Chapter 6

INTERNATIONAL MARKET

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6.1 World Demand and Trends

6.1.1 Overview of Global Consumption for Chilled and Frozen Food

The consumption of chilled and frozen food is increasing globally. Demand of major consuming countries is estimated at USD108 billion in 1999. The global market is currently concentrated in developed countries such as the US, European countries, and Japan. The chilled and frozen food market is very established in the West and constitutes about 40 percent of shelf space in big retail chains stores. These are generally discerning markets that demand good quality of food. The United States of America (US) dominates the global market, accounting for over 60 percent of all sales and the United Kingdom (UK), the largest frozen food market in the European Union, accounts for approximately 7.5 percent of the global market sales.

The following shows consumption of chilled and frozen food for several major economies:

Table 6.1 1999 Frozen Food Consumption of Major Countries #

	USD (Billion)
European Union	31.3*
United States	67.7**
Japan	8.8***
Total	**107.8**

Notes:

* Figures derived from an estimated 5% annual growth rate. According to sources from Quick Frozen Foods International, Food Processing and Retail Business, the frozen food industry growth rate in Europe is about 5% annually.

UK frozen food market was about £4.96 billion in 1998 (source: Birds Eye Wall's Frozen Food Factfile, 1999), approximate USD7.74 billion (exchange rate about 1.56)

UK frozen food market was about 26% of European Union market; this means European Union market was about USD29.77 billion in 1998. With an estimated 5% annual growth rate it was about USD31.26 billion in year 1999.

UK frozen food market is approximately 10% of the world market for frozen food, this means world market for frozen food was about USD75 billion. With an estimated 5% annual growth rate it was about 91.2 billion in year 1999.

** Retail sales – USD27.1 billion; Food services – USD40.49. Source: American Frozen Food Institute, 2000

*** Figure derived from an estimated 2.4% annual growth rate using the actual figure in 1998 which is USD8.62 billion. Source: Japan Frozen Food Association, 1998

\# Consumption of frozen food for other countries is not available. US, Europe, and Japan are the biggest consumers of chilled and frozen food in the world.

Though the chilled and frozen food market in these countries is large, it is difficult to enter these markets. Potential exporters need to meet the stringent quality requirements of these countries such as HACCP, ISO 9000 and ISO 14000.

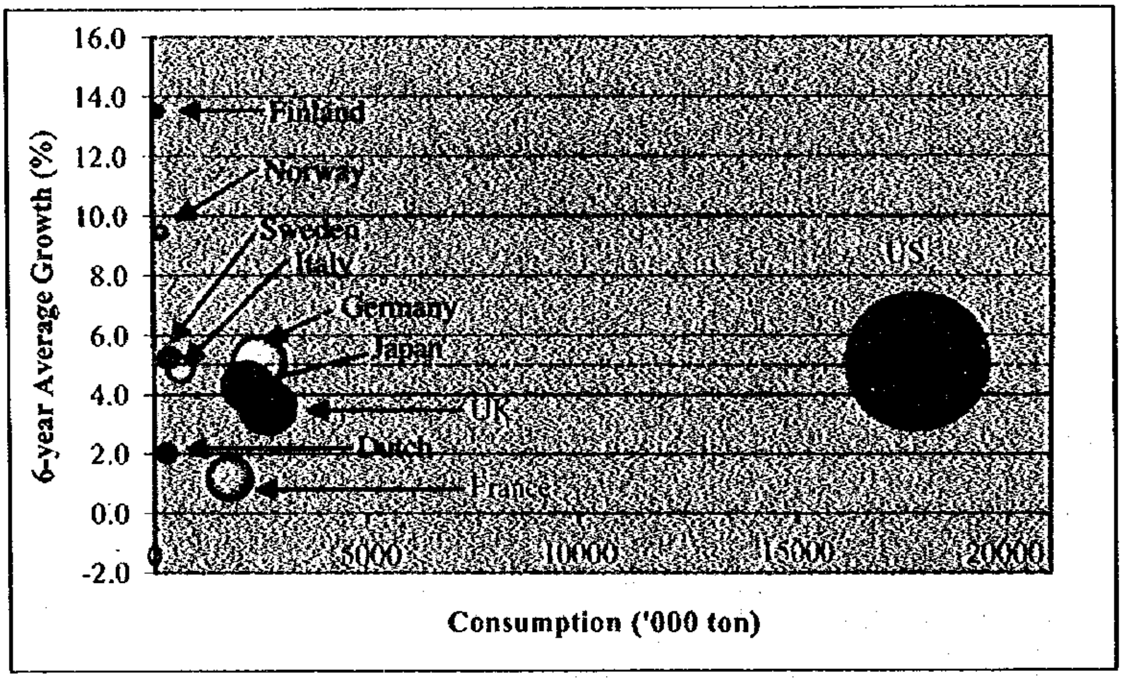
In addition to the stringent food import regulations, chilled and frozen food exporters are also required to meet the exacting requirements of their customers, especially large supermarket chains. The requirements and expectation set by these supermarket chains operators are sometimes more demanding than the food import regulations of their countries.

6.1.2 The Growth Scenario

In the past six years, the global frozen food market has grown by an estimated average of five percent per year, with the exception of Norway and Finland, which grew over 10 percent per year (source: Quick Frozen Foods International, Food Processing and Retail Business). The chart below illustrates the growth trend of chilled and frozen food consumption in some selected countries.

The chilled and frozen food market is expected to grow steadily and probably exponentially in certain developing countries. This appears inevitable as the trends/factors that drive the consumption in developed countries are also beginning to significantly impact developing and third world countries.

Chart 6.1 Consumption of Chilled / Frozen Food of Major Countries 1999



Convenience, choice, demand for out of season food, flexibility, ease of preparation, quality, and value are the hallmarks of frozen food and are the reasons for its rise in popularity.

Generally in developed countries, ready-to-serve meals and frozen ethnic food are the most promising category of food experiencing double-digit growth for the past few years. South Asia's abundance of fresh produces, its price factors, and the public's negative perception of chilled and frozen food quality are the main barriers to the development of the frozen food industry.

Despite the obstacles that exist in this region, we find that the market for chilled and frozen food will continue to grow, driven by factors that will be presented in later sections of this report.

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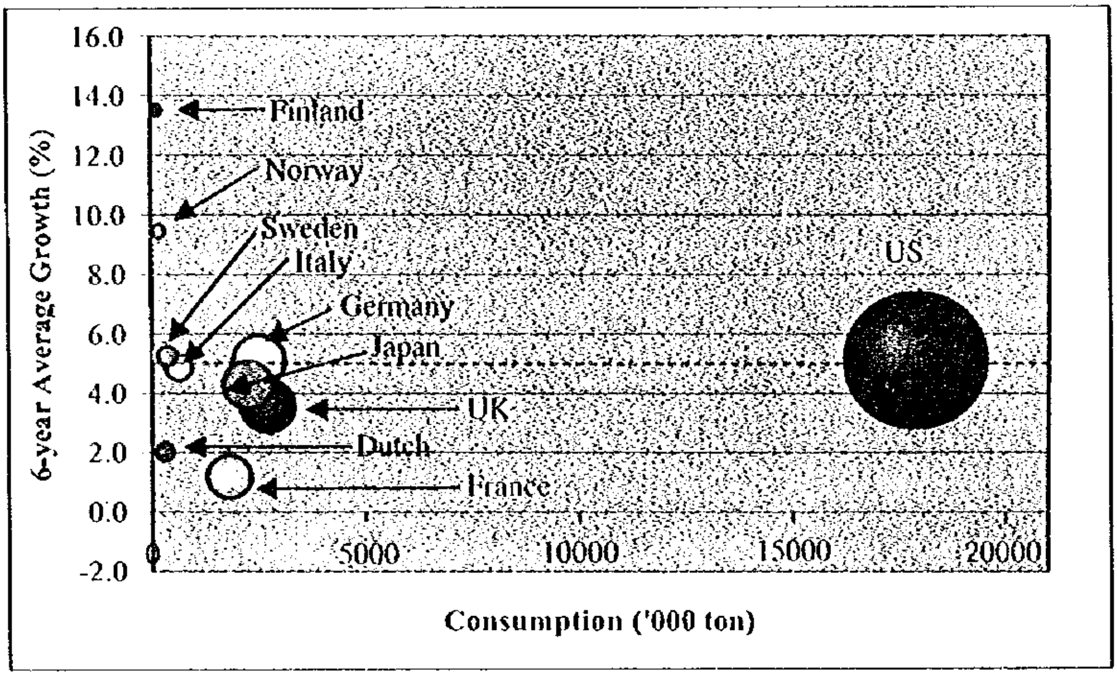

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Exporters to the developed countries have to comply with stringent food import regulations and also the requirements of large supermarket chains, which are sometimes more demanding than the food import regulation requirements of their countries. As such, though the global market for chilled and frozen food is high and expanding, it is, generally, not easy for exporters to penetrate these markets.

6.1.3 European Market

Europe is one of the leading markets for chilled and frozen food and UK has the most developed market among European countries. The average per capita consumption of frozen food in Europe was 24.5 kg in 1994, with a growth rate of 4.8 percent.

Table 6.2 European Frozen Food Consumption

	Frozen Food Consumption ('000 ton)						5-year average growth	Per capita consumption (kg)	
	1994	1995	1996	1997	1998	1999	%	1994	1999
UK	2,271	2,533	2,568	2,607	2,715	2,707	1.7	40.3	45.6
Germany	1,959	1,944	2,024	2,127	2,214	2,513	6.6	23.9	30.6
France	1,695	1,729	1,700	1,738	1,733	1,797	1.0	29.0	30.0
Italy	507	556	577	598	623	643	3.7	9.0	11.6
Sweden	292	308	333	346	364	377	5.2	32.7	42.6
Dutch	275	279	294	308	-	304	2.2	17.9	19.8
Denmark	252	264	265	-	-	-	-	48.4	-
Norway	114	120	130	163	172	179	10.5	24.4	39.9
Finland	69	77	85	114	127	130	14.0	13.6	25.1

Source: Japan Frozen Food Association

According to Datamonitor, frozen ethnic ready-to-serve meals recorded double-digit growth in most European Countries.

Leatherhead Food Research Association (LHRA) forecasted that the current undeveloped markets for ethnic food in certain countries like Spain and Italy will have exceptionally strong growth rate in the future. LHRA also anticipates that the relatively mature British market will experience a slow down in the growth rate, probably to 5-10 percent per year. Europe will continue to focus on the health and convenience aspects of food products.

6.1.4 American Market

The US is the world biggest consumer of chilled and frozen food. In 1999, the total frozen food sales were USD67.7 billion. The fastest growing segments are dinners/entrees and seafood (source: America Frozen Food Institute).

The food service market accounts for about 60 percent of U.S. frozen food sales. The main reasons indicated by the US food service operators for using frozen food (in descending order) are availability, product consistency, reduced preparation time, portion control, high quality, ease of storage, price stability, and low cost.

According to a report by the Frozen Food Age magazine and the American Frozen Food Institute (AFFI), US consumers react more positively toward frozen food than any other consumers. They recognize frozen food products as effective home meal solutions and appreciate the ease and quickness of their preparation.

6.1.5 Asian Market

Asian food products are becoming more popular than the Western varieties, which are more readily available in the market. High potential products are the traditional Asian health foods enriched with new nutritional ingredients and typical Asian products (such as instant noodles), and Asian convenience foods (like meat, fish balls and frozen dim sum). Price is one of the main factors in Asia.

The chilled and frozen food markets in various Asian countries are explained below:

a) Japan

Japan has the most developed market for chilled and frozen food in Asia. Japan's chilled and frozen food industry began to develop in early 1900s. The Japanese Government had initiated a massive cold chain promotion programme in 1965. The objectives of the cold chain programmes are to improve the health of the citizens, to reduce wastage of agricultural products and to streamline the supply of food.

Prior to 1960s, there are several frozen food association mainly for seafood. In connection with the rapid industry growth in 1960s, a new organisation, namely the Japan Frozen Food Association (JFFA) was established. In 1970, JFFA introduced a self-regulation programme to secure product quality and hygiene of its members. Members who achieved the standard set by JFFA will be given a certificate and are allowed to display it on their products. Monthly audits are carried out randomly and the certificate withdrawn if members failed to maintain the standard.

In addition, the JFFA also carried out educational and promotion campaigns on frozen food consumption, which were subsidised by the Japanese Government for 10 years.

Total sales reached 2.2 million metric ton in 1998 (source: Japan Frozen Food Association). Production of frozen food in Japan has risen by more than 2.5 times since 1980, by 45 percent since 1990 and by an average of 3.4 percent between 1994 and 1998. The consumption grew even at a faster rate of 4.5 percent during the 1994 and 1998. In 1998, the per capita consumption of frozen food in Japan was 17.4kg.

Table 6.3 Japan Frozen Food Production and Consumption

	1994	1995	1996	1997	1998
	'000 ton	'000 ton	'000 ton	'000 ton	'000 ton
Frozen food production	1,319	1,365	1,420	1,482	1,489
Frozen vegetable imports	501	548	604	627	706
Total frozen food consumption	1,829	1,913	2,024	2,109	2,194

Source: Japan Frozen Food Association

Institutional consumers (mainly food processing and food services industries) consume 72 percent of the total frozen food output in Japan in 1998. In the food service sector, frozen food is also gaining in importance as restaurants try to reduce their operational costs by using processed ingredients in frozen form.

According to a study by the USDA's Foreign Agriculture Service (USDA/FAS), the rapid growth in the Japanese frozen food industry can be attributed to its increased price competitiveness and improved quality. Societal changes have also played a significant role. In addition, there is a growing trend for frozen food consumed as main meals and not just as side dishes.

b) China

The chilled and frozen food industry in China is still underdeveloped. It is estimated that about 10 to 15 percent of the total 1.2 billion population consume processed food.

c) Taiwan

Frozen food production, exports, imports and domestic consumption in Taiwan all grew at a feverish pace in 1994, according to Chinese Frozen Food Institute (CFFI) where per capita consumption reached 14.25 kg. Domestic consumption was 287,762 tons, up 28 percent from the 224, 840 reported in 1993.

Table 6.4 Taiwan: Frozen Food Consumption 1994

Category	Productions*	Imports	Consumption
	ton	ton	ton
Fish and seafood	1,940	68,677	70,617
Meat & poultry	23,991	72,255	96,246
Vegetables and fruits	14,191	26,553	40,744
Prepared foods	79,008	-	-
Dough products	1,147	-	-
TOTAL	120,277	167,485	287,762

*Production for domestic consumption
Source: Quick Frozen Foods International, April 1996

6.1.6 Southeast Asia Market

The region's native abundance in fresh produces, especially meat and seafood, has often been seen as a major obstacle in the development of the frozen food market. Generally, consumers perceive that chilled and frozen food is not "fresh" and deemed to be of inferior quality.

In most part of Southeast Asia, price remains as a significant barrier to consumers especially during times of economic crisis. The readily available domestic supply of fresh food further accentuates the price difference between fresh and frozen products. One of the reasons buyers are skeptical of the quality of frozen food may be due to poor handling by suppliers.

The domestic negative perception of frozen food and the abundance of "fresh" food have caused many frozen food manufacturers in Southeast Asia to produce largely for the export markets. This export bias is also the result of the relative strength of the US dollar against recently depreciated local currencies, which enables exporters to offer attractive prices to foreign markets.

There is a gradual and steady trend in Southeast Asia indicating that the production of food is shifting from simple processing or packing towards value-added products, such as fish or meatballs, finger food items, surimi, and other convenient ready-to-eat foods. This change is mainly due to increase in demand from more developed countries that source food products from this region.

Despite the restraining factors, there is a large potential for frozen food, including value-added items, in Southeast Asia. The market for frozen food continues to grow at a steady pace this decade.

Since the 1980s, the proliferation of Western restaurants and fast food chains of the food service sector also triggered the current growth pace of the chilled and frozen food industry in Southeast Asia. More varieties of Western cuisine and snacks have been introduced to the market. This has spurred demand for food such as frozen pizzas, meat patties, nuggets, and French fries in supermarkets. Consequently, local food producers have recently introduced spin-offs from local favourites like frozen spring rolls, curry puffs, *roti canai*, Chinese *pau*, *samosa* and *dim sum* to cash in on this sector's expansion.

In addition, the increasing urbanization of the population in Singapore, Malaysia and Thailand also contributed to the rapid growth of the industry.

6.2 Comparison of Consumer Behaviour Across Countries

Both Malaysia and US consumers were concerned about product quality, such as nutritional value and taste, but Malaysians also rank price as one of the determinant on making their purchasing decision (see Table 6.5 and Table 6.6). Consumers ranked brand and packaging as less important features compared to factors, such as quality, hygiene, and price.

Table 6.5 Factors for Consuming Chilled and Frozen Food

Feature Ranking	Malaysia [1]	US[2]	Japan[2]
1	Convenience	Convenience	Convenience
2	East to get	Taste	Variety
3	Time saving	Variety	Cost
4	Easy to serve		
5	Delicious		
6	Reasonable price		
7	Easy to prepare		
8	Healthy products		
9	Longer shelf life		
10	Many choices		

Notes: 1. Source- Study Team
2. Source: USDA/FAS, JA5028, 1995

Table 6.6 Comparison of Processed Food Features among Malaysia and US Consumers

Feature Ranking (1 is the most important feature)	Consumer Survey Malaysia	US Survey
	Features of chilled and frozen food seen as important:	**Features of packaged meals seen as important:**
1	Quality	Taste
2	Hygiene	Nutrition
3	Nutritious/Healthy	Good value
4	Price	Appealing ingredients
5	Taste	Convenience
6	Halal status	Easy directions
7	Convenience	Low fat and low calorie
8	Brand	Trusted brand name
9	Outlet	Appealing packaging photo
10	Packaging	

As shown in Table 6.5, consumers in advanced countries, such as the U.S and Japan, appreciate the ease of food preparation and convenience, and better quality products. This trend is highly related to the socio-economic changes and the increased number of women in the work force.

The consumption trend also shows that consumers in advance countries are switching towards chilled foods, which they perceive to be fresher and better quality, and an overall growing interest in vegetarian foods. In the US, the Home Meal Replacement (HMR) concept is well accepted as most of the consumers have busy life styles and prefer to spend less time cooking.

Japanese consumers on the other hand, the target consumers for chilled and frozen food may be the Cosmopolitan and Modern traditional group. About 83 million people in Japan fall under these two categories that stay in major urban areas to sub-urban areas. The urban areas' residents who lead a busier lifestyle may consume more convenience food. Aside from convenience, Japanese are particular about product quality and as their incomes increase, premium products are preferred.

In Southeast Asia, China and India, consumers may be classified under Elite, Consumer Class, and Pre-consumer class. The focus market is the Consumer Class with about 106 million population in South East Asia, 204 million in China and 260 million in India. They comprise mainly younger age groups who live in urban areas and fall under the middle to high-income group. In addition, most women in this category are highly involved in the workforce.

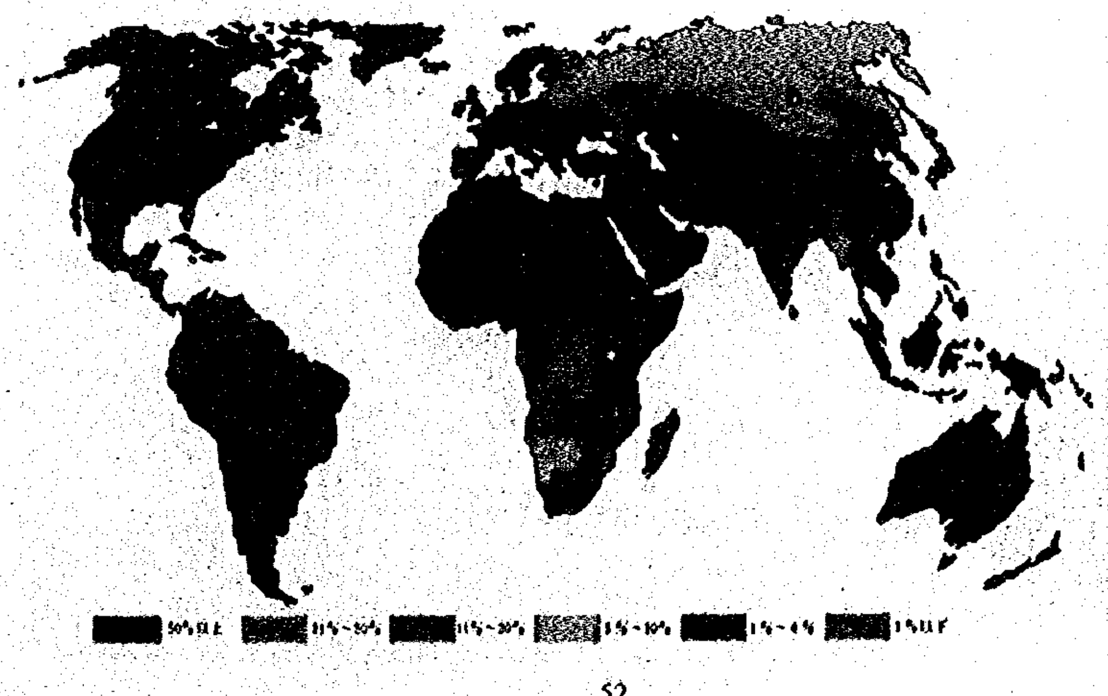
These target markets demand various types of convenience food include chilled and frozen food. In China and India markets, processed foods with minimum value-added may attract the markets' attention. As for the South East Asia region, the market appears to appreciate higher value added products as consumers are more educated and sophisticated.

In Malaysia, consumers are still conservative and obscure about the quality and nutritional value of chilled and frozen food. Consumers normally tend to make a direct comparison between fresh food and frozen food, preferring fresh food which they belief are better quality than frozen food.

6.3 Halal Food Market

The demands of Muslim consumers have urged the food industry to cater to halal food not only in Malaysia but worldwide. The worldwide halal food market appears to be very big and growing. Demand for halal food is currently estimated at USD80 billion (RM304 billion) a year (Babji, 1998). The large Muslim populations in the Middle East, North America, South and Southeast Asia, the former Soviet Union, and China present a lucrative market for the food industry (Chaudry, 1992).

Chart 6.2 Estimated World Muslims Population 1999

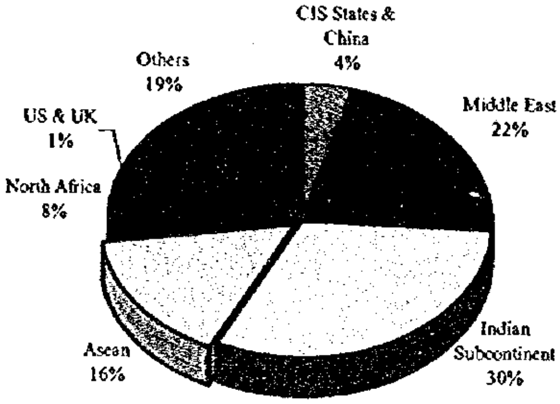


6.3.1 Chilled and Frozen Halal Food Market

Based on the Muslim population and population growth rate, the frozen food segment alone is estimated at USD28 billion and is projected to grow at 4.3 percent a year. BY 2010, the market is expected to reach USD51 billion. The halal chilled and frozen food in Malaysia accounts for about 85 percent of the total chilled and frozen food market and is estimated at RM1.7 billion.

The current world's Muslim population is estimated at 1.5 billion and is growing at about three percent a year. There are large Muslim population in countries of the Middle East, South and South East Asia, the East European states of the former Soviet Union, China and United States. Indonesia and India appear to be the biggest potential market for halal food, given their large Muslim populations.

Chart 6.3 Distribution of World Muslim Population 1999



Source: www.imangroup.org

6.3.2 Government Halal Food Policy

The Malaysian Government strongly supports the halal food industry as evidenced by the various programs that have been initiated by the Government. This includes the inclusion of the halal food development in the Second Industrial Master Plan (IMP2, 1996-2005), setting halal and haram committees, and also forming working groups on halal food for developing a Malaysian SIRIM standard. In the IMP2, one of the strategic directions is to position Malaysia as an international halal food hub.

6.3.3 Halal Food Control

The commitment of the Government to facilitate the provision of halal food for the Muslim consumers in the country is reflected through the establishment of various legal infrastructures. The following lists the legal infrastructures:

- Trade Description (Use of Expression 'Halal') Order 1975
- Trade Description (Marking of Food) Order 1975
- Customs (Prohibition of Imports) Order 1988
- Animal (Importation) Order 1962
- Local by-laws as well as its enforcement
- Establishment of halal guidelines and certification activities by JAKIM
- Establishment of SIRIM Halal Standard

The control of halal food is currently addressed through a multi-agency approach led by JAKIM of the Prime Minister's Department.

In connection to this, JAKIM introduced a halal logo to help Muslim consumers differentiate food products that have obtained official Government approval and those that have not. Along with the logo, JAKIM has issued Halal Verification Certificate. SIRIM is currently preparing Standard for Halal Foods to facilitate both local and international food manufacturers to produce halal food according to Islamic requirements.

Since 30 September 1998, the Government has entrusted a new company, Ilham Daya Sdn Bhd, to undertake the role of evaluating, inspecting, and analysing products and premises for the purpose of certification, and to make their recommendations to JAKIM.

6.3.4 Standardisation of Halal Food for International Trade

Malaysia has prepared the "General Guidelines For Use of the Term Halal", which has been adopted in 1997 as an international guideline (Ministry of Health, 2000). These guidelines provide the necessary basic and general information on how food could be produced and claimed as halal.

Similarly at the regional level, the "ASEAN General Guidelines on the Preparation and Handling of Halal Food" under the auspices of the ASEAN Ministers of Agriculture and Forestry (AMAF) is at the final stage of its deliberation before being adopted as a regional instrument for facilitating inter-ASEAN trade.

6.3.5 Roles and Efforts of Government Agencies in Positioning Malaysia as a Halal Food Hub

Various Government agencies are involved in the effort of positioning Malaysia as the international halal food hub (refer Table 6.7). The Ministry of Agriculture (MOA) is the leading agency that is coordinating and facilitating this effort. The committee on Malaysian Halal Food Hub is still working on the strategic paper to position Malaysia as a international halal food hub.

However, there are ongoing efforts in creating various halal food zone/park in various states such as Pahang, Selangor, Malacca, Negri Sembilan, and Perlis where certain areas are allocated for the creation of halal food production zones.

6.3.6 Roles and Efforts by Private Sector in Positioning Malaysia as Halal Food Hub

a) Organisation and Products

Management of major private companies are generally aware of the current and future market for halal food and their responsibilities in providing good, healthy, safe and permissible food to Muslims and non-Muslims as well. Some of the respondent companies have special halal committee responsible for the development of halal food in the company.

Table 6.7 Summaries of the Support Foundation from Government Agencies for Halal Food Industry

Infrastructure and Support Services	**R&D and Food Processing Technology**	**Laws and Regulations**	**Financial & Capital**	**Institution:** **1. Accreditation** **2. Health and Safety Std.** **3. Halal Std.**	**Promotion**
DVS, MARDI, SIRIM, UKM, UPM, UUM,USM, Ports, public and private abattoir	DVS, MARDI, SIRIM, UPM	Ministry of Domestic Trade and Consumer affair, DVS, Custom (Entry of Port), local by laws	MIDA,Public and Private, financial institution	MOH, DVS, IDSB, JAKIM, SIRIM	MATRADE, MITI
• Human resource development training and educating • Slaughtering services • Ports and transportation facilities • Storage facilities	• Fresh, chilled and frozen meat technology • Halal food ingredient technology • Product development from bio-technology	• Laws and regulations: • Trade description 1972 (Use of Expression "Halal") Order, 1975 • Trade Description 1972 (Marking of Food) Order, 1975 • The Animal Rule 1962-Section 8 • Local by-laws: • Educate consumer • Handle consumer complaints	Financed by the promoted products/ activities – promotion of investments acts, 1986 under processing of agricultural produce livestock and livestock product Halal food industry financing	• Code of practice for food hygiene GMP HACCP Certification Veterinary Health Mark Logo Halal Certification Malaysia Halal Standard	Conduct international seminars, conferences, and trade shows Facilitate the trade-import and export of halal products internationally

b) **Promotion**

A number of international as well as local food companies are currently being benefited from the halal requirement and capturing larger markets locally and around the world. Examples of some successful companies are Nestle (Malaysia) Berhad, KFC Holdings (M) Berhad, MAS Catering Sdn Bhd, and Prima Agri-products Sdn Bhd.

Halal food products, including chilled and frozen varieties, are distributed through the normal distribution channel but added care are given to ensure compliance with halal requirements as stipulated under the Trade Description (Use of expression 'Halal') Order 1975 and Trade Description (Marking of Food) Order 1975.

c) **Distribution**

Presently, transportation and distribution channel for imported meat products including chilled and frozen products strictly follow this requirement. For other halal food products, including chilled and frozen varieties are distributed through the normal distribution channel, but added care is given to ensure compliance with halal requirements as stipulated.

d) **Pricing**

The survey found that there is not much price difference between halal and non-halal food.

Chapter 7

MARKET POTENTIAL

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7.1 Market Drivers

The review of chilled and frozen food market in various countries revealed that market drivers for consumption of chilled and frozen are common, for example:

a) Changing demography and lifestyle are the main demand drivers

- Chilled and frozen food is gaining more acceptance as an alternative to fresh food, especially among the higher income and educated group.
- There is a growing preference among consumers to spend less time cooking, resulting in the popular frozen "Home Meal Replacement" concept.
- Teenage children tend to prefer pre-cut/pre-cooked food than their parents and have influenced frozen food purchases.
- There is a gradual change in lifestyles towards lighter meals, and greater health and weight consciousness.

b) Growing food service industry is also creating additional demand

- The food service industry is opting for more frozen food for convenience as well as reducing labour cost.
- The flourishing food service industry especially in the US, UK and Japan, is one of the main factors driving the demand for chilled and frozen food.

c) More products and better merchandising are encouraging more purchases

- More varieties and better quality of chilled and frozen food are being introduced into the market.
- The fact that more shopping malls/superstores and convenience stores offer chilled and frozen products and increasing space to accommodate the products, reflect their mounting confidence.

d) Marketing efforts are creating awareness and improving product perception

- Marketing programmes are important in educating and communicating to consumers the advantages of chilled and frozen food, i.e., chilled and frozen food as the fresh food alternative. Research shows that sales of these products are more promotion-responsive compared to others.

e) Improvements in supply chain is producing better quality product and improving output and reducing cost

- The improvement in the cold chain, i.e., better equipment, proper food handling practices, adequate transportation and storage, is encouraging higher output and reducing food spoilage.
- The internet enable lower procurement cost as well as providing more sources of supply of chilled and frozen food. At the same time, consumers are able to easily obtain better and faster information related to the chilled and frozen food.

7.2 Market Size Projection and Sensitivity Analysis

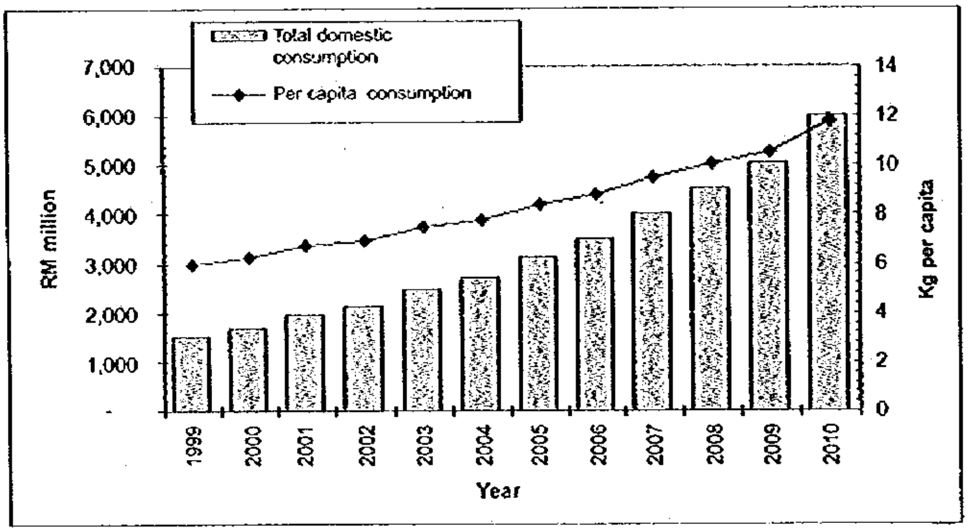
7.2.1 Market Size Projection

Malaysia's chilled and frozen food consumption for 1999 has been estimated at approximately 6.0kg per capita. It is estimated that Malaysia's 1999 per capita consumption of 6.0kg of chilled and frozen food is equivalent to Japan's per capita consumption of frozen food in 1980. This conclusion is consistent with the opinion of experts with industry knowledge of the Japanese and Malaysian chilled and frozen food industry.

Using the Japanese consumption growth pattern, the study team developed a model to estimate Malaysia's consumption of frozen food from now till year 2010 based on the development of the Japanese chilled and frozen food industry since 1980.

Accordingly, the market size for local chilled and frozen food is projected at RM3.1 billion in 2005 and RM6.0 billion in 2010. Malaysia's chilled and frozen food consumption is projected to increase to 11.7 kg per capita by 2010 (see Chart 7.1).

Chart 7.1 Malaysia Chilled and Frozen Food Market Projection



* The projection incorporates an annual population growth of 2 percent and average inflation rate of 4.5 percent per year.

The following tables (Table 7.1 and Table 7.2) list the estimated growth rate and projected market size for the four categories of chilled and frozen food in this study:

Table 7.1 Estimated Growth Rate for Various Chilled and Frozen Food Categories

		Estimated growth per annum	
		2000-2005	2006-2010
Category 1	Ready meals	25.0%	15.0%
Category 2	Snacks	25.0%	15.0%
Category 3	Food Ingredient	10.0%	20.0%
Category 4A	Vegetables	14.5%	19.3%
Category 4B	Meat & meat-based and seafood products	10.0%	10.0%

Table 7.2 Domestic Market Size for Various Chilled and Frozen Food Categories

		1999	2005	2010
		RM million	RM million	RM million
Category 1	Ready meals	9.5	36.3	73.0
Category 2	Snacks	42.8	163.3	328.5
Category 3	Food ingredient	5.6	10.0	24.8
Category 4A	Vegetables	506.7	1,138.9	2,750.9
Category 4B	Meat & meat based and seafood products	995.6	1,763.8	2,840.6
Total		1,560.2	3,112.3	6,017.8
Compounded Annual Growth Rate		-	12.2%	13.1%

Vegetable is classified as an individual category as this category is expected to grow significantly in the future driven mainly by the demand from the food service sector, increase in value-adding activities on these products, and wider product range.

The relative market size for various chilled and frozen categories are tabulated below:

Table 7.3 Projected Relative Market Size for Various Chilled and Frozen Food Categories

		1999	2005	2010
		%	%	%
Category 1	Ready meals	0.6	1.2	1.3
Category 2	Snacks	2.9	5.5	5.9
Category 3	Food Ingredient	0.4	0.3	0.4
Category 4A	Vegetable	32.4	35.9	43.2
Category 4B	Meat & meat-based and seafood products	63.7	57.0	49.1
		100.0	100.0	100.0

7.2.2 Projected Domestic Market Size for Chilled Food

Market potential and growth rate for chilled food, except chilled vegetables, is projected to be much lower than the frozen food in Malaysia due to greater sensitivity of chilled food to the local high temperature.

The study team conservatively estimates that the relative market size of the chilled food (excluding vegetables) is at five percent of the total chilled and frozen food market value. In 1999, chilled vegetables contributed approximately 85 percent of the chilled and frozen vegetables market size. This proportion of chilled vegetables market size is expected to remain relatively the same in the future, as consumers generally still prefer fresh food.

7.2.3 Sensitivity Analysis

Sensitivity analysis was conducted to ensure that the market projections are directionally correct, after taking into account the possible impact of the differences between the Malaysian scenario and Japan's chilled and frozen food industry development on which the projection model is based.

Discussions with various industry experts led us to believe that Malaysians could consume more chilled and frozen food per capita in future compared to the Japanese in the past and the consumption growth rate may even be faster compared to Japan. This is due to the more rapid development in technology and industrial growth anticipated in the future, as compared to the development in the past.

Hence, the projection of Malaysia's consumption of chilled and frozen food in the earlier section represents the lower range of Malaysia's future consumption path.

Sensitivity analysis was performed to gauge the impact on the market potential projection to changes in the following two variables:

- Annual per capita consumption rate
- Annual growth rate used in the projection (i.e., the Japanese growth pattern)

Three sets of sensitivity tests were carried out for the following scenarios:

Scenario 1: 25 percent higher per capita consumption rate in frozen food
Scenario 2: 25 percent faster growth in consumption rate in frozen food
Scenario 3: both (a) and (b)

The following are the results of the tests:

Table 7.4: Summary of Sensitivity Analysis

	SCENARIO 1			SCENARIO 2			SCENARIO 3		
Year	Estimated per capita consumption	Total consumption		Estimated per capita consumption	Total consumption		Estimated per capita consumption	Total consumption	
	kg	'000 ton	RM billion	kg	'000 ton	RM billion	kg	'000 ton	RM million
2000	7.8	181,267	2.1	6.8	158,064	1.9	8.5	197,581	2.3
2005	10.4	266,725	3.9	9.1	232,585	3.4	11.4	290,731	4.2
2010	14.7	413,860	7.5	12.8	360,886	6.6	16.0	451,107	8.2

In view of the above, it appears that the demand for chilled and frozen food is growing, and if this demand grows at the projected rate it will significantly impact the market size.

7.3 Market Potential by Product Categories

a) Ready-to-Serve Meals

This market is currently very small. There are indicators that demand in this category of the local market will grow as Malaysia becomes more developed. If the local ready meals market is not developed to meet this anticipated demand, this category will eventually turn to imports to satisfy its needs. The increase in demand for ethnic food in western and developed countries also offers opportunities for Malaysian ready-to-eat meal producers to enter this category. The study team believes that in view of the import substitution possibilities and export potential, this category should be developed.

b) Snacks

This is also an attractive category of the industry currently dominated by a few players. The global increasing demand for snacks and ethnic food offers good export potential for local producers. Already several local snack manufacturers have successfully penetrated the export market despite importing countries' stringent requirements. This category should be developed to strengthen the existing foundation and to take advantage of the global demand and export potential.

c) Food Ingredients

The ingredient market is presently small. With the development of the food service sector like central kitchens, however, this category will increasingly grow. Chilled and frozen food ingredients are facing competition from the easily available fresh and dried varieties. For these reasons, the study team believes this category offers limited opportunities.

d) Vegetables

There is a relatively big ready market for chilled and frozen processed vegetables but the supply is currently met by imports. There is limited scope for import substitutions as a large portion of these imported vegetables are not economically or technically feasible to grow in Malaysia. Within these constraints, there are potentials to undertake value-adding processing locally on imported and locally grown vegetables, e.g., minimally processed vegetables for institutional users.

e) Meat, Poultry and Seafood

This is the biggest category of the market accounting for almost 63 percent of the total market in 1999 and is expected to remain as one of the biggest categories even in 2010. The meat-based products are mainly for local consumption while a large percentage of seafood is exported. This segment is well developed with the market dominated by a few large players, some of whom are also public-listed companies in Malaysia.

This category is largely constrained by the limited local supplies of meat and seafood. The processed meat or meat-based products have limited scope to export to Western countries even with the increasing demand there for ethnic food due to local manufacturers' inability to meet these countries' stringent regulatory requirements.

Chapter 8

KEY CHALLENGES AND ISSUES

CHAPTER 8

KEY CHALLENGES AND ISSUES

8.1 SWOT Analysis

The result of the SWOT analysis is provided below:

8.1.1 Chilled and Frozen Food Industry

a) Strengths

- Malaysian ethnic food has already penetrated overseas markets and is well received.
- Local poultry and seafood industry is well-established and as competitive as the foreign products.
- Good industrial infrastructure already in place could attract new investors.
- Major players are upgrading their technology and production systems and are catching up with international operators.
- Sufficient trained food technologists are available.
- Support provided by the Government in terms of liberal input importation and funding.
- Public research institutions are already in place, thus, reducing set-up time.

b) Opportunities

- Most of the food processing sectors is at infancy or initial stage of growth. There is a big scope for expansion, especially into value-added food products.
- There is a growing trend towards the consumption of convenience food that are easy to cook and ready to eat.
- Malaysia is still a developing country and urbanisation rate is rising. This translates to opportunities for expansion.
- There are growing business opportunities through franchising and the central kitchen concept.
- Strong government support as a result of recent refocusing on the agricultural sector.

c) Weaknesses and Threats

The weaknesses and threats of the Malaysian chilled and frozen food industry represent the industry's issues and challenges and are discussed in Chapter 8.2.

8.1.2 Positioning Malaysia as a Halal Food Hub

a) Strengths

- Malaysia is a Muslim country with high appreciation on halal food.
- Malaysia is a member of OIC and a respected Muslim country.
- Malaysian halal logo, verification and certification system are generally well recognised worldwide.
- The Government strongly supports the halal food industry.
- There is good industrial infrastructure with well-connected transportation network and utilities supply.
- Existing major players in the food industry have been actively promoting halal logo.

b) **Opportunities**

- Muslim population is growing at a faster rate than the world average, which means increase demand for halal food.
- Large regional (ASEAN) Muslim market.
- Muslim purchasing power is increasing.
- Islamic awareness among Muslims are expanding worldwide especially in non-Muslim countries.
- Commonwealth of Independent State (CIS) countries are new markets for halal food. These countries have a large Muslim population
- Liberalisation of trade worldwide, and harmonising of halal regulations and guidelines globally through Codex, will facilitate halal food trading.

c) **Weaknesses and Threats**

The weaknesses and threats of the halal food hub represent the industry's issues and challenges and are further discussed in Chapter 8.3.

8.2 Malaysia Chilled and Frozen Food Market Key Challenges and Issues

Malaysia's chilled and frozen food business, except for seafood and meat segments, are still in its infancy.

For Malaysia to further develop the chilled and frozen food sector, several key issues have to be addressed. These issues can be divided into common and industry specific issues.

8.2.1 Common Issues

The following are various common issues:

a) **Production**

(1) **Technical Know-how**

Generally, the industry players (except for meat and seafood segment) lack knowledge in the following areas:

- Selection of proper equipment and usage of monitoring devices for process, storage, transportation and retailing
- Compliance to quality and product safety systems required by industry or regulatory authorities or both
- Adherence to Good Manufacturing Practices by processors, support services, (transporters, cold room operators, suppliers) wholesalers, importers and retailers

Many of the players depend heavily on the equipment and ingredients suppliers or their agents for the processing technology, and do not have the benefit of getting objective, independent, and professional advice on the technology suitable for their operations.

(2) Affordability of Chilling and Freezing Machinery

Most of the local food manufactures are SMIs and do not have the resources and capability to upgrade themselves and meet the requirements of the market.

Due to the high cost of imported machinery, many players are turning to locally fabricated machinery, which are, generally, inferior to the imported machines. Hence, the finished products may not consistently achieve the desired quality.

(3) Availability of Local Raw Materials

The availability of local raw materials has remained a long-standing national issue in making locally produced food competitive in the local and overseas markets. This issue has been specifically addressed extensively in NAP3 and other national policies.

For the chilled and frozen food industry, the lack of local raw material alone is not a critical issue, as the food processors are able to import the required materials at better quality, and sometimes at lower cost than the local source. The current trend towards liberalising international trade will worsen for Malaysia's situation, unless the country is able to compete by improving their technology and know-how, and perform well in high value-added sectors.

b) Technology and R & D

(1) Technology

Many of the good performance chillers and freezers are high capacity machines, while many players in the local chilled and frozen food sectors operate at rather low outputs. Machines are not being used economically. There is also lack of suitable machinery to produce most of the local ethnic food.

(2) R&D

There are very few research and development projects undertaken on chilled and frozen food. Most of the projects that have been carried out often stops at the research stage without any commercial benefit.

c) Consumer Acceptance, Perception and Awareness

Frozen food is perceived to be inferior in quality than the freshly prepared products. Consumers generally lack appreciation of the quality parameters of chilled and frozen food. There is also a lack of awareness on proper handling of chilled and frozen food.

d) Cold Chain

Apart from processors, the chilled and frozen food business depends also on other players in the cold chain to ensure the chain is not broken at any stage, thus, securing product quality and safety to the end user. The following are issues that need to be addressed:

- Transporters, cold room operators, and retailers' general lack of knowledge in handling chilled and frozen food may lead to poorer food quality.
- Equipment should be properly maintained and calibrated, including cold rooms, cold trucks, and display cabinets.
- Properly designed facilities should be available for loading and unloading of chilled and frozen food. With the exception of a few big players, such facilities are not available.
- Poor practices, particularly during loading and unloading lead to temperature abuses and breakdown in the cold chain.
- Local fabricators of cold rooms and cold trucks sometimes use inferior materials that are off-specification. The use of low-grade panels in the long run degrades cooling efficiency and quality of the products stored/transported.
- The lack of technology and know-how in building modern and sophisticated cold stores based on international standards.
- Lack of sufficient cold trucks operating networks outside of the Klang Valley.
- The need to set up industrial associations to promote greater cooperation with support service providers.

e) Human Resources

The industry is not adequately using qualified human resources that are available in the country with large establishments employing only a few local graduates.

There is a shortage of general workers in this sector given the nature of the operation (cold and sometimes wet environment) and competition from other industry sectors for manpower.

f) Legislative and Institutional

Local food manufacturers are having difficulties in meeting stringent international food regulatory standards and importing countries' requirements.

There is no organisation to specifically spearhead the development of the local chilled and frozen industry and co-ordinate efforts of the industry players. Currently, the industry players are working independently in exploring the markets and conducting R&D. Industry players are also unaware of services or products that could help them in their operations.

g) Impact of Globalisation

With the advent of AFTA, WTO, and global liberalisation of trade, Malaysian chilled and frozen food manufacturers will face greater competition both locally and internationally.

8.2.2 Sector Specific Issues

The following are specific issues of the 4 categories of chilled and frozen food:

a) Ready to-Serve Meals and Snacks

There has been very limited scope for the chilled and frozen ready-to-serve meals sector as reflected in the few number of rather small players. It is envisaged that the main players in the local snacks manufacturing sector will expand into ready-to-serve meals due to the use of similar technology and production facilities. Issues related to chilled and frozen snacks, therefore, will also apply to complete meals. The following lists some of the issues:

(1) Design of Manufacturing Premise and GMP

Many of the factories producing frozen local snacks are currently operating in improper hygienic environment. The operators lack training and understanding of the hygiene requirements related to chilled and frozen food.

Meeting the hygiene standards and complying with GMP and Food Safety requirements (HACCP) will be a great challenge to this sector of the food industry.

(2) Product Development

Many of the snack and ready meals products are developed on a trial and error basis by manufacturers themselves rather than based on a rigorous scientific R&D. While these products are acceptable to current consumers, they may not be acceptable as consumers become more discerning. For the local snacks and meals category, research work in other countries have limited use in Malaysia due to differences in recipe, consumer taste, and ingredients.

(3) Competition from Non-Chilled and Frozen Foods

The challenge faced by manufacturers is to be able to produce chilled and frozen snacks and ready meals that have similar eating qualities as freshly prepared foods with emphasis on convenience.

(4) Lack of Experience in Proper Central Kitchen Operation

Systematic central kitchen operation is relatively new in Malaysia. It requires a big investment in equipment and production system (e.g., cook-chill systems).

b) Food Ingredients and Vegetables

There are very few players in the chilled and frozen food ingredients sector.

About 60 percent of vegetables imported are in the chilled and frozen form and these are used by food service establishments such as fast food outlets, or for conversion to value added products by manufacturers, including manufacturers of snacks such as buns, *samosa*, and spring rolls.

Several big players in food catering such MAS Catering, KLAS, and Sajibumi have expressed the need for minimally processed local ingredients and vegetables, but at present there are no suppliers of these products in commercial quantities. The minimally processed ingredients and vegetables will add value to the larger food catering establishments and institutions in terms of productivity (less manpower), quality, and hygiene.

Local players are reluctant to commercially produce these products due to availability and cost of these vegetables. In addition, Malaysian farmers traditionally supply their vegetables to wet market and some supermarket chains, and only a handful supply to industries, e.g., fresh chillies to chilli sauce manufacturers.

c) Chilled and Frozen Meat and Seafood

The followings are issues related to chilled and frozen meat and seafood:

(1) Chilled and Frozen Poultry Products

This sector is equally well established with many big players involved, using high technology machinery and production systems that enable them to compete successfully with imports from US, Holland and Denmark. A key issue in this sector for small players is the cost of raw material (corn and fish meal) to produce animal feed. Currently, almost all animal feeds need to be imported.

While the local market for chilled and frozen poultry products appear to be thriving, export of these products are limited. To date, because of strict safety and quality requirements, only three manufacturers are allowed to export their products into Singapore. It will be a challenge for other players in this sector to upgrade their overall operation to enable them to export to other developed countries.

(2) Chilled and Frozen Meat Products (Beef, Lamb)

Most of manufacturers are in the SMI segment and almost 98 percent of the value added products (VAP) are for local consumption. Most manufacturers use imported Indian buffalo meat. The use of low quality Indian meat makes it difficult for Malaysia to export its VAP. The challenge is to import higher quality meat from reputable sources such as from Australia and convert into premium VAP that can compete in the overseas markets. In addition, to be a serious player, a manufacturer in this category must achieve HACCP status and obtain Veterinary Logo, which very few SMIs have obtained.

(3) Chilled and Frozen Pork Products

In this segment, there are few major players and SMIs. For the local market, sale of this product is restricted to special designated sections and counters at retail outlets. The halal factor overshadows the growth of this sector, and the recent JE outbreak incident compounded the problem of exporting these products.

(4) Chilled and Frozen Seafood

This sector is well established with relatively big players participating, and their products mainly exported. Many manufacturers have obtained EU number and/or HACCP status, which enable them to penetrate overseas markets.

The key issue facing this sector is the availability of raw material such as prawns and other seafood. Currently, local manufacturers have to compete with Thailand for raw materials produced locally and in the region.

One of the challenges is to produce quality local products that could withstand the freezing process and distribution throughout the whole cold chain.

At present, Malaysian exporters of chilled and frozen seafood enjoy preferential treatment in Europe. If this is removed, it will be a challenge for the local players to compete with Thailand, one of the biggest manufacturers of seafood in the world.

8.3 Key Challenges and Issues Identified for Halal Food Hub

Malaysia aspires to become a hub for the production and marketing of halal products. There are various agencies involved in crystallising the "Malaysian Halal Food Hub" concept, such as MOA, DVS, JAKIM, MATRADE, and MIDA. Efforts of these agencies, however, are not concerted and lack of a common vision, e.g., in addressing the question of what should the Halal Food Hub be.

In order to be recognised as a "hub", the "hub" must produce a vast product range of all types of food, not only chilled and frozen food, and undertake various related activities. Bearing this in mind, it is important for authorities to revisit the following strategic issues:

- *What should this Halal Food Hub be?*
- *What to hub? E.g., a production center, a certification center, a distribution center or the entire value chain.*

As such, it is not appropriate to discuss the halal food hub within the scope of chilled and frozen food only. Nevertheless, we have identified the following issues related to the production and marketing of halal food

a) Production and Distribution

- Lack of local raw materials to produce large quantity of frozen and chilled food products.
- It is a great challenge to establish a comprehensive guideline and monitoring system for the production of halal food, which incorporates both GMP and Syariah law. In addition, the product has to be "halal" throughout the chain (processing, operating systems, ingredients used, and packaging).

b) Technology and R&D

- Scientific advances, such as using genetic engineering in food production, pose a great challenge to halal certification, in terms of halal interpretation and to verify if the genes are from prohibited animals. Thus, research and development (R&D) will play a very important role in future to help food producers verify the technical aspects of halal certification of food ingredients, processes, and packaging materials.

c) Legislation and Institutional

- There is a lack of linkages among Government agencies in solving problems and in implementing strategies for halal food production. Even though the subject of positioning Malaysia as hub for halal food is clearly stated in NAP3 and IMP2, to date, however, only a strategic plan has been formulated. There are no clear, formulated action plans.
- There is no legal requirement for mandatory compliance of halal production and certification, except that it should conform to the Trade Description (use of expression of "Halal") Order 1975.
- Presently, there are many logos for halal products in the country. It is necessary to standardise for uniformity and to avoid confusing consumers.
- JAKIM halal logo and certificate are well recognised internationally. However, the privatisation and fee structure for halal certification could discourage the expansion and further growth of halal food market, especially among local small and medium industries (SMI's).
- At present, the supportive infrastructure such as accredited laboratories for halal auditing work is not sufficient.

d) **Consumers Education**

- The certifying bodies are not totally committed to educate the public on halal requirements.

e) **International Trade**

- The Sanitary and Phytosanitary Measures under the WTO do not include halal principles.
- There is no standard international guideline on halal certification due to the different interpretations of halal requirements according to Syariah Law. This may confuse consumers to perceive that all halal certified food is "equally halal".
- On the other hand, a standard halal logo ASEAN may result in Malaysia losing the prestigious "Malaysian Halal" logo and, therefore, losing the competitive advantage.
- Malaysia has established credibility in halal food production with its strict and proper halal guidelines. However, there is very little international promotion on Malaysian halal food to aggressively capitalise on this opportunity.

8.4 The Need for Intervention/Government Action

The following are main reasons for government intervention in the chilled and frozen food industry:

a) **Interventions required to achieve projected market potential**

There is a need to at least undertake similar types of interventions as done by the Japanese Government in the 1970s to achieve the forecasted market potential by the year 2010. If these interventions are not implemented, the market potential of RM6.0 billion may not be realised since market projection is based on the Japanese growth model.

b) **Economic benefit from developing selected categories**

The rising demands for ethnic food in developed countries offer opportunities to Malaysian manufacturers of chilled and frozen food. Malaysia will benefit economically by assisting Malaysian companies to grow and to penetrate these markets. Exports will also assist in reducing the food bill deficit.

c) **Food safety aspects**

The increasing consumption of chilled and frozen food will place heavier demand on the already fragile cold chain. If the cold chain were not fully developed, citizens' health would be affected by breakages in the cold chain. The result of this may include food poisoning and adverse impact on the nation's productivity

d) **Food security aspects**

Malaysia is a net importer of food and is expected to remain so for the foreseeable future, due to reasons beyond the authorities' control. Malaysia could try to reduce the deficit by increasing export, reducing imports, and relying more on local production. The Government, especially the MOA, is undertaking various measures to achieve these objectives, with varying degree of success.

Within the scope of this study, the Government can make efforts to reduce wastage due to food products spoiling during storage and transportation. Fully developing and implementing the cold chain can reduce this problem.

Chapter 9

DEVELOPMENT STRATEGIES AND ACTION PLANS

CHAPTER 9

DEVELOPMENT STRATEGIES AND ACTION PLANS

9.1 Vision

For the industry to further develop, a vision is required to set the direction for the future. The vision needs to have clear statements on the following:

- Goals to be achieved
- Timeframe for the achievement
- Means for achieving the goals

The following is the vision recommended for the Malaysian chilled and frozen food industry:

> By **2010**, the consumption of chilled and frozen food will be **RM6.0 billion.** with the **infrastructure** fully developed to support the industry and there will be **sufficient range of products** to satisfy the needs of customers.
>
> The industry will be using **up-to-date technology**, some of which are home-grown, to produce **high quality products.**
>
> All chilled and frozen food producers will implement **GHP and GMP** while the **major** ones will have **HACCP** certification to gain acceptance overseas.
>
> For Malaysia to be the **International Halal Hub in 2010,** the country will produce at **least 10 percent** of world's halal food market.

9.2 Strategic Thrusts

To achieve the vision, the study team recommends the following strategic thrusts for the chilled and frozen food industry in Malaysia:

a) Fully develop the cold chain

Based on the findings from industry survey, the following are reasons for breakages in the cold chain:

- Lack of appreciation of the cold chain by all parties involved in the chain including end consumers
- Lack of stringent guidelines and regulations to efficiently manage the cold chain operation
- Lack of self-regulation initiative
- Lack of application of proper technology

It is important to develop a strategy to fully develop the cold chain, as the cold chain is the fundamental infrastructure for the chilled and frozen food industry. Hence, the main thrust of this strategy is to ensure that all chilled and frozen food is "safe for consumption and good food quality is maintained".

A fully functional cold chain can also:

- Assist in reducing waste due to spoilage
- Assist in stabilising prices as primary products can be stored in times of glut and low prices and released during shortages and high prices
- Make seasonal food available during off season

A fully developed cold chain is highly desirable and the Government should intervene in developing the cold chain.

b) Develop the food service sector

The study team believes that developing the food service sector will spearhead the chilled and frozen food industry to achieve the projected market potential of RM6.0 billion by the year 2010. This is because almost 70 percent of each of the chilled and frozen food segment covered in the study are consumed by the food service providers. Hence, in order to significantly develop the chilled and frozen food sector, it would be worthwhile to develop the food service sector.

The following is the main thrust of the strategy:

- Expand components of the food service, e.g., central kitchen and fast food operation
- Develop a strong supplier base for the food service sector, especially from SMIs.

Based on the Japanese experience and development, the growth of the food service sector will substantial impact the chilled and frozen food industry.

c) Promote the chilled and frozen food categories that have the most potential

The study indicates that Malaysians' consumption for chilled and frozen food is increasing due to reasons like convenience, demographic shifts, and change of lifestyle. This will in turn create promising business opportunities for local businesses, both in the local and foreign markets. As such, it is worthwhile from a national economic point of view to develop selected chilled and frozen food sectors with potential economic benefits or developed from a national point of view for import substitution purposes.

Recommendations for promotion of the four categories under this study are:

(1) Ready-to-serve meals and snacks

Given the global increase in the demand for chilled and frozen ethnic food and snacks, the ready-to-serve meals and snacks categories have potential import substitution (against imported ready-to-serve meals) and good export opportunities. As such, it is recommended that this category of the industry be promoted to local and export markets.

(2) Chilled and frozen food ingredients

At present, most of the food ingredient producers are small-scale and produce mainly coconut milk. Other local spices are hardly found in the chilled and frozen form. However, it is anticipated that the development of the food service sector will boost the demand for chilled and frozen food ingredients.

Since the strategy to develop the food service sector also impacts the frozen food ingredients' issues, they will be addressed together.

(3) Vegetables

It was found that the players in the industry such as chilled and frozen food manufacturers use imported vegetables (mostly temperate vegetables) for their production. Manufacturers and institutional buyers such as hotel and industrial caterers have also indicated that there is lack of minimally processed local vegetables, which they are interested to source to ease their operations.

In light of this, we propose that the focus for this segment should be in value-adding activities on local vegetables. The appropriate strategy recommended is to develop minimally processed local vegetables.

(4) Meat, Poultry and Seafood

The following are reasons Malaysia has to import meat and seafood, except poultry, for local consumption:

- Local production for raw meat are inadequate for domestic consumption
- Most of the locally produced fresh seafood (especially high quality shrimps) are exported to foreign countries with little value-adding activities.

From the industry's perspective, the availability of raw materials is not an issue. The issue is the quality and the fact that the requirement is met from imports. Despite that, there are still opportunities for this segment to grow and we believe, based on the analysis, the strategic thrust here should include the following:

- Increase the varieties of meat-based, poultry-based, and seafood-based products, especially to serve the ready-to-serve meals and snacks categories.
- Continue to expand into the overseas markets especially seafood, regardless of the source of raw materials, as exports from Malaysia are an economic benefit to the country.

d) Strategic Thrust for Halal Food Hub

The halal food segment is potentially a lucrative market where Malaysia appears to have some competitive advantage. Recognising this, the Malaysian Government has decided to position Malaysia as a world halal food hub, and chilled and frozen halal food is one of the areas to be looked into.

Despite having a broad vision of making Malaysia a world hub for halal food, the country has yet to have a clear commonly accepted definition and vision of what the Malaysian halal food hub should be.

As the chilled and frozen halal food segment is only one segment of the whole halal food industry, and the Government's overall strategy for positioning Malaysia as a world hub for halal food has not been crystallised, the study team recommends the following as strategic thrusts:

- Appoint an agency/department to plan, coordinate, and drive the activities of the relevant agencies involved in making Malaysia a hub for halal food.

- Initiate a more comprehensive understanding of the international halal market (not only chilled and frozen food) i.e., to understand the market from the consumers' point of view, market requirements, Malaysia's competitive edge, and other countries' strategies.

- Promote Malaysia's status as a prominent Muslim nation and leverage on the reputation to market locally produced halal food products in the world market.

9.3 Strategies and Action Plans

Based on the vision and strategic thrusts outlined, we recommend the following seven key strategies for the Malaysian chilled and frozen food industry:

Strategy 1:	Fully develop the cold chain
Strategy 2:	Increase the size of players and varieties of products in the ready-to-serve meals and snacks categories
Strategy 3:	Develop the food service sector
Strategy 4:	Aggressively market locally produced chilled and frozen food
Strategy 5:	Improve human resource development
Strategy 6:	Promote industry coordination and self regulation
Strategy 7:	Undertake a global study on the market positioning of Malaysia as the halal food hub and to develop brand loyalty for Malaysia's halal food products.

Strategy 1: Fully Develop the Cold Chain

Based on the findings, the following are the cold chain's issues:

- Poor handling practice
- Improper design and quality of materials used in chillers and freezers
- Lack of cold trucks network outside Klang Valley

The following are the proposed action plans:

Action Plans	
Action Plan 1	Initiate training on proper handling of chilled and frozen food
Action Plan 2	Implement GHP, GMP or HACCP for chilled and frozen food industry
Action Plan 3	Stringently enforce current legislations: • Food Act 1983 • Food Regulations 1985 • Proposed Draft Food Hygiene Regulation
Action Plan 4	Introduce and mandate the practice of temperature monitoring system
Action Plan 5	Improve the quality of locally fabricated machines
Action Plan 6	Reduce import duties on machinery
Action Plan 7	Encourage logistics companies to expand their cold truck network outside Klang Valley

Strategy 2: **Increase the Size of Players and Varieties of Products in the Ready-To-Serve Meals and Snacks Categories**

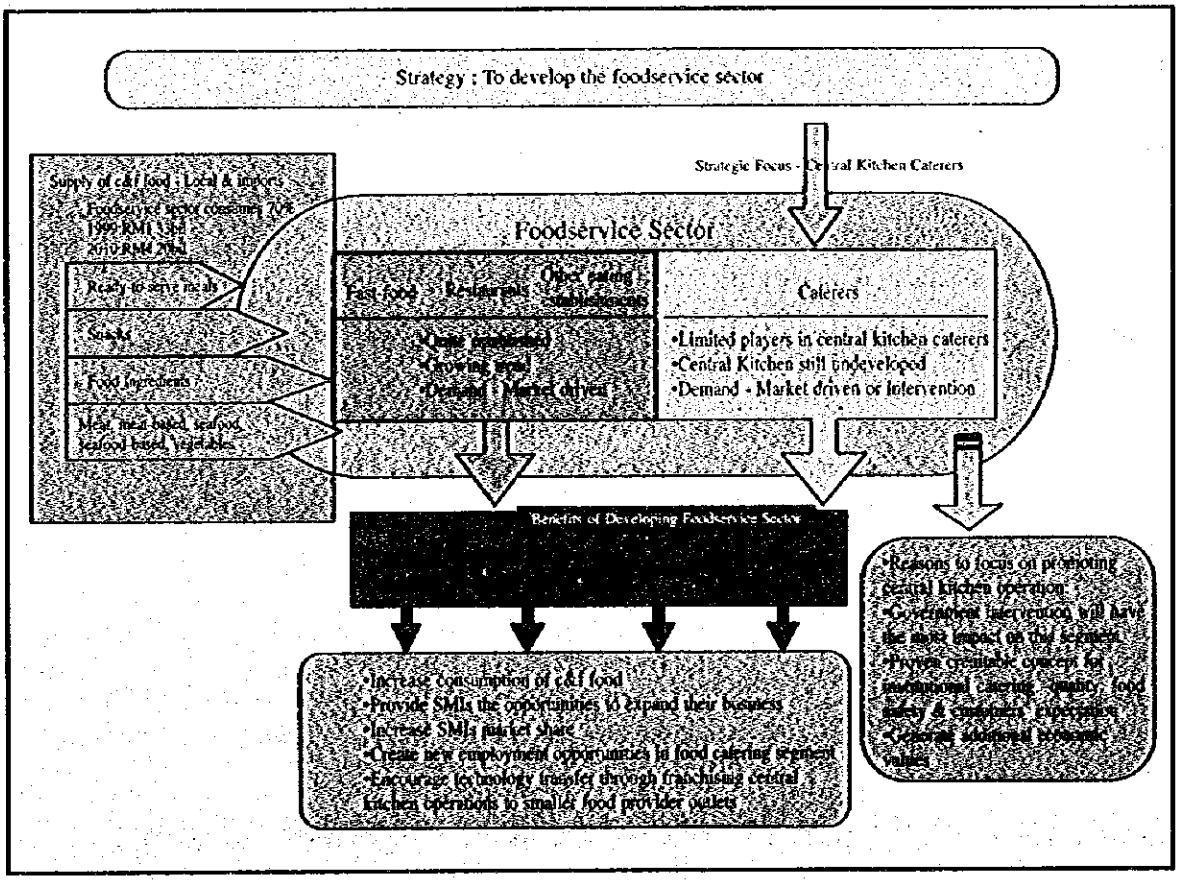
The urbanisation rate in Malaysia has been increasing and so will the demand for chilled and frozen foods as its consumption is highly related to a country's development. The following are the proposed action plans to capture the growing market demand:

Action Plans	
Action Plan 8	Increase production capacity
Action Plan 9	Better raw materials management – for vegetables
Action Plan 10	Increase products R&D
Action Plan 11	Increase product varieties
Action Plan 12	Develop food standards and production systems

Strategy 3: **Develop the Food Service Sector**

The study reveals that there is a need to develop the food service sector to spearhead the chilled and frozen food industry. See diagram below.

Chart 9.1 **Strategy to Develop the Food Service Sector**



As outlined in the diagram above, the food service sector is the largest consumer. Developing this sector will inevitably benefit the chilled and frozen food industry. The following are the proposed action plans:

Strategy 2: Increase the Size of Players and Varieties of Products in the Ready-To-Serve Meals and Snacks Categories

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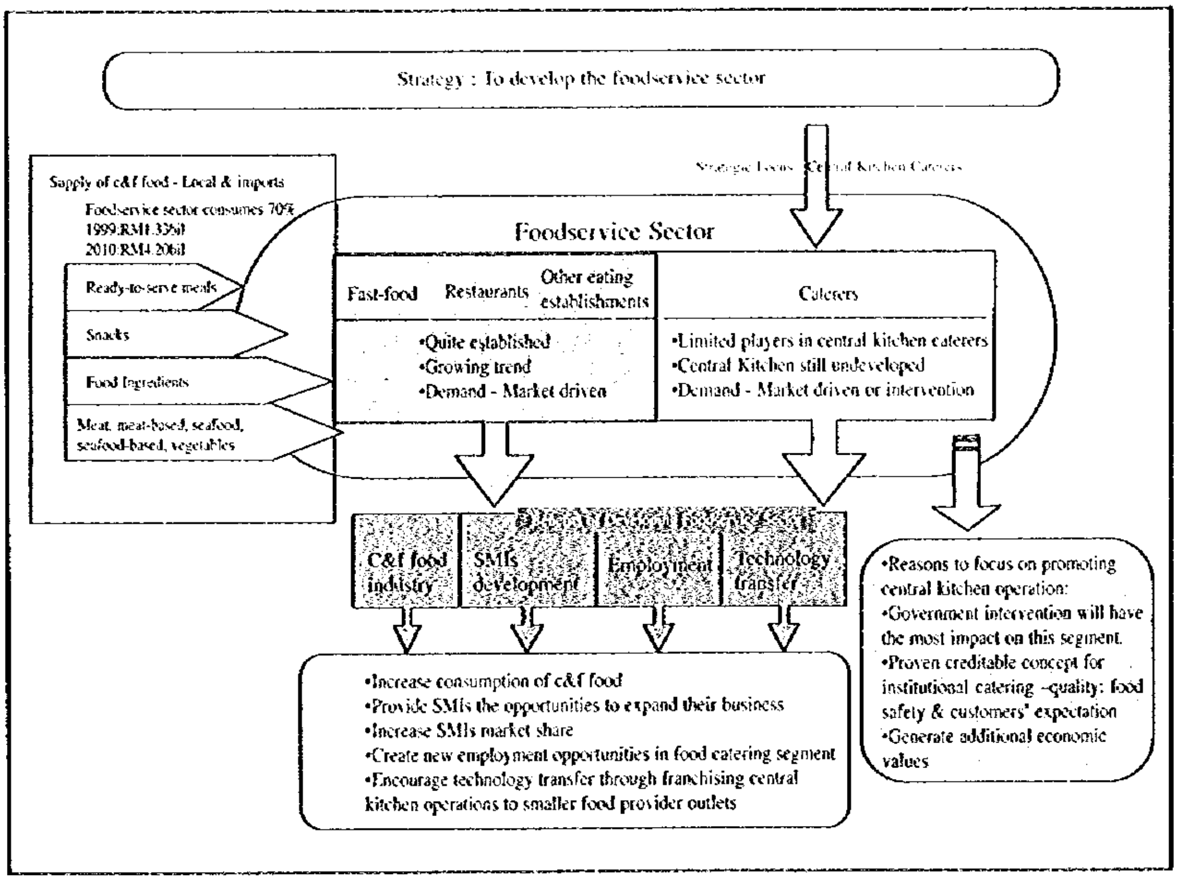

As outlined in the diagram above, the food service sector is the largest consumer. Developing this sector will inevitably benefit the chilled and frozen food industry. The following are the proposed action plans:

Action Plans	
Action Plan 13	Promote the establishment of central kitchen
Action Plan 14	Upgrade SMIs in the chilled and frozen food sector to be suppliers to central kitchen operators
Action Plan 15	Encourage investment in minimally processed vegetables

Strategy 4: Aggressively Market Locally Produced Chilled and Frozen Food

Based on the study, the following aspects need to be addressed in order to achieve the market size of RM6.0 billion:

- Improve the image of the chilled and frozen food products
- Develop and market the high potential growth product categories

The following are the proposed action plans:

Action Plans	
Action Plan 16	Educate consumers/public on food safety and values of chilled and frozen food
Action Plan 17	Identify high potential growth products
Action Plan 18	Undertake niche marketing strategy

Strategy 5 : Improve Human Resource Development

The shortage of frontline workers and limited exposure of good management skills among players, especially the SMIs, is a hindrance to the development of chilled and frozen food industry. Therefore, in order to improve the human resource aspect, the following are the proposed action plans:

Action Plans	
Action Plan 19	Recruit foreign workers
Action Plan 20	Invest in mechanisation of processes
Action Plan 21	Educate and train on Good Management Practice

Strategy 6: Promote Industry Coordination and Self Regulation

Currently, the various categories in the chilled and frozen food industry are functioning independently. There is a lack of proper channel to collect and monitor the flow of information, and to bridge the communication gap between the industry and Government. It would be appropriate to establish a relevant body to assist the industry to develop in a more structured manner. The following is the proposed action plan:

Action Plans	
Action Plan 22	Setting-up Chilled and Frozen Food Association

Strategy 7: **Undertake A Global Study On The Market Positioning Of Malaysia As The Halal Food Hub And To Develop Brand Loyalty For Malaysia's Halal Food Products**

The worldwide growth of the Muslim population has spurred the demand for halal foods and created new opportunities for food processors. As such, the Malaysian Government intends to position Malaysia as the hub for world's halal food market. As highlighted, Malaysia has yet to have a clear and defined vision and strategic plan to achieve the objective. This hinders the strategic planning for the chilled and frozen halal food market segment. The following are the proposed action plans:

Action Plans	
Action Plan 23	Conduct a comprehensive study on the international halal food market
Action Plan 24	Appoint an agency/department to spearhead the halal food strategies
Action Plan 25	Promote Malaysia as a prominent Muslim country and prominent centre for halal food production
Action Plan 26	Increase locally produced halal food in the world market
Action Plan 27	Develop strategies for making Malaysia as the hub for world halal food

9.4 Implementation Timeframe for Action Plans

As the strategies and action plans proposed are for a period of 10 years, below is the recommended implementation timeframe. The timeframe for action plans are immediate to two years time, and long-term would refers to 3 to 10 years.

The diagram below links the challenges, opportunities and threats identified to short term and long term action plans.

(Please refer to the following pages)

CHART: ACTION PLANS

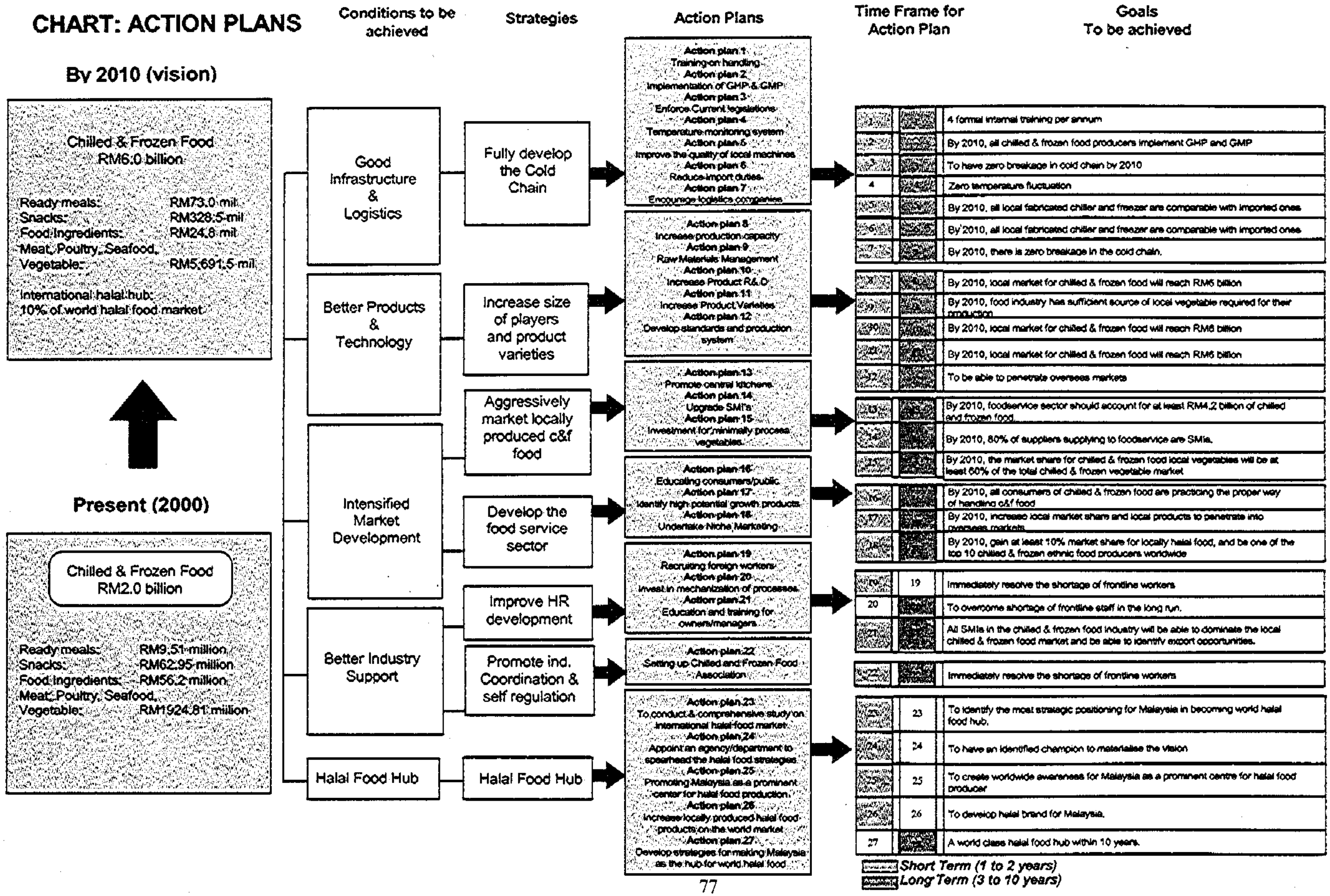

CHART: ACTION PLANS

By 2010 (vision)

Chilled & Frozen Food
RM6.0 billion

Ready meals:	RM73.0 mil
Snacks:	RM328.5 mil
Food Ingredients:	RM24.8 mil
Meat, Poultry, Seafood, Vegetable:	RM5,691.5 mil

International halal hub:
10% of world halal food market

Present (2000)

Chilled & Frozen Food
RM2.0 billion

Ready meals:	RM9.51 million
Snacks:	RM62.95 million
Food Ingredients:	RM56.2 million
Meat, Poultry, Seafood, Vegetable:	RM1924.81 million

Conditions to be achieved	Strategies	Action Plans
Good Infrastructure & Logistics	Fully develop the Cold Chain	**Action plan 1** Training on handling **Action plan 2** Implementation of GHP & GMP **Action plan 3** Enforce Current legislations **Action plan 4** Temperature monitoring system **Action plan 5** Improve the quality of local machines **Action plan 6** Reduce import duties **Action plan 7** Encourage logistics companies
Better Products & Technology	Increase size of players and product varieties	**Action plan 8** Increase production capacity **Action plan 9** Raw Materials Management **Action plan 10** Increase Product R& D **Action plan 11** Increase Product Varieties **Action plan 12** Develop standards and production system
Intensified Market Development	Aggressively market locally produced c&f food	**Action plan 13** Promote central kitchens **Action plan 14** Upgrade SMI's **Action plan 15** Investment for minimally process vegetables
Intensified Market Development	Develop the food service sector	**Action plan 16** Educating consumers/public **Action plan 17** Identify high potential growth products **Action plan 18** Undertake Niche Marketing
Better Industry Support	Improve HR development	**Action plan 19** Recruiting foreign workers **Action plan 20** Invest in mechanization of processes **Action plan 21** Education and training for owners/managers
Better Industry Support	Promote ind. Coordination & self regulation	**Action plan 22** Setting up Chilled and Frozen Food Association
Halal Food Hub	Halal Food Hub	**Action plan 23** To conduct & comprehensive study on international halal food market **Action plan 24** Appoint an agency/department to spearhead the halal food strategies **Action plan 25** Promoting Malaysia as a prominent center for halal food production **Action plan 26** Increase locally produced halal food products on the world market **Action plan 27** Develop strategies for making Malaysia as the hub for world halal food

	Time Frame for Action Plan	Goals To be achieved
1	1	4 formal internal training per annum
2	2	By 2010, all chilled & frozen food producers implement GHP and GMP
3	3	To have zero breakage in cold chain by 2010
4	4	Zero temperature fluctuation
5	5	By 2010, all local fabricated chiller and freezer are comparable with imported ones
6	6	By 2010, all local fabricated chiller and freezer are comparable with imported ones
7	7	By 2010, there is zero breakage in the cold chain.
8	8	By 2010, local market for chilled & frozen food will reach RM6 billion
9	9	By 2010, food industry has sufficient source of local vegetable required for their production
10	10	By 2010, local market for chilled & frozen food will reach RM6 billion
11	11	By 2010, local market for chilled & frozen food will reach RM6 billion
12	12	To be able to penetrate overseas markets
13	13	By 2010, foodservice sector should account for at least RM4.2 billion of chilled and frozen food
14	14	By 2010, 80% of suppliers supplying to foodservice are SMIs.
15	15	By 2010, the market share for chilled & frozen food local vegetables will be at least 60% of the total chilled & frozen vegetable market
16	16	By 2010, all consumers of chilled & frozen food are practicing the proper way of handling c&f food
17	17	By 2010, increase local market share and local products to penetrate into overseas markets
18	18	By 2010, gain at least 10% market share for locally halal food, and be one of the top 10 chilled & frozen ethnic food producers worldwide
19	19	Immediately resolve the shortage of frontline workers
20	20	To overcome shortage of frontline staff in the long run.
21	21	All SMIs in the chilled & frozen food industry will be able to dominate the local chilled & frozen food market and be able to identify export opportunities.
22	22	Immediately resolve the shortage of frontline workers
23	23	To identify the most strategic positioning for Malaysia in becoming world halal food hub.
24	24	To have an identified champion to materialise the vision
25	25	To create worldwide awareness for Malaysia as a prominent centre for halal food producer
26	26	To develop halal brand for Malaysia
27	27	A world class halal food hub within 10 years.

Short Term (1 to 2 years)
Long Term (3 to 10 years)

Chapter 10

CONCLUSION AND RECOMMENDATION

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CHAPTER 10

CONCLUSION AND RECOMMENDATION

The demand for chilled and frozen food has been increasing in both developed and developing countries, such as Malaysia mainly due to changing demographic and lifestyle. In Malaysia, the chilled and frozen food industry is considered to be at an infancy stage. The state of cold chain, chilled and frozen food handling awareness, consumer perception, food technology and R&D knowledge are still far from the desired level. This study has also identified the potential food segments to be further developed e.g. local ethnic food and snacks, minimally processed vegetables and central kitchen operations.

Although this Study reveals that the Malaysian chilled and frozen food industry has great potential in the future, the existing limited industry infrastructure and knowledge would hinder the growth of the industry. Accordingly, it is believed that Government needs to intervene to realise the projected market potential and ensure orderly development of the chilled and frozen food industry.

Accordingly, strategies and action plan together with the implementation timeframe have been formulated to achieve the vision recommended by this study. It is strongly recommended that the Malaysian Government spearheads the implementation of proposed action plans during the initial period, as adequate financial and policy supports are needed.

JICA