

Chapter 2

PRESENT SITUATION OF THE INDUSTRY

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2.1 Economic Background

Malaysia's economy had an average growth rate of about eight percent during the 10 years up to 1997. However, with the Asian financial turmoil, Malaysia's economy experienced a dramatic slowdown, with the 1998 Gross Domestic Product (GDP) reported at a negative 7.5 percent. In 1999, the economy improved with a 5.8 percent growth in real GDP and is expected to register further growth of 7.5 percent and seven percent respectively for 2000 and 2001. The World Bank¹ reported that the rate of Malaysia's economy recovery will be faster than other countries in the region. Table 2.1, Table 2.2 and Table 2.3 below illustrate the economic performance of Malaysia in 1990s:

Table 2.1 Key Economic Indicators

Key Economic Data	1995	1996	1997	1998	1999	2000 ^f
Total population (million)	20.7	21.0	21.7	22.2	22.7	23.3
Real GDP growth (%)	9.8	10.0	7.3	(7.4)	5.8	7.5
Consumer Price Index (CPI) (%)	3.4	3.5	2.7	5.3	2.8	1.6
Total Exports (RM million)	184,987	197,026	220,890	286,563	321,181	337,307
Total Imports (RM million)	194,345	197,280	220,935	228,125	248,870	312,427
Trade Balance (RM million)	(9,358)	(254)	(45)	58,439	72,311	60,881

Source: Year Book of Statistics 1999, Bank Negara Malaysia Quarter Reports, Economic Report 2000/2001

^f Forecast

Table 2.2 Gross Import of Consumption Goods

Year	RM Million
1990	13,015
1991	17,117
1992	17,289
1993	18,994
1994	25,319
1995	27,623
1996	28,099
1997	31,700
1998	31,005
1999	n.a.

Source: Monthly Statistics Bulletin (June 2000) Bank Negara Malaysia

¹ White Paper – Status of the Malaysian Economy, 6 April 1999

Table 2.3 Foreign Direct Investment

Year	Foreign Direct Investment (FDI) (RM Million)
1991	8,776
1992	14,195
1993	17,474
1994	28,873
1995	26,874
1996	31,081
1997	35,961
1998	27,757
1999	25,375

Source: Cash BOP Reporting System, Bank Negara Malaysia

It appears that the population's purchasing power is growing, as there is a continuous and increasing trend in the imports of consumption goods². As shown in Table 2.3, Malaysia continues to attract foreign investments with RM9,039 million out of RM25,373 million of FDI invested in the manufacturing sector³.

Malaysia is a multi-racial country with three main races, i.e., the Malays, Chinese, and Indians. In addition, there are about 51,000 high-income expatriates residing mainly in the Klang Valley of Selangor, Penang and Johor⁴. It is forecasted that in the year 2000, Malaysia's population will reach 23.3 million, and projected to increase to 29.8 million by 2020. According to the Malaysia Statistics Report, more than half of the population live in urban⁵ areas. Table 2.4 below shows the population dispersal between rural and urban areas between 1980 and 1991.

Table 2.4 Dispersal of Population

Population By State ('000)	Urban		Rural	
	1980	1991	1980	1991
Malaysia	4,731.9	9,382.3	9,013.4	8,997.4
Johor	580.1	1,038.4	1,058.1	1,124.0
Kedah	162.3	451.3	953.8	913.2
Kelantan	252.3	406.5	641.5	801.2
Melaka	108.7	208.7	356.1	320.5
Negeri Sembilan	188.1	306.5	385.5	415.5
Pahang	210.7	330.4	588.1	750.7
Perak	584.0	1,072.4	1,221.2	902.5
Perlis	13.7	50.8	134.6	139.4

² Hong Leong Research, 8 May 2000.

³ Statistics on the Manufacturing Sector-MIDA & Cash BOP Reporting System

⁴ GAIN Report; Malaysia HRI Food Service Sector; Malaysian Food Service Sector Study 2000

⁵ Urban refers to gazetted areas with population of 10,000 or more persons at the time of the 1991 Census. Built-up areas were area contiguous to a gazetted area and had at least 60% of the population (aged 10 years or more) engaged in non agricultural activities and a minimum of 30% of the housing units are equipped with modern toilet facilities

Table 2.4 Dispersal of Population (continued)

Population By State ('000)	Urban		Rural	
	1980	1991	1980	1991
Malaysia	4,731.9	9,382.3	9,013.4	8,997.4
Pulau Pinang	456.1	840.4	498.6	276.4
Sabah	208.3	600.5	802.7	1,208.3
Sarawak	235.4	652.6	1,072.2	1,065.8
Selangor	522.6	1,810.0	992.9	603.6
Terengganu	232.5	360.6	308.1	448.0
Kuala Lumpur	977.1	1226.7	-	-
Labuan	-	26.6	-	28.3

Source: Year Book of Statistics 1999

Furthermore, a significant proportion of the population consists of young people and middle-aged groups. About 35 percent of the population are 15 years old and 28.2 percent are between 15-29 years old.

Based on the Economic Report 2000/2001, Malaysia's 2000 per capita income (at current price) was RM12,882 (USD3,390@ RM3.80)(see Table 2.5). The GAIN Report of 10 March 2000 shows 61 percent of the population make up the middle to upper income groups and 6.8 percent of the population live in poverty. Most Malaysian households are in the middle-income group (Table 2.7).

Table 2.5 Per Capita Income

Income (Current Price)	1997	1998	1999 ^e	2000 ^e	2001 ^f
Per Capita Income (USD)	4,376	3,093	3,238	3,390	3,607
Growth (%)	(3.7)	(29.3)	4.7	4.7	6.4

Source: Economic Report 2000/2001 Ministry of Finance Malaysia

Note: e -- estimated
f - forecast

Table 2.6 Classification of Household Income Groups

Income Group	Description
Lower Income	Household income earning below RM1,000
Middle Income	Household income earning between RM1,000 -- RM3,000
Upper Income	Household income earning above RM3,000

Source: Department of Statistics Malaysia

The Report on the Household Expenditure Survey Malaysia (1993-1994) shows that Malaysians spent 23.4 percent of their income on food, 3.6 percent on clothing, and 18.2 percent on other goods and services.

The country's overall population is well-educated. The primary school enrolment rate in 1999 was 95 percent and nearly 211,584 students were enrolled in universities in the same year. Table 2.7 and 2.8 below depict the mean monthly gross household income by ethnic group for 1995 and 1997, and the education level of the nation:

Table 2.7 Mean Monthly Gross Household Income by Ethnic Group 1995-1997

	1995	1997
(At Current Price)	RM	RM
Malaysia	2,008	2,607
Citizens	2,020	2,606
Bumiputera	1,604	2,038
Chinese	2,890	3,737
Indians	2,140	2,896
Others	1,284	1,680
Non Citizens	1,744	2,625

Source: Year Book of Statistics 1999, Department of Statistics

Table 2.8 Education Level

Education	1995	1996	1997	1998	1999
Primary school enrolment rate (%)	96.7	95.2	95.3	95.1	95.0
University enrolment (person)	125,213	144,907	161,472	200,366	211,584
Literacy rate (%)	87.7	88.2	88.7	89.2	89.7

Source: Economic Report 2000/2001

Unemployment rate is relatively low. The unemployment rate for 2000 was forecasted at 2.9 percent, mainly due to structural unemployment. The structure of the conventional workforce, which was dominated by men, is changing. The number of women in the workforce is reported to make up 34 percent of the total workforce as shown in Table 2.9 below. The ratio has been consistent over the last five years, between 1995 and 1999.

Table 2.9 Female Workers In Malaysia

Female Workers In Malaysia	1999	1995
Total no. of female workers ('000)	3,152.9	2,690.0
Total no. of workforce ('000)	9,286.7	7,893.1
% of female workers in total workforce (%)	34	34

Source: Malaysia HRI Food Service Sector - Malaysia Food Service Sector Study 2000

As Asians become more exposed to wider horizons beyond their own country's boundary, most of them including Malaysians, are trying to keep up with the development pace of their more advanced counterparts in United States, Japan, and Europe. Hence, with the general rise in their disposable income and the increasing influence from the Western countries, Asians nowadays are more willing to accept new products including new food products. They are not only accepting the concept of these new products but are also consuming in the same way. This is evident by the rise in frozen food consumption in most Asian countries⁶.

⁶ Agriculture and Agri-Food Canada.

2.2 History of Chilled and Frozen Food Industry in Malaysia

Table 2.10 below summarises the history of the chilled and frozen food industry in Malaysia

Table 2.10 Summary: History of Chilled and Frozen Food Industry in Malaysia

1960's	<ul style="list-style-type: none"> The frozen food industry has its beginnings in early 1960's. There were only a few factories set up and the export volume was low. In the late 1960's more seafood companies entered the industry and the competition increased.
1970's	<ul style="list-style-type: none"> The Malaysian Frozen Foods Processors Association (MFFPA) was formed in 1970. More frozen products were launched by local producers in the market. Chilled and frozen foods were sold through supermarket outlets. Food freezing processes were adopted.
1980's	<ul style="list-style-type: none"> Local frozen food producers started to import some machinery from Japan and Taiwan. Some new frozen products were introduced, including curry puffs, <i>samosas</i>, <i>roti canai</i>, meat-based products, and seafood products. Foil packaging was used for frozen products. The Government gave increasing attention to industry.
1990's	<ul style="list-style-type: none"> The Ministry of Health gave increasing attention to industry practices and began to establish standards for frozen products. Support from Malaysian Government helped the industry expand rapidly since the early 1990's. The Malaysian Meat Importers Association was established in 1995. The main products imported by members of the association were chilled and frozen meat and meat-based products as well as chilled and frozen vegetables. Frozen vegetable mixes became popular. Frozen ethnic cuisine rose in popularity. Frozen food sales (local & export) exceeded RM2 billion. Export of frozen seafood and seafood-based products maintained its strong presence in Europe, Australia, and Japan. Malaysia supplied approximately 1.5% to 2% of the world's seafood. Most of the supermarket have chilled and frozen food cabinets and showcase. Supermarkets began to compete with traditional grocery outlets. The introduction of precooked or prepared frozen foods opened up an entire new field for industry growth. TV dinner concept was introduced. Frozen products were the primary products for fast food service. Frozen foods entered the airline catering services. National uniformity became an issue for the first time such as halal logo on the packaging. Usage of microwave oven increased.
2000's	<ul style="list-style-type: none"> The frozen food industry is limited by capital investment, human resource and some materials shortage.

2.3 Industry Players

Key industry players in this study refer to the manufacturers, importers, retailers, food service providers, institutional buyers and support service providers, who hold significant market share or are well established in the market. They are well known by members of industry and in most cases, their total turnover are among the highest in the industry.

They built the total network for this industry and play a significant role to keep the industry growing and promote the chilled and frozen food concept. Since the Malaysian chilled and frozen food industry is still at infancy, we were unable to trace the exact number of players through there are several key players who monopolise the local market. There are about 64 manufacturers and 35 importers of chilled and frozen food in Malaysia.

Table 2.11 Number of Chilled and Frozen Food Manufacturer and Importers Identified

	Number of Manufacturers	Number of Importers
Chilled & frozen meals and snacks	15	6
Chilled & frozen food ingredients	7	5
Chilled & frozen meat and seafood	42*	24
Total	64	35

* Including 23 meat manufacturer and 19 seafood manufacturer

Source: Industry Survey conducted from April 2000 to June 2000

2.3.1 Manufacturers

a) Ready-to-serve Meals

There are hardly any significant local player in this category.

b) Snacks

The snacks category is dominated by a few key manufacturers KG Pastry Sdn Bhd with an annual turnover of RM28 million, followed by Kart Food (RM7.88 million), Ben Fortune Sdn Bhd (RM2.64 million) and P.A. Food Sdn Bhd (RM3 million). Major snacks produced include *roti canai*, *roti pratha*, *samosa*, spring rolls, steam buns, *mantau* and curry puffs. KG Pastry Sdn Bhd is the biggest local producer with approximately 65 percent of the local market share. The following is the list of manufacturers:

Table 2.12 Manufacturers of Chilled and Frozen Meals and Snacks

Company	Year of establishment
Anika Food Sdn Bhd	8 March 1997
Ben Fortune sdn Bhd	13 April 1993
Figo Marketing	NA
Fujiya Food Trading	10 May 2000
Germie Pastry	NA
Kart Food Ind Sdn Bhd	26 November 1983
KG Pastry Sdn Bhd	1992
Max Food Industry	NA
Nishiki Confectionery	NA
Pampas Sdn Bhd	NA
P.A Food Sdn Bhd	1985

Table 2.12 Manufacturers of Chilled and Frozen Meals and Snacks (continued)

Company	Year of establishment
Pertama Springrolls	NA
Sydney Cake House Sdn Bhd	29 July 1981
Tee Yih Jia Food Manufacturing	NA
Tricious Food	27 February 1997

Note: NA = Not Available

c) Food Ingredients

Manufacturers of chilled and frozen food ingredients are rather limited and most of the food ingredients consumed are imported. There are some key manufacturers such as Sensori Food Industri, with an annual turnover of RM 2.7 million. Examples of chilled and frozen food ingredients are coconut milk, frozen onions, garlic, ginger, and chilled vegetables. The following is the list of manufacturers:

Table 2.13 Manufacturers of Chilled and Frozen Food Ingredients

Company	Year of establishment
Sensori Food Industri Sdn Bhd	9 September 1993
Green Mark Food Services Sdn Bhd	NA
Siang Selatan Trading	NA
M & S Food Industry Sdn Bhd	NA
Li Ter Vegetarian Supplier	28 Jun 1996
Sime Aerogreen Technology	NA
Aroma Spices Enterprise Sdn Bhd	23 November 1998
Gabam Sdn Bhd	NA

Note: NA = Not Available

d) Meat, Seafood, and Vegetables

Manufacturers of chilled and frozen meat are the major producers of chilled and frozen food in Malaysia. More than 80% of the further processed poultry products are marketed in frozen state. KFC Holdings (Ayamas) is the market leader, followed by Dindings Poultry Processing Sdn Bhd, Sinnah Holdings Bhd, and Leong Hup (Ayam I).

KFC Holdings is a fully integrated poultry producer. It processes about 85,000 to 90,000 chickens per day at two of its plants, and about 35-40% is for further processed products. Smaller players, such as Solid Side, have annual sales of about RM2.76 million.

Chicken nuggets and burgers seem to dominate the product range. They form about 35-40% and 20-30% of total production respectively. Other chicken-based products such as sausages and chicken meatballs formed the next 15-20% and 10-15% respectively. Currently, there are four companies dominating the chilled and frozen poultry market; KFC (Ayamas) controls 44-50%, followed by Dindings 25-30%, Farms Best with 15-20% and Ayam A1 with 8-10% of the market share. Major local manufacturers in this sector who target Malaysia's suburb areas are Ramly's, Saudi Cold Storage, Fika, Purnama, Sri Rasah, Yeo's, Tanjong, Cinta, and Mega Burgers.

Export value of processed meat and meat products stood at RM69.5 million in 1998, while imports were valued at RM378.8 million. The ex-farm value of livestock production subsector in 1998 was valued at RM4.2 billion and registered an annual growth rate of 7% p.a. The major contributors were poultry (69%) and pork (26%) with the 5% being made up by beef, mutton and dairy. Example of meat-based products include breaded chicken parts, burgers, nuggets, patties, sausages, marinated chickens, sauces, spices blend / marinades, *satay*, chicken balls, meat balls, chicken loaf, and fritters.

The following is a list of manufacturers in this industry:

Table 2.14 Manufacturers of Chilled and Frozen Meat

Company	Year of establishment
KFC Holdings (Ayamas)	12 December 1980
Dinding's Poultry	1991
Sinnmah Holdings Bhd	NA
Leong Hup (Ayam I)	10 October 1979
Perusahaan Burger Ramly	1980 (small time), 1985
Fika Food Corp. Sdn Bhd	1987
Perniagaan Burger Mega	1993
Selangor Food Industry	1993
Sri Rasah	1993
Omar's Deli	1997
Saudi Frozen Sdn Bhd	1991
Bintang Lapan Food Processing Sdn Bhd	NA
Mac Food Services (M) Sdn Bhd	1987
Mawashi Meats Sdn Bhd	1982
Gan United Cannery Sdn Bhd	1978
Yeo Hiap Seng (M) Sdn Bhd	1972
Lucky Frozen	NA
Rex Canning	1999
Taipei Food	1992
Solid Side Food Industries Sdn Bhd	1995
U.B. Food Sdn Bhd	1985
Ayam Manjung	NA
Burger Tanjung	1997

Note: NA = Not Available

Chilled and frozen seafood producers in Malaysia are mainly focusing on the export market. There are about 19 manufacturers in this sub-segment. One of the major players is QL Food, with annual turnover of approximately RM145.5 million. Another prominent producer, Seapack, is the market leader of value-added seafood products and has an annual turnover of RM45 million and it exports more than 90% of its products to Europe and other countries. Other manufacturers include Sea Master (revenue RM 37.4 million), Barkath Marine (RM62 million) and Lucky Frozen (RM 6.8 million). Common type of seafood-based products are *surimi*-based products, *sotong* balls, breaded *sotong* balls, *sotong* nuggets, scallops, fish chips, fish nuggets, 2- in-1 fish sandwiches, fish burgers, fish fillets, *otak-otak* rolls, prawn balls, and breaded prawn balls. The following list illustrates some of the local seafood manufacturers:

Table 2.15 Manufacturers of Chilled and Frozen Seafood

Company	Year of establishment
Barkath Marine Products	28 December 1972
Butterworth Iceworks Sdn Bhd	NA
Eastern Global (M) Sdn Bhd	NA
Hong San Frozen Foods Sdn Bhd	NA
N.T. Huat Kee Fisheries Sdn Bhd	NA
Panda Foods Co. Sdn Bhd	NA
Sea Gull Frozen Foodstuffs Sdn Bhd	NA
Seapack Food Sdn Bhd	1994
Sea Master Trading Co. Sdn Bhd	NA
Soonfroze Corporation Sdn Bhd	NA
Sin Wan Fatt Marine Products Sdn Bhd	NA
Ting Seng Brothers Trading	NA
Biochem Laboratories Sdn Bhd	NA
Union Laboratories Sdn Bhd	NA
QL Foods	1994
HSH Sdn Bhd	1991
Kami Food Sdn Bhd	1997
Tradisi Emas	1988
Oceanpac Sdn Bhd	NA

Note: NA = Not Available

The further processed local chilled and frozen meat, poultry and seafood products produced have outpaced similar imported products over the last few years. Fierce competition among the handful of local poultry integrators brought down prices of chicken frankfurters to a level that displaced foreign brands such as Emborg, Rose and Valley Chef.

2.3.2 Importers

Importers of chilled and frozen food play an important role in the industry especially in supplying food ingredients and western food products. Some of the local manufacturers of chilled and frozen food are also importing certain range of chilled and frozen food directly from overseas markets. Pillsbury (M) S/B, with an annual turnover of RM 4.5 million, is an example of importers of chilled and frozen meals and snacks. Kong Kee Trading is one of the major importers of chilled and frozen food ingredients with an annual turnover of RM 16.56 million. Examples of imported chilled and frozen food are ready-to-eat apple pies, waffles, pizzas, puffs, and chilled and frozen Japanese ingredients. The local beef product manufacturers import beef from India via Port Klang or Penang Port. The following tables list of major importers of chilled and frozen food:

Table 2.16 Importers of Chilled and Frozen Meals and Snacks

Company	Year of establishment
Pillsbury (M) Sdn Bhd	19 September 1998
Gardenia	NA
Kellogg's	NA
Sara Lee	NA
Standard & Confectionery	NA
Pok Brothers	11 May 1974

Note: NA = Not Available

Table 2.17 Importers of Chilled and Frozen Food Ingredients

Company	Year of establishment
Daisho Food (M) Sdn Bhd	NA
Focal Marketing	NA
Kong Kee Trading	NA
Sahachol Food Supplies	NA
Toyo Suishan	NA

Note: NA means not available

Table 2.18 Importers of Chilled and Frozen Meat and Seafood

Company	Year of establishment
Suvinisa (M) Sdn Bhd	NA
Sin Soon Onn Frozen Food Sdn Bhd	NA
Prima Agri Products Sdn Bhd	07 September 1987
Fatric Sdn Bhd	NA
Pok Brothers Sdn Bhd	11 May 1974
Pacific Shore Finefoods Sdn Bhd	NA
Angliss Food Sdn Bhd	NA
Chiew Frozen Foods Sdn Bhd	NA
Syarikat Jasa Murni	NA
Perusahaan Burger Ramlymokni Sdn Bhd	1980 (small time), 1985
Ng Kee Cold Storages Sdn Bhd	NA
Ternakan Murni Sdn Bhd	NA
Angliss Malaysia	NA
Ben Foods (M) Sdn Bhd	16 September 1986
Selangor Livestock Company Sdn Bhd	NA
Maha Berjaya Frozen Foods Sdn Bhd	NA
Chiong Ching Food Supply Sdn Bhd	NA
Selamat Supplies Sdn Bhd	21 April 1992
B.G.S. Sdn Bhd	NA
Farm Master Sdn Bhd	NA
Yee Trading & Management Resources Sdn Bhd	NA
Saudi Cold Storages Sdn Bhd	NA
Lucky Frozen Sdn Bhd	9 April 1982
Principal Agents For Frozen Meat	NA

Note: NA means not available

Other industry players are discussed in Chapter 4.1 Supply Chain of the Industry.

2.4 Production Facilities, Equipment and Capacities

a) Chilled and Frozen Ready-to-serve Meals

There is no local producer of chilled or frozen ready meals. Almost all products in this category are sold in restaurants, coffee shops, and coffee stalls at ambient temperatures and sold within the same day of production. In Singapore, some of these products are distributed in frozen condition and are manufactured by Singaporean companies.

b) Chilled and Frozen Snacks

Almost all products in this category are distributed frozen. As such, production of spring roll pastry, *mantau*, mini buns, pancakes, spring rolls, *roti pratha*, and *samosa* require freezing equipment and facilities. Currently, most manufacturing facilities are housed in shop lots, and are rather manual and labour intensive. Majority of the manufacturers are SMIs with a turnover of not more than RM25 million. Production equipment is basic, many of them secured before 1990.

The key equipment in ensuring quality of products in the cold chain is shock freezers and spiral freezers. Other equipment required are mixers, moulding machines, belt conveyors, and packaging machines. While the larger manufacturer has one unit each of shock freezer and spiral freezer (more than five years old), the smaller ones usually lease ordinary freezers. As to the delivery cold trucks, the larger manufacturers have cold trucks of their own while for the smaller companies; delivery is outsourced to third parties. In all cases, loading and unloading of finished products for dispatch are done at ambient temperature without the facilities of the "ante-room" which should safeguard against the loss of cold air.

A leading manufacturer has now invested about RM15–RM20 million in building and machinery in order to meet the growing demands of his products both locally and overseas. The company is upgrading his hygiene standards to meet importing markets' GMP and HACCP requirements. Most snack manufacturers have plant utilisation of about 70% and above, and are planning for expansion and upgrading their manufacturing facilities.

c) Chilled and Frozen Meat and Seafood

In the meat sector, the following are the main facility and processing equipment used:

- Further processing air-conditioned ventilated room, to meet hygiene, sanitary and plant-engineering requirements set up by the Government.
- Waste disposal system infrastructure attached to the above building, with minimum standards set by the DOE under the Ministry of Science, Technology and the Environment.
- Plant design and materials specifications built to meet the MOH and the MOA requirements, under the HACCP or Veterinary Inspection Systems.

In the poultry sub-sector, the following are the major production facilities of chilled and frozen food:

- Complete processing and packaging line for coated products such as nuggets, balls fingers, fillers and patties.
- Complete processing line for frankfurters from raw materials to freezing and packaging
- Complete processing line for hamburgers
- Complete processing line for balls
- Specific equipment for brine curing, injection, tumbling, marinating, and smoking of value-added meat products.

In the seafood value-added chilled and frozen products processing, the major primary processing plant will have the following flow of processing line:

- Similar to those with the poultry complete line if the poultry products are the same.
- Surimi (minimally processed fish meat) processing line as shown in see Appendix 9.
- Seafood analogue of crab sticks, crab claws, scallops, lobster tails, fish sausages processing machinery.

In the meat, poultry and seafood value-added sector, the following are the two major categories of manufacturers:

- Large Scale Manufacturers Category

Products	Manufacturer
Poultry	<ul style="list-style-type: none"> • KFC (Ayamas), Dindings Poultry Processing, Sin Mah Sdn Bhd, and Leong Hup (Ayam AI)
Seafood VAP	<ul style="list-style-type: none"> • Kami Food, QL Foods, SwiShun and Tradisi Emas Sdn. Bhd

- Smaller Scale Manufacturers Category

Products	Manufacturers
Poultry and Beef	<ul style="list-style-type: none"> • Fika, Food, Purnama, Tonsjung, Mega and Sri Rasah
Minimally-Prepared Seafood*	<ul style="list-style-type: none"> • Butterworth Keworks, Barkath, Ocean Park Sdn Bhd

Note *: such as Black Tiger, shrimp, cockles, crab meat and lobsters

Production capacity for the two major categories differs largely as a result of raw materials procurement.

Table 2.19 Average VAP Production Capacity of Various Size of Manufacturers

	VAP production capacity
	Metric tons / month
Fully integrated poultry manufacturers e.g. KFC (Ayamas)	1200 - 1500
Medium size firm e.g., Leong Hup	300 - 500
Small SMI factories like Tanjong Burger, Perusahaan Megah and Sri Rasah	30 - 100

With Seafood VAP, Seapack Food Sdn Bhd produced about 580 tons per month, most of it for the export markets. QL Foods produces close to 350 tons per month of VAP largely for the local market. Perusahaan Kami, and Tradisi Mas Sdn Bhd along with HSH Food Sdn Bhd, produce about 30 tons, 54 tons and 80 tons respectively. These figures were given by the owners / operators. Perusahaan Makanan Kami Sdn. Bhd may produce 50 tons per month but local market dominance of its products range (VAP) are many and represented by subsidiary companies like Starkiss Food Corporation, Mac Food Enterprise, and Jaiton Frozen Food Sdn Bhd.

The above examples of production volumes of VAP products are rough estimation obtained from interviews and filed survey. Many owners/operators were reluctant to release actual production figures.

Some figures obtained from the Department of Veterinary Service on VAP from the livestock sub sectors are shown in Table 2.20.

Table 2.20 Production of Value-Added Products 1999

Value-Added Products (1999)	Volume (metric tons)
Poultry products	36,485
Beef products	6,848
Pork products	14,610
Milk products	144,038
Total	201,981

Taking into account the production volumes of KFC Ayamas at 1,200 tons per month, Dindings at 600 tons per month, Farms Best at 500 tons per month, and Ayam AI at 300 tons per month (totalling to 31,200 tons per year, for poultry chilled and frozen products), the four major manufacturers accounted for about 85.5 percent of the 1999 production volume for poultry products.

The production capacity of selected local producers are shown in Table 2.21

Table 2.21 Production Capacity of Selected Local Producers

Name of Manufacturer	Number of employees	Number of shift	Max production (tons/month)
Saudi Cold Storage	100	1	8
Burger Tanjung	9	1	NA
Omar's Deli	<20	NA	8
HSH Sdn. Bhd	15	1	80
Kami Food Sdn Bhd	52	1-2	50
Lucky Frozen	130	1-2	1000
OL Foods	100	2	350
Rex Canning Co	60	1	60
Sri Rasah	NA	NA	100
Tradisi Emas	NA	1	30-72
Seapack	340	3	583
Selangor Food Industry	89	2	432
U.B. Food SB	10	1	40

d) Chilled and Frozen Food Ingredients and Vegetables

Food ingredients such as tofu are mostly manufactured by backyard industries and distributed chilled or at ambient temperature to wet markets. Coconut milk or *santan* is another food ingredient distributed chilled or at ambient temperature.

The players involved are many and almost all are SMIs though very little information is available on their plant capacity and production volume.

The cost structure of some of the chilled and frozen food players surveyed are as follows:

Table 2.22 Cost Structure / Profit Margin for some Chilled and Frozen Food Players

	Snack manufacturer A	Snack manufacturer B (tempura)	Snack manufacturer B (Pau)	Importers A & B
Raw material	% 30	% 60	Cost of production 26%	Gross profit margin 20% - 30%
Manufacturing cost	30	20	Cost to agent 59%	
Transportation	10	5	Gross profit margin 14%	
Packaging	15	10		
Promotion	5	5		
Others	10	-		
Total	100	100		

2.5 Raw Materials

2.5.1 Raw Materials for Frozen Snacks

The main raw materials for frozen snacks are sourced both local and overseas and include wheat flour, vegetable oil, margarine, glutinous rice, spring onions, potatoes, peas, onions, chicken fillets, and vegetables. Examples of source of supplies are shown in Table 2.23.

Table 2.23 Examples of Source of Main Raw Materials for Frozen Snacks

Main Raw Material	Sourced from	Company / country
Wheat flour	Local	United Malayan Flour
Vegetable Oil	Local	Edible Oil
Margarine	Local	Felda Refinery
Glutinous Rice	Overseas	Thailand
Spring Onion	Overseas	Germany
Potatos	Overseas	USA

The main reasons for importing raw materials, especially vegetables, are consistent supplies, cheaper prices, and better quality. There is little understanding by local farmers of the manufacturers' commercial requirements.

The snack manufacturers have expressed their concerns that the Government has not given enough emphasis on developing large-scale vegetable farming to increase supply and keep prices from going up.

2.5.2 Raw Materials for Chilled and Frozen Meat and Seafood

The chilled and frozen food industry is growing well, mainly due to the strong poultry and seafood subsector. Malaysia is the third largest producer of poultry meat among developed and developing nations in the Asia Pacific Region, contributing about five percent to the region's total production. Table 2.24 to Table 2.27 showed Malaysia's position in chilled and frozen poultry products sub-sector.

Domestic per capita consumption of poultry meat in Peninsular Malaysia has also increased by 6.8 percent p.a. from 20.4 kg in 1990 to 32.33 kg in 1997. Beef production, however, caters mainly to domestic demand for fresh beef, as most frozen meat is imported from India and very much lower quantities from Australia and New Zealand.

Per capita consumption of beef in Peninsular Malaysia increased by 6.3 percent p.a. from 3.5 kg in 1990 to 5.4 kg in 1997. The per capita consumption of meat in East Malaysia is much lower, approximately half the amount of Peninsular Malaysia.

Malaysia is self sufficient in poultry, pork and eggs, but imports close to 80 percent of its beef requirements. Tables 2.28 showed Malaysia's production of livestock meat products, which explains why we import large volume of the raw materials such as Indian beef and seafood products. Tables 2.29 and 2.30 highlights the raw materials from livestock that are imported and exported for 1990 and 1995.

Table 2.24 The Poultry Industry in Malaysia

Number of Chickens Slaughtered in South-East Asia (millions)						
Country	1990	1993	1994	1995	1996	1997
Myanmar	68	80	84	99	111	124
Indonesia	591	860	1004	1,095	1,202	1,317
Cambodia	12	16	15	15.0	17	17
Laos	8	10	11	11	12	12
Malaysia	285	473	504	516	530	530
Philippines	205	272	284	307	350	360
Singapore	45	40	39	40	40	40
Thailand	440	527	520	434	685	735
Vietnam	160	150	150	155	190	210
Total	1,814	2,428	2,610	2,672	3,137	3,344

Source: Poultry International Oct. 1998, (FAO)

Table 2.25 The Poultry Industry in Malaysia

Chicken Meat Output in Listed Countries ('000 metric tons)						
Country	1990	1993	1994	1995	1996	1997
Myanmar	68	80	84	99	111	124
Indonesia	473	688	803	876	961	1,053
Cambodia	12	16	15	15	17	17
Laos	6	8	9	9	9	9
Malaysia	349	606	645	661	678	678
Philippines	229	347	362	400	455	470
Singapore	68	60	58	60	60	60
Thailand	575	685	700	780	890	955
Vietnam	130	120	120	124	150	170
Total	1,910	2,609	2,796	3,023	3,332	3,536

Source: Poultry International Oct. 1998, (FAO)

Table 2.26 The Poultry Industry in Malaysia

Number Of Layers in Listed Countries (millions)						
Country	1990	1993	1994	1995	1996	1997
Myanmar	14	15	16	18	18	20
Indonesia	86	110	126	138	150	160
Cambodia	2	2	3	3	3	3
Laos	1	1	1	1	1	1
Malaysia	39	47	47	47	48	48
Philippines	52	51	53	56	67	78
Singapore	2	2	2	2	2	2
Thailand	62	56	57	59	70	71
Vietnam	22	26	27	28	29	30
Total	280	310	331	351	388	413

* Source: Poultry International Oct. 1998, (FAO).

Table 2.27 Self Sufficiency in some of the Major Commodities 1990 –1995

Commodities	1990	1995
	%	%
Fishery Products	91	91
Beef	30	22
Mutton	10	6
Poultry	115	114
Pork	117	101
Egg	109	114

Source: Economic Report, Ministry of Finance 1998/99

Table 2.28 Production of Livestock Products 1990 – 2000 ('000 tons)

Commodity	1990	1995	2000
Beef	12.8	15.6	187.0
Mutton/goat	0.8	1.1	13.0
Poultry	385.9	647.0	840.0
Pork	227.9	305.0	320.0
Eggs ¹	5505.0	7750.0	9150.0
Milk ²	28.9	33.8	37.5

1. Measured in million unit

2. Measured in million litres

Source: Economic Report, Ministry of Finance 1998/99

Table 2.29 Food Export 1990–1995 (RM Million)

Commodities	1990	%	1995	%
Export	3991.5	100.0	4484.5	100.0
Live animal	385.0	9.7	545.9	12.2
Meat and meat products	44.4	1.1	64.5	1.4
Dairy products	157.4	3.9	239.3	5.3
Seafood products	606.8	15.2	848.2	18.9

Source: Economic Report, Ministry of Finance 1998/99

Table 2.30 Food Import 1990-1995 (RM Million)

Commodities	1990	%	1995	%
Import	4551.2	100.0	6677.8	100.0
Live animal	67.0	1.5	101.1	1.5
Meat and Meat Products	284.4	5.5	340.2	5.1
Dairy Products	538.7	11.8	727.6	10.9
Seafood Products	361.7	7.9	762.0	11.4

Source: Economic Report, Ministry of Finance 1998/99

Frozen beef imports, especially from India need special mention. Almost 90 percent of the red meat (in the form of frozen Indian buffalo meat) comes from India. From the costs and retail prices as shown in Table 2.31, it is obvious why meat from India accounts for 84 percent of total imports. Cheapest at RM6.00 per kg, meat from India is the major raw material for the value added beef meat products in Malaysia.

In fact, because of its low price, almost all manufacturers of beef burgers, frankfurters, balls, and nuggets use Indian meat with the exception of companies like Prima Agri Sdn Bhd and MacFood, who produce specified value-added meat products from non-Indian beef.

Value-added products such as beef burgers, hotdogs, and balls are produced using cheaper Indian meat, instead of using the fresh and more expensive local beef or imported meats from Australia, New Zealand and Argentina. Frozen meat was noted to have become more popular than fresh versions.

The fishery and livestock industries have shown improved productivity from 1997 to 1998. Marine fish landing in 1997 was 1,131,000 ton improving in 1998 to 1,166,000 ton, a 3.1% change. As for the livestock sub sector, production was 894,600 tons in 1997 increasing to 932,400 tons in 1998, a 4.2% change.

Table 2.31 List of Meat Exporters of Malaysia and Retail Prices of some Red Meat 1996-1997

Exporting Countries (1997)	Weight (kg)	Cost including freight case	(CIF/KG)(RM)
Argentina	82,039	1,014,638	12.37
Australia	4,836,914	24,394,960	5.04
Canada	6,206	23,409	3.77
Holland	13,608	189,402	13.92
India	47,237,507	175,542,749	3.72
New Zealand	3,941,063	27,369,927	6.95
Thailand	24,000	264,000	8.50
United States	384,041	7,393,192	19.25
Type of Meat	1996	1997	
Local beef	11.78	11.93	
Import beef (India)	6.03	6.01	
Local mutton	13.69	14.08	
Import mutton	6.09	7.77	
Slaughtered chicken	4.45	4.66	

Source: Economic Report, Ministry of Finance 1998/99

2.6 Technology and Technical Know-how

In the frozen snacks segment, the level of technology employed is low to medium, using basic processing and packaging machinery. While bigger key players have blast and spiral freezers, essential in maintaining the quality and safety of products, smaller players employ third party cold room facilities located within vicinity of the factory.

Key players have plans to expand their business, and have taken steps to purchase new factory buildings and up-to-date equipment for processing, packaging and freezing. One key player has invested an estimated RM10 to RM15 million for his operation.

Many of the main players are entrepreneurs who have started small in hawking. As such, their knowledge lacks sophistication and is based on their prior hands-on and practical experience. Some of these entrepreneurs have since participated in international exhibitions which have generated fresh ideas for their factories.

2.6.1 Chilling and Freezing Technology

The success of the chilled and frozen food industry depends to a very large extent on the availability and use of suitable technology. Today advances in the chilling and freezing technology have helped the industry produce food that meet the increasing demand of consumers for quality and safe food. These advances are helping companies make their operation more efficient and cost effective.

Chilling and freezing technology involves the process of reducing heat or lowering the temperature of the food, thereby slowing down various changes that takes place to the food during storage. These changes are due to the activities of microorganisms and chemicals such as enzymes present that will affect the quality and possibly, the safety of the food. Since little or no heat treatment is used in the operation, procedures before and after chilling and freezing operations are just as important if food is to be considered safe for consumption.

a) Chilling

Chilling equipment is classified based on the method involved in bringing down the temperature. These are:

- Mechanical refrigerators
- Cryogenic systems

Batch and continuous operation is possible with both types of equipment. These equipment are able to lower the temperature of the product as quickly as possible through the critical warm zone (50 – 10°C) where maximum growth of microorganisms and enzymic activities occur.

The following sections describe various types of chilling equipment:

(1) Mechanical refrigerators

Mechanical refrigerators have four basic elements: an evaporator, a compressor, a condenser, and an expansion valve. A refrigerant such as CCl₂F or CHClF₂ circulates between the four elements of the refrigerator, changing state from liquid to gas and back as liquid. During this process, the refrigerant cools the chilling medium.

The chilling medium in mechanically cool chillers may be air, water, or metal surfaces. Air chillers use forced convection to circulate cooled air to increase the rate of cooling. Air blast chillers for refrigerated vehicles are also available. However, food should be adequately chilled when loading onto the vehicle as the system is designed to hold the food at the required temperature and not to provide additional cooling of incompletely chilled food. Some companies, to reduce distribution time, maintain product quality and reduce transport cost; use computerized planning of vehicle loads and transport route.

Retail chill cabinets use chilled air, which circulates by natural convection. Forced convection is not usually necessary because the equipment holds pre-chilled food and the heat load is, therefore, small. The cost of chill storage can be high and some stores may have centralized plant to produce refrigerant for all cabinets. Computer controls of multiple cabinets are now available to detect excessive rises in temperature and warn operators to remedy the situation. Other advances in this area are in the installation of glass doors and night blinds on the front of cabinets to trap cold air.

Food with a large surface area (such as lettuce) is washed and vacuum cooled. The food is placed in a large vacuum chamber and the pressure is reduced to approximately 0.5kPa. Cooling takes place as moisture evaporates from the surface (a reduction of 5°C for every reduction of 1 percent in moisture content). Direct immersion in chilled water removes field heat from fruits and vegetables. Plate heat exchangers are still very popularly used by the industry to rapidly cool liquid foods. Semisolid foods can be cooled by contact with refrigerated, or water-chilled metal surfaces in the scrapped heat exchanger.

(2) Cryogenic chilling

Cryogenic chilling is achieved by using solid carbon dioxide (CO₂), liquid CO₂, or liquid nitrogen. Liquid nitrogen can be sprayed onto trays or cartons of food to remove heat at a much faster rate than mechanical chillers. When properly carried out, products are not dehydrated. Small excess of cryogen on the packaging continues the cooling during transportation. If the product is dispatched immediately in insulated vehicles, this type of chilling is able to replace on-site cold stores and thus saves space and labour costs. Another example of cryogenic chilling is where liquid CO₂ is used in sausage manufacturing to remove heat produced during meat grinding and mixing.

(3) Cook chill system

Cook chill and cook-pasteurize-chill systems have been well accepted as important to the operation of the food service sector. This system can replace the practice of warm holding of foods for long period before consumption, which in turn, reduce losses in nutritional and eating quality. Less expensive, sales of cooked-chilled ready meals in the retail segments in the West, are increasing due to their convenience, mild processing and healthy image.

Initial preparation of cooked chilled food is the same as normal food. The food is then portioned and chilled to 30°C within minutes of cooking. Chilling should be completed within 90 minutes and should be stored at 0-30°C to control the growth of microorganisms. Such food has a shelf life of up to five days. In the cooked-pasteurise-chill system, hot food is filled in a flexible container, a partial vacuum is formed to remove oxygen and the pack is heat-sealed. It is then pasteurised to a minimum temperature of 80°C for 10 minutes at the thermal center, followed by immediate cooling to 30°C. Such food can have a shelf life of 2-3 weeks.

b) Freezing

Freezing is a process in which the temperature of a food is reduced below the freezing point, and a portion of water in the food undergoes a change in state to form ice crystals. As freezing may result in deterioration of the food quality, advances in the technology have helped minimize this effect. Major groups of commercially frozen foods include fruits, either whole or pureed, vegetables such as potatoes and peas, fish and seafood and their products; meat and meat products, and prepared foods such as pizza, snacks, and complete meals.

There are many types of freezing equipment available in the market, but they can be categorised into mechanical freezers and cryogenic freezers. Mechanical freezers use cooled air, cooled liquid or cooled surfaces to remove heat from foods. Cryogenic freezers use carbon dioxide, liquid nitrogen or liquid Freon directly in contact with the food.

Alternatively, freezers can be classified according to the rate of cooling achieved:

- Slow freezers and sharp freezers including still air freezers and cold stores
- Quick freezers including blast and plate freezers
- Rapid freezers including fluidized bed freezers
- Ultra-rapid freezers or cryogenic freezers

Freezers that use cooled air include chest freezers, blast freezers, spiral freezers, and fluidized-bed freezers.

The various types of freezers are explained below:

(1) Cryogenic freezers

Freezing is achieved using a cryogen coming in intimate contact with the food and rapidly removing heat from the food. The two most common refrigerants are liquid nitrogen and solid or liquid CO₂. The choice of refrigerant is largely determined by its cost and the nature of the product. In liquid nitrogen freezers, packaged or unpacked food travels on a perforated belt through a tunnel where it is cooled by gaseous nitrogen and then frozen by liquid nitrogen. This method has many advantages including smaller weight loss from dehydration, little rapid freezing and simple continuous equipment with relatively low capital costs. The main disadvantage is the relatively high cost of refrigerant.

(2) Cooled liquid freezers

These are freezers where packed food is passed through a bath of refrigerated propylene glycol, glycerol or calcium chloride solution on a submerged mesh conveyor. The method has high rates of heat transfer with relatively low capital costs. It is commercially used to pre-freeze film-wrapped poultry before blast freezing.

(3) Plate freezers

Plate freezers consist of horizontal or vertical series of hollow plates, through which refrigerant is pumped at about -40°C. They may be batch, semi-continuous or continuous in operation. Flat, relatively thin foods (e.g. filleted fish, fish fingers, prawns, or beef patties) are placed in single layers between the plates and a slight pressure is applied by moving the plates together. This improves the contact between surfaces of food and the plates and, thereby, increases the rate of heat transfer. Advantages of this type of equipment include good economy and space utilization, relatively low operating costs compared with other methods, little product dehydration, and high rate freezing. The main disadvantages are the high capital costs, and restriction on the shape of foods.

(4) Fluidized-belt freezers

These are a modified blast freezers in which air at between -25 and -35°C is passed at a high velocity through a 2-3cm belt of food contained on a perforated tray or conveyor belt. Food comes into greater contact with the air than in blast freezers and all surfaces are frozen simultaneously and uniformly. The freezing rate is shorter; production rates are higher (10,000kg/h) with less dehydration than in blast freezing. However, the method is restricted to particulate foods such as French fries, shrimps, sweet corn kernels and peas. These freezers are highly suited for the production of individually quick freezing (IQF) foods.

(5) Blast freezers

Freezing is achieved by circulating cooled air of between -30 and -40°C at certain speed over food. In batch equipment, food is stacked on trays in rooms or cabinets. Continuous equipment consists of trolleys stacked with trays of food or conveyor belts which carry the food through an insulated tunnel.

Air flow is either parallel or perpendicular to the food and is ducted to pass evenly over all food pieces. Blast freezing is relatively economical, and highly flexible in that foods of different shapes and sizes can be frozen. The equipment is compact and has a relatively low capital cost and a high throughput (200-500kg/h). However the large volume of recycled air can cause freezer burn and oxidative changes to unpacked foods. Moisture from the food is transferred to the air and builds up as ice on the refrigeration coils, and this necessitates frequent defrosting.

(6) Belt freezers

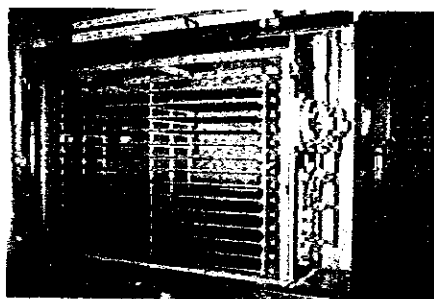
These are modified air blast freezers in which a continuous flexible mesh belt is formed into spiral tiers. Food is carried up through a refrigerated chamber on the belt. Cooled air or sprays of liquid nitrogen are directed down through the belt stack (counter-current flow). Spiral freezers require relatively small floor space and are high capacity (for example a 50-75 cm belt in a 32-tier spiral process up to 3000kg/h. Other advantages include automatic loading and unloading, low maintenance costs, and flexibility for different products. They are used for a wide range of products including snacks, pizzas, seafood, poultry, and meat products.

(7) Chest freezers

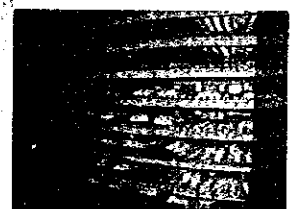
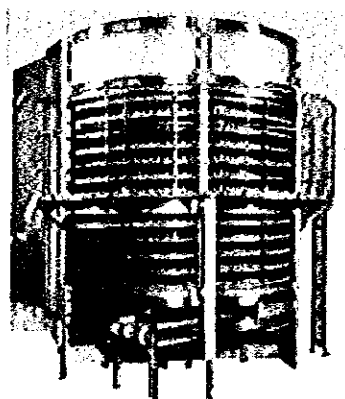
Food is frozen in natural circulation air at between -20 and -30°C . Because of their slow freezing rates, chest freezers are normally used as cold store of frozen foods and to freeze carcass meat.

Examples of freezers

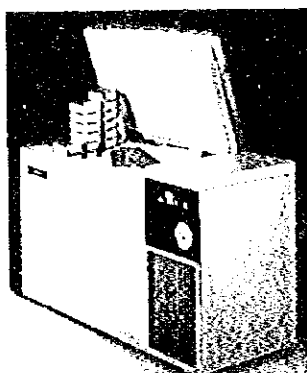
Air Blast freezer



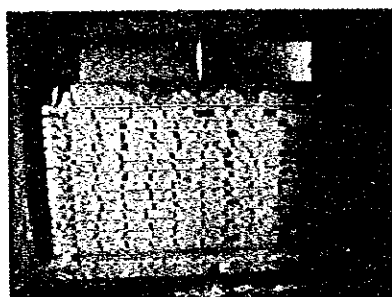
Spiral freezer



Cryogenic freezer



Contact Freezer



A comparison of freezing methods and their applications are summarised below:

Table 2.32 A Comparison of Freezing Methods

Method of freezing	Typical freezing times for specific foods to -18°C (min)	Categories of food
Still air (chest freezers)	180	Meat carcasses, cold store
Blast	18 – 30	Unpacked peas
Spiral belt	25	Meat and poultry portions, seafood, cut vegetables
Fluidized bed	3 – 4 15	unpacked peas fish fingers
Plate	25 75	1 kg carton vegetables 25 kg blocks of fish
Immersion (Freon)	0.5 4 – 5	Peas Beef patties, fish fingers
Cryogenic	2 – 5 0.5 – 0.6	Beef patties, seafood Fruits and vegetables

Source: Food Processing Technology: Principles and Practice/ P. Fellows (1999).

2.6.2 Use of Chilling and Freezing Technology in Malaysia

Currently, there is a wide variation in the industry's adoption of technology which comprises both SMIs and multinationals. Table 2.33 summaries various types of equipment and their use among local chilled and frozen food producers. Generally, large-scale manufacturers only use high-end equipment such as cryogenic, spiral and contact freezers. Lower end blast freezers and still freezers are generally used by SMIs.

There is a widespread use of fabricated machine in chilled and frozen industry due to reasons the high cost of imported machinery (there is a tax of 40 percent imposed on refrigeration machinery). Imported machines also require a high production volume to be cost effective. Except for chilled and frozen meat and seafood sub-sector, many local manufacturers may not be able to operate at such high capacity.

Table 2.33 Usage of Chilling and Freezing Technology in Malaysia

Technology & Equipment	SMEs	Larger scale manufacturers
1. Freezing		
Cryogenic freezers	<ul style="list-style-type: none"> Not available in all SME's 	<ul style="list-style-type: none"> Available to a few, e.g. Mac Food
Belt / spiral freezers	<ul style="list-style-type: none"> Not available in most SME's 	<ul style="list-style-type: none"> Available and used by some, e.g. Selangor Food Industry, Mac Food, KFC
Fluidized belt freezers	<ul style="list-style-type: none"> Not available in most SME's 	<ul style="list-style-type: none"> Not adopted by manufacturers under survey
Blast freezers	<ul style="list-style-type: none"> Adopted by larger SME's, e.g. Lucky Frozen, K.G. Pastry. Not available in most SME's 	<ul style="list-style-type: none"> Available and widely utilized
Contact freezers	<ul style="list-style-type: none"> Not available in most SME's 	<ul style="list-style-type: none"> Commonly used in seafood processors, e.g. Oceanpack
Cook freeze system	<ul style="list-style-type: none"> The fully integrated system is not adopted by SME's, eg. production of roti pratha is using cook and chill system, but not the integrated system 	<ul style="list-style-type: none"> Adopted by Mac Foods
Still freezers	<ul style="list-style-type: none"> Adopted by most SME's, some via 3rd party; processes using this system, e.g. <i>Roti pratha, pau, murtabak</i>. 	<ul style="list-style-type: none"> Adopt a variety of techniques including still freezers for less critical steps.
2. Chilling		
Cryogenic chiller	<ul style="list-style-type: none"> Not available in most small food service sectors 	<ul style="list-style-type: none"> Not adopted by manufacturers under survey
Blast chiller	<ul style="list-style-type: none"> Not available in most small food service sectors 	<ul style="list-style-type: none"> Used by bigger Food Service Establishments, e.g. MAS Catering, KLAS, Sajibumi.
Cook-chill system	<ul style="list-style-type: none"> Not available in most small food service sectors 	<ul style="list-style-type: none"> Used by some hotels and food caterers, e.g. Hilton, MAS Catering, KLAS
Still chiller	<ul style="list-style-type: none"> Widely used by Food Service establishments & retailers. 	<ul style="list-style-type: none"> Widely used by retail chains, e.g. Makro, Carrefour, and complete with temperature monitoring devices

Ability of the locally fabricated machine to produce high quality chilled and frozen product is questionable. The machine does not have to comply with full specification requirements as in the case of imported machinery. While well known imported machinery (such as spiral freezer and fluidised-bed produced by Frigoscandia Equipment AB, Sweden; blast chillers and shock freezers produced by IRINOX, Italy; and blast freezers produced by WILLIAM, (UK), have undergone a thorough R&D process, the local fabricated machines are not fully tested. Its real performance in the long run can only be known after prolonged use.

2.6.3 Effect of Chilling and Freezing Technology on Quality Parameters

The level of chilling and freezing technology used in the manufacturing of chilled and frozen food has a major influence on product quality in terms of eating quality, food safety and nutritional quality.

The following sections list the effects of chilling and freezing technology on quality parameters:

a) Eating Quality

Chilling and freezing will affect eating quality of food i.e. the food's texture, colour, appearances, juiciness, taste, aroma and mouth feel. The following are examples of food changes:

- Frozen *karipap*, *martabak* become soggy and less crispy compared to fresh ones.
- Frozen prawns become rubbery and dry due to drip loss after processing.
- Fats and oils in chilled processed food will harden.
- *Santan* will turn rancid and oil fraction separated.
- Fruits and vegetables will have unappealing colour and texture.

The extents of the changes are dependent on the pre-treatment used on the food as well as the conditions during cold storage, transportation and display. Table 2.34 summarises a general relationship of various chilling and freezing equipment and eating quality. Good eating quality can be obtained using cryogenic, spiral and good blast freezers where minimum damage occurs to the food matrix. The use of still and contact freezers may result in lower quality products due to physical injury of food from the formation of large ice crystals.

Chilling normally does not result in significant deterioration of food eating quality as little physical changes occur. Chilling, however, may solidify fat ingredients. Slow chilling may allow bacteria to grow and enzymes and chemicals to react resulting in the formation of off-flavor compounds.

Table 2.34 Relationship between Chilling and Freezing Equipment and Eating Quality

Equipment	Very Poor	Poor	Satisfactory	Good	Very Good
(a) Freezer					
Cryogenic					
Spiral					
Fluidized					
Blast					
Contact					
Still					
(b) Chiller					
Cryogenic					
Blast chiller					
Cook chill					
Still chiller					

b) Food Safety

Chilling and freezing do not kill pathogens. If improperly carried out, pathogens may grow and produce toxins. The key factor here is the rate the processes are carried out. Rapid freezing and chilling will quickly arrest the growth of pathogens making products safer. However, if the processes are slow, food safety may be at risk. This is particularly true for chilled products. If the temperature is allowed to go above 4°C, then pathogens such as *Salmonella*, *Staphylococcus* and *E. coli* 15.7H can start to grow. In fact, *Listeria monocytogenes* can even grow at temperatures close to 0°C.

Table 2.35 Relationship between Chilling and Freezing Equipment and Food Safety

Equipment	Very Poor	Poor	Satisfactory	Good	Very Good
(a) Freezer					
Cryogenic					
Spiral					
Fluidized					
Blast					
Contact					
Still					
(b) Chiller					
Cryogenic					
Blast chiller					
Cook-chill					
Still Chiller					

c) Nutritional Quality

Chilling and freezing do not have major impact on the nutritional value of the products, as they do not destroy nutrients. However, in cases where freezing is carried out too slowly, vitamins and other nutrients may be lost through leaching, resulting from physical injury to the food (see Table 2.36).

Table 2.36 Relationship between Chilling and Freezing Equipment and Nutritional Value

Equipment	Very Poor Retention	Poor Retention	Satisfactory Retention	Good Retention	Very Good Retention
(a) Freezer					
Cryogenic					
Spiral					
Fluidized					
Blast					
Contact					
Still					
(b) Chiller					
Cryogenic					
Blast chiller					
Cook chill					
Still chiller					

2.6.4 Cost of Investment

Investment in machinery normally require a lump sum amount of money, for example sausage machine cost over RM100,000 (USD26,320).

For the poultry segment, machinery cost for the nugget, burger, frankfurters, roast chickens and cured products can vary widely. A small factory producing about 50 tons per month of nuggets, 25 tons per month of burgers, and 25 tons per month of meat balls may need a minimum investment of RM1 million (see Table 2.37). This is just for basic equipment cost and do not include the costs of fixing of piping, hot water system, sewage facilities, and raw materials. Fika Foods, Perusahaan Mega Burger and Sri Rasah are good examples. A sophisticated, high capacity nugget or frankfurter line alone may cost at least RM6-8 millions while hamburgers and meat balls lines are less costly with initial costs of about RM1 million. A small-scale producer of sausages (1-2 tons per day) may require an initial investment cost of RM0.5 million.

For the seafood products, there is high-level sophisticated moulding, steaming, homogenizing and folding technology, which can be very costly. But for many SMI producers who manufacture between 30-70 tons per year of fish VAP, equipment cost is much lower.

Table 2.37 Estimated Cost of Processing Equipment for Basic Meat Products

Equipment	Cost (RM)
Frozen meat breaker	80,000
Meat grinder	100,000
Bowl cutter	200,000
Former	250,000
Flour machine	80,000
Batter machine	50,000
Breading machine	80,000
Brine mixer	40,000
Cooling tanks	10,000
Cooking kettle	10,000
Vacuum packaging machine	100,000
Total	1,020,000

Chapter 3

EXISTING MARKET SIZE AND CHARACTERISTICS

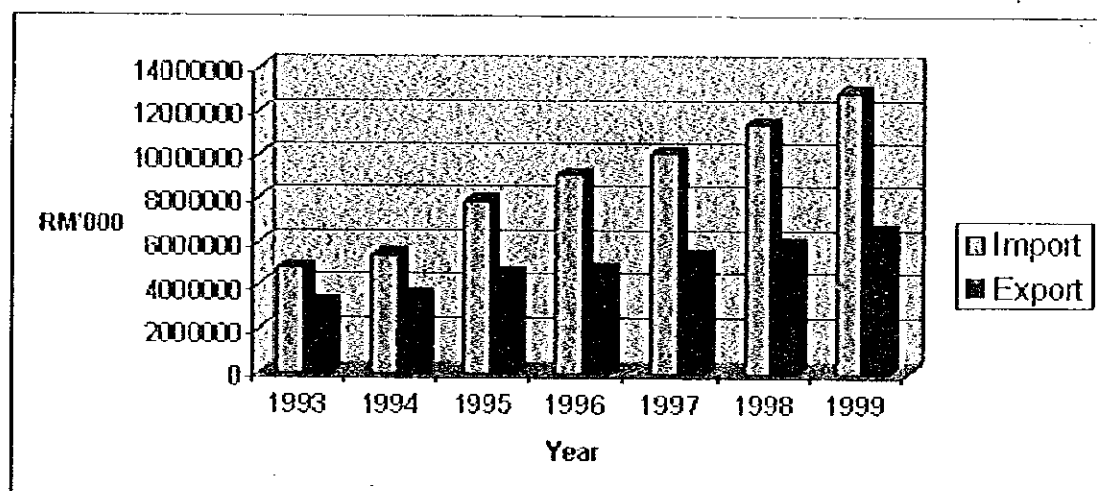
CHAPTER 3

EXISTING MARKET SIZE AND CHARACTERISTICS

3.1 Existing Market Size

The total export and import of food into Malaysia are shown in Chart 3.1. Currently, Malaysia is a net importer of food. The country's total food import was approximately RM12 billion in 1999 while the total export of food was about RM6 billion. Table 3.1 shows some selected commodity groups of food that includes chilled and frozen meat, fish and vegetables. The exact figures of chilled and frozen food by categories are not available. The figures available are mainly gathered from various sources using bases, which may differ in data collection.

Chart 3.1 Total Export and Import of Foods in Malaysia 1993-1999 (RM'000)



Note: Figure of 1998 and 1999 are based on the medium annual growth rate which are 13% for Import and 11% for Export.

Source: Department of Statistic Malaysia: Malaysian External Trade Report, 1994 – 1998.

Table 3.1 Malaysia Import and Export by Selected Commodity Groups 1993-1997 (RM'000)

Year	Commodity Groups	Meat of bovine animals	Other meat and edible offal, fresh, chilled or frozen	Fish, fresh, chilled or frozen	Crustaceans and mollusks, fresh, chilled, frozen, salted or in brine or dried	Vegetables, fresh, chilled, frozen or preserved
1993	Import	155,601	49,341	345,379	110,026	338,126
	Export	5,681	22,282	1,366,985	271,151	91,725
1994	Import	187,876	66,076	380,154	132,708	363,439
	Export	4,409	28,259	119,740	293,442	79,364
1995	Import	246,348	101,364	465,549	199,931	560,422
	Export	5,535	42,011	138,049	397,288	100,925
1996	Import	286,706	141,906	553,582	178,960	655,003
	Export	6,514	50,153	151,218	379,990	105,461
1997	Import	332,069	187,201	619,327	188,844	731,829
	Export	5,631	499,665	144,357	4,90,221	120,035

Source: Department of Statistic Malaysia: Malaysian External Trade Report, 1994 – 1998.

Chilled and Frozen Food Market

The chilled and frozen food market in Malaysia is estimated at RM2 billion (see Table 3.2). This figure takes into account only main items produced or imported by key players in the industry. The estimation relies on several sources of data from Euromonitor, Department of Veterinary Services Malaysia, Malaysian Frozen Foods Processors Association, Malaysia Monthly Manufacturing Statistics, Department of Statistics Malaysia, and the industry survey. The values above include traceable items of chilled and frozen food plus an average growth rate of 5% p.a., which is the minimum estimate.

Table 3.2 Estimated Chilled and Frozen Food Market Size in Malaysia

RM (million)	1996	1997	1998	1999			
				Market size	Export	Local Consumption	
						Total	Per capita (RM)
Ready meals	6.25	7.19	8.27	9.51	NS	9.51	0.42
Snacks	NA	NA	NA	62.95	20.16	42.79	1.89
Food Ingredients	NA	NA	NA	5.62	NS	5.62	0.25
Meat-based value-added products	NA	NA	303.28	18.44	S	18.44	4.03
Beef	326.22	357.15	342.56	359.69	NS	359.69	15.84
Mutton	64.97	70.84	73.53	77.21	NS	77.21	3.40
Pork	8.85	7.20	4.43	4.65	NS	4.65	0.21
Chicken	61.71	82.01	89.21	93.67	NS	93.67	4.13
Sub-total (beef, mutton, pork and chicken)	461.75	517.20	509.73	535.22	NS	535.22	23.58
Sub-total for meat	NA	NA	813.01	853.66	NS	853.66	37.61
Frozen crustacean	293.85	361.38	412.39	421.91	417.69	4.22	0.18
Chilled and frozen fish fillet	23.84	30.49	38.54	47.65	1.21	46.44	2.05
Frozen fish	121.32	127.39	133.76	140.44	49.16	91.28	4.02
Sub-total for seafood	439.01	519.26	584.69	610.00	468.06	141.94	6.25
Vegetables	NA	413.99	476.49	506.65	NS	506.65	22.32
Total	NA	NA	1,882.46	2,048.39	488.22	1,560.17	68.73

Notes: N/A – not available, NS – not significant.

Figures are obtained from Euro monitor, ROC, and the industry players. Some involve projection based on experts' opinions

The distribution of market size of the 4 categories of chilled and frozen food by segment is summarised in Table 3.3 below.

Table 3.3 Distribution of Chilled and Frozen Food Market Size by Segment 1999

	Ready-to-serve meals		Snacks		Meat		Seafood		Vegetables	
	%	Value RM million	%	Value RM million	%	Value RM million	%	Value RM million	%	Value RM million
Fast Food	Nil	-	Nil	-	67	571.95	20	122.00	30	152.00
Catering + Retail + Restaurant+ Hotel	90	8.56	65	40.92	30	256.10	3	19.94	70	354.65
Export	Nil	-	30	18.88	1	8.54	77	468.06	Nil	-
Others	10	0.95	5	3.15	2	17.07	Nil	-	Nil	-
Total	100	9.51	100	62.95	100	853.66	100	610.00	100	506.65

Note: Estimation by segment is derived based on sources from the industry, Government, and research institutions. The percentage given serves to indicate the relative proportion of various segments.

a) Ready-to-Serve Meals

The ready-to-serve meals market is estimated at RM9.51 million. This segment is at its infancy stage in the local market. Malaysian consumers are becoming more exposed to new eating alternatives such as Home Meal Replacement. The products in this food category include *nasi lemak*, prawn fried rice, chicken fried rice and noodle-based meals and steak. In Singapore, there is one company which distributes some limited quantities of *Loh Mai Kai* (glutinous rice with chicken). These products, which are mainly imported, are distributed in ready-to-eat form at normal ambient temperatures. There is no significant player in the local market for this category, however, based on the world food trend, this market may expand as consumers become more aware and receptive to the concept of chilled and frozen ready to serve meals.

Table 3.4 Market Characteristics of Chilled and Frozen Ready-to-Serve Meals

Definition	<ul style="list-style-type: none"> • Products that have three meal components, including meat or fish as the primary ingredient accompanied with a vegetable and a sauce or garnish to make up the third component. • In Malaysia, the primary ingredient may be rice, accompanied with vegetables and sauce to make up the third component.
Estimated Market Size For 1999	<ul style="list-style-type: none"> • RM9.51 million, the market size is mainly for local consumption because Malaysia does not export ready meal products.

Table 3.4 Market Characteristics of Chilled and Frozen Ready-to-Serve Meals (cont'd)

Consumption and source	<ul style="list-style-type: none"> • RM9.51 million (from industry survey)
Import and Export Size	<ul style="list-style-type: none"> • 95% of ready meals is imported (RM9.03 million). • 5% (RM 0.48 million) of ready-to-serve meals are distributed by local retailers or small producers who pack meals chilled without brand such as chilled <i>nasi lemak</i> • Malaysia does not export ready meals products
Per capita consumption	<ul style="list-style-type: none"> • Malaysian spends about RM0.42 to buy ready-to-serve meals (RM9.51 million / 22.7 million population)

Refer Table 3.5 for Calculation Framework for Chilled & Frozen Ready-to-Serve Meals (includes breakdown for Export Market & Local Consumption value for the year 1999).

Table 3.5 Calculation Framework for Chilled and Frozen Ready-to-Serve Meals

	Market size*** RM million	Annual growth rate
1996	6.25*	
1997	7.19**	15%
1998	8.27**	15%
1999	9.51**	15%

* Euromonitor estimation of US \$2.5 million (in 1996, 1USD=RM2.5), approximately RM6.25 million in year 1996.

** Figures derived from an estimated 15% annual growth rate; the 15% was chosen because in the industry survey, manufacturers interested to venture into ready meals sub-segment indicated that the annual growth rate is about 10 to 20% (the average growth rate is about 15%).

*** The total amount is mainly for local consumption.

b) Snacks

The snacks market is estimated at RM62.95 million. There are six major manufacturers in the local market in this segment. Some typical items are *pau*, *mantau*, spring rolls, buns, *roti pratha*, *samosa*, pizzas, and curry puffs. Most of them are in frozen form. According to Mr. T.C. Gan, the Managing Director and owner of KG Pastry, and Mr. H. S. Ding, Director of P.A. Food, there has been good growth over the past three years with an average 35% growth rate for industry leaders. They strongly believe that in the coming year this segment will achieve an annual growth rate of at least 20%. The export market is this segment's high potential, especially to Europe, US, Australia and New Zealand, where there is a strong demand for ethnic snacks.

Table 3.6 Market Characteristic of Chilled and Frozen Ready-to-Serve Snacks

Definition	<ul style="list-style-type: none"> • Light meal products consumed during teatime or between meals • In Malaysia this means products such as curry puffs, <i>mantau</i>, buns, spring rolls, <i>samosa</i>, pies, pizzas
Estimated Market Size for 1999	<ul style="list-style-type: none"> • RM62.95 million
Consumption and Source	<ul style="list-style-type: none"> • RM42.79 million of chilled and frozen snacks are consumed locally (based on industry survey).
Import and Export Size	<ul style="list-style-type: none"> • Export is about RM20.16 million (32% of RM62.95)
Per capita Consumption	<ul style="list-style-type: none"> • Malaysians spend about RM1.89 to buy snack products (RM42.79 million/22.7 million population)

Refer to Table 3.7 for Calculation Framework for Chilled & Frozen Snacks.

Table 3.7 Calculation Framework for Chilled and Frozen Snacks

(RM million)	1997	1998	1999			
	Market size	Market size	arket size	Export ratio	Export	Local consumption
(1) KG Pastry	16**	19**	28.00**	50%	14.00	14.00
(2) Kart Food Industries Sdn. Bhd.	NA	7.88*	9.06***	50%	4.53	4.53
(3) Ben Fortune	NA	2.64*	3.04***	10%	0.30	2.74
(4) P.A. Food Sdn Bhd	NA	NA	3.00**	35%	1.05	1.95
(5) Anika Food Industries Sdn. Bhd	0.19*	0.22***	0.25***	NA	NA	0.25
(6) Sydney Cake House Sdn Bhd	NA	NA	5.66*	5%	0.28	5.38
(7) Pillsbury Malaysia Sdn. Bhd	NA	NA	4.50**	NA	NA	4.50
Total turnover of 7 players (consists of 85% of market share)	NA	NA	53.51			
Other players (15%)			9.44	NA	NA	9.44
Total			62.95		20.16	42.79

* Figures from ROC (Registrar of Companies)

** Figures from industry survey

*** Figures derived from an estimated 15% annual growth rate, according to the industry survey, manufacturer indicated an industry growth rate of about 10-20% (average 15%).

NA = Not Available

Calculation of total market size explanation

- The figures shown are the total turnover of the particular company either from ROC or from industry survey. The total turnover is taken because these companies mainly produce or sell chilled and frozen snacks. Therefore their total turnover represent the market size.
- Market share: from the industry survey, the 7 players listed above actually make up about 85% of total market share.
- The export ratio is from the industry survey.

c) Food Ingredients

Chilled and frozen food ingredients are mainly imported. Local production of food ingredients is very limited. For example, Sensori Food produces chilled and frozen coconut milk/grated and their annual turnover is about RM3.1 million. Japanese types of ingredients are mainly imported and one of the importers indicated they imported about RM2.4 million of Japanese Ingredients in 1998 and expects the amount to increase.

Table 3.8 Market Characteristics of Chilled and Frozen Food Ingredients

Definition	<ul style="list-style-type: none"> • Products used to prepare meals such as spices, coconut milk, tofu and Japanese ingredients (e.g. sauce, snack soup, dressing)
Estimated Market Size For 1999	<ul style="list-style-type: none"> • About RM5.62 million
Consumption and Source	<ul style="list-style-type: none"> • RM5.62 million • RM3 million for local food ingredients (coconut milk) • RM2 million for Japanese ingredients. • As data for chilled and frozen food ingredients is not available, the estimates given are based on analysis from information gathered from producers in the industry.
Import and Export Size	<ul style="list-style-type: none"> • Malaysia imports Japanese Ingredients and does not export food ingredients. The import data is not available.
Per capita consumption	<ul style="list-style-type: none"> • Malaysians spend about RM0.25 to buy food ingredients (RM5.62 million/22.7 million population)

Refer to Table 3.9 for Calculation Framework for Chilled & Frozen Food Ingredients.

Table 3.9 Calculation Framework for Chilled and Frozen Food Ingredients

(RM million) Market size	1997	1998	1999
Sensori Food Industries Sdn Bhd (manufacturer of c&f coconut milk)	1.6*	2.2*	3.1*
Daisho Food (M) Sdn Bhd (importer of c & f food ingredients)	NA	2.4*	2.52**
Total	NA	4.6	5.62

* Figures from industry survey

** Figure derived from an estimated 5% annual growth rate

NA = Not Available

Calculation of total market size explanation

- The figures shown are the total sales of chilled & frozen food ingredients of the particular company from industry survey, the figures are taken because these companies mainly produces or sell chilled and frozen food ingredients. Therefore their sales figures represent the market size.
- In the industry survey only one company (Sensori Food Industries Sdn. Bhd) is producing chilled and frozen coconut milk. There is hardly any other local producer of chilled and frozen food ingredients.
- Definition of producer of chilled and frozen food ingredients - involving chilling and freezing technology where the ingredients have gone through the chilling and freezing processes during manufacturing and sold in chilled and frozen form.
- The figures shown are mainly for local consumption.
- Only two players in this sub-segment can be traced. The total market size for the entire industry can not be derived. The figure of RM5.62 million only represent the traceable portion of the market share which probably is very small relative to other chilled and frozen sub-segments.

d) Meat, Meat-Based Products, Seafood and Vegetables

The seafood market is the second largest market estimated at RM610.00 million (see Table 3.3). The important segment is frozen crustacean with an estimate RM422 million in 1999 and per capita seafood consumption (including chilled and frozen seafood) was about 45kg in 1997. Supplies from domestic landings were insufficient to meet the increasing local demand even with local harvests each year of nearly 90,000 (live weight) million tonnes of shrimp. More than 20,000 mt of fresh/frozen shrimp are imported annually to satisfy demand. The shrimp imports in the late 1990s decreased due to the recession. Some of the imported shrimps are used for processing cooked and breaded shrimps for re-export. The main suppliers are India, Bangladesh and Myanmar.

The meat and meat-based products market size is estimated at RM853.66 million. Poultry products are the major chilled and frozen products manufactured and traded locally in Malaysia. More than 80% of the further processed poultry products are marketed in frozen state. As shown in Table 3.3 poultry and beef value added products total market size is about RM318.44 million. According to the Department of Veterinary Services, the per capita consumption of meat (including fresh, chilled and frozen form) in 1996 in West Malaysia was about 5.07 kg for beef, 0.86 kg for mutton, 10.48 kg for pork and 29.23 kg for chicken. About 15% of the meat consumed is chilled and frozen meat.

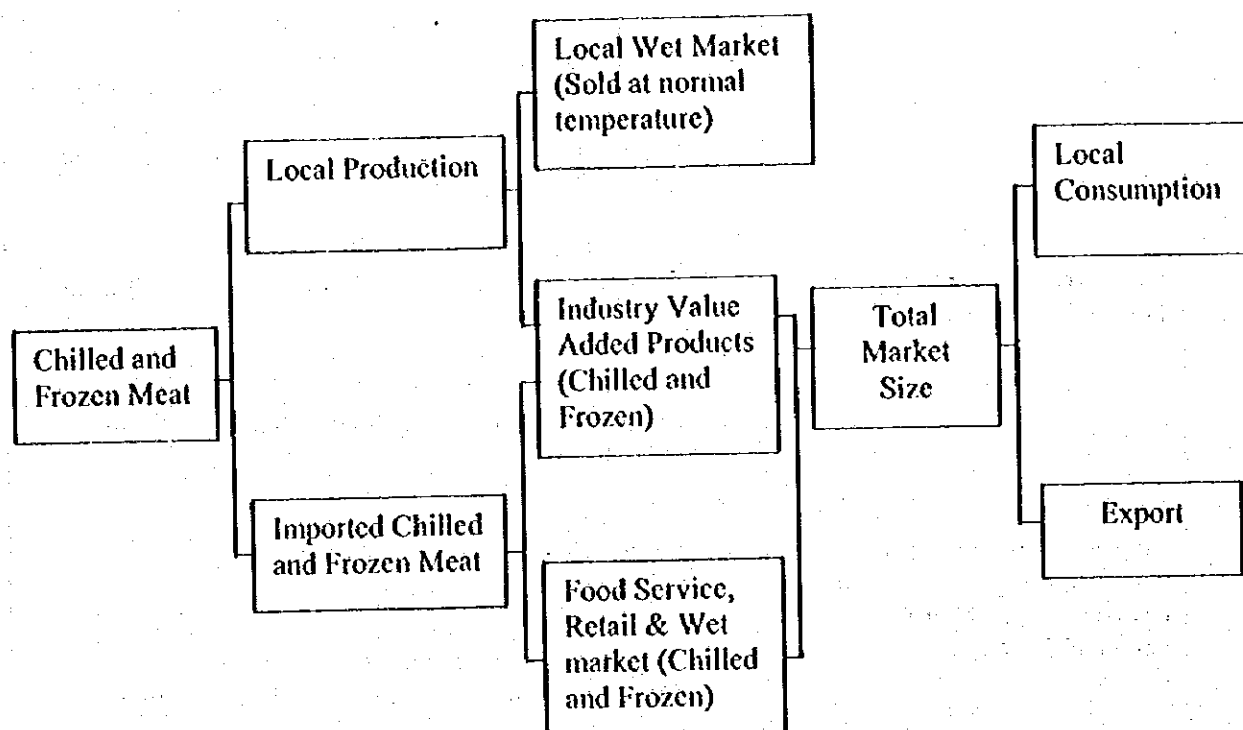
The chilled and frozen vegetable market is estimated at RM507 million and is mainly imported. The Importers Association notes that 60% of the imported vegetables are in chilled and frozen form. The industry survey also suggests that there is a ready market for pre-cut vegetables and fruits in chilled form but there is no local supplier.

Table 3.10 Market Characteristic of Chilled and Frozen Ready-to-Serve and Ready-to-Cook Seafood, Meat and Vegetables

Definition	<ul style="list-style-type: none"> • Product that are in the original texture such as chilled & frozen poultry, beef, pork, mutton and seafood. • Or product that are further processed such as chilled & frozen nuggets, burger, sausages, fish ball, <i>sotong</i> ball and crabmeat. • Chilled and frozen vegetables and pre-cut chilled and frozen vegetables.
Estimated Market Size For 1999	<ul style="list-style-type: none"> • RM853.66 million (chilled and frozen meat and meat based products) • RM610.00 million (chilled and frozen seafood and seafood based products) • RM506.65 million (imported chilled and frozen vegetables)
Consumption and Source (consumption of chilled and frozen meats is inclusive of Sabah and Sarawak)	<ul style="list-style-type: none"> • RM292.19 million for beef • RM64.97 million for mutton • RM8.85 million for pork • RM57.03 million for chicken • RM115.54 million for chilled or frozen seafood in 1995. • Consumption of chilled & frozen vegetables is about RM 506.65 million in 1999.
Per capita consumption	<ul style="list-style-type: none"> • Per capita consumption 1999 • RM15.84 (Beef) • RM3.40 (Mutton) • RM0.21 (Pork) • RM4.13 (Chicken) • RM6.25 (Seafood) • RM22.32 (Vegetables)

Refer the following sections on Calculation Framework for Chilled & Frozen Meat; Chilled & Frozen Seafood; and Chilled & Frozen Vegetables.

Chart 3.2 Calculation Framework Chilled and Frozen Meat



Explanation:

- 100% of imported meat (beef, mutton, pork, chicken) is in chilled or frozen form; of which 10% of beef and chicken will be used to produce value added products, therefore this portion is removed from total import to avoid double counting.
- The total market size is derived from the figures of value added product + figures of total imported meat (after removing the value added product).

Table 3.11 Computation of Market Size of Chilled and Frozen Meat

(RM million)	1996	1997	1998	1999
Value Added Product (local production)	NA	NA	303.28*	318.44**
Import of Livestock and Livestock Products				
Beef	326.22*	357.15*	342.56*	359.69**
Mutton	64.97*	70.84*	73.53*	77.21**
Pork	8.85*	7.20*	4.43*	4.65**
Chicken	61.71*	82.01*	89.21*	93.67**
Sub-Total	461.75	517.20	509.73	535.22**
Total	NA	NA	813.01	853.66

* Source: Department of Veterinary Services; Value added product is from Laporan kepada Menteri, Jabatan Perkhidmatan Haiwan, Jun 2000. Import of Livestock and livestock products is from Perangkaan Ternakan 1998, Jabatan Perkhidmatan Haiwan.

** Figures derived from an estimated 5% annual growth rate. A 5% annual growth rate is used, as the average world growth rate of 5% is generally accepted as the minimum growth rate that can be achieved by most countries.

NA = Not Available

Note: RM 853.66 million represents the total market size as well as total local consumption. Export of livestock and livestock products are mainly to Sabah, Sarawak, Singapore, Hong Kong and Brunei and are not significant. Figures for Sabah & Sarawak are included in the Malaysian market, while export to Singapore, Hong Kong and Brunei are not significant.

Table 3.12 Malaysia: Output of Value Added Products

	Value-Added							
	1998		2000		2005		2010	
	MT	Value (RM 000)	MT	Value (RM 000)	MT	Value (RM 000)	MT	Value (RM 000)
Chicken Product	36,485	132,534	38,746	140,698	96,031	347,128	198,580	721,668
Beef Product	6,848	68,480	9,433	94,330	29,462	294,620	68,842	688,420
Pork Product	14,610	102,270	16,071	112,497	18,482	129,374	22,178	155,246
Total	57,943	303,284	64,250	347,525	143,975	771,122	289,600	1,565,334

Source: Laporan kepada Menteri, Jabatan Perkhidmatan Haiwan, Jun 2000

Table 3.13 Malaysia: Import of Livestock and Livestock Products - 1996

1996	Beef		Mutton		Pork		Chicken	
	MT	Value (RM million)	MT	Value (RM million)	MT	Value (RM million)	MT	Value (RM million)
West Malaysia	67,183	268.94	13,804	63.88	859	3.93	5,197	27.88
Sabah	4,012	21.24	Na	Na	765	2.29	6,618	33.58
Sarawak	5,949	72.29	194	1.09	309	2.63	1,420	7.11
Total	77,144	362.47	13,998	64.97	1,933	8.85	13,235	68.57
90% (minus 10% to VAP)	69,429.60	326.22	NS	NS	NS	NS	11,911.50	61.71

Source: Perangkaan Ternakan 1996, Jabatan Perkhidmatan Haiwan, Kementerian Pertanian Malaysia
NS - Not significant

Table 3.13 Malaysia: Import of Livestock and Livestock Products - 1997

1997	Beef		Mutton		Pork		Chicken	
	MT	Value (RM million)	MT	Value (RM million)	MT	Value (RM million)	MT	Value (RM million)
West Malaysia	73,254	317.79	12,508	66.21	903	3.49	6,878	39.58
Sabah	5,504	28.67	366	2.81	580	2.30	8,948	43.53
Sarawak	6,538	70.37	322	1.82	165	1.41	1,601	8.01
Total	85,296	416.83	13,196	70.84	1,648	7.20	17,427	91.12
90% (minus 10% to VAP)	76,766.40	357.15	NS	NS	NS	NS	15,684.30	82.01

Source: Perangkaan Ternakan 1998, Jabatan Perkhidmatan Haiwan, Kementerian Pertanian Malaysia
NS - Not significant

Table 3.13 Malaysia: Import of Livestock and Livestock Products - 1998

1998	Beef		Mutton		Pork		Chicken	
	MT	Value (RM million)	MT	Value (RM million)	MT	Value (RM million)	MT	Value (RM million)
West Malaysia	63,087	304.97	11,840	69.76	708	3.43	5,396	35.45
Sabah	4,052	25.76	332	2.62	38	0.30	7,580	41.43
Sarawak	4,896	49.89	205	1.15	82	0.70	4,444	22.24
Total	72,035	380.62	12,377	73.53	828	4.43	17,420	99.12
90% (minus 10% to VAP)	64,831.50	342.56	NS	NS	NS	NS	15,678	89.21

Source: Perangkaan Ternakan 1998, Jabatan Perkhidmatan Haiwan, Kementerian Pertanian Malaysia

NS - Not significant

Table 3.14 Malaysia: Export of Livestock and Livestock Products - 1996

1996	Beef		Mutton		Pork		Chicken	
	MT	Value (RM million)	MT	Value (RM million)	MT	Value (RM million)	MT	Value (RM million)
West Malaysia	1,724.20	11.30	27.00	0.23	1,125.17	7.78	8,947.01	47.41
Sabah	12.88	0.10	0.16	0.00	324.70	1.50	627.84	1.92
Sarawak	2,544.00	0.046	1,950.00	0.03	1,253.00	8.77	965.00	5.31
Total	4,281.08	11.45	1,977.16	0.26	2,702.87	18.05	10,539.85	54.64

Total Export of 1996 = RM84.27 million

Note: Export of Livestock and Livestock Products are mainly to Sabah, Sarawak, Singapore, Hong Kong and Brunei.

Source: Perangkaan Ternakan 1996, Jabatan Perkhidmatan Haiwan, Kementerian Pertanian Malaysia

Table 3.14 Malaysia: Export of Livestock and Livestock Products - 1997

1997	Beef		Mutton		Pork		Chicken	
	MT	Value (RM million)	MT	Value (RM million)	MT	Value (RM million)	MT	Value (RM million)
West Malaysia	1,459.01	9.980	21.21	0.240	942.02	9.670	8,963.23	50.110
Sabah	112.63	0.672	0.18	0.001	358.55	1.569	449.07	1.644
Sarawak	51,562.00	0.928	na	0.025	1,125.00	7.878	2,497.00	12.485
Total	53,133.64	11.58	21.39	0.266	2,425.57	19.117	11,909.30	64.239

Total Export of 1997 = RM95.20 million

Note: Export of Livestock and Livestock Products are mainly to Sabah, Sarawak, Singapore, Hong Kong and Brunei.

Source: Perangkaan Ternakan 1998, Jabatan Perkhidmatan Haiwan, Kementerian Pertanian Malaysia

Table 3.14 Malaysia: Export of Livestock and Livestock Products - 1998

1998	Beef		Mutton		Pork		Chicken	
	MT	Value (RM million)	MT	Value (RM million)	MT	Value (RM million)	MT	Value (RM million)
West Malaysia	1,247.00	10.24	10.87	0.11	435.11	5.24	10,319.30	58.57
Sabah	18.88	0.14	0.24	0.00	18.89	0.10	1,368.01	7.39
Sarawak	na	Na	na	Na	1,373.00	9.61	1,722.00	8.61
Total	1,265.88	10.38	11.11	0.11	1,827	14.95	13,409.31	74.57

Total Export of 1998 = RM100 million

n.a. - Not available

Note: Export of Livestock and Livestock Products are mainly to Sabah, Sarawak, Singapore, Hong Kong and Brunei.

Source: Perangkaan Ternakan 1998, Jabatan Perkhidmatan Haiwan, Kementerian Pertanian Malaysia

Table 3.15 Calculation Framework for Chilled and Frozen Seafood

	Market Size (RM million)				1999**		
	1995	1996	1997	1998**	Market Size	Export	Local consumption
					Value (RM) million	Value (RM) million	Value (RM) million
Frozen Crustacean	307.77*	293.85*	361.38*	412.39	421.91	417.69	4.22
Chilled and frozen fish fillet	21.21*	23.84*	30.49*	38.54	47.65	1.21	46.44
Frozen Fish	115.54*	121.32**	127.39**	133.76	140.44	49.16	91.28
Total	444.52	439.01	519.26	584.69	610.00	468.06	141.94

* Figures based on actual statistic, refer to computation of market size of chilled & frozen seafood.

** Figures derived from an estimated 5% annual growth rate

Explanation:

- **Frozen Crustaceans** include frozen shrimps, prawns, rock lobsters, lobsters, crabs, other sea crawfish and other crustaceans.
- **Chilled and Frozen Fish Fillet** represents a specific category.
- **Frozen Fish** represent whole fish of frozen pacific salmon, trout, Atlantic salmon & Danube salmon, Halibut, Plaice, Sole, other flat fish, Albacore or longfinned tunas, Yellowfin tunas, Skipjack or stripe-bellied bonito, other tuna, Herrings, Sardines, Cod, Mackerel, Hake, Haddock, Coalfish, Dogfish, other sharks, Eels, Scabass, Sauries, other marine fish, other freshwater fish.

The list of items included in the **Frozen Crustaceans** and **Frozen Fish** were obtained from Department of Fisheries, Malaysia. Quantities of individual items are not available.

Chart 3.3 Calculation Framework for Frozen Crustacean (using 1997 as an example)

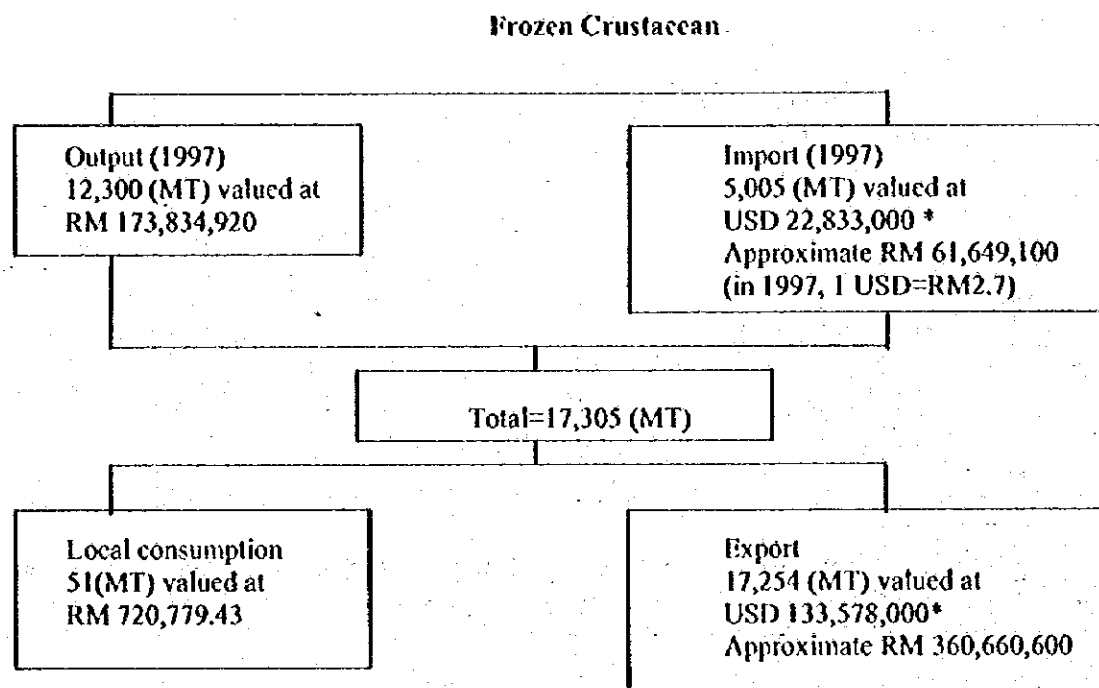
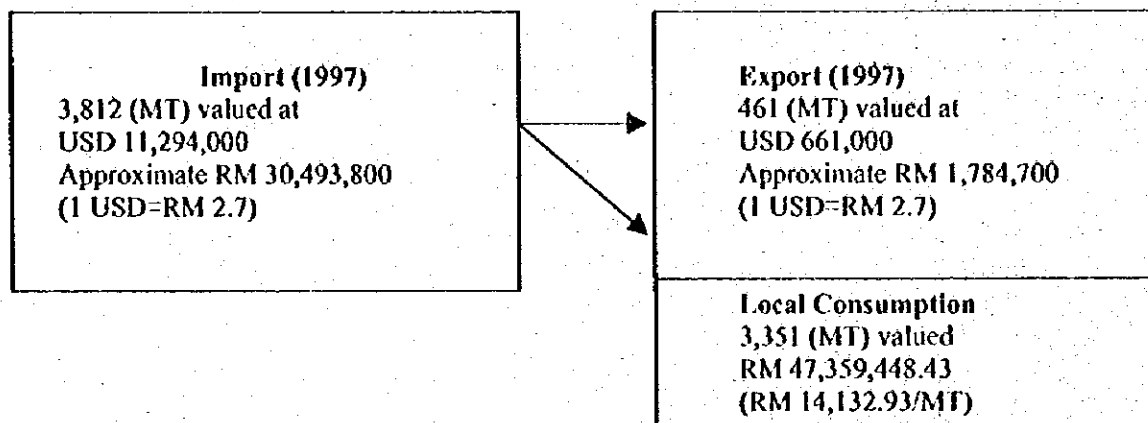
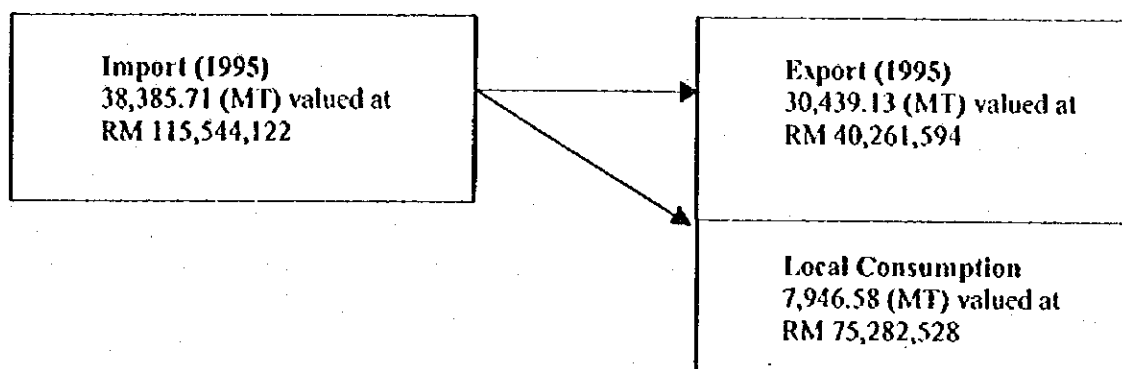


Chart 3.4 Chilled and Frozen Fish Fillet (using 1997 as an example)



Note: No significant local output of chilled and frozen fish fillet.

Chart 3.5 Chilled and Frozen Fish (using 1995 as an example)



Note: No significant local output of chilled and frozen fish.

Table 3.16 Computation of Market Size of Chilled and Frozen Seafood

Frozen Crustacean

	Output ¹			Import ⁴			Export ⁴			Local Consum ⁵	Exch. Rate
	MT	RM'000	RM/MT	MT	USD '000	RM '000	MT (% of total market size, output + import)	USD '000	RM'000	M'000 (MT)	1 USD
1995 ¹	6,700	97,968.14	14,622.11	8,380	29,743	74,357.50	15,032 (99%)	122,829	307,072.50	701.86 (48)	RM 2.5
1996 ¹	8,000	105,632.24	13,204.03	7,314	20,580	53,508.00	15,098 (98%)	111,923	290,999.80	2,852.07 (216)	RM 2.6
1997 ¹	12,300	173,834.92	14,132.92	5,005	22,833	61,649.10	17,254 (99%)	133,578	360,660.60	720.78 (51)	RM 2.7
1998 ²	12,915	301,419.31	23,338.70	4,755	n.a	64,731.55	17,493 (99%)	n.a	408,263.88	4,130.95 (177)	-
1999 ²	13,561	316,496.11	23,338.70	4,517	n.a	67,968.13	17,897 (99%)	n.a	417,692.71	4,224.30 (181)	-

Notes

1 Figures from original source: <http://apps1.fao.org/servlet/Xteservlet.jrun>.

2 Figures for year 1998 and 1999 are based on an estimated 5% annual growth rate for output and export; and an estimated 5% decrease in import.

3 Output figures are in MT, the value is calculated based on average price obtained from Malaysian Frozen Foods Processors Association, 1998.

The average price is available up to year 1998, therefore calculation of year 1999 is based on the average price of year 1998.

The import and export values are in USD, the RM is calculated based on particular year exchange rate.

Total market size = Export value + Local consumption value of frozen crustacean

n.a. = not available

Table 3.16 Computation of Market Size of Chilled and Frozen Seafood (continued)

Chilled and Frozen Fish Fillet

	Import ¹			Export ¹			Exchange rate
	MT	USD'000	RM'000	MT	USD'000	RM'000	1 USD
1995 ¹	2,823	8,485	21,212.50	304	496	1,240.00	RM 2.5
1996 ¹	3,382	9,171	23,844.60	184	215	559.00	RM 2.6
1997 ¹	3,812	11,294	30,493.80	461	661	1,784.70	RM 2.7
1998 ²	-	-	38,544.11	-	-	2,088.52	-
1999 ²	-	-	47,645.12	-	-	1,214.43	-

Notes

- 1 Figures from original source: <http://apps1.fao.org/servlet/Xtcservlet.jrun>.
- 2 Figures from industry survey (data from MATRADE, only specific items such as fish fillet are available, the full data not yet published)
- 3 The import and Export values are in USD, the RM is calculated based on particular year exchange rate.

Table 3.16 Computation of Market Size of Chilled and Frozen Seafood (continued)

Frozen Fish

	Import		Export	
	MT	RM'000	MT	RM'000 (% of Import)
1995 ¹	38,385.71	115,544.12	30,439.13	40,261.59 (35%)
1996 ²	-	121,321.33	-	42,462.47 (35%)
1997 ²	-	127,387.40	-	44,585.59 (35%)
1998 ²	-	133,756.77	-	46,814.87 (35%)
1999 ²	-	140,444.61	-	49,155.61 (35%)

Notes

- 1 Actual figures from Department of Fisheries, Malaysia: Export and Import of Fishery Commodities, 1995
- 2 Figures based on an estimated 5% annual growth rate

Table 3.17 Calculation Framework Chilled and Frozen Vegetables

Malaysia: Import of Vegetables (fresh, chilled, frozen, roots, tubers, prepared or preserved)

(RM million)	1997	1998	1999
Total import of vegetables	846,307,930	987,295,478	1,067,399,467
Fresh or chilled vegetables ¹	574,818,769	675,826,712	713,317,172
Chilled vegetables ²	344,891,261	405,496,027	427,990,303
Frozen vegetables ²	69,100,568	70,989,148	78,655,830
Total chilled & frozen vegetables	413,991,829	476,485,175	506,646,133

Notes

- 1 According to industry survey about 60% of imported fresh or chilled vegetables are in chilled form, however, these vegetables may be sold at normal temperature.
- 2 Chilled and frozen vegetables include items such as Potatoes, Peas, Carrot, Mix Vegetables. Out of imported chilled and frozen vegetables:
 - about 30% of these chilled and frozen imported vegetables go to fast food sector in chilled and frozen form.
 - about 20% of these chilled and frozen imported vegetables go to food service providers and manufacturers in chilled and frozen form.
 - about 15% of these chilled and frozen imported vegetables go to retail market in chilled and frozen form.
 - about 35% of these chilled and frozen imported vegetables go to retail market and sold at normal temperature.

Source: Data from FAMA

3.2 Market Characteristics by Categories

We conducted a retail survey in order to assess the range of chilled and frozen products available in the market, covering supermarkets around Klang Valley, such as Top's, Jaya Jusco, Hock Choon and Xtra. We also surveyed a few mini-markets to cover products, if any, that are not sold at major supermarkets.

All retailers interviewed have positive views about the prospect of chilled and frozen food products. They believe that this sector will definitely grow, especially in urban areas. Although no figures were forthcoming, they agree they will allocate more space for these items. In the developed economies, the floor space in supermarkets for these items is around 35% or more.

Detailed list product range found at retailers is presented in Appendix 5.

3.2.1 Product Range

a) Chilled and Frozen Ready-to-Serve Meals

Chilled and frozen ready-to-serve meals are divided into two segments, namely Western meals and Eastern meals. Malaysia does not export ready-to-serve meals; local consumption, therefore, is mainly from imported frozen ready-to-serve meals. Some chilled ready meals such as chilled *nasi lemak* produced by small local producers are available in some retail outlets such as petrol station convenient stores. However, demand for this type of food is extremely low as consumers are able to access the traditional home cooked *nasi lemak* in various outlets. Western ready meals such as steak and fish based meals may have higher demand.

Only a small range of complete meal products was found. All of them are frozen. They include several varieties of rice based meals such as prawn fried rice, chicken fried rice, mushroom and chicken mushroom rice and noodle based meals. All of these are imported from Japan and are packaged for single serving (150 – 250g) using flexible packaging materials, some of which are transparent. A 150g rice-based meal is retailed at between RM6.90 and RM7.50 while a 250g is packaged at around RM12.90. There were no halal markings on these products.

We were not able to find any local chilled and frozen complete meal for local meals such as *nasi lemak*, fried rice or noodles in the supermarkets covered. There was also hardly any significant Western type complete meals.

Table 3.18 Examples of Chilled and Frozen Ready-to-Serve meals

Product	Size	Retail Price (RM)
Chilled		
Fried noodles	225g	10.90
Frozen		
Prawn fried rice	250g	12.90
Chicken fried rice	250g	22.90
Chicken rice	150g	7.50
Mushroom rice	150g	7.50
Chicken Mushroom rice	150g	6.90
Beef lunch	120g	13.90

b) Chilled and Frozen Snacks

There is a wide range of products under this category, both western and oriental. The range, suppliers and space allocated for oriental products are, however, much bigger. Snacks available in the local market are mainly of the frozen varieties and consist of Western snacks (pizza and pie) and the local varieties such as curry puffs, *samosa*, spring rolls, *roti canai*, *roti pratha*, *mantau*, *dim sum* and *naun/capati*. Western snacks are mainly imported with small portion being produced by local producers.

The biggest local producer is K.G. Pastry with about 65% of the local market share. The Company produces spring roll pastry and spring rolls, *roti pratha*, *samosa*, mini buns, and *mantau*. The famous brand names in this segment are K.G., Pau Ahmad and Kart's. According to K.G. Pastry, the top selling products are *roti paratha*, spring roll and *samosa*, spring roll pastry, mini bun, and *mantau*.

Some main snacks in the local market are as follows:

(1) Spring Rolls

These are all frozen items packaged in flexible packaging material including cardboard. The packing size is between 200 – 300g and retailed between RM3–RM4 per pack. The main fillings used are a mixture of vegetables. Spring roll skins are also found packaged in 250g/20 pieces or in 500g/40 pieces retailed at RM1.80/250g and RM3.20/500g. Most of the space allocated for these items are occupied by products from KG Pastry.

(2) Pau

These are all frozen items, with a wide variety of fillings used including red beans, kaya, lotus seed, coconut, sardine, chicken, beef and pork meat. The suppliers of these items are mostly from local, such as Kart Food, KG Pastry, Tee Yih, Cinta Edar Malaysia, and Gemmie Pastry, as well as imports such as Nishiki from Singapore and Imuraya from Japan. Contained in flexible packaging, these items come in various sizes. Examples of retail prices for locally produced *pau* are at RM1.50 for 160g, RM3.20 for 270g and RM3.50–RM5.50 for 360g, depending on the type of fillings used. Pau Ahmad's products are retailed as ready-to-eat food, displayed in steamed cabinets at various traditional eating establishments and not in the supermarkets surveyed.

(3) Mantau

Only frozen *mantau* was found in our survey and are sold as either plain or flavored. The packaging size is either 330 or 375g and priced at between RM2.50 to RM4.50. KG Pastry has a very strong presence in the supermarkets surveyed.

(4) Dumplings

Only imported dumplings containing shrimp, crabmeat and pumpkins from Japan were found. The packaging size is between 140 and 252g, packaged in flexible packaging material, and retailed between RM11.90 and RM12.90. All items found in the supermarkets surveyed do not have the halal logo.

(5) Puffs

Products under this group include curry puffs, *samosa*, pies, and doughnuts. The fillings used are vegetables, mushrooms, meat, sardines, and various beans. The packaging size ranges generally between 200g and 1000g. Prices are based on packaging size, e.g., about RM2.99 for 280g and RM13.90 for 1000g. Local manufacturers of puffs include KG Pastry, Kart Food, Ben Fortune, Aneka Food, and Sidney Cake House.

(6) Roti canai and roti pratha

These are frozen wheat-based products with and without other ingredients added. Some products are packaged together with curry or *dahl* sauce. The number of pieces per pack varies from two to six. Prices vary from RM2.90 to RM4.50. All products are well represented and manufactured locally, including from Kart Food, KG Pastry and Kawan Food.

(7) Pies

These refer to western-type pies containing apple fillings, meat and vegetables, and are either produced locally by Ben Food, Tricious Food, Deluxe Food, and Kart Food or imported by Pok Brothers and Pillsbury.

(8) Pizza

A wide range of pizza is sold in local supermarkets, and are either produced locally by many players or imported. Most of the local products and a few imported ones have halal logo.

Table 3.19 Examples of Frozen Snacks

Product	Size	Retail Price (RM)
Frozen		
Lotus seed buns	270g	3.20
<i>Kari ayam pau</i>	360	3.50
Lotus pau	360g	3.50
<i>Kaya pau</i>	6pcs/360g	4.40
<i>Mantau</i>	375g	3.15
<i>Mantau</i> (flower rolls)	375g	4.60
Spring rolls pastry (plain)	250g	3.30
Spring rolls pastry (egg)	50pcs/500g	3.20
Vegetable spring roll	275g	3.30
Mini spicy spring roll	300g	4.10
Pizza (beef supreme/curry chicken)	250g	5.80
Pizza (chicken mushroom)	280g	8.00
<i>Roti pratha</i> (plain/with onion)	400g	3.75
Oriental lotus / red bean pancake	250g	3.70
<i>Roti canai</i> (with curry & dals)	475g	3.40
<i>Roti canai</i> (sumbo)	475g	2.90
<i>Roti canai</i>	630g	4.20
Shepherd's pie	400g	6.55
Beef pie	8pcs	7.45
Fruit pie	3pcs	5.30
<i>Samosa</i> vegetable	225g	3.70
Dumplings	140g	11.90
Dumplings	252g	12.90
Shrimp <i>shuimai</i>	225g	10.90
Shrimp fried <i>shuimai</i>	180g	11.90

c) Chilled and Frozen Food Ingredients

There was very little chilled and frozen food ingredient and those found were mainly in chilled form. They were produced at ambient temperature and stored cold in refrigerators to prolong shelf life. There are a small quantity of processed coconut products (liquid milk and grated) in chilled and frozen forms, with and without labels. A typical packaging size is equivalent to that of one coconut.

There are also small quantities of oriental ingredient items, such as soya based products which are used in the preparation of Japanese type of food ingredients.

Table 3.20 Examples of Chilled Food Ingredients

Product	Size	Retail Price (RM)
Chilled		
Japanese chilled	13pcs	9.90
Sour ginger	170g	4.40
Pickled leaf mustard	250g	8.90
Palm seed	400g	4.90
Pickled green chilled	340g	4.50
Seasoned seaweed	100g	10.50
Pack <i>cincau manis</i>	210g	1.00
<i>Cendol</i>	100g	1.50
<i>Tapai pulut</i>	100g	0.70
Tofu	1pc	3.50
Ganmodok tofu	3pcs	2.40
Nimono Set (mixed tofu)	1 tray	5.50
Japanese tofu	3pcs	1.99
Soft tofu	250g	0.70
Egg tofu	150g	0.70

d) Chilled and Frozen Meat, Seafood, and Vegetables

These products make up a large proportion of the chilled and frozen items in supermarkets. Meat products consist mainly of poultry, seafood, and beef and to certain extent pork. The following are the many value-added products in this category:

- Frozen finger foods such as nuggets, meatballs, cocktails, hotdogs, and burgers of poultry, beef, and seafood
- Frozen minimally prepared meat cuts, chicken parts, seafood, and minced meat
- Frozen sausages, roast chicken, meat loaf, salami, bologna, and pastrami type of meat products
- Chilled cold cuts type of meat, poultry and pork products mainly sliced up for a sandwich meal preparation

Most of the vegetables are imported in chilled form including French fries, peas, corn kernels, carrots, beans, and mixed vegetables. Imported and some local leafy vegetables are displayed in chilled cabinets.

Table 3.21 Examples of Chilled and Frozen Meat, Seafood and Vegetables

Product	Size	Retail Price (RM)
Chilled		
Salmon	1pc	8.50
Kanpanchi	1pc	17.80
Komochi Shishaw	6pcs	9.98
Frozen		
Chicken burger	600g	4.99
<i>Ayam percik</i>	750g	9.90
Chicken fingers	500g	5.90
BBQ spicy hot wing	500g	7.50
Chicken meat ball (plain)	400g	4.50
Chicken nuggets	1000g	11.90
Chicken drummet	1000g	11.80
Chicken sausages	1000g	9.90
Beef burgers	700g	4.80
Beef salami cooked	6pcs	4.50
Shrimp burgers	280g	7.00
Squid fingers	200g	4.00
Prawn fingers	200g	4.00
Fish fingers	200g	4.00
Fillet fish fingers	245g	4.70
<i>Otak-otak</i>	200g	5.50
Cuttlefish	200g	3.70
Fish chips	500g	4.90
Prawn chips	500g	5.50
Prawn balls	200g	3.70
Crab balls	200g	5.35
Tuna fish sausages	340g	4.20
Squid nuggets	500g	8.90
Cod fillet	380g	5.80
Nugget (fish)	200g	3.50
Fish burgers	500g	5.50
Frozen vegetables		
Broccoli spears & butter	283g	6.55
Cut green beans	500g	3.10
Mix vegetables	250g	1.90
Sweet corn	500g	4.10
Spinach whole leaf	450g	6.75
Peas	500g	3.10
Niblets corn & butter	283	8.55
Non-Halal		
Pork BBQ	600g	11.75
Sausages rookwurst	1pcs	11.65
Pork sausages	340g	21.70
Pork frankfurters	600g	9.95
Bacon (chilled)	500g	9.80
Spiced ham (chilled)	135g	12.90

3.2.2 Price Comparison Between Imported and Local Chilled and Frozen Food

In food businesses, including chilled and frozen food, price is one of the major influencers of purchasing activities. Local customers may not be willing to pay more for chilled and frozen food; therefore, the prices of these foods must be competitive relative to fresh food. It is not possible to do a direct price comparison from the data collected, as there is no equivalent local variant. For those closely related items, the price variations shown in the following tables are at best indicative. Other than price, all variables that should be considered are recipe, quality, packaging materials, packing configuration, and brand names.

a) Ready-to-Serve Meals

In the ready-to-serve meals sub-segment, almost all of the products are imported. Comparatively, imported products are priced higher. As shown in Table 3.23, on average, prices for ready-to-serve meals are between RM4.60 to RM5.20 per 100g with the exception of beef lunch, which is about RM11.60 per 100g. Ready-to-serve meals are priced higher and are targeted at middle to high-end consumers who emphasise more on convenient and food quality rather than price. Local producers who are interested to enter this sub-segment may have to price their product accordingly to enjoy the higher margin or using low production cost as a competitive edge.

Table 3.22 Retail Price of Chilled and Frozen Ready-to-Serve Meals

Imported			Local		
Product	Size	Retail Price (RM)	Product	Size	Retail Price (RM)
<i>Chilled</i> fried noodles	225g	10.90	NA		
<i>Frozen</i>					
Prawn fried rice	250g	12.90	NA		
Chicken fried rice	250g	12.90	NA		
Chicken rice	150g	7.50	NA		
Mushroom rice	150g	7.50	NA		
Chicken mushroom rice	150g	6.90	NA		
Beef lunch	120g	13.90	NA		

Note: NA = Not Available

b) Frozen Snacks

Frozen snacks sub-segment is one of the highly competitive segments. With the trend towards snacking, the demand for various types of snacks may increase significantly. Western and oriental snacks have attracted market attention. Western snacks are usually imported with the exception of a few like pizzas and pies. Generally, imported varieties cost about two to five times higher than the local ones. For example, the imported 300g Hawaiian pizza costs RM19.50 against the local pizza at RM7.14. This is about 2.7 times higher than the local product.

Table 3.23 Retail Price of Frozen Snacks

Imported			Local		
Product	Size	Retail Price (RM)	Product	Size	Retail Price (RM)
Spring rolls	220g	14.50	Spring rolls (plain/egg)	250g	3.30
Sambal chicken pizzas	300g	19.80	Chicken mushroom pizzas	280g	8.00
Hawaiian pizzas	300g	19.50	Hawaiian pizzas	250g	5.95
Supreme pizzas	340g	14.50	Beef supreme	250g	5.80
Apple pies	400g	12.50	Strawberry pies	3pcs	5.30
Lemon Meringue pies	624g	36.90	Sepherds pie/Lasagne	400g	5.90
Red bean pau	4pcs	15.90	Red beans pau	360g	3.50
Meat pau	4pcs	15.90	Kari ayam pau	360g	3.50
Puffy pastry	300g	6.50	Shell sardine	280g	2.99
Dumplings	140g	11.90	Mantau (plain)	375g	3.15
Shrimp Shuimai	225g	10.90	Mantau (pandan)	375g	2.50
Pizza base	280g	8.70	Roti canai	630g	4.20

c) Chilled Food Ingredients

There are no equivalent products that allow us to do a direct price comparison. Among the closest is the chilled Tofu where three pieces of imported Gannodok is RM2.40 against the local Japanese Tofu at RM1.99. The locally produced chilled and frozen food ingredients are very limited.

Table 3.24 Retail Price of Chilled Food Ingredients

Imported			Local		
Product	Size	Retail Price (RM)	Product	Size	Retail Price (RM)
Seasoned seaweed		10.50	Pickled leaf mustard		8.90
	00g			50g	
Momen tofu/Tose tofu	1pc	3.50	Tofu pudding	1pc	0.78
Gannodok Tofu	3pcs	2.40	Japanese Tofu	3pcs	1.99
Sour Ginger	170g	4.40	Sour Plum	220g	5.15
Plain white noodles	440g	10.90	Hokkein Mee	400g	0.85
Japanese fried noodles	300g	5.25	Wonton noodles	450g	2.60

d) Chilled and Frozen Meat, Seafood, and Vegetables

For beef and pork value-added products (VAPs), the price differences are significant. For example, imported frozen beef burgers costs RM9.25 for 700g against the equivalent size of local variety at RM4.50. The price differences may be attributed to the quality and the raw materials used, such as Australian beef versus Indian beef.

For seafood VAPs, there were only minor price differences, with the imported varieties priced slightly higher. This could again be attributed to different recipes or quality of the raw materials used. For example, imported prawn balls cost RM3.70 (200g) against RM3.20 (200g) for local ones.

For the frozen vegetables sub-segment, there is no local variety equivalent to the imported ones. The prices of imported chilled and frozen vegetables range from RM0.62 per 100g (cut green beans, and peas) to RM3.00 per 100g (niblets, and corn and butter).

Table 3.25 Retail Price of Chilled and Frozen Meat, Seafood, and Vegetables

Imported			Local		
Product	Size	Retail Price (RM)	Product	Size	Retail Price (RM)
Frozen beef burgers	1200g	15.85	Frozen burger <i>daging lembu</i>	700g	4.50
Frozen chicken franks	340g	2.99	Frozen chicken frank	340g	2.59
Frozen Fish fingers	250g	5.50	Frozen fillet fish fingers	245g	4.70
Prawn balls	200g	3.70	Prawn meat balls	200g	3.20
Cod fillet	380g	5.80	Fish patties (cod fillet)	380g	4.95
Fish 'O' vegetable nuggets	500g	8.90	Fish nuggets	500g	5.80
Crab sticks	250g	6.49	Crab flavored balls	250g	4.85
Turkey sandwich squares (sliced)	4pcs	6.00	Turkey sandwich rolls (sliced)	5pcs	5.40
Non-Halal					
Pork sausages	340g	21.70	Pork chestnut stuffing	400g	7.50
Canadian style bacon	6 oz	16.90	Mack bacon	150g	5.10
Frozen broccoli spears & butter	383g	6.55	NA		
Cut green beans	500g	3.10	NA		
Mix vegetables	250g	1.90	NA		
Sweet corn	500g	4.10	NA		
Spinach whole leaf	450g	6.75	NA		
Peas	500g	3.10	NA		
Nibblets corn & butter	283g	8.55	NA		

Note: NA=Not Available

3.3 Marketing Analysis

3.3.1 Marketing Practices

a) Chilled and Frozen Ready-to-Serve Meals

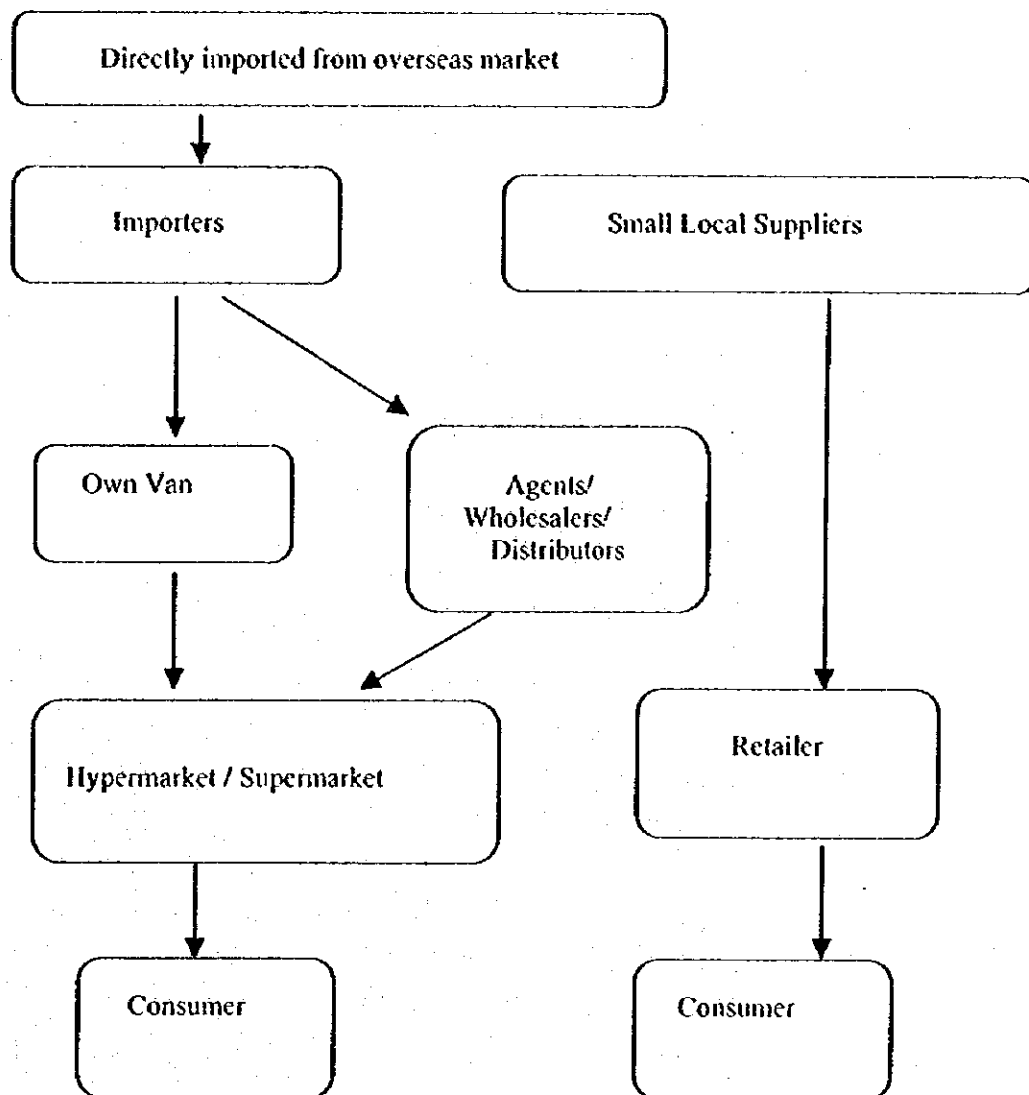
As the retail audit showed, ready meals are usually packed using plastic bag that is not transparent. As consumers are not able to see the ingredients, they may not buy it. Consumers prefer transparent packaging where they can visualise the contents. A good example is Toyo Suisan and Nissin, Japan imported brand name ready-to-serve meals.

The promotion of ready meals is still limited in Malaysia. Sometimes promotion is carried out at the food testing section in supermarkets. The industry survey indicated that there are still very limited marketing activities for this segment. Imported chilled and frozen ready-to-serve meals are usually distributed directly by importers to major retailer outlets. Small local suppliers also directly distribute to retailers. Ready-to-serve meals segment shows a high potential growth, as the present eating trend is heading towards the Home Meal Replacement concept.

Table 3.26 Marketing Practices for Chilled and Frozen Ready-to-Serve Meals

Marketing Characteristics	Industry practices
Product segmentation	<ul style="list-style-type: none"> • Western meals (mainly imported) • Eastern meals (small suppliers in local market but could not be traced)
Target market	<ul style="list-style-type: none"> • Local market
Positioning	<ul style="list-style-type: none"> • Convenience, ready-to-eat, just needs to heat the meals.
Packaging	<ul style="list-style-type: none"> • Plastic bag • Not transparent (consumer cannot see the ingredients)
Branding	<ul style="list-style-type: none"> • No brand for locally produced ready meals such as chilled <i>nasi lemak</i>. • Toyo Suisan and Nissin (noodles imported from Japan) • Prawn and chicken fried rice (no brand, just indicated that the product is imported from Japan).
Strategies	<ul style="list-style-type: none"> • Promote as home meal replacement
Promotion	<ul style="list-style-type: none"> • Samples sometimes available in supermarkets to let patrons try their products.
Distribution	<ul style="list-style-type: none"> • Refer to Chart 3.6

Chart 3.6 Product Flow of Chilled and Frozen Ready-to-Serve Meals



Explanation:

Chilled and frozen ready-to-serve meals products are mainly imported by local importers and distributed directly to hypermarkets or big supermarkets and other distributors using their own cold trucks. A few small scale local producers produce some chilled ready-to-serve meals such as chilled *nasi lemak* and fried noodles and sell them directly to retail chains such as "Select". As this category is still under-developed, the distribution network is rather simple and not extensive.

b) Chilled and Frozen Ready to Serve Snacks

Manufacturers of frozen snacks usually distribute the products directly to their main customers (hypermarket/supermarket) and also through distributors to other retail outlets (see Chart 3.7). Small aggressive producers are trying to set-up their selling point at the retail outlet by sponsoring display track.

The managing director of K.G. Pastry indicated that the future prospect of this segment is good. As Malaysian society change, more people will be switching to convenient and easy to prepare meals. In addition, the trend is towards snacking where people prefer to enjoy a snack or two rather than heavy meals.

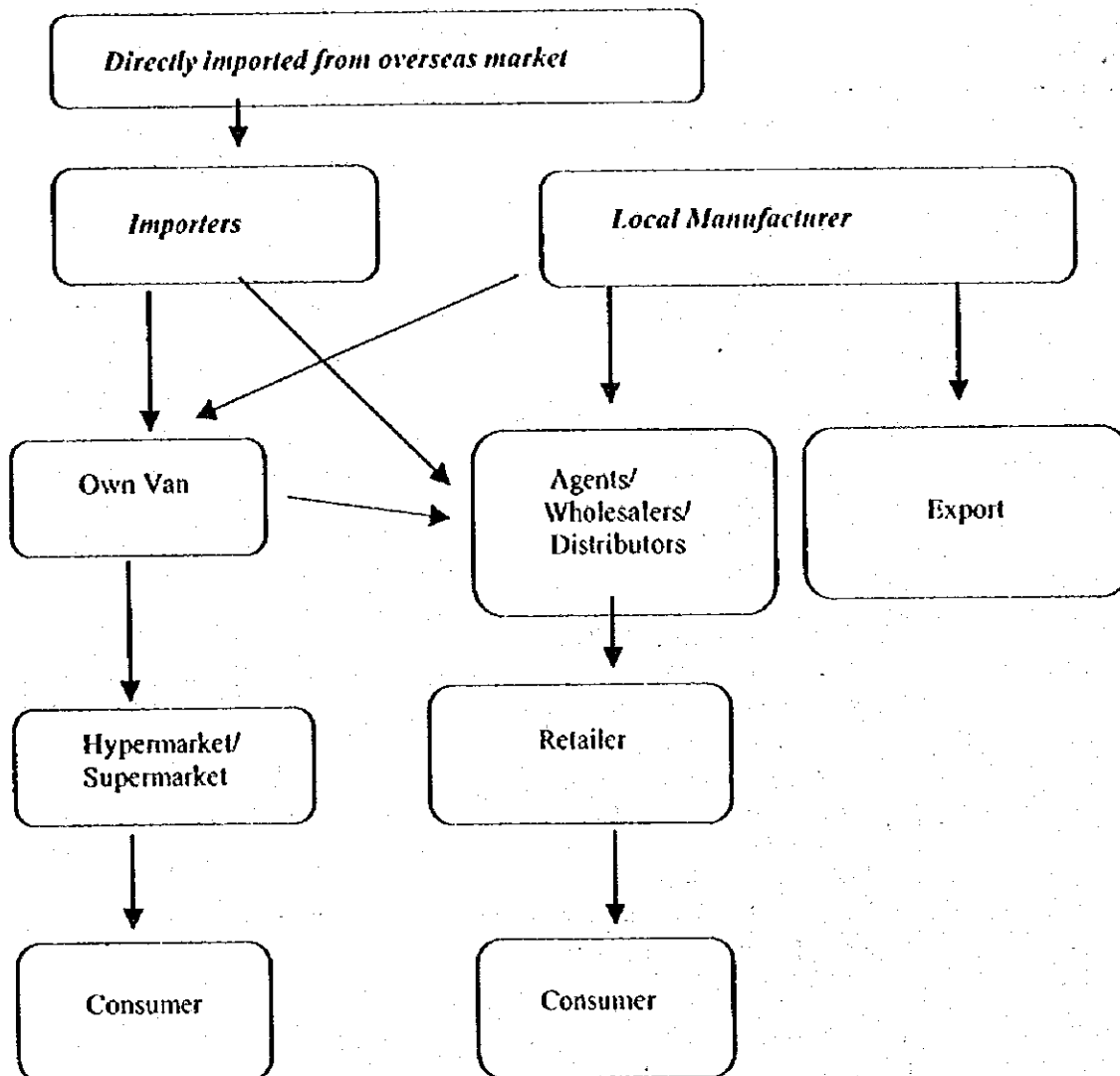
Table 3.27 Marketing Practices for Chilled and Frozen Ready-to-Serve Snacks

Marketing Characteristics	Industry practices
Product segmentation	<ul style="list-style-type: none">• Western type (pizzas, pies, puffs)• Ethnic cuisine of snacks• Malay cuisine (curry puff, <i>samosa</i>)• Chinese cuisine (<i>mantau</i>, buns, <i>dim sum</i>, dumplings, spring rolls)• Indian cuisine (<i>roti canai</i>, <i>roti pratha</i>, <i>naan/capati</i>)
Target market	<ul style="list-style-type: none">• Local market (68%)• Export market (32%)
Positioning	<ul style="list-style-type: none">• High quality, convenience, and ethnic varieties (export market)• Low price, convenience, high quality (local market)
Packaging	<ul style="list-style-type: none">• Plastic packaging• Cardboard box• PVC box• Aluminium foil• Transparent

Table 3.27 Marketing Practices for Chilled and Frozen Ready to Serve Snacks (continued)

Marketing Characteristics	Industry practices	
Branding (brand name, companies, products)	Brand name (company) • K.G. (K.G. Pastry)	Products • <i>Pau, Mantau</i> , Spring rolls, <i>Samosa</i> , frozen pizza, frozen <i>roti pratha</i>
	• Pau Ahamad (P.A. Food Sdn Bhd)	• <i>Pau, mantau</i>
	• Figo (Tradisi Emas)	• Seafood <i>shuimai</i> (dumplings)
	• Kart's (Kart Food)	• <i>Kaya pau</i> , lotus <i>pau</i> , bake <i>pau</i> , frozen <i>roti canai</i> , frozen pie
	<ul style="list-style-type: none"> • Tricious (Tricious Food SB) • Sunshine (Sunshine Baker) • Kawan (Kawan Food Manufacturer) • Deluxe (Deluxe Food Service) 	<ul style="list-style-type: none"> • Frozen pizzas, pies • Frozen pizzas • Frozen <i>roti pratha</i> • Frozen pie
Strategies	<ul style="list-style-type: none"> • Control or buy material directly instead of relying on suppliers • Control or distribute directly to the consumers such as hypermarket /supermarket using own van • Produce new food products • Find replacement of raw materials, some materials are expensive • Import other frozen food products such as frozen vegetables for own use and sell to other local market. • Invest in new factory • Upgrade installation, including hygiene and implement Good Manufacturing Practice • Set-up factories overseas 	
Promotion	<ul style="list-style-type: none"> • Distribute brochures, catalogues, product listings • Give samples, join trade shows • Establish own sales team • Create website 	
Distribution	• Refer to Chart 3.7	

Chart 3.7 Product Flow of Frozen Ready-to-Serve Snacks



Explanation:

Western variety snacks are usually imported and distributed by local importers. Importers tend to supply directly to hypermarkets, supermarkets and local distributors, using their own cold trucks. Local snacks, such as frozen *pau*, *samosa*, spring rolls, and *roti canai* are produced locally and distributed to both the local and export market. Local consumers normally obtain the products in supermarkets or mini markets.

c) Chilled and Frozen Food Ingredients

The chilled and frozen food ingredients segment is very small and fragmented. In Malaysia, people tend to use fresh food ingredients. Local producers of chilled and frozen coconut milk / grated such as Sensori Food Industri S/B, claim they use high quality and low price positioning as the selling point. Currently, their products are sold only to the local market.

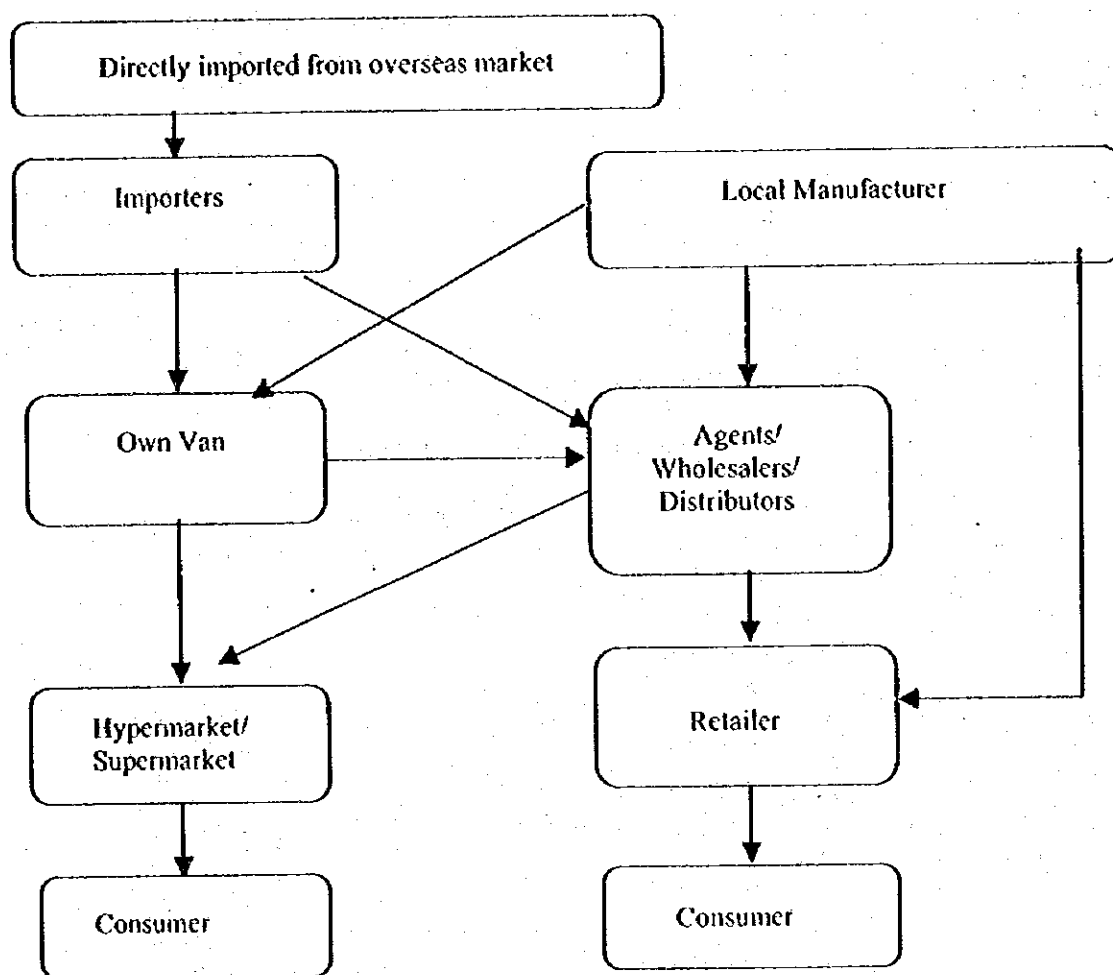
Another example of popular ingredients is chilled tofu, produced locally by Syarikat Perniagaan Cheong Fatt and supplied to retail outlets. In addition, Japanese ingredients are also imported and sold in the local market.

As there are limited and fragmented marketing activities of chilled and frozen food ingredients, it is hard to capture the full picture of this segment. This situation is usual, even in some developed countries the chilled and frozen food ingredients is not considered a segment by itself.

Table 3.28 Marketing Practices for Chilled and Frozen Food Ingredients

Marketing Characteristics	Industry practices	
Product segmentation	<ul style="list-style-type: none"> Local food ingredients (spices, coconut milk/grated) Japanese food ingredients 	
Target market	<ul style="list-style-type: none"> Local market 	
Positioning	<ul style="list-style-type: none"> High quality Low price 	
Packaging	<ul style="list-style-type: none"> Plastic bag Plastic cup 	
Branding	Brand name (company) <ul style="list-style-type: none"> Aindo (Focal Marketing) Simmanoca (Focal Marketing) Green Giant (Pillsbury) Cheong Fatt (Syarikat Perniagaan Cheng Fat) Ajinomoto (Japan Corp) Kong Kee (Kong Kee Trading) Diorgono (Di Giaorno Foods Co) 	Product <ul style="list-style-type: none"> Teppanyaki soba Tempura Soba Napolitan spaghetti Chilled food ingredients Pasta accents Vegetables Soft tofu Japanese ingredients Chilled Japanese tofu Chilled spice pastes
Strategies	<ul style="list-style-type: none"> Control or distribute directly to the consumers Use heavy promotion to try and attract consumers Try to enter the overseas market 	
Promotion	<ul style="list-style-type: none"> Sending brochures, catalogues, product listings Established sales team Direct marketing 	
Distribution	<ul style="list-style-type: none"> Refer to Chart 3.8 	

Chart 3.8 Product Flow of Chilled and Frozen Food Ingredients



Explanation:

Chilled and frozen food ingredients category attracts less attention from the industry. The distribution system is similar to the chilled and frozen snack category except that there are no exporting activities. The products are distributed through importers/local agents/wholesalers/distributors to retail outlets and finally to the end users.

As most of the local food ingredients are sold in fresh, dried or preserved form, chilled and frozen food ingredients are relatively less attractive. In addition, chilled food ingredients may require a complete chilled chain to maintain the temperature of the food for safety and quality. Currently, chilled food ingredients, such as chilled tofu, are distributed using the traditional channel system (see Chart 3.8) while imported chilled and frozen food ingredients, however, are sold to local food service operator or large-scale retailers through importers, agents, or local distributors.

d) Chilled and Frozen Ready-to-Serve and Ready-to-Cook Meat, Seafood and Vegetable

Various segments of the frozen meat products are described below:

(1) Poultry

Malaysia is self-sufficient in poultry meat and egg production and it means that Malaysia is enjoying a reasonably stable supply of both items.

The industry is technologically driven with automated feeding, egg collection and packaging apart from scientific disease and stress prevention methods and environmental controlled housing of chickens. Producers make attempts to increase productivity and reduce costs, and are venturing into downstream processing and marketing of fresh chicken meat and value-added products. The poultry industry's imported feed ingredients are a major cost.

Poultry farms sell their broiler chicken to wholesalers and retailers. Many of the wholesalers are integrators who either operate a feed mill or cold storage/ slaughterhouse or both (e.g., KFC Holdings). These integrators use contract farming and in the case of cold storage operators, operate their own retailing outlets. Most retailers source their meat from their own farms or from slaughterhouse operators.

Marketing of chilled and frozen poultry products is done via a complete distribution system, encompassing wholesalers, retailers, restaurants, and the export market. Chart 3.9 shows a typical distribution chart for a medium to large-scale poultry integrator or manufacturer.

For example, Malayan Flour Mill Berhad operates a fully integrated poultry business with a marketing and distribution system almost similar to KFC Holdings. Another major poultry producer, Dindings Poultry, is involved in processing chilled and frozen marinated chicken and chicken parts for retail outlets, supermarkets and hypermarkets.

The imports of whole chicken into Malaysia are banned, while with import quotas, the restriction on importing of chicken parts was relaxed in 1996. Malaysia imported 8524 mt of chicken parts and chicken products in 1997, mostly frozen whole chicken, frozen chicken wings, and processed chicken products. Imported products such as Danpó, Valley Chef, Emborg and Rose are still in the market, but it is anticipated that these products will eventually lose out to similar products produced locally by Dindings, Ayamas, Farm's Best, Ramly, and Prima Agri.

Traditional marketing outlets for fresh meat at wet markets, farmer's markets and grocery shops are still popular. They tend to offer meat freshly slaughtered on the same morning, although many retailers are using ice water to chill the products. There has been a growing trend of more specialised poultry retail shops by poultry integrators and retailers which offer chilled carcasses and chicken parts as well as other processed poultry products such as chicken frankfurters, nuggets, and burgers. It is foreseeable that such poultry 'supermarkets' shall gain prominence at the expense of traditional meat stalls as consumers develops greater product awareness and purchasing sophistication. The sale of live chicken to consumers even in smaller towns is slowly diminishing.

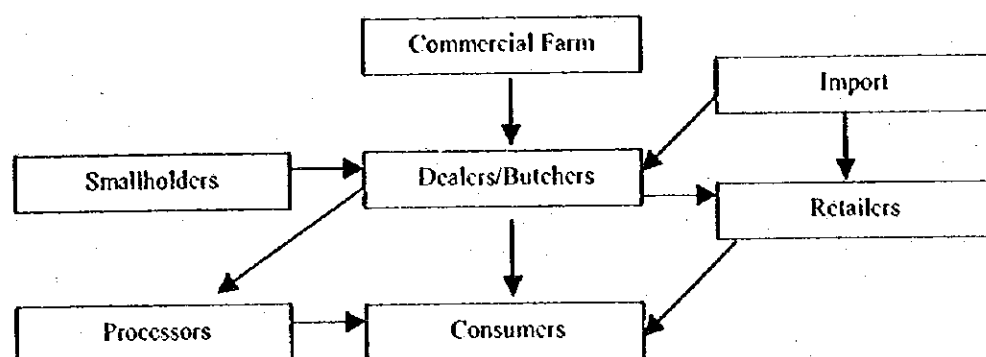
Poultry producers' entry into poultry retailing and processing may be their effort to survive the competitive industry amidst thinning profit margin by bypassing middlemen and retailers. Diversifying their product is one of their other ways to boost demand. At present the more prominent special retail shops are those operated by poultry integrators such as Ayamas, Dindings Poultry, and Ayam A1.

(2) Beef and Mutton

Importation of frozen red meat (mainly beef and Indian buffalo) amounted to 60,092 tons, 71,018 tons and 67,382 tons for 1995, 1996 and 1997 respectively. Indian buffalo meat accounted for 85.9 percent, 84.8 percent and 83.4 percent of the total red meat imports for 1995, 1996 and 1997 respectively. Of all the major livestock sub-sector, the ruminant industry is the least developed in terms of production and marketing. Local production of beef and mutton cater to less than 20 percent of the local demand.

Beef and mutton's distribution is relatively simple and under-developed (see Chart 3.9). This distribution channel is important as Malaysia imports over 85 % of its meat requirement. The imported meat is sold frozen and chilled to farms wholesalers and retailers and the bulk of meat imports come from India followed by Australia, New Zealand, and lately, Argentina and Uruguay. Efforts to integrate ruminant livestock production in palm oil plantations have yet to reach commercial status. An example of a Government-assisted farm is Sarawak where PPES Ternak Sdn Bhd operates a fattening cattle farm and provides meat and VAP to its own retail outlet store, Sarabif. Even then, PPES Ternak faces difficulties competing with VAP from Peninsular Malaysia and similar imports from other countries.

Chart 3.9 The Distribution System for Beef and Mutton



Most locally produced fresh, chilled or frozen beef and mutton are sold at meat stalls in wet markets, weekend or farmer's markets throughout Malaysia. Such stalls lack refrigeration facilities and the meat is often exposed to heat and dust. Ruminant meat retailing has not progressed much over the last decade although companies like Prima Agri Sdn Bhd and hypermarkets such as Macro and Carrefour, have gone into minimal processing, packaging and retailing of red meats.

Further processing of beef products are limited to a few key players such as Ramly Mokni, Saudi Cold Storage and Prima Agri Sdn Bhd. There is no price regulating mechanism for beef and mutton, prices are determined by supply and demand. As imports form a large portion of market supply, imported meat are subjected to exporting countries' production and prices as well as exchange rates fluctuations and freight related charges. Despite these factors, imported meat is still cheaper than local meat as the production costs for local meat are relatively higher.

The distribution channel of value added meat products is complete and multi-level as this segment is well developed compared to other segments. Some manufacturers distribute their products directly to key account or hypermarket. The limited size of the Malaysian market and growing domestic competition, however, is pushing local producers to focus more on export markets by penetrating overseas markets such as Singapore, US, UK, Australia, where the demand for chilled and frozen foods are high.

(3) Frozen seafood and seafood products

Malaysia exports high quality seafood and seafood based product. High quality chilled and frozen products are branded-vacuum-packed with colourful and attractive packaging where the healthy quality of the product is highlighted.

(4) Chilled and frozen vegetables

These products are mainly imported with a small portion of chilled local vegetables available in the supermarket. The chilled local vegetables are minimally processed and repacked by the hypermarket operators. Kong Kee Trading and Pillsbury are the major importers of chilled and frozen vegetables.

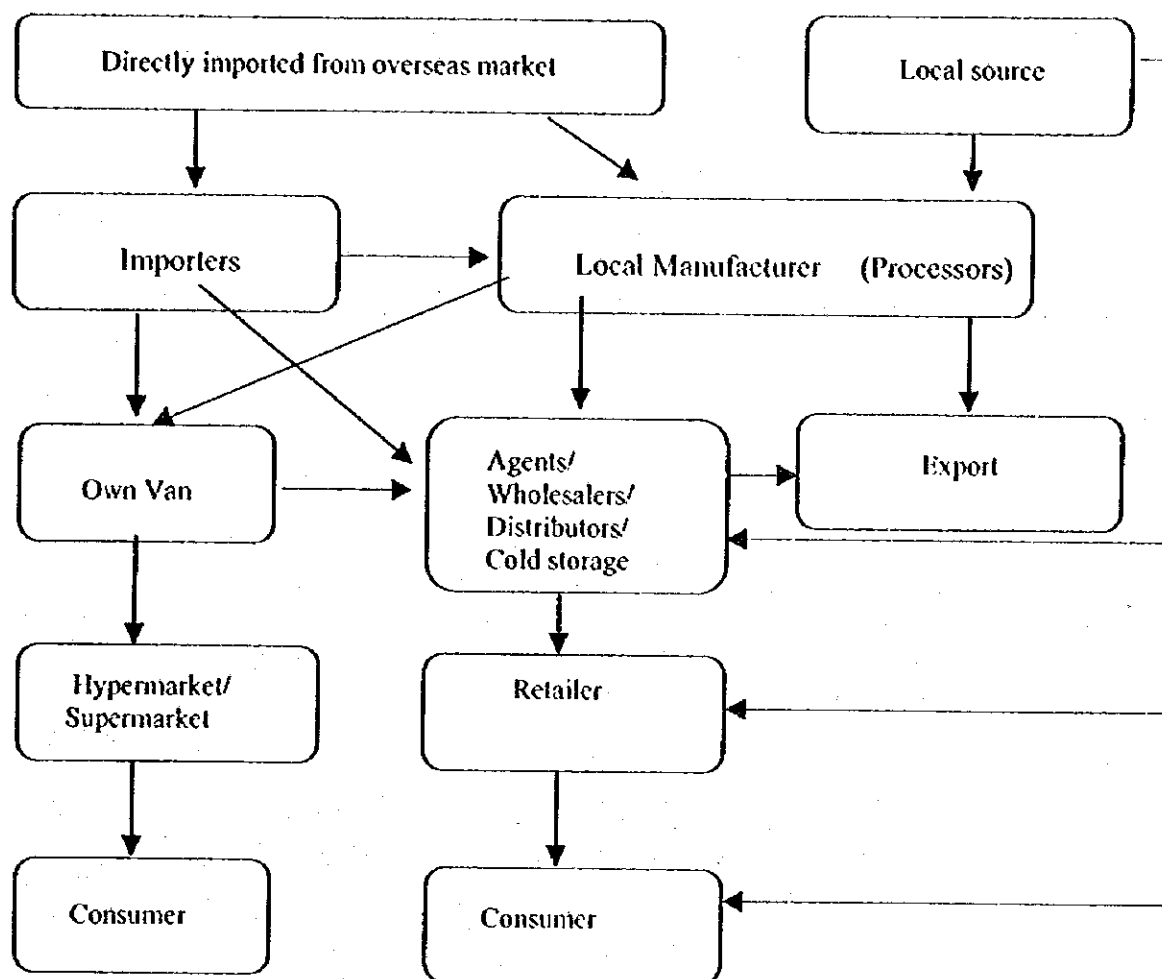
Table 3.29 Marketing Practices for Chilled and Frozen Ready-to-Serve and Ready-to-Cook Meat, Seafood, and Vegetables

Marketing Characteristics	Industry practices
Product segmentation	<ul style="list-style-type: none">• Chilled & frozen poultry, beef, mutton, pork, seafood• Chilled & frozen value-added products (nuggets, burger, sausages, meat ball, seafood products)• Chilled and frozen vegetables
Target market	<ul style="list-style-type: none">• Local market• Export market
Positioning	<ul style="list-style-type: none">• High quality• Low price• Healthy food
Packaging	<ul style="list-style-type: none">• Nylon• Polybag boxes• Laminated film• Carton box

Table 3.29 Marketing Practices for Chilled and Frozen Ready-to-Serve and Ready-to-Cook Meat, Seafood, and Vegetables (continued)

Marketing Characteristics	Industry practices	
Branding	Brand name (company) <ul style="list-style-type: none"> • Farm's Best (Sinnah Food Industries S/B) • Ayam Dinding (Dindings Poultry Processing S/B) • Ramly (Ramly Food Processing) • Ayamas (Ayamas Food Corp) • Ayam A1 (Ayam A1 Food Processing S/B) • Seapack (Seapack Food S/B) • DoDo (Thong Seik Food Industry) • Yoki (Suiwishun Food Trading S/B) • Figo (Tradisi Emas) • Solisage (Solid Side Food Ind.) • Jones Dairy Farm (Jones Dairy Farm Fort Atkinson USA) • Watties (Kong Kce Trading SB) • Green Giant (Pillsbury) 	Product <ul style="list-style-type: none"> • Frozen processed meat • Frozen seafood • Breaded fish chips, Yaki chikuwa (grilled cuttlefish rolls) • Non-halal meat • Chilled & frozen vegetables
Strategies	<ul style="list-style-type: none"> • Control or buy materials directly • Control or distribute directly to the consumers such as hypermarket and supermarket • Take over some of the firms who produce same products • Promote heavily • Export overseas • Introduce new products • Diversify into related businesses 	
Promotion	<ul style="list-style-type: none"> • Advertise in media such as TV, radio, and newspaper. • Send brochures, catalogues, product listings • Establish sales team • Give discounts and incentives, join food seminars, have special promotions at hotels and restaurants • Launch product activities • Create website 	
Distribution	<ul style="list-style-type: none"> • Refer to Chart 3.10 	

Chart 3.10 Product Flow of Chilled and Frozen Meat, Seafood and Vegetables



Explanation:

Chilled and frozen meat and seafood such as burgers, sausages, fish fingers, prawn balls, and crab sticks are either imported or sourced locally. Chilled and frozen vegetables such as broccoli, green beans, and sweet corn are mainly imported.

The processed products are distributed to markets through wholesalers or smaller distributors, hypermarkets, supermarkets and retail stores to the local end users. Imported raw materials are sold to local producers or small-scale manufacturers for further processing. Value-added products are distributed through similar distribution networks to the local market. Chilled meats such as chicken, beef, and mutton available in the retail outlets are supplied directly from local sources (slaughterhouses).

3.3.2 Promotional Tools

Unlike markets in developed countries where advertising is used heavily to promote a product, competition in the domestic market does not involve much advertising and promotions. Instead, producers compete with one another by reducing prices and offering special offers.

According to local industry players, the most effective promotional tools are advertising (TV and radio ads), sales promotion (sampling, discount) and personal selling (using their own sales force). The effectiveness of each promotional tool sometimes depends on the particular product and industry. Most of them have their own sales force to promote their products. In UK, for example, producers of chilled and frozen foods invite chefs, cookery gurus, and TV celebrities to create and endorse their range of ready-to-serve meals.

Consumers still hold onto the traditional perception that fresh products are better than the frozen version. Night-time street bazaars, however, buy frozen foods for their business purposes. It appears that customers will buy cooked products using frozen products but they will not buy the frozen product to bring home to cook.

There is a need to educate people on ways to cook and store the product. Malaysians are still very new to this, and may not understand the difference between frozen and chilled products. They may put the product into the chiller section rather than the frozen compartment, and then complain when the product spoils long before the expiry date. Local manufacturers, wholesalers and other middlemen need to cooperate in educating buyers on product quality and handling.

Table 3.30 Use of Promotional Tools in the Chilled and Frozen Industry in Malaysia

Industry Player	Advertising	Personal sales force	Sales promotion	Publicity	Direct marketing	Most effective promotional tool
Sensori Food Ind S/B	Brochure Catalogue Trade magazine Product listing	Company sales force	-	-	Catalogue selling	Advertising Company sales force
Tricious Food S/B	-	Company sales force	Discounts Incentives Higher margin for distributors Credit facilities Join trade shows & Food seminars	-	Catalogue selling	Sample
PA Food S/B	-	-	-	-	Consignment	

Table 3.30 Use of Promotional Tools in the Chilled and Frozen Industry in Malaysia (continued)

Industry Player	Advertising	Personal sales force	Sales promotion	Publicity	Direct marketing	Most effective promotional tool
Pillsbury (M) S/B	Radio	Company sales force	Samplings Trade shows	Orphanage & shelter home fund	Company website	Sampling Aggressive promotion through TV and radio
Focal Marketing S/B	Pamphlets brochures	-	-	-	-	TV and radio
Daisho (M) S/B	-	-	Testing/ instruction counter in supermarket	-	-	TV & Radio
Saudi Cold Storage	Brochure Catalogue Product listing	-	Discounts Incentives Food seminars	Product launching	-	Food testing (giveaway samples)
Burger Tanjung	Brochure	-	-	-	-	Sample testing Sticker
HSH Sdn. Bhd	Most of the advertising tool such as newspaper, TV and radio ad	-	-	-	Company website	Advertising in newspaper
Lucky Frozen	Newspaper Promotion for hotel and restaurant buyers	-	-	-	Trade promotion	-
OL Foods	Product listing Leaflets Brochures Radio 5	-	Discounts	-	Company website	Product listing Leaflets
UB Food S/B	-	Company sales force	-	-	-	Company sales force
Seapack	Most of the advertising tools	-	-	-	-	Trade promotion for export purposes Supermarket promotion for local markets
Selangor Food Industry	Brochure Catalogue	-	Promoter to promote product	Sponsor football team	-	-

3.3.3 Market Positioning Analysis of Chilled and Frozen Food

The market standing of the four categories of chilled and frozen food are as shown in Chart 3.11. International penetration stage refers to the ability of local manufacturers to market their products to regional or international market. The local market standing refers to the market segment, from niche market to mass market.

Chilled and frozen ready-to-serve meals category serves a niche market and the supplies are mainly imported. There are no significant local producers in this category and the products are mainly sold in super and hypermarkets and high-end retail outlets located in urban areas.

Chilled and frozen snacks category has achieved considerable success in the local and overseas market. In the local market, their products are still confined to urban areas, and sold mainly in hypermarkets, supermarkets and some mini markets.

Currently the local market for chilled and frozen food ingredients is still undeveloped.

Valued-added processed meat products are readily available in the local market. Poultry products, presently, have limited success in the regional markets such as Singapore, Brunei and Hong Kong. The products are not able to penetrate the European markets due to regulatory barriers and are still struggling to meet international standards.

Substantial chilled and frozen seafood products are exported overseas. There are about 30 seafood producers who have obtained B.U. No which enable them to export to Europe. Fresh seafood suppliers mainly meet the demand for seafood in the local market.

Chart 3.11 Market Standing of Chilled and Frozen Food

