

Sub-sector Strategy

Longan Sub-sector

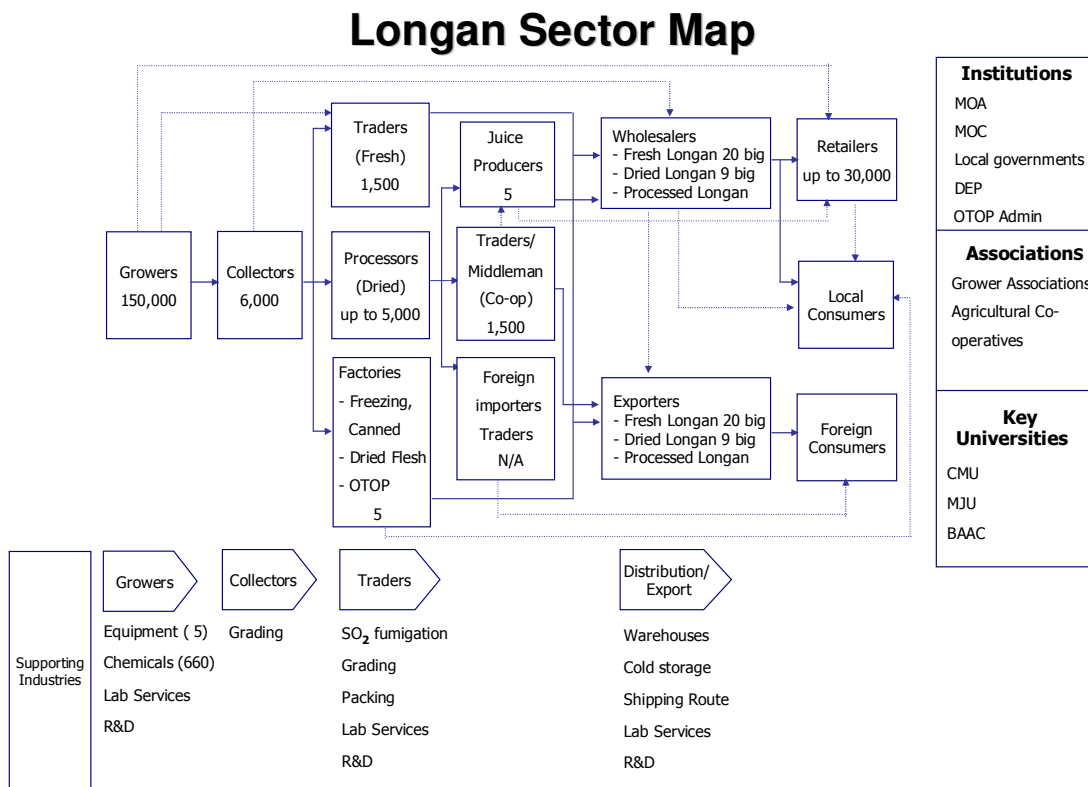
Importance of the Sector

Longan is a sub-tropical fruit native to Asia. It is sweet, crisp and has a unique juicy flavor. All major retail chains offer longans to the ethnic Asian market, usually displaying them with tropical and/or exotic fruits i.e., rambutan and lychee. Longan has the advantages of a longer shelf life than both, but is less known and its brown color is less appealing.

About 85,000 hectare (ha.) of land in the Upper North of Thailand are covered by longan plantations. Major longan growing provinces include Lamphun, Chiang Mai, Chiang Rai, Nan, Phra Yao, Lampang, Phrae and Chanthaburi with 90% of total longan being grown in the neighboring Chiang Mai and Lamphun provinces. The production area has shown a steady growth over the past 10 years with annual production output reaching 650,000 tons in 2004 (figure 2). The revenue generated by longan was approximately 6,000 - 8,000 million Baht in 2003, and it contributed 1.5% of Thailand's total agricultural value and 0.14% share of the country's GDP (Eureka Report, 2004).

The longan industry provides employment to estimated 230,000 people (figure 1).

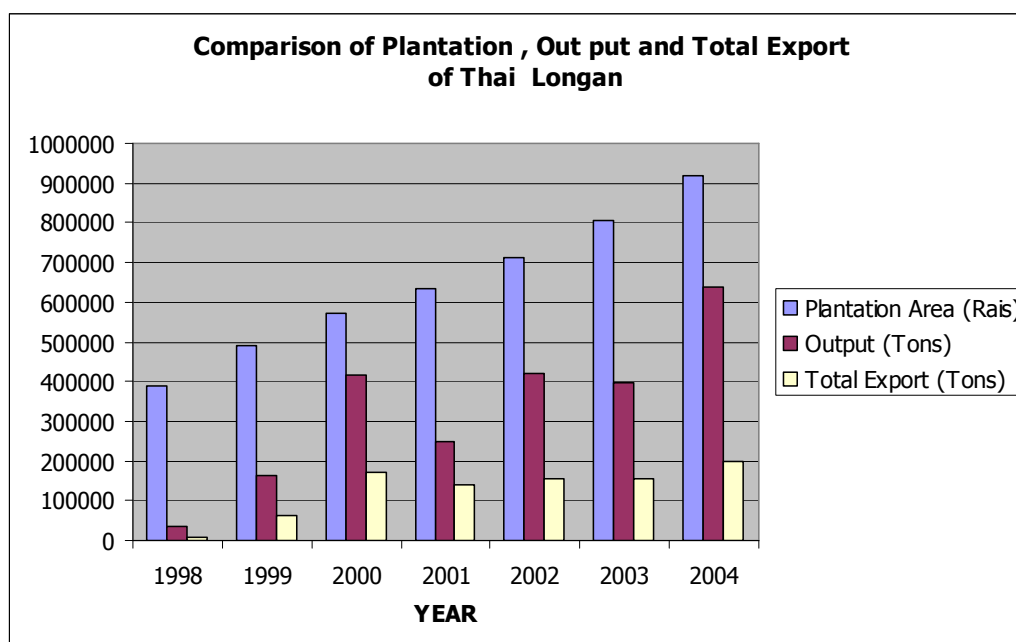
Figure 1: Longan Sector Map



There are approximately 100,000 farmers growing longan, 80% of which are small privately owned farms of up to 1.25 ha. There are 6,000 collectors who employ an additional 70,000 seasonal labourers during the harvesting period; 1,500 middlemen/traders; 6,000 SME and micro-businesses involved in longan's dehydration with an average production of 6 tons per month, another 30 medium-size driers and 10-15 large processing units, operated by large longan exporters. From the total Thai longan production, 65-70% is dehydrated, another 2-3% is canned, frozen, converted into syrups or juice. The remaining 30% is consumed in the fresh form mainly during the harvest season between July and September.

Longan is considered to be one of the top Northern Thailand export revenue earners. 32% of the total output is exported overseas (figure 2), mainly to China, Hong-Kong and Indonesia. According to the Department of Customs, longan exports have grown approximately 16% annually in terms of volume and 12% in terms of value for the past 10 years. In 2004, Thailand exported approximately 200,000 tons of longan for 4,000 million Baht, with fresh longan representing 58% of the total export quantity (figure 3) and 52% of the total export value (figure 4).

Figure 2: Plantation Area and Output of Thai Longan

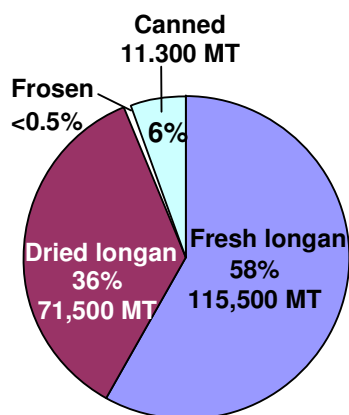


Source: Agricultural Economic Resource Center, 2005

Since the plantation area and the supply of longan continue to increase, the government policy aims to promote value added and output efficiency of the high quality fruit to meet export market expectations. One of the key policies is to enhance competitiveness through the adoption of Good Agricultural Practices (GAP). Part of the budget from the Farmer Assistance Measurement Policy Committee is dedicated to support the development of new longan packaging to attract more customers. The Agriculture and Co-operatives Ministry plans to spend some of its budget on marketing campaigns to stimulate domestic and international demand. In response to the policy, this sub-sector has a well-organized support from the institutions, associations and local government agencies such as Department of Agriculture (DOA), Chiang Mai University (CMU), Maejo University, Provincial Governments of Chiang Mai and Lamphun, including the Longan Co-operative Associations in many districts. These agencies are capable of

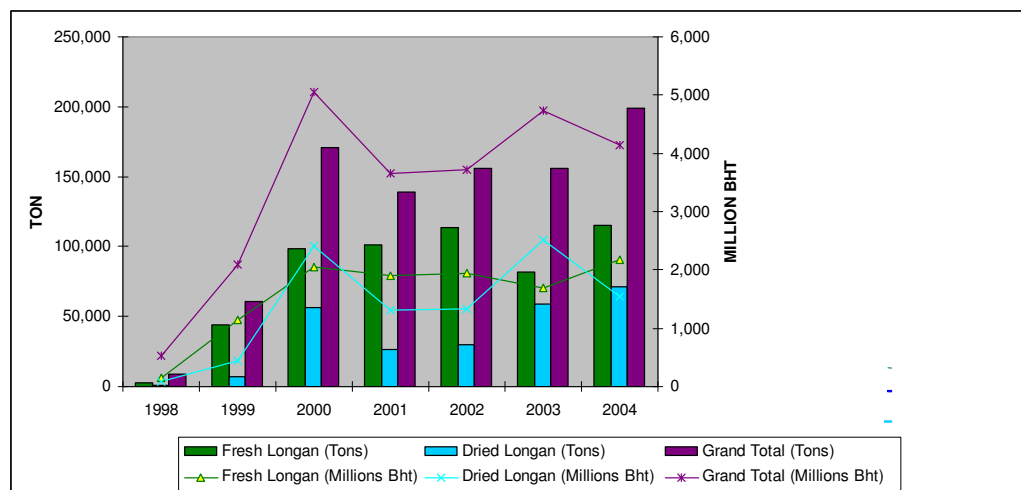
facilitating the sector's transition towards higher competitiveness and represent excellent partners for GTZ involvement.

Figure 3: Total Export of Longan Products (2004, Tones)



Source: Thai Department of Customs

Figure 4: Export Value of Longan Products



Market and Competition

Thailand is the biggest producer and exporter of longan in the world, with the global market share of approximately 60-80%. Although, there is no global longan industry, per se, as longan is mainly distributed regionally with some minor exceptions. Longan is very popular among the Chinese population and as it can be seen from the figures below, the major export markets are the countries with the large Chinese communities.

According to industry experts, the expansion of longan production in several Southeast Asian countries has not yet saturated regional markets and there continues to be a demand for longan exports to China, Chinese consumers in many East-Asian countries and other overseas markets.

Fresh longan is mainly exported to China, Indonesia and Hong Kong (these three countries account for 90% of fresh longan exports) (figure 5). Dried longan is almost exclusively sold to China (77% of dried longan exports), and canned longan is mainly consumed in Malaysia, Singapore and Indonesia (65% of canned longans exported). Overall, Thai exports closely mirror the total global exports of longan to these countries (Eureka Report, 2004).

Figure 5:

Fresh longan – the top 3 Thai export markets:

Country	2002		2003		2004	
	Volume (Tones)	Value (Million Bhat)	Volume (Tones)	Value (Million Bhat)	Volume (Tones)	Value (Million Bhat)
1. China	6,407	99.29	12,771	226.45	49,427	803.96
2. Indonesia	147	3.53	22,872	560.42	33,190	707.86
3. Hong Kong	66,046	947.60	31,528	536.34	21,081	323.38
Total Exports:	113,168	1,940.32	81,924	1,697.52	115,480	2,166.03

Dried longan – the top 3 Thai export markets:

Country	2002		2003		2004	
	Volume (Tones)	Value (Million Bhat)	Volume (Tones)	Value (Million Bhat)	Volume (Tones)	Value (Million Bhat)
1. China	28,546	1,210.14	56,788	2,268.97	54,787	1,038.55
2. Hong Kong	523	65.49	706	122.29	2,434	143.14
3. Korea	333	12.91	447	16.29	162	6.04
Total Exports:	29,916	1,326.13	59,157	2,511.63	71,562	1,540.99

Canned longan – the top 3 Thai export markets:

Country	2002		2003		2004	
	Volume (Tones)	Value (Million Bhat)	Volume (Tones)	Value (Million Bhat)	Volume (Tones)	Value (Million Bhat)
1. Malaysia	3,986	119.59	5,430	178.87	3,262	95.89
2. Singapore	3,083	110.97	3,197	116.87	2,590	89.92
3. Indonesia	760	26.98	1,035	37.24	1,566	55.06
Total Exports:	11,506	412.69	13,541	495.64	11,321	403.29

Source: Thai Customs Records

World longan production has been growing steadily over the past five years. China has developed significant areas of longan plantations, however, it is mainly used for domestic consumption, making China a single largest importer of longan from Thailand. Other producers are Laos, Myanmar, Vietnam, Taiwan and Australia, with Vietnam emerging as the main competitor due to low labor costs and its rapidly expanding plantation area.

At the moment, Thailand is able to maintain an advantage over its regional competitors in terms of fruit quality, consistency and reliability of product supply as well as better dehydrating technology. Local varieties (mainly caused by mutations) are good with the positive ratio between size and seed, smell, aroma, sugar content, firmness of flesh, appearance in colour and other quality features are still ahead of Chinese and Vietnamese varieties. In addition, Chinese and Vietnamese just started dehydrating longan and have less experience in processing techniques.

Longan production in China is not reliable either in terms of quantity or quality of fruit supply, this is because the climate is too cool and results in the severe damage of the production yield. However, China is trying hard to get Thai varieties in order to produce similar quality longan and substitute it for Thai imports.

The fundamental weakness of longan sector in Thailand is that 80% of its production is done by small family-based farms which are not as commercially scaled as they are in China, Australia and other countries. Longan farmers are scattered and focus on earning a living rather than running a business and lack entrepreneurial drive. Since the growers have cash flow problems, they lack the interest to invest in production technology and farm management techniques.

In fact, Thailand is lagging behind its competitors in terms of plantation techniques: Thai growers do not apply mechanical pruning after harvest as it is done in Vietnam, China and the USA to control the height of the tree and increase yield of premium grade fruit.

In the quality control area, there are problems with inconsistent grading and a lack of grading standards. The lack of cold storage and inability to effectively control the level of Sulphur Dioxide which is applied to extend the shelf life of the fresh longan, can lead to a loss of the market share in the most attractive high-end health conscious consumer segment.

Sector Strategy

As Thailand's domestic market is unlikely to absorb the continuing output expansion, increasing the export sales to a wide array of countries (to counter the heavy reliance on a single Chinese market) is critical to the continuing viability of the longan industry.

Although, for the time being, Thailand has a considerable comparative advantage among its regional neighbors in terms of quality and consistency of longan supply, this advantage is likely to disappear in the next 3-5 years. As Vietnam, China and Australia continue expanding their commercially scaled plantation areas, further driving down production costs, as they continue investing significant efforts into research and development of better longan varieties and farm management techniques, the development of a strategic plan to enhance Thai longan industry's competitiveness is required. The strategy should focus on **increasing competitiveness of longan produce in exports markets**, and, specifically, on quality improvement, cost reduction and process and product innovation.

In terms of market segments, the most attractive opportunities exist in the premium grade segment from the higher-income health conscious customers. Specifically, demand for fresh, good quality and large longan is increasing in Hong-Kong and China and consumers are willing to pay higher prices for out-of-season fruit. At the moment, Thai producers are well-positioned in the organic segment as they are the only suppliers of organic longan. According to industry experts, the market for fresh organic, non-fumigated longan can be expanded, while the market for mainstream fumigated products can be at least maintained if properly upgraded in terms of controlled amounts of Sulphur Dioxide residues. For dried longan, quality improvement and cost control are critical in order to maintain or expand market shares in the face of the increasing competition from Vietnam.

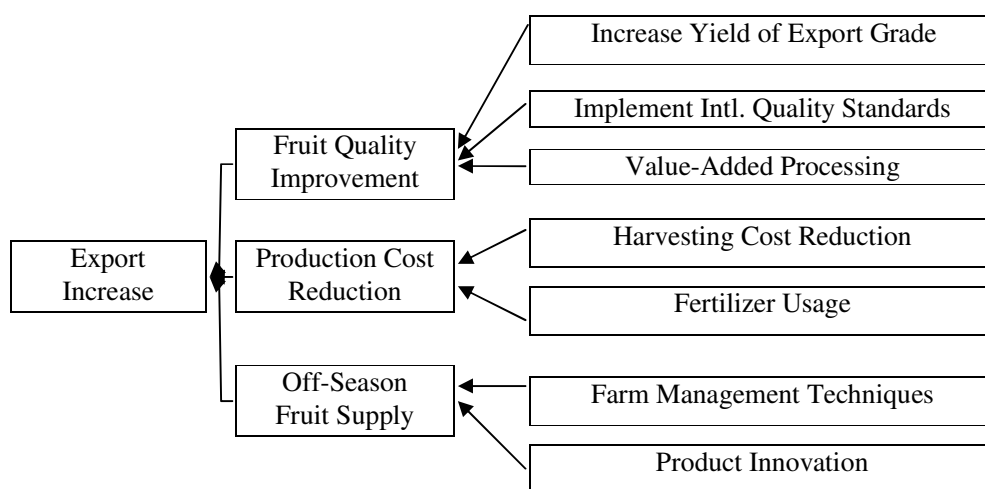
Other countries with sizable Asian communities in South-East Asia, Canada and the USA should also be targeted. Although, longan seems to be not very attractive to westerners due to its high sugar content, there might be some opportunities in the EU and the US markets, using dried longan for cereals and/or dairy products, if product health benefits are scientifically proven and communicated. According to various research, the active ingredients found in longan are antioxidant and anti-carcinogenic.

The Middle East might provide additional market opportunities, given that sweet and dried fruits are very popular in the Middle East. So far, there have been no efforts of introducing longan to this region.

Programme Focus

As a result of focus group discussions, brain storming sessions, research surveys of the value chain participants and validation workshops, the programme has identified the following most important competitiveness issues to focus its interventions on: quality improvement, cost reduction and off-season fruit production (figure 6).

Figure 6: Program Focus Diagram



Quality improvement will be achieved by improving the yields of export grade longan (Grade AA and A) from current 60% to targeted 70%, which can be attained through the introduction of pruning techniques. Farmers awareness of the international quality standards as well as the implementation of reliable lab tests and certification services,

will allow Thai producers to better meet the requirements of foreign buyers. Various value added processes such as cutting the fruit branches and developing of the retail (as oppose to bulk) packaging as well as introduction of the cold storage will make Thai longan more appealing to the high-end export markets.

The introduction of pruning techniques will also make trees shorter, making harvesting process less time consuming and, hence, reducing labour costs. Harvesting costs can also be reduced by more efficient use of fertilizer and other chemical inputs. Farmers' awareness of the use of organic fertilizer will increase their use of environmentally sustainable production systems. Introduction of farm management techniques, and specifically zoning of the land and off-season cropping, will allow farmers to produce off-season longans which will command much higher prices among high-income customer segments in Hong Kong, Singapore and Malaysia and, hence, will increase farmers' incomes from the longan plantations. Facilitation of product innovation leading to development of demand driven new products from longan (such as cereals, dairy products and beverages) will increase off-season fruit consumption both domestically and in the export markets.

Interventions

With the above project strategy, the Programme for Enterprise Competitiveness is planning to improve the competitiveness of Thailand's longan sub-sector through the following interventions:

On-going interventions

- **Establishment of a Farm Management Service Provider:** The programme partners with Maejo University and Industrial Promotional Center (IPS 1) to establish a university-base farm management service provider, which will offer technical assistance to small and medium longan growers in different areas of farm management such as pruning technique, flowers setting, fertilizer usage, soil nutrient management, etc. Longan cultivation has been studied for several years by Maejo University, and the knowledge gained so far is now ready for dissemination. In the process of this research and experimentation, the professors, researchers and graduated students from Maejo University have developed their competences and are willing to work as a corporate team to provide consulting services and the farm management techniques to the SMEs in longan sub-sector. This service solution will help farmers to improve the fruit size quality, increase yield of premium grade longan, reduce harvesting costs and institute off-season cropping.
- **Grading and Cleaning Process Innovation:** The programme will work with Thai Institute of Science and Technical Research (TISTR) to develop equipment for fresh longan processing, and specifically, grading and cleaning machines. The currently used grading machines do not have precision required to sort out export grade longan, resulting in additional grading by exporters. As for the new cleaning machine, it will be designed to replace manual cleaning of fruit skin contamination and should decrease instances when the export shipments are returned due to fruit contamination. Better grading and cleaning processes will also help exporters to target higher-end foreign buyers, significantly increasing potential price premium for Thai longan.
- **Product Innovation:** This intervention aims to explore a number of the commercially viable innovations for potential SMEs investments. The programme will work with National Innovations Agency (NIA), Research and Development and Innovation Service Center (R&DISC) at Federation of Thai Industries (FTI) and IPC 1 to select a number of

commercially viable product innovation ideas from various research centers. Potential product innovations can include a new range of longan products like food supplements and medicines based on the active ingredients contained in the fruit. Further activity is to create awareness of the selected innovations to the SMEs investors through the seminars and/or innovation fair. The programme will also assist in providing financial support to the SMEs investors by linking them to various incubation centers like NIA, Northern Science Park and Incubation Centers at the universities, hence, facilitating SMEs' investment in the implementation of these innovations. Overall, this intervention will facilitate R&D and new product development services at the research institutions by generating demand for commercially viable innovations from SMEs.

Raw Intervention Ideas

- **Export Markets Study Tour:** The Programme will work with the Department of Export Promotion (DEP), Thai Fruit Export Association, CCC and IPC1 to arrange a trade fair participation or industry logistics study trip to Australia, New Zealand or China for the longan exporters. The main objective of this study tour is to gain competitive information on locally produced fruits, learn industry logistics and trade constraints. The knowledge gained from the trip could be applied in Thailand to improve the export of longan products.
- **Cold Chain Management and Post-Harvest Handling:** Cool storage and transportation are necessary to serve the growing demand from the premium markets. The programme will work with IPC 1 to develop the comprehensive chain of cool storage facilities and post harvest handling processes to increase quality of the product in the export shipments.
- **New Packaging Design:** The project will work with exporters and traders to identify fresh longan's product attributes attractive to the high-end export buyers, and will work with packaging supplier to design individual packaging promoting these attributes.
- **Good Agricultural Practices (GAP) Standards Awareness:** The programme will work with the Department of Agriculture (DOA) and a Farm Management Service Provider to promote the GAP standards in longan production. The lack of farmers' awareness about GAP requirements and how to obtain the appropriate certification, can impede exportability of Thai longan in the future when regional competition intensifies.
- **Access to Credit for Process and Product Innovation:** The programme will work with Bank of Agriculture and Agricultural Cooperatives (BAAC) to improve farmers' access to credit for working capital needs and technology investment. It will also work with the SMEs Bank to provide credit to the interested SMEs to invest in the process or product innovation.
- **Trade Fair Participation for the Middle East Market:** In cooperation with the department of Export Promotion, promote Thai longan at the trade fairs in the Middle East. This exposure may result in the expansion of longan exports into the Middle Eastern markets.

Reference

The followings are the lists of the reference materials that have been used in the compilation of the sub-sector strategy:

1. Government documents:

- Production and Market information of Longan in Thailand; Mar. 2005
Office of Agricultural Economics, Department of Agriculture
- Study of Longan Production and Market information in China; Feb. 2003,
Bureau of Agricultural Economic Research.

2. Export Statistical reports from the Customs Department.

3. Websites

<http://www.doa.go.th/onestop/exporter/webeng.html>

<http://www.caltreefruit.com> ; International market report

<http://wwwjournalink.or.th>

<http://english.peopledaily.com.cn>

<http://vietnamnews.vnagency.com.vn>

<http://www.newcrops.uq.edu.au/newslett/1-newslet.htm>

<http://www.crfg.org>

<http://www.rirdc.gov.au>

4. Research reports

- Potential of Northern Economic Fruits; Researched by NRCT-DFG
- Asian and Exotic Fruit; LONGAN @ NSW Agriculture, 2000
Thai Farmers Research Center Co., Ltd.
- Development of Export Markets for Longan Products; researched by Khonkean University.