



**Formulation of Case/ Industry Studies to Develop ASEAN Baselines and
Benchmarks for SMEs in Three Identified ASEAN Priority Sectors Study
(IND/SME/09/003/REG)**

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Case Title : Groundnut Industry in Edible Oil in Myanmar

Industry : Agro based Food Processing (Edible Oil Mill)

Country : Myanmar

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Ms. Thawdar Htwe and Mr. Pyi Soe Oo
Team of the Case Writer for Myanmar.

Case Study of Ngwe La Min Peanut Oil Mill.

The following facts and analysis are presented out of empirical study conducted recently on privately owned large size groundnut oil mill situated in Yangon division.

Location	Connected load	Category	Crushing Capacity(product) (tonne/8 hr)	Year of installation	Type	Name of mill
Hlegu	90 Hp	Large	1.72	1982	expeller	Ngwe La Min

Man power	Operating Hours per month	Crushing capacity of peanuts(raw)(ton/8 hr)	Peanuts in ton purchased from local farmers on credit terms from Jan to Mar.	Peanuts purchased from market directly in cash (ton per year)	Average Groundnut oil Sale volume in ton/month.
13	123	4.3	165	627	26.4

Ngwe La Min Oil mill was established in 1974 with a small expeller, crushing of two barrels per ten hours. Owner is U Maung Maung. In the years of establishment, there had been sufficient groundnut supplies for milling in the nearby villages as most of the farmers traditionally growing the groundnuts or sesame in their farm land when paddy was harvested in post monsoon season. In 1982, oil mill was upgraded to large expeller which can process 10.75 tonnes of groundnuts in 8 milling hours in the mill owner's innovative idea. After the years 1990, there was a significant change that plunged the oil cropping in the region due to paddy double cropping was a mandatory for a farmer as their farmland were fed by water irrigated. The other inducement was alternative seasonal pulses and beans that booming with competitive market price offered by the exporter's intermediaries. Simultaneously, imported edible oil launched into domestic market, was a serious blow to the SME of sesame oil and groundnut oil producers. Currently, Ngwe La Min brand peanut oil is maintaining its sale volume steadily through four sale centers in Yangon market.

1.1. Challenges to the oil miller

There are a series of challenges in oil crop chain that commonly seen are

- Procurement of peanuts or sesame from local farmers
- Influence of whether changes and geographical climatic condition on plantation.
- Faulty grid electrical power supply
- Gridlock labor employment program resulting from irregular milling hours for insufficient raw materials
- uncompetitive price to edible oil in the domestic market

1.1.1 Procurement of groundnuts and sesame from local farmers.

Most of the farmers in the region are encouraged to grow the groundnuts after their paddy harvesting, by providing seeds on credit terms, a kind of subsidy that is a particular baskets(A

basket of groundnuts in pods = 7 viss or 11.41 Kg) was contracted between miller and farmers in trust as they had been in business partnership. Then, the farmers need to sell the produce to millers after harvest. The interest of credit is account for 3 to 5 percent added to the cash amount for volume of seeds when the deal is done for the three months of cultivation period. These practices had been maintained traditionally but becoming more competitive among the millers and farmers in the past twenty years. This practice is not functional in all cases of transaction. It could be supportive to some farmers and benefit to both sides but could create crisis of confidence along with an uncalculated factors, weather, farm management practices and rodents poses great impact on yield and quality of produce.

1.1.2 Influence of whether changes and geographical climatic condition for plantation.

Groundnut is grown on large scale in dry zone of Myanmar (upper Myanmar) being in a subtropical region which favors with suitable rainfall, less than 50 cm during the growing season with abundance of sunshine relatively warm temperature is natural blessings for oil crops chain. Groundnut thrives best in well-drained sandy loam soils, as light soil helps in easy penetration of pegs and their development and their harvesting. A groundnut gives good yields in soils with Ph of 6.0 to 6.5. In the region of Yangon, monsoon season is normally recognized from mid of May to mid of Oct. The onset of southwest monsoon into the country is becoming late and its withdrawal is advancing earlier.

From 1988 -2000, the monsoon duration was shortened by three weeks in Northern Myanmar and one week in other parts compared to 1951-2000 average. But post monsoon rain can occur at any time due to the influence of cyclonic disturbance in South China Sea. Due to the weather changes, untimely rain squall and unstable frequency of rain spell throughout the years are experienced in the past several years had thwarted groundnut and sesame growing in neighboring areas of Yangon division. The advantages for groundnut farmers and millers in dry zone are that they have more opportunity to grow the seeds and dry the produce in sunshine at low cost and protect the groundnuts and oilcake stored in warehouse from infestation of fungus whereas farmers and millers in the lower Myanmar have the reverse situation.

1.1.3 Faulty grid electrical power supply

Although Myanmar has a abundant of natural resources, in her inability of providing electrical power supply to the industries and public in the past decade. All sectors utilizing the grid electrical power had to shift to diesel engine driven generators for their factories and mills. Additional operation cost increased resulting from the utilization of costly power source. For easier comparison of production cost difference shows that it bears 140,000 Kyat (164 US\$) for 35 gallons of diesel in lieu of 40,000 Kyat (46.8 US\$) for grid electrical power for 10 hours of milling by connected load of 90 Hp. Power generated diesel generator is 4 times higher than that of EPC (200 kyats per 1KWH versus 50 kyats per 1KWH) drives up the production cost and ultimately leaves the local supply less competitive. Electrical power shortages normally occur in dry season when oil mills are in operation for its high season of peanut harvest in lower Myanmar. Millers are advised to run their mills when night falls at the times of lower power consumption by public.

1.1.4 Gridlock labor employment resulting from irregular milling hours for insufficient raw materials

Most of the oil mills especially in lower Myanmar are constrained by the labor employment including experienced foreman to general workers as the raw groundnuts falls short in the raining season till beginning of cold season from May to Nov, totally six months. Some mills which have higher purchasing power of their products in the market are only able to continue running with the raw groundnuts required by direct purchase from commodities brokers in dry zone where groundnuts are grown twice a year. Most of the oil mills by small to large are generally able to run their mills eight hours a day, average of seven days to 18 days a month at most in a year. In response to the underlying circumstances, the mill that the study was conducted had adopted labor employment policy of “**modus operandi**” which facilitates labor requirement ad hoc periodically that is daily wages for work on schedules and additional fixed pay per month plus household commodities support,(*one basket of rice, one viss of oil, chilly, onion and salt) entitles to employees.

*one basket rice = 33.33 kg, one viss = 1.63 kg

1.1.5 Uncompetitive price to edible oil in the domestic market

Local expellers including Ngwe La Min Brand are facing competition on two levels besides competition among themselves as raw material acquisition and import of other edible oil, especially Palm Oil as the threat of Substitute Products. Palm oil is the highest demand due to its low price in local market, average price for palm oil is 2,625 Kyats as groundnut oil is 3,650 Kyats which is 39% higher than palm oil. Additionally, Exporting of groundnuts and sesame seeds, better quality crops such as hand-picked groundnut, without shell, is highly in demand by bordering countries through informal border trade. It is pushing the raw materials price up in local markets. Groundnut oil demand is highly affected by its high price.

Traditionally, people in Myanmar had been consuming the peanut oil or sesame oil for decades until early 1990 when vegetable oil or palm oil was introduced to Myanmar market. Only very few consumers had tried on the palm oil initially. But it gains its market shares most in Myanmar eventually for its cheaper market price as groundnut and sesame oil market segment decreased globally according to the FAO database. Global oil market is dominated by palm oil and soybean which both account for 51 % of the global supply. Global demand for palm oil has been increasing by 250 % over the past ten years. Palm oil is currently the world second consumed edible oil and would likely to supersede the market of the world leading edible soybean oil. This is the global market trend which would likely impose SME sector of groundnut and sesame oil processing with financial predicament, resulting in unemployment rate increased. Besides the above factors, there is no internally driven cooperation and sharing of knowledge to improve research and development area among the expellers as well.

1.2 Oil mill management.

In Yangon, all oil mills are operating with many years of experience in family owned businesses. Procurement of raw materials, supervision of production chain, marketing and accounting is directly supervised by family members. Sometimes, trusted individuals may be trained to take management responsibilities in the oil mills. Training of operating personnel in all size mills are based on in-mill experience. Milling techniques are handed down to family members who learn from their ancestors. Most of the largest mills have two to three generations of miller who at some point in time started with a small operation in a village and in time of visit, family members or sons/daughters of the owner in supervising level. None seems to have been employed or benefited in one way or another from government trained engineers or certified employees from others similar institutes. Given that advances which have been made in processing techniques, the training and instruction available on in-mill experience is often inappropriate and thus fails to have any impact on mill efficacy. In general, lack of proper research of the market and little improvement to traditional method.

1.3 Basic calculation method of oil output percentage from groundnuts.

Oil extraction from peanut is normally calculated based on average weight of given mass of groundnuts, 40 percent of oil, 55 percent of oilcake and 5 percent of processing waste depending on the quality of groundnuts and its moisture content as well as pressing efficiency of expeller. This calculation method is usually applied when transaction is made in procurement from farmers.

Basic Crop budget analysis

Crop : Groundnut
 Season : Post monsoon season
 Water source : Not applicable
 Land type : Lal Mye(Farm land)
 Region : Hlegu, Yangon division

Table. 1.1 Basic Crop budget analysis

Value production	Unit	Unit price (Ks)	Quantity/acre	Total Kyat/acre	Total US \$/ acre
Value of grain yield	Basket	1,600	125	200,000	233.9
Total revenues				200,000	233.9

Operating costs	Unit	Unit price (Ks)	Quantity/acre	Total Kyats/acre	Total US\$/acre
Seed	Basket	16,000	6	96,000	112.2
Compound fertilizer	50 kg bag	10,000	1	10,000	11.69
Farm Yard Machinery	Bullock cart	13,000	1	13,000	15.2
Pesticides	Ltr	5,000	1	5,000	5.8
Land tax					-

Subtotal input cost				124,000	145.0
Planting	Man power	1,000	3	3,000	3.5
Weeding	Man power	5,000	1	5,000	5.8
Harvesting	Man power	5,000	1	5,000	5.8
Transportation		5,000		5,000	5.8
Total operating cost				142,000	166.6
Gross margin				58,000	67.8
Costs and returns ratio				1.4	1.4

1.4 Groundnut- cake (By - Product of Edible Oil)

In recent years, the rapid growth of the feed mill industry has created demand for higher quality cakes and better quality control. CP, a major user of oilcake for its growing chicken poultry industry is providing training to oil millers to improve conditioning of oilseeds before crushing. Finally, the low cost of electricity allows oil millers to crush cakes up to 7 times to increase the extraction rate that retains oil content in cakes between 5 and 7 percent.

Palm oil cake is crushed with shell which results in low protein content and high fiber value. This depreciates the value of palm oil cake on the market. Higher oil content in palm oil cake suggests inefficiencies in the existing mills. All oil cake users in Myanmar reported to be satisfied with the quality of oil cakes. The oil contents in cakes is generally appreciated for chicken industry, as oil is rich in energy and needed for chicken feed. If de-oiled cakes through solvent extraction are used feed millers would have to add oil in the cakes to increase the energy value of the chicken feeds. Crude edible oil is more expensive than cake and therefore feed miller would not pay a premium for de-oiled cakes.

Table. 1.2 Nutritional value of oil cakes in Myanmar

Types of cake	Moisture %	Crude protein %	Oil content %	Crude Fibre %
Groundnut cake	8.58	42.78	5.25	3.82
Sesame cake	7.16	39.07	6.62	4.91
Soybean cake	15.20	47.50	6.40	5.10
Palm oil cake	6.24	14.35	8.72	25.12
Sunflower cake		25.03		
Niger cake	8.82	37.1	6.38	4.87

Source: Ministry of Livestock and fisheries

Main quality concern for the chicken industry are the Aflatoxine and Ureic Acid(UA) levels. Aflatoxine level can be contained by quality inspection of raw material from the farm and proper sun drying and seed conditioning before crushing. The CP Company has conducted training of oil

millers which are supplying oil cakes. UA level is maintained low by cooking soybean before crushing. Not all oil mills have cooking facilities and therefore, feed mills are routinely testing UA level content. Cake rancidity during the rainy season was reported as a minor issue by both oil and feed millers.

For the fishery industry, the nutritional value of the cake is satisfactory as well. Yet, protein content is the main notional factor and therefore a small premium of kyats 20-30/viss over what the wholesale market is paid for de-oiled soybean cakes produced from solvent plants in Yangon.

1.4.1 Oilcake shortage

With the fast growth of livestock (mainly chicken) fishery and shrimp industries, the demand for cake had increased significantly over the past six years. According to the Ministry of Livestock and Fisheries, the chicken population has nearly doubled over the past six years. The CP, a Thai company is the main buyer of oil cake for the poultry industry in central Myanmar and the Shan State, but it does not buy all cakes from the mill for its cake quality specification. But oilcake demand in Myanmar is beyond supply for animal feed. The price for oil cake is between 1,000 Kyat and 1,100 kyat for one viss with the variation on shortage/surplus in the market.

1.5 Market Situation

Most of the peanut oils brands are facing the lack of trust by consumers as they are producing many grades of products which are mixing with palm oil. For example,

Premium grade : 100% pure (not adulterated) and charge the premium prices

Medium grade : Mixed with Peanut oil and Palm oil as the ratio of 2:3

Low grade : Mixed with Peanut oil and Palm oil as the ratio of 1:5

Production of many grading can get more market share but the demand is getting low upon the preference of peanut oil brands.

The success and strength of Ngwe La Min Brand groundnut oil is produced to a premium grade without adulteration practices that have been undergone the certified laboratory analysis at Food Industries Development Supporting Laboratory (FIDSL) annually. The product is sold in different size of bottles, from 0.5 viss ,1 viss,2 viss, 3 viss, 5 viss and 10 viss by weight with brand name labeled on them. In some instances, oil in barrels is sold to the wholesalers. As the mill had been founded over 38 years, expanded its local market steadily by opening 5 more wholesale outlets in Yangon division, oil processing is done in GMP and thus gained customer royalty for its specialty and flagship within its local market segment.

Table 1.3 Estimation of Edible Oil Sufficiency (Based on 2009-2010 Production)

1.	Population	60 Millions (Avg)
2.	a) Annual total consumption (@ 10 kg/person/year)	600,000 MT

	b) Industries & Restaurant uses	250,000 MT
	Total Requirements per year	850,000 MT
	Total Requirements per day	2,328 MT
3.	Total Domestic Production (@ 60% of total production for crushing and less export &	580,000 MT
4.	Annual Import Requirement (2) –(3) = (4)	270,000 Mt

(source : Myanmar Edible Oil Distributors Association)

About 270 Metric Tons of edible oil required per day for the total population in Yangon Division according to the above estimation.

Many challenging are also affecting to Ngwe La Min in its market penetrating and market demand such as:

- Inability to upgrade the mill with the modern components to maintain the product quality, as a premium grade groundnut oil brand, that constrains Ngwe La Min to enter the international market leaving the mill entirely dependent on shrinking local demand for its product.
- The threat of palm oil importing from Malaysia which is reaching a record \$682 million in 2012, the best hope for the domestic cooking oil industry is more foreign investment to improve its access to more advanced technology.
- And while peanut growers are enjoying strong sales to China, many lament the fact that they are only able to sell raw materials at low prices, and lack the means to sell value-added products. Current Regulations on the whole edible oil business has DOUBLE HEADED SWORD effect. Protecting one aspect of the sector can negatively affect the other aspect of the sector, for example, restriction on export of crops to promote local edible oil production will have serious impact on the exporting sector and income of farmers.

In order to get sustaining productivity and economic growth, the following facts are suggested from the edible oil producers in this case study:

- Government authorities should set the proper anti dumping tariffs for imported cheap palm oil, should set more standardizations certification bodies to prevent the local oil expellers.
- To provide more health awareness for public to reduce over depending of imported cheap palm oil as the daily cooking household.
- To provide more trade promotions for local edible oil producers instead of allowing foreign oil brands penetrating and taking the local market share.
- To introduce and develop cluster concept for building competitiveness through cluster process to build and develop confidence and entrepreneurial spirit, adopting best practices and benchmarking.

Under the era of new governance, as the last frontier for investors, hope Myanmar could become not only self sufficiency but also "Oil Pot" of Asia.

Lists of Visited Institutions and Interviewees for Case Study

Institutions	Interviewees
Ministry of Industry	<ul style="list-style-type: none"> ▪ Daw Aye Aye Win (Director, SMEs Development Center, Ministry of Industry) ▪ Daw Tin Tin Htoo (Deputy Director, Directorate of Myanmar Industrial Planning, Ministry of Industry) ▪ Daw Mu Mu Aye (Deputy Assistant Director, SMEs Development Center, Ministry of Industry)
Republic of the Union of Myanmar Federation of Chambers of Commerce and Industry (UMFCCI)	U Zaw Min Win , Vice President
Myanmar Edible Oil Distributors Association	U Thein Han, Chairman
Myanmar Agro based Food Processors and Exporters Association	U Kyaw Nyein Aye
Owner, Ayar Waddy Peanut Oil Mill	U Khin Soe
Owner, Ngwe La Min Peanut Oil Mill	U Kyi Thar

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Tables

Export of Oil Seeds (2006-2007 to 2008-2009 Average)

Type of Crops	Total	Amount (USD)
Sesame Seeds	107,000 M Ton	127 Millions
Normal Trade & Border Trade		
Niger Seeds	3,573 MTon	2.58 Millions

Source : Myanmar Edible Oil Distributors Association .

Import of Palm Oils (2004 to 2010)

Palm Oil Import	Total	Amount (USD)
2004-2005	161,802.67	80.34
2005-2006	176,459.18	75.96
2006-2007	167,780.29	74.27
2007-2008	319,211.87	203.07
2008-2009	245,798.96	260.30
2009-2010	283,638.61	291.00

Source : Myanmar Edible Oil Distributors Association .

Consumer Preference of Different Edible Oil Type

	Groundnut Oil	Sesame Oil	Palm Oil	Vegetable Oil	Soy Bean Oil	Sunflower Oil	Olive Oil	No Preference
Taste	97%	19%	3%	5%	2%	1%	2%	
Aroma	92%	34%	2%	2%	2%	3%	3%	
Affordability	4%	2%	96%	5%	0%	0%	0%	1%
Nutritious	90%	10%	1%	4%	2%	1%	90%	10%
Suitable to Health	90%	18%	1%	5%	2%	1%	90%	18%

Source : Myanmar Edible Oil Distributors Association

Table. 4. Estimate of Private Industries in Myanmar (2010)

Category	2004	2005	2006	2008 (Sept'08)	2009 (Aug'09)	2010 (Dec'10)
Large	3,135 (7.3%)	3,194 (7.63%)	3,438 (7.94%)	3,590 (8.20%)	3,610 (8.24%)	4,035 (9.30%)
Medium	6,215 (14.5%)	6,149 (14.68%)	6,430 (14.84%)	6,722 (15.35%)	6,741 (15.40%)	6,950 (16.01%)
Small	33,454 (78.2%)	32,534 (77.69%)	33,456 (77.22%)	33,472 (76.45%)	33,438 (76.36%)	32,423 (74.69%)
Total	42,804 (100%)	41, 877 (100%)	43,324 (100%)	43,784 (100%)	43,789 (100%)	43,408 (100%)

Source: Myanmar Industrial Development Committee