The results of the interviews with 10 households are shown in Table 7. The maize variety which is used in this village is the same as that used in Park Khem village (CP 888) and is provided by a middleman in the region under the same system as in Park Khem village (29,000 kip/kg (with 4 months' credit) and 25,000 kip/kg (cash)).

The average maize cultivation area and yield per household of the 10 households is around 2.12 ha and 5.4 ton/ha respectively. The current input cost of maize production in Houay Luk village includes the cost of maize seed and the share of the gross revenue is 12.9%. Labor costs account for the highest proportion of total gross revenue at 41.23%. The machinery cost in Case 1 and Case 2 accounts for 17.03% and 22.8% respectively of the gross revenue of villagers.

In conclusion, compared to the market price of maize in 2003 (average 651 kip/kg), the estimated cost of maize production in Houay Luk village in the case of the tractor rental fee in Case 1 (450,000 kip/ha) and Case 2 (650,000 kip/ha) is 563 kip/kg and 601 kip/kg respectively. We found that the farmers in the

village gain benefit (profit) in both cases.

3.7. Nahin village, Khen Thao district, Xayabury province

The total population of Nahin Neua village is 931, including 469 women, and the village consists of 190 households, with 517 people of labor age (15 to 55), including 219 women. Most of the villagers belong to the Lao Lum ethnic group. The agricultural land consists of 70.61 ha of lowland paddy fields, 37.69 ha for upland rice cultivation, 260.56 ha for maize cultivation, 0.64 ha for groundnuts, 93.53 ha for red beans and 2.64 ha for sesame.

Table 8 Cost of maize production in Nahin village, Khen Thao district, Xayabury province

Item	Average
Area (ha)	1.6
Variety	Suwannee, CP888
Total production (kg)	7,041
Yield (kg/ha)	4,311
Price (kip/kg)	640
Gross revenue (kip/ha)	2,758,648
Current input cost (per ha)	195,750
Seed	195,750
Fertilizer	-
Pesticide	-
Value-added	2,562,898
Labor cost	1,767,814
Labor input (man days/ha)	136
Wages	13,000
Machinery cost (Case 1)	566,399
(Case 2)	766,399
Tractor (Case 1) (kip/ha)	450,000
(Case 2)	650,000
Threshing cost	116,399
Land rent (kip/ha)	540,000
Profit	
(Case 1)	(311,315)
(Case 2)	(511,315)
Cost of maize production (kip/ha)	
(Case 1)	3,069,963
(Case 2)	3,269,963
Cost of maize production (kip/ kg)	
(Case 1)	712
(Case 2)	759

Source: Village survey, September 2004

According to the interviews with 10 households, 50% of respondents in this village use the Suwannee variety of maize seed and the other 50% use CP888. All the maize seed is imported from Thailand (CP Company). The average market price of maize in 2003 was about 640 kip/kg. The average area and yield per household in this village is 1.6 ha and 4.3 t/ha respectively. Maize farmers do not use fertilizers or pesticides in their maize fields. The cost of seed accounts for 7.1% of gross revenue. The labor cost in

Nahin village is the highest cost, the same as in the other villages, accounting for about 64.1% of gross revenue. The second highest share of gross revenue is accounted for by machinery costs. This includes the fees for tractor rental and threshing, accounting for 20.53% (Case 1) and 27.78% (Case 2) respectively.

In conclusion, compared to the market price of maize in 2003 (average 640 kip/kg), the estimated cost of maize production in Nahin village in the case of the tractor rental fee in Case 1 (450,000 kip/ha) and Case 2 (650,000 kip/ha) is 712 kip/kg and 759 kip/kg respectively. We concluded that the maize farmers in this village make a loss in maize cultivation

3.8. Keng Sao village, Parlai district, Xayabury province

The total population of Keng Sao village is 741, including 329 women, with 270 people of labor age (15 to 55), including 124 women. The total area of the village is 2,275.52 ha, consisting of 680 ha of forest, 40.88 ha of lowland paddy fields, 2 ha of upland rice fields, 1,545.66 ha of maize fields, 6 ha of job's tear and 0.98 ha of mulberry trees.

Table 9 Cost of maize production in Keng Sao village, Park Lai district, Xayabury province

Item	Average
Area (ha)	2.9
Variety	CP 888
Total production (kg)	23,850
Yield (kg/ha)	8,229
Price (kip/kg)	726
Gross revenue (kip/ha)	5,976,626
Current input cost (per ha)	525,290
Seed	512,978
Fertilizer	-
Pesticide	12,312
Value-added	5,508,852
Labor cost	1,253,783
Labor input (man days/ha)	96
Wages	13,000
Machinery cost (Case 1)	672,179
(Case 2)	872,179
Tractor (Case 1) (kip/ha)	450,000
(Case 2)	650,000
Threshing cost	222,179
Land rent (kip/ha)	540,000
Profit	
(Case 1)	2,985,375
(Case 2)	2,785,375
Cost of maize production (kip/ ha)	
(Case 1)	2,991,252
(Case 2)	3,191,252
Cost of maize production (kip/ kg)	
(Case 1)	125
(Case 2)	388

Source: Survey in Keng Sao village, September 2004

Approximately 80% of maize farmers (interviewees) in this village started maize cultivation in 2000, because at that time there was demand for maize. Based on interviews with 10 households, most of the maize farmers in the village use a hybrid variety called CP 888 which comes from Monsanto and CP Company in Thailand. The average maize cultivation area and yield per household is 2.9 ha and 8.23 t/ha, respectively. The current input cost of maize production accounts for 9% of gross revenue. Some farmers use pesticides to protect the maize from insects and animals (ants and mice). Labor costs account for about 21% of gross revenue and machinery costs about 11.25% (Case 1) and 14.59% (Case 2).

In conclusion, compared to the market price of maize in 2003 (average 726 kip/kg), the estimated cost of maize production in Keng Sao village in the case of the tractor rental fee in Case 1 (450,000 kip/ha) and Case 2 (650,000 kip/ha) is 125 kip/kg and 388 kip/kg respectively. We found that the farmers in this village still gain benefit (profit) in both cases.

Ecological condition of target villages in Oudomaxay province

1. Oudom village

1.1. Methodology

The information and data relating to the production cost of maize were collected from the field survey at Ban Oudom, Houn district, Oudomaxay province in the north of Lao PDR from September 10 to 22, 2004. The information and data were obtained mainly from interviews with maize farmers (10 households⁶) in the village, supplemented by information from the head of the village, maize traders in Houn district, and the government authorities responsible for maize production (Provincial Agriculture and Forestry Office (PAFO), District Agriculture and Forestry Office (DAFO) and Agriculture Promotion Bank (APB) branches at provincial and district level). The survey used a questionnaire for farmers to collect qualitative and quantitative data. We used the data from 2003 instead of 2004, because the maize harvest in 2004 was not completed by most of the farmers.

Based on the information collected from the village, the maize farmers can be divided into two categories as follows: farmers who use a power tiller in their fields (6 households) and farmers who do not use a power tiller (4 households). In Oudom village, maize can be planted only in the rainy season, which starts in late April or early May until the harvest in July to early August.

⁶ 10 Households were selected by the head of Oudom village, and not randomly selected.

1.2. Result

In estimating the production cost of maize, we incorporated some assumptions. First, the dominant mode of labor used in the village is family labor and exchange labor. When employing exchange labor, farmers do not pay cash wages, but provide meals (once or twice). In such a situation, it is difficult to obtain the wage rate. However, one farmer we surveyed employed hired labor at a rate of 10,000 kip/day without meals. Therefore, we used this rate of 10,000 kip/day to calculate the labor cost, irrespective of family labor and exchange labor.

Secondly, it is difficult to estimate the cost of using a power tiller for land preparation. Instead of estimating it directly (through estimating diesel oil, other oil, labor, depreciation of machinery, etc.), we used the rental charge of a power tiller even when farmers used their own machinery. The rental charge of a power tiller for land preparation for maize, according to interviews with the village head and farmers, is 400,000 kip/ha in Oudom village. However, according to interviews in Donkeo village, it is 650,000 kip/ha. Considering that the rental rate is cheaper among relatives, we calculated the cost in two cases: Case 1 400,000 kip/ha and Case 2 650,000 kip/ha.

Table 10 Cost of production of maize in Oudom village in 2003

Item	Power tiller used	Power tiller not used
No. of households (hh)	6	4
Variety	LVN10	LVN10
Average Area (ha)	1.70	1.28
Total production (kg)	8,976	6,938
Yield (kg/ha)	5,280	5,441
Price (kip/kg)	792	813
Gross revenue (kip/ha)	4,179,922	4,420,956
Current input cost (kip/ha)	334,667	418,193
Seed (kip)	315,833	389,318
Fertilizer (kip)	-	-
Pesticide (kip)	2,167	3,875
Bags (kip)	16,667	25,000
Value-added (kip)	3,845,256	4,002,763
Labor cost (kip/ha)	810,833	1,443,750
Labor input (man-days/ha)	81	144
Land preparation	12	35
Sowing	14	22
Weeding	25	42
Harvesting	30	45
Wages (kip)	10,000	10,000
Machinery cost (Case 1)(kip/ha)	558,397	143,710
(Case 2)(kip/ha)	808,397	-
Power tiller (Case 1)	400,000	-
(Case2)	650,000	-
Threshing cost (kip/ha)	158,397	163,235
Profit	-	-
(Case 1)	2,476,025	2,395,777
(Case 2)	2,226,025	-

Cost of maize production (kip/ha)	-	
(Case 1)	1,703,897	2,025,178
(Case 2)	1,53,897	0
Cost of maize production (kip/kg)	-	
(Case 1)	323	372
(Case 2)	370	0

Source: Estimated by the authors based on the survey in September 2004.

Table 10 shows a comparison of the cost of maize production in the two categories (with and without using a power tiller for land preparation).

All the surveyed farmers used the same variety called LVN10 (a hybrid variety purchased from

Vietnam) which was provided through APB (Agriculture Promotion Bank) or from middlemen, under the supervision of the DAFO.

The average area and yield of maize were not much different between the two categories of farmers: 1.28 to 1.70 ha/farmer and 5.44 to 5.28 t/ha. The farmers sold their maize to middlemen at about 800 kip/kg in 2003.

The current inputs used for maize production were hybrid seed, pesticides and bags. Chemical fertilizers were not used at all. Pesticides (DDT or Folidon) were sometimes used for protection against ants and mice. The interest on an ABP loan is included in the price of the hybrid seed, which was approximately 18,000 kip/kg. Normally, there are two systems for providing seed to farmers: first, the APB provides seed on credit and farmers have to pay the bank back (with interest) in the harvest season (after 4 months), and second, when farmers get credit from middlemen, they have to sell maize to that middlemen (at the market price at that time). Middlemen also provide fertilizers, pesticides and other inputs.

The figures show that the average labor cost in category 2 was higher than category 1 by 43.84% (about 63 man-day/ha). If we use 10,000 kip/ha as the daily wage rate, the difference is 630,000 kip, which is more or less equivalent to the cost of a power tiller. This means that our estimates based on assumptions are reasonable.

In conclusion, the production cost of maize in Oudom village was estimated to be 323 to 372 kip/kg, which was substantially less than the market price (about 800 kip/kg), leaving a large amount of surplus (profit) in the hands of the farmers.

2. The case of Donekeo village

2.1. Methodology

The method used in Donkeo village was similar to that used in Oudom village. The information and data were obtained mainly from interviews with maize farmers (4 households) and supplemented by information from the head of the village.

Maize cultivation in Donkeo village is characterized by double cropping in the rainy and dry seasons. The first cultivation in the rainy season starts in late April or early May until the harvest in July or early August and the second cultivation in the dry season starts from early or mid-August until the harvest in late October or early November. Maize cultivation in the dry season is mainly confined to the area along the river or to wetlands where water is available.

2.2. Result

Considering the difficulties in estimating the production cost of maize, the same assumptions as in the case of Oudom village were made. First, we assumed the input wage rate of family and exchange labor as 10,000 kip/day. Second, we assumed that the cost of using a power tiller for land preparation is equivalent to the rental charge of the machinery: 650,000 kip/ha.

Table 11 shows a comparison of the maize production cost in Donkeo village in the rainy season and dry season. The same variety of LVN10 is used in this village and in both seasons. On average, 44.6% of the land (0.78 ha out of 1.40 ha) was under double cropping for the sample farmers. The yield was lower in the dry season because of water stress, but the farmers got a higher price. The result was that gross revenue was higher in the dry season than in the rainy season.

Table 11 Cost of maize production in Donkeo village

Item	Average wet season	Average dry season
Area (ha)	1.40	0.78
Variety	LVN10	LVN10
Total production (kg)	8,225	3,950
Yield (kg/ha)	5,875	5,097
Price (kip/kg)	793	1,000
Gross revenue (kip/ha)	4,655,938	5,096,774
Current input cost (per ha)	364,063	393,119
Seed	298,438	320,833
Fertilizer	-	-
Pesticide	9,375	16,036
Bags	56,250	56,250
Value-added	4,291,875	4,703,655
Labor cost	1,268,125	1,494,554
Labor input (man-days/ha)	127	149
Wages	10,000	10,000
Machinery cost	826,250	802,903
Power tiller	650,000	650,000
Threshing cost	176,250	152,903
Profit	2,197,500	2,406,198
Cost of maize production (kip/ha)	2,458,483	2,690,576
Cost of maize production (kip/kg)	418	528

Source: Survey in village, September 2004

Chemical fertilizers were not used in this village.

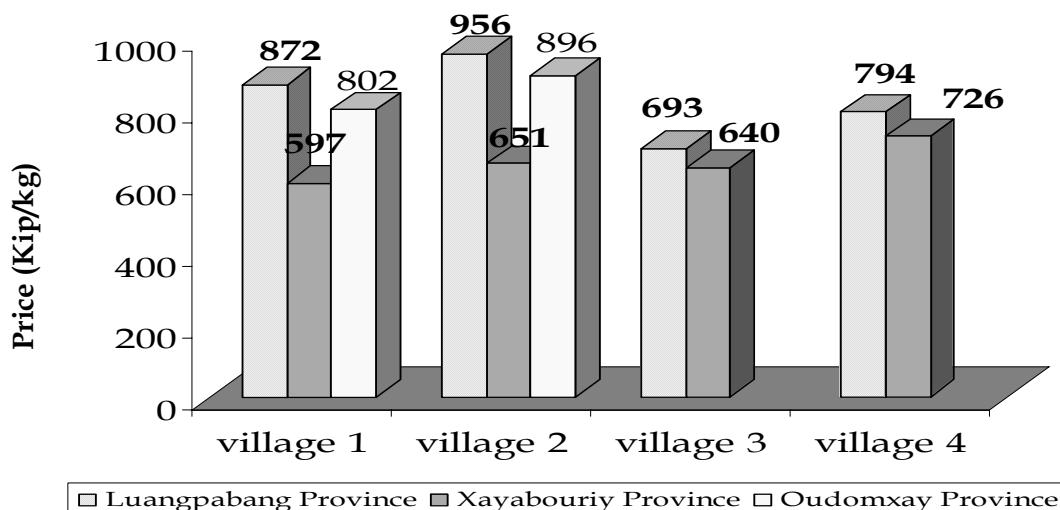
In conclusion, the production cost of maize in Donkeo village was estimated to be 418 kip/kg in the rainy season and 528 kip/kg in the dry season, which was substantially higher than the market price (793 kip/kg and 1,000 kip/kg respectively).

4. Comparative cost of maize production in Luangprabang, Xayabury and Oudomxay provinces

4.1. Market price of maize

The maize market price in Luangprabang province fluctuates greatly and is higher than in Xayabury Province (see Chart 3). The main reason for the price difference is as follows:

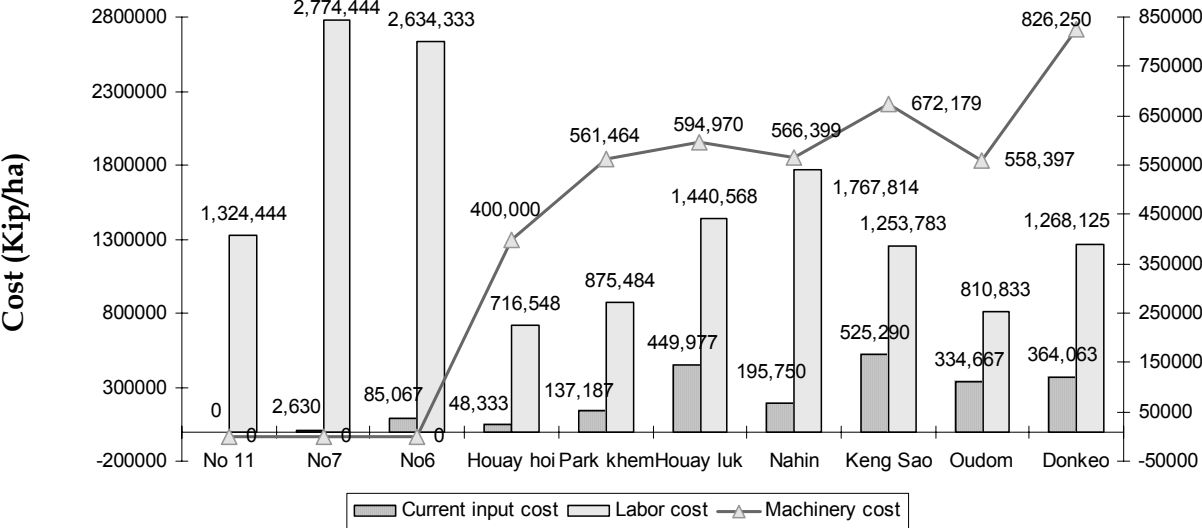
Chart 3 Market price of maize production in 2003



Firstly, the distribution channel used by middlemen in Luangprabang province is shorter than in Xayabury province; secondly, the market price was affected by bird flu disease that occurred in Thailand last year. During that time, middlemen from Thailand did not purchase any maize from Lao PDR. On the other hand, there was no problem with maize demand from China.

4.2. Current input cost, labor cost and machinery cost per hectare

Chart 4 Comparison of current input cost, labor cost and machinery cost of maize production per hectare in each village

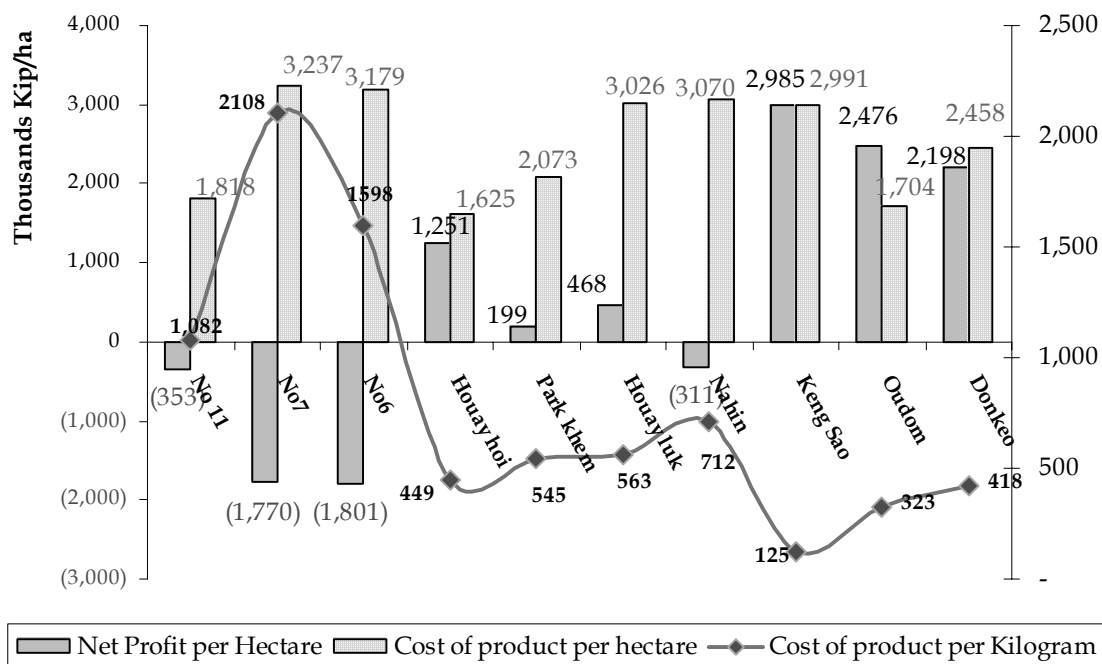


When we compared the cost of maize production in each village, we found that the highest labor cost exists in No. 7 and No. 6 Villages in Xieng Ngern district, Luangprabang province. The reason for this is that villagers in this region do not use any machinery in their fields, except in Houay Hoi village. The current input cost is mainly accounted for by maize seed. Most of the villages in Xayabury province, Houay Hoi village in Luangprabang province and Oudomaxay province use the hybrid maize varieties LVN10 or CP888, and maize farmers have to purchase seeds every year.

4.3. Net profit and cost of maize production per hectare and kilogram in the villages

According to Chart 5 below, maize production in Luangprabang province, especially in No. 7 and No. 6 villages, is not competitive because the cost of production in those villages is higher than the gross revenue, resulting in a deficit in those villages. Only Houay Hoi village in Luangprabang province and all the villages in Xayabury province gain much profit from their maize cultivation.

Chart 5 Comparison of the profit and cost of maize production per hectare and kilogram



High profit is seen in Keng Sao village of about 3 million kip per hectare. The factor underlying this high profit is the very high yield in this village of about 8.23 tons per hectare. Consequently, the cost of maize production per kilogram is lower (125 kip/kg) than all the other villages.

IV Conclusion and recommendations for the government

Based on the findings of the survey in Luangprabang, Xayabury and Oudomaxay provinces, maize production has the potential for expansion and can be competitive with neighboring countries because there are two big markets (demand), China and Thailand, in the north to absorb agricultural production from Lao PDR. In addition, the road construction project from Khuming to Thailand through Oudomaxay and Luanamtha provinces provides a good opportunity for Laos to utilize the road to facilitate exports to these countries. Maize production is a source of income for people at grassroots level to eradicate their poverty. It is an alternative cash crop for villagers and can contribute to the success of government policies such as stabilization of shifting cultivation, poverty alleviation and cash crop promotion.

According to the results of the survey, maize production has some benefits for villagers in terms of economic advantage, and many government organizations are trying to promote this product at provincial and central level. In the long term, the government or agencies which are responsible for this issue should be aware of some negative impact factors.

Firstly, the high profit from maize cultivation encouraged villagers to expand their maize fields. In fact, based on land allocation by the government, farmers or villagers have only 3 plots of land for agriculture (about 3 ha), so in future, farmers/villagers will try to extend the agricultural area (maize fields) into the forest area (especially in protected forests and consumption forests). This situation occurred in some villages in Xayabury province (based on an interview with the deputy director of PAFO, Xayabury province). From this result, the government at district, provincial and central level should introduce measures to prevent or control this issue in the future.

Secondly, there are the issues of soil fertility and soil erosion. Based on interviews with villagers, the fallow period of land is very short, about one or two years. Mostly farmers practice maize cultivation in “Hi Lok” (young upland fields) year by year. Therefore, there is no chance to recreate or improve the existing soil fertility. In addition, usually farmers do not apply any fertilizers to their maize. Consequently, the yield declines year by year. To solve this problem, there are government projects that attempt to encourage farmers to plant beans in the fields in conjunction with other cash crops and use bio-fertilizer to improve soil fertility.

Soil erosion is now a very serious issue in Xayabury province, because farmers use heavy machines (tractors) for land preparation, especially in the upland area. In the fields, there are no big trees to prevent soil erosion from rain. Now, many NGOs and government agencies are trying to solve these problems. In the long term, if Luangprabang and Oudomaxay provinces do not introduce some policies to solve these issues, they will face the same problem as Xayabury province.

The third issue concerns variety. Most maize farmers are using a hybrid variety (improved variety from Vietnam or Thailand). This means that most maize production in Laos depends on seeds from an outside country (Laos cannot produce seeds to distribute to farmers). In addition, the hybrid variety is also costly, because it is impossible to use the seeds a second time like traditional varieties, so farmers have to pay for the seeds every season. In addition, for efficiency the hybrid variety needs chemical fertilizers, pesticides and so on. However, some maize traditional varieties are more resistant to disease than maize hybrid varieties. Unfortunately, some farmers in the villages still collect the hybrid seeds for planting in the next season and still use dangerous pesticides (DDT or Folidon) in their fields, because they do not have access to any information or technical guidance for maize cultivation from the organizations concerned. To make maize production sustainable, the government must establish a laboratory to conduct more research on the genetics of this product and improve new seed varieties for distribution to the farmers.

The fourth issue concerns the marketing channel. Maize from Laos has the potential to be exported to neighboring countries such as Thailand and China. However, there is also high competition because all the neighboring countries (Thailand, China, Vietnam, Cambodia) also produce this kind of product. In the future, if they want to be competitive, the government should improve the quality of maize, especially the

moisture content. Now, the moisture content of Laos maize is around 17% to 18%, but the standard is 14% to 15%⁷. The reason for the high moisture content is the storage technique of the villagers. Normally, the villagers just use the traditional method of storing maize under the house until the trader comes to purchase it. On the other hand, there are no modern tools to measure the moisture content and the traders only measure the moisture based on their experience. In the future, the government must set up a committee or agency to measure and guarantee the moisture content, in order to improve maize production in Lao PDR and enable it to compete with neighboring countries.

⁷ Interview with wholesaler in Xayabury province

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