PRODUCTION OF MODIFIED CASSAVA FLOUR (MOCAF)

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EXECUTIVE SUMMARY

Nowadays the Malaysia population expected to be increased as well as the consumption of food required especially on the agriculture sector. This result also effect the amount of wheat imported to Malaysia which is following the same statistics. Due to this matter, Modified Cassava Flour (MOCAF) has been developed to overcome the problem. By having the MOCAF which derived from local crops cassava, it can become one of the alternatives for substituting the wheat consumption in this country.

Malaysian MOCAF Sdn Bhd is the first company in Malaysia that producing MOCAF. Due to the reason of competing in wheat flour based food industry, the company is producing special flour that have a similar wheat flour characteristic with a low price to the related industries in order to reduce their raw material cost and increasing their profitability.

Malaysian MOCAF Sdn Bhd is a flour production company that targeting the wheat based food which is baked goods, biscuits and noodles industries as the starting business. This company is located at Sipitang Sabah and only targeting the local market. Even though the market is only focusing in Malaysia, the value of the market is quite high which reach 14.95 Million only for baked goods industry. This market value might be increase by the time MOCAF being commonly used in Malaysia industry. The competitive analysis shows that the Malaysian MOCAF Sdn Bhd will be survive in the market even though there are several flour mill company already established in Malaysia. This is due to the high demand in the related industries and the availabilities of customer with high annual income.

Malaysian MOCAF Sdn Bhd estimated to finish the start-up period at the beginning of January 2015 and the first production will come on March 2015. The Company is a partnership associated with 3 members as shareholders and a total of 25 employees for the beginning operation.

The company sell the products directly to the customers without having an intermediary this due to the quality service that being implemented by the company which to maintain the quality of the product as well as the reliable price received by the

customer. The potential and experienced management team will lead the company to become more competitive in the industry. The Flexible manufacturing strategies choose would help the company survive if there are any changes in the market and keep the good satisfaction to the customer.

Malaysian MOCAF Sdn Bhd will require investment RM 4 Million to start operating the business. RM 1 Million will be provided by the shareholders while the remaining RM 3 Million was expect to get from Bank Loan. The payback period of the investment estimate to be after four and a half year. The starting sales production is 13250 units per month and will increase to 20384 units per month at the end of five years. The profit of the first year estimate to be RM 170,755.00 and drastically increases to RM 1,414,504.00 at the end of year five. In order to reduce the external funding, the loan payment of RM 300,000.00 will start at the first year. The Balanced Sheet shows that the company will have a total asset of 7 Million at the end of year five compare to the 4 Million at the beginning of start-up. All the details are explained in the Financial Analysis.

In conclusion, the profitability of Malaysian MOCAF Sdn Bhd will be substantial and will generate high shareholders value. It can become the world's major supplier of MOCAF for industry purposes in the near future based on the superior of qualities of the product at extremely competitive price and generating attractive profit margin for the customer.

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LIST OF SYMBOLS

ha	Hectares
kg	Kilogram
%	Percentage
MT	Metric Tonne
mL	Millilitre
sp	Species

LIST OF ABBREVIATIONS

MOCAF	Modified Cassava Flour
GDP	Gross Domestic Product
RM	Ringgit Malaysia
CAGR	Compounded Annual Growth Rate
Ltd	Limited
CEO	Chief Executive Officer
2MC	Malaysian Mud and Chemicals
JAKIM	Jabatan Kemajuan Islam Malaysia
LAB	Lactic Acid Bacteria
DOSH	Department of Safety and Health
DOE	Department of Environment
PVA	Polyvinyl Alcohol
OHSAS 18001	Occupational Health And Safety Management Systems
MS	Malaysia Standard
ISO	International Organization for Standardization

CHAPTER 1

INTRODUCTION

1.1 Introduction

The population of Malaysia expected to be increased by 10 million (35.0%) from 28.6 million in 2010 to 38.6 million in 2040 reported by Department of Statistic Malaysia. The current population is already achieving 29.6 million of people. Due to this matter, the government is very concerned about the consumption of food required especially on the agriculture sector. The agriculture is not only providing foods to the people but also contributing to the Malaysia's economy. According to nationsencyclopedia.com, the agriculture is contributing 12 percent to the national GDP and providing employment for 16 percent of the population.

The Government of Malaysia is attempting to diversify agriculture to decrease the country's dependence upon one crop for the food consumption which is paddy that produces rice. Cassava (locally known as *Ubi Kayu*) is among the major crops which have been considered for this purpose. Malaysia produced 464, 800 MT of cassava in year 2012 compared to 440,000 MT in 2009. This increment shows that the government is seriously considering the production of cassava as well as creating the possibility for the new cassava based food to be competing in the Malaysia food market.

Cassava in Malaysia are mostly used for starch and some of the minor product such as Cassava Chips, Animal Feeds, and *Tapai Ubi*. However, in Indonesia there was a technology to convert cassava into a new type of flour that called Modified Cassava Flour (MOCAF) which contains almost the same properties as wheat flour. Malaysian

MOCAF Sdn Bhd has come with the idea to implemented this technologies in Malaysia to produced Malaysia own MOCAF. The idea of developing this MOCAF company will help the government to meet the requirement for diversifying the agriculture as well as to fulfil the demand of foodstuff for the increasing Malaysian population.

The MOCAF produced will provide an alternative source for food production especially for the wheat based foods industries. This industry is currently facing the limitation of raw material since the wheat required is imported from other countries. Furthermore, the wheat price also quite expensive and can cause higher cost of production. This is the major "pain" facing by the industries. By having the MOCAF as another option as a raw material, it will resolve the problems as well as the industries will gain more benefits as the industries have more opportunity in producing variety of product. Since cassava is the local crops and easy to cultivate, it will make the price of the MOCAF lower compare to the wheat flour.

Cassava or tapioca which has been synonymous with inferior commodity is outclassed by other crops such as wheat, paddy and sweet potatoes since it has a low selling power. This perception might be changed indirectly by the idea of introducing the MOCAF to this country. This will increased the selling power of cassava and cassava farmers also can benefit with the rise of resale price because demand of raw materials for the production of MOCAF will be high. This is due to a simple economic law which if the demand of cassava increases then the price of cassava will automatically follow up.

Malaysian MOCAF Sdn Bhd production process will involve farmers, technical, expectorate and cooperatives. Besides that, MOCAF produced also can be used as raw material for food industry household scale, medium and even large industries. Thus, Malaysian MOCAF Sdn Bhd as upstream production together with the downstream use by industry will create more business opportunities as well as employment opportunity to the country.

1.2 Product Overview

Modified Cassava Flour **(**MOCAF) is a new innovation of flour that uses the principle of modifying cassava cells in fermentation, which produces distinctive characteristics, so it can be used as a food ingredient with a very wide scale. MOCAF characteristics almost the same as wheat flour (white, aroma, and flavour equivalent), so MOCAF can be a substitute ingredient in preparation of food products based on wheat flour and rice flour.

The main advantages of using MOCAF is they are good for health and easily digested because of the fermentation process as explained by Marwati (2012). In addition, the process of making MOCAF involves natural biological (organic) without any chemicals (no preservatives and dyes) and processed hygienically. MOCAF is also free-gluten products, so it is safe for the children with autism, diabetes, digestive disorders, and allergies. Besides that, MOCAF also contained a high calcium, high fibre (the highest of all the flour), low fat, contains scopoletin which may inhibit cancer cell proliferation.

Current conditions indicate that the MOCAF product is economical because they are much cheaper than wheat-based flour currently available in the market. This is due to the easy access to raw materials (cassava) which can be easily cultivated. Besides that, the process of producing MOCAF does not require high technology, means the price of MOCAF is 20% cheaper than the price of wheat flour. Thus, MOCAF will be more profitable than the wheat flour, besides having similar product quality to boost its market competitiveness.

1.3 Market Overview

Malaysian MOCAF Sdn Bhd producing the new invention of flour known as MOCAF using cassava as the main raw material. MOCAF will be the first new product based on cassava in Malaysia that has the high possibility to replace the wheat flour in the food industry. Mostly, the flour based on cassava will be converted into starch,

which then converted into flour (MOCAF) using enzymatic fermentation that contains almost the same characteristic of wheat flour.

Malaysian MOCAF Sdn Bhd will be targeting the local market for their business because the MOCAF is already commercialized in the neighbourhood country like Indonesia, and due to their bigger production scale with a consistent source of raw material, they can export their product internationally. The demands of wheat based food in Malaysia are still increasing and consumption of wheat in Malaysia is also getting higher every year. Therefore, Malaysian MOCAF Sdn Bhd may profit from the flour industry by introducing this new innovation of cassava-based flour which has yet to be explored in Malaysia akin to blue-ocean strategy.

MOCAF is a healthier product compare to wheat flour. This is one of the major advantages for the company to compete in the related industries. Due to the current situation which most Malaysian are more health-conscious where they are more likely to choose foods that are healthier and more nutritious, it will cause the product produced from MOCAF will be more preferred by the Malaysian compare to the wheat based products. This situation indirectly will become the market driven to the company product and give the opportunity for the MOCAF-based product to compete with any other product.

Cassava are one of the well-known traditional crops that contribute to the Malaysian food sector since long ago and like rice it was used as a routine food. It means that, there is no possibility for the consumer to refuse the product based on the cassava since they already know about the nourishment of the cassava itself. This will create the opportunity for the MOCAF to be commercialized in the Malaysia market.

1.4 Resource and Raw Materials

The major raw material for MOCAF is cassava and the enzyme that used to modified the starch flour during the fermentation process. There is no issue of availability for these raw materials since both can be gained and easily produced on any state in Malaysia or any other countries. In general, MOCAF can be produced from any

types of cassava, but the cassava species with low contain of acidic cyanide would be the best raw material. The other raw material used in producing MOCAF is the enzyme used for fermentation process which called *FerMo*.

1.4.1 Cassava

Cassava is the third most important crop plant after rice and maize in Asia, Africa and Latin America. Its flour is a primary calorie source which is used as a basic staple food in tropical regions around the world. The product also provides an important income directly to huge numbers households in the rural area.

The other crops mainly rubber and oil palm are competing with cassava for land. FAO Corporate Document Repository explained that area planted for cassava has declined from 20000 ha in 1976 to only about 2000 ha in 1996. However the result changes in 1997 where the area planted for cassava was increased to 39000 ha. This situation occurs due to the government policy that promoting domestic production of agricultural products as a means of saving foreign currency. In other words, the production of cassava cultivation in Malaysia is not yet alarming because there are still many vacant lands that have not been explored especially in Sabah and Sarawak.

Malaysian MOCAF Sdn Bhd is planning to cultivate cassava in 300 acres of land which can produce 3000 MT of cassava to meet the requirement for producing 10 MT of MOCAF per day. There are several advantages of cassava crop such as, it can adapt to poor soils and resist drought that can make cassava a good famine crop. It is also easily propagated by planting the cutting stem. It gives a relatively high yield and an excellent source of calories. Furthermore, it is relatively inexpensive to produce and requires very little weeding when planted in optimal plant populations. Cassava also has no critical planting date, and its roots can be left stored in the ground and harvested when required according to Okigbo (2006).

1.4.2 Enzymes (FerMo)

The enzymes use in fermentation process for MOCAF is *FerMo*. The enzymes used to change the structure of the cassava flour that will convert it into MOCAF instead of starch. This enzyme would be supplied from PerumJatisawitAsriPvt. Ltd. in Indonesia. The enzymes which in liquid form contains Positive Microbe which are *Lactobacillus sp*, BPF, *Pseudomonas sp*, *Azotobactersp*, *Rhizobium sp*, and *Selulolitik sp*. The cost of these FerMo will be RM 15.00 per 500 mL and it will require 5 mL of *FerMo* for every 3kg of Cassava.

Malaysian MOCAF Sdn Bhd will also use these *FerMo* enzymes for the research purpose in order to come out with the new enzymes. This is due to the limitation of the source of the *FerMo*. Even though there are several companies that supplying the *FerMo*, but it is still risky for Malaysian MOCAF Sdn Bhd because it might be insufficient to fulfil the requirement needed. Only having a good inventory for the *FerMo* will not be the solution, so Malaysian MOCAF Sdn Bhd will study to produce the new enzymes so that this limitation can be overcome. Malaysian MOCAF Sdn Bhd will buy the *FerMo* only for the beginning of the operation and as soon as the research of the new enzyme is finish, the company will start using the new enzymes that will boost up the company profit.

CHAPTER 2

MARKET ANALYSIS

2.1 Demand of Wheat in Malaysia

Malaysia produces approximately 860 000 tonnes of wheat flour and imports between 20 000 and 40 000 tonnes per annum in between 2003 to 2005as per reported in *Overview of the Western Australian Wheat Flour Industry and Potential Export Opportunities* by Department of Agriculture and Food of West Australia. However, the value increases sharply in 2007/08 as Malaysia imported around 100 000 tonnes of wheat flour. This was likely an opportunistic move by importers due to the perceived shortage of wheat flour and sharply increasing food prices at the time. The result shows consistent imports from Singapore (re-exported from Indonesia) and the United States over the last five years. In 2007/08 however Australia and China were the key suppliers of wheat flour to Malaysia.

In line with the growth in consumer demand, interest in good quality pastries and bread is rising, and the number of specialties cafes and pastry shops serving bakery products is similarly increasing. According to *Global Agricultural Information Network*, from January till September 2012, total production of wheat flour in Malaysia was 75,000 tons up by 0.56% from January till September 2011 which totalled at 74,500 tonnes. This production was export to Singapore, Thailand and Brunei. Moreover, consumers nowadays are opting for high-fiber whole meal bread. All these factors are boosting wheat imports in Malaysia. In addition, instant noodles and sweet biscuits manufacturing for both domestic and export markets are also growing. Table 2.1 shows the Import Trade Matrix of Malaysia for July 2010 until Sept 2011.

Table 2.1: Malaysia Import Trade Matrix

Import Trade Matrix			
Country	Malaysia		
Commodity	Wheat		
Time Period	Jul 10/ Jun 11 for 2010, Jul 11/ Sep 11 for 2011	Units: 1000 MT	
Import for:	2010		2011
U.S	300	U.S	112
Others		**Others**	
Australia	684	Australia	239
Canada	58	Canada	7
Pakistan	35	Pakistan	2
Russian Fed	8	Ukraine	1
Argentina	4		
Romania	1		
Iran	1		
Total for Others	794		249
Others not Listed	6		
Grand Total	1100		361

Source from thecropsite.com

Wheat imports are forecast to drop by 8 percent in 2012/13. However the statistic subsequently increased by 6.5 percent in 2013/14as shown in Table 2.2 due to the growth of the baking industries. Baking sector remains vibrant, with new stores opening and products developed rapidly, and this economic activity will continue to increase the consumer purchasing power and demand for wheat-based consumer products. Australia remained the biggest exporter to Malaysia, holding an estimated 65 percent market share in 2012/13. U.S. exports are expected to be about 270,000 tons in 2012/13. Nonetheless, local millers continue to appreciate the quality of US wheat. In recent years, Malaysia has purchased a limited amount of competitively priced wheat from Pakistan, Russia and Ukraine.

Table 2.2: Malaysia Wheat Flour Import, Supply and Demand Statistic

Wheat Malaysia	**2011/2012**		**2012/2013**		**2013/2014**	
	Year Begin: Jul 2011		**Year Begin: Jul 2012**		**Year Begin: Jul 2013**	
	USDA Official	**New Post**	**USDA Official**	**New Post**	**USDA Official**	**New Post**
Area Harvested	0	0	0	0		0
Beginning Stock	350	350	350	385		245
Production	0	0	0	0		0
MY Imports	1500	1500	1400	1380		1470
TY Imports	1500	1500	1400	1380		1470
TY Imports from U.S	188	269	0	270		272
Total Supply	1850	1850	1750	1765		1715
MY Exports	125	125	100	100		100
TY Exports	125	125	100	100		100
Feed and Residual	50	40	40	40		42
FSI Consumption	1325	1300	1325	1380		1400
Total Consumption	1375	1340	1365	1420		1442
Ending Stock	350	385	285	245		173
Total Distribution	1850	1850	1750	1765		1715

(Source from *Global Agricultural Information Network (GAIN)*

2.2 Target Market

In Malaysia, there has been a significant increase in the consumption of wheat based foods, with per capita consumption of wheat increasing from 33 kilograms in 1990 to 58 kilograms in 2005 according to *ABARE, "Changing food consumption and imports in Malaysia"* report. Malaysian wheat flour millers are expanding their manufacturing of wheat based foods especially the baked goods industries. In addition, wheat flour millers also expect further growth in the manufacturing of instant noodles and biscuits for the domestic as well as the global market during 2012/13. Due to this reason the company will focus on the market of baked goods, biscuits and noodles in Malaysia for the early stages and start the expansion once the company are strong in the Malaysian market.

2.2.1 Baked goods

Malaysian consumer perception of baked goods as basic needs will continue to maintain the growth of baked goods in the industries according to Euromonitor International. Since bread remaining an integral breakfast item for Malaysians, this naturally has contributed to the strong performance of baked goods. White bread is the most popular type of packaged/industrial bread, accounting for 68% of overall value sales in 2008 as shown in Table 2.3. This was mainly due to consumers being used to its taste and the softer texture than other types of packaged/industrial bread like wholemeal bread. Wholemeal bread, which has increased in popularity due to it being a healthier option than white bread, continued to account for about 25% of sales in 2008. The sales of baked goods were increasing from 188700 tonnes to 200800 tonnes at 2012.

Health-based products such as fortified products are expected to increase in prominence, as consumers becoming more educated about the importance of healthy eating and living. However, high price tags could remain an obstacle for a strong pick-up in performance for these products, with the low-to-middle income consumers still viewing baked goods as a necessity product and will choose one that is cheap. The necessity nature of baked goods will still continue to sustain growth in the baked goods sector.

Table 2.3: Forecast Sales of Baked Good by Subsector: Volumes (‘000 tonnes)

	2008	2009	2010	2011	2012
Bread	130.6	132.7	134.6	136.4	138.1
Packaged/Industrial Bread	64.9	65.8	66.7	67.5	68.2
Unpackaged/Artisanal Bread	65.6	66.8	67.9	68.9	69.9
Bread Substitutes	-	-	-	-	-
Pastries	24.3	24.8	25.3	25.8	26.1
Packaged/Industrial Pastries	12.4	12.7	12.8	13	13.1
Unpackaged/Artisanal Pastries	11.8	12.2	12.25	12.7	13
Cakes	33.9	34.7	35.4	36	36.6
Packaged/Industrial Cakes	6	6.1	6.3	6.4	6.5
Unpackaged/Artisanal Cakes	27.9	28.5	29.1	29.6	30.1
Bread Goods	188.7	192.1	195.3	198.2	200.8

Source: Euromonitor International estimates from official statistics, trade associations, trade press, company research, trade interviews

2.2.2 Biscuits

Sales of biscuits are expected to grow positively since there is stable demand for plain biscuits as well as savoury biscuits. Table 2.4 summarize the sales of biscuits in Malaysia from 2008 to 2012 shows that there is an increment of biscuits sales at the end of 2012. Rising consumer interest in innovative products with value-added functions like those fortified with calcium will also support growth.

Table 2.4: Forecast Sales of Biscuits by Subsector: Volumes (‘000 tonnes)

	2008	2009	2010	2011	2012
Sweet Biscuits	24.7	25.1	25.6	26.0	26.4
Plain Biscuits	13.7	13.8	13.9	14.0	14.1
Cookies	2.1	2.2	2.3	2.4	2.5
Chocolate Coated Biscuits	1.0	1.0	1.1	1.1	1.1
Sandwich Biscuits	5.0	5.2	5.3	5.5	5.6
Filled Biscuits	2.8	2.9	2.9	3.0	3.1
Savory Biscuits and Crackers	27.8	28.2	28.6	28.9	29.2
Biscuits	52.5	53.3	54.1	54.9	55.7

Source: Euromonitor International estimates from official statistics, trade associations, trade press, company research, trade interviews

2.2.3 Noodles

Maturing of categories such as plain noodles and the fact that noodles' already large sale base means the noodle sector is unlikely to register significant extra growth. However, the high convenience factor of noodles will mean that they will remain popular among time-poor consumers looking for a quick meal solution, reported by Department of Agriculture and Food of Western Australia Government. Sales of cold and frozen noodles are expected to remain limited due to limited storage space within independent small grocers and consumers' preference for long shelf-life products such as plain and instant noodles. Table 2.4 shows the sales of noodles in Malaysia for 2008 to 2012. The sales show some increment of the demand of noodles in Malaysia as the sales increase to 111500 tonnes in 2012.

Table 2.5: Forecast Sales of Noodles by Subsector: Volumes ('000 tonnes)

	2008	2009	2010	2011	2012
Plain Noodles	9.0	9.3	9.5	9.7	9.9
Instant Noodles	85.6	88.2	90.8	93.1	95.3
Cup/Bowl Instant Noodles	6.7	6.9	7.2	7.5	7.7
Pouch Instant Noodles	78.9	81.3	83.6	85.7	87.6
Chilled Noodles	-	-	-	-	-
Frozen Noodles	-	-	-	-	-
Snack Noodles	6.0	6.1	6.1	6.2	6.2
Noodles	100.6	103.6	106.4	109.0	111.5

Source: Euromonitor International estimates from official statistics, trade associations, trade press, company research, trade interviews

2.3 Market Share

The company are focusing on the market of bakery industries in determining the possibility market shares since this industry are the higher contribution in target market. By focusing on the bakery industries, the market share could be more enough for the company to achieve since the growth of the sales is increasing drastically. Furthermore, the biscuits and noodles industries will become the second option and support the market share.

The bakery industry seems to be attracting quite a bit of attention these days as existing companies are expanding capacity while others are venturing into this segment of consumer goods. For instance, PPB Group Bhd intends to move downstream from its existing flour milling business with the commissioning of a RM105 million bakery in Pulau Indah, Selangor. Joining the recent expansion is Singapore- listed Etika International Holdings Ltd, which acquired the Family Bakery group for RM18.7 million.

The Edge Malaysia Issue 810 mentioned that the OSK Research on December 2009 have found Malaysian bread and rolls consumption has been growing consistently at an annual rate of 3.8% to7% over the last six years and there is still room for local bread consumption to grow as bread and rolls consumption was 6.1kg per capita per year in 2008, compared with 9kg in Singapore. Additionally, bread consumption is expected to continue to rise given that it is an affordable essential food.

Although it seems that more company are likely to take the opportunity in this industry, but there is no concerned about an overcrowded market since there is plenty of room for expansion. This will be a great change for the Malaysian MOCAF Sdn Bhd to gain their market share. According to a report by research firm Euromonitor International on the Malaysian baking industry, sales of baked goods including bread, pastry and cakes reached RM1.55 billion in 2009 and could potentially reach RM1.65 billion by 2014, growing at a compounded annual growth rate (CAGR) of 6.6 %. Figure 2.1 shows the market forecast for baking industry. The market value is large enough to accommodate for new entries in these baked goods industries.

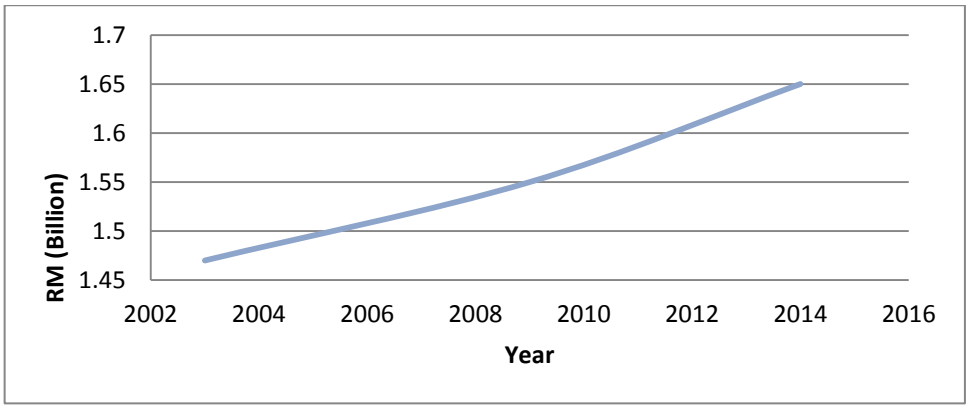

Figure 2.1: Baking Industry Market (Source from Euromonitor)

Currently, the dominant players in the premium bread market are Gardenia and Silver Bird Group Bhd with about 68% and 22% market share respectively, according to the research house. Gardenia bread is manufactured by Gardenia Bakeries (KL) Sdn Bhd, part of QAF Ltd, which is listed in Singapore. Padiberas Nasional Bhd holds 30% of Gardenia Bakeries. Silver Bird Group Bhd owned by Lembaga Tabung Haji, which produces High 5, will reportedly invest some RM35 million to expand its capacity to 260,000 loaves a day from 160,000 to meet the demand of its new RM76 million supply contract in Singapore obtained at the end of last year. Both of these companies would become the highly rated target customer for Malaysian MOCAF Sdn Bhd.

Malaysian MOCAF Sdn Bhd market share are based on the Gardenia and Silver Bird Group Bhd share in the industry since both of this company will be the main targeted customer for Malaysian MOCAF Sdn Bhd. By the taking the portion of1.0 percent of Gardenia market and 0.8 percent from Silver Bird Group it will provide the company a value of 1.8 percent from the total market. With the additional of 0.2 percent from the rest of company in the bakery industry, it will make the total market value for Malaysian MOCAF Sdn Bhd is **RM14.95 Million** as shown in Table 2.6.

Table 2.6: Market Share for Malaysian MOCAF Sdn Bhd

Company	Market Share	Value (Million)	Target Market Share	Value (Million)
Gardenia	68	1122	1.0%	11.22
Silver Bird Group	22	363	0.8%	2.90
Others	10	165	0.5%	0.83
	Total	1650	Total	**14.95**

2.4 Competitor Evaluation

Malaysians together with many other South East Asian consumers are discovering the taste and convenience of wheat based products such as instant noodles, breads and pastries. The steadily growing demand for these food products is pushing up domestic wheat consumption. Since there is no wheat produce in Malaysia, all consumption requirements must be met by imports. When Malaysia's first flour mill opened in 1967, the government classified the facility as a "pioneer industry." Much of

the country's flour mill boom occurred during January 1995 to April 1999, when seven new or expansion projects were approved as reported by Melissa Alexander on *World-Grain.com*. Total investments during that time were RM74.4 million, with about 81% of that from local sources.

The largest company in terms of capacity is Federal Flour Mills (FFM).According to The Edge Financial Daily report, PPB's 80% owned FFM is the largest flour player with some 2,550 tonnes per day capacity installed at its five mills in Selangor, Johor, Kuching, Prai and Kota Kinabalu. The company also planned to start commercial production of loaf breads and buns at its new bakery complex next to its flour mill in Pulau Indah, Port Klang. On this segment of the business, PPB will be competing against current market leader Gardenia Bakeries (KL) Sdn Bhd and High 5 brand of Silver Bird Bhd. This situation is beneficial to Malaysian MOCAF Sdn Bhd as FFM will not competing directly in the same market segmentation. However, the FFM will affect the market share of the bread industry that will reduce the market share of the customer. This is the reason for FFM to become one of the biggest competitors for Malaysian MOCAF Sdn Bhd.

Another company that have the strength to compete fiercely with Federal Flour Mills is the first flour mills ever built in Malaysia which is Malayan Flour Mills Bhd. According to The Star Online on 10 May 2012**,**Malayan Flour Mills Bhd (MFM) will spend around RM160 million to expand the production capacity of its Vietnamese and Malaysian operations. The company has earmarked RM 46 million to increase capacity at its two plants in the north and south of Vietnam to 2,500 tonnes of wheat per day from 1,600 tonnes currently. Both of Federal Flour Mills and Malayan Flour Mills are still monopolise the wheat flour industries although there was some of the company are established. Besides those two companies, most of the other Malaysia's major flour milling companies is part of larger corporate interests involved in other agricultural areas such as feed milling, transportation or packaging. For example, Singapore-based Gold Coin owns Prestasi Flour Mills, Sabah Flour and Sarawak Flour Mills, and Pernas own United Malayan Flour. Other companies include Kuantan Flour Mills and Seberang Flour Mills.

World Grain.com reported on September 1st 1994, that there are six major milling companies operate in Malaysia. The estimates market shares of this company