

Chapter 4

DISTRIBUTION SYSTEM

APPENDIX B

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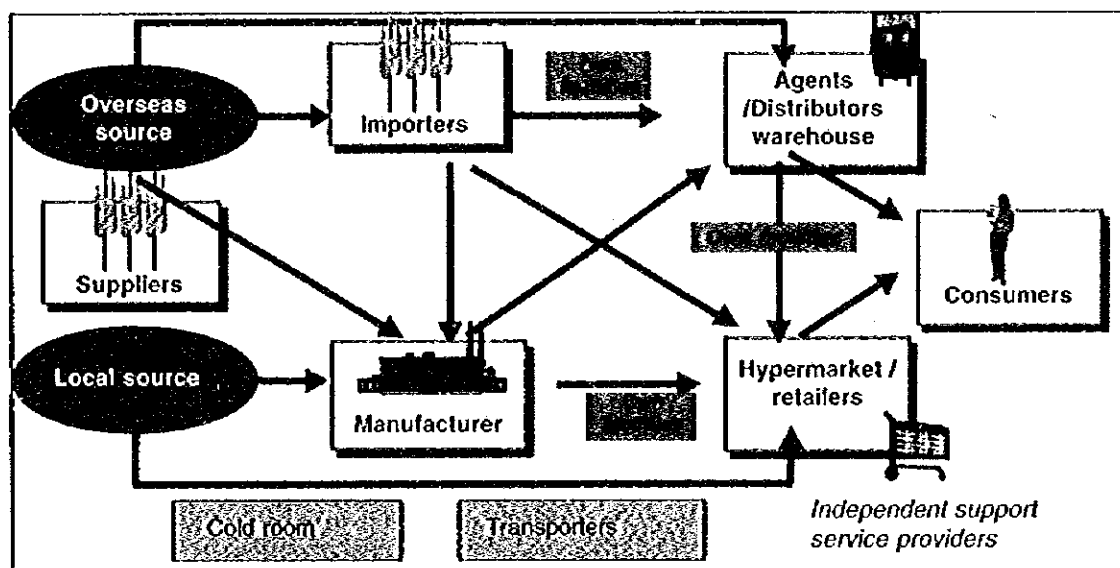
4.1 Supply Chain of the Industry

The following are major components of the chilled and frozen food supply chain (i.e. Cold Chain):

- Equipment Suppliers
- Value Added Food Processor/Manufacturers
- Freight Forwarding Agents (i.e. importers / exporters)
- Support Service Providers (mainly comprising transporters and cold storage providers)
- Food Service Providers (mainly fast food chain operators and caterers)
- Retailers and Distributors

The chart below illustrates the supply chain flow of the chilled and frozen food industry:

Chart 4.1 Industry Supply Chain



The flow of material begins with the supply of raw materials (e.g. vegetables, meat, fish, and ingredients) and supply of services (e.g. equipment and maintenance). Raw materials are then stored temporarily by storage providers and converted into packed processed food, by food processors/manufacturers. The packed processed food are briefly stored as finished goods and then transported by sea or land to large retailers or distributors. This cycle repeats over and over, as the industry responds to customer demand.

Finally, consumers are the ones who reap all the benefits of the operational efficiency or the reverse if the chain is broken.

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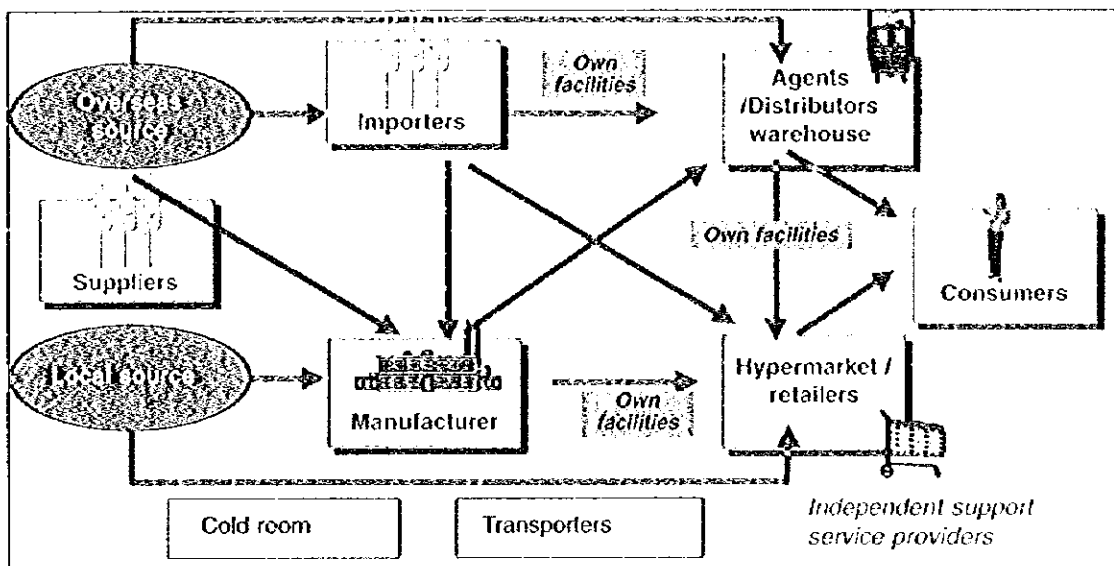
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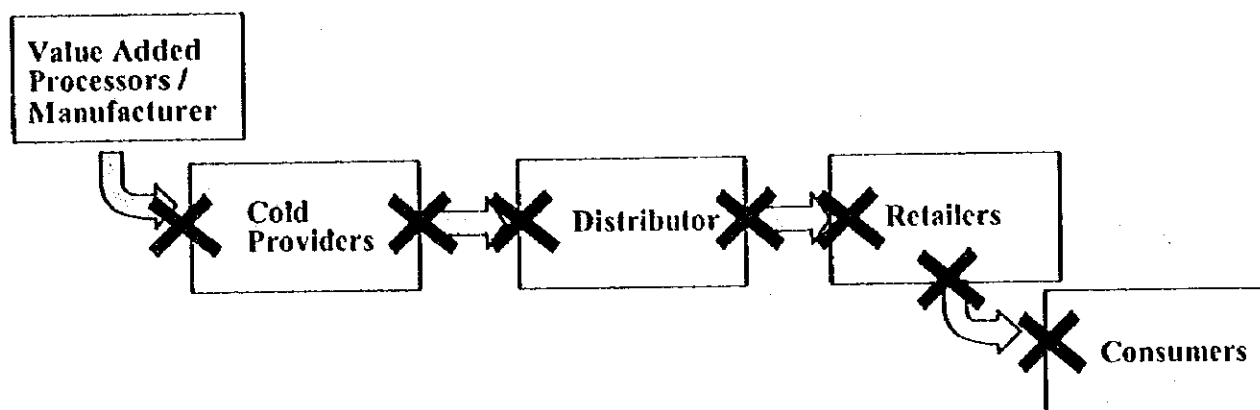
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4.2 Cold Chain in Perspective

One of the major challenges of the chilled and frozen food industry in Malaysia is to maintain the cold chain from the point where the food processors receive the unprocessed food product to the point where a consumer picks the processed foodstuff from the retailer's shelves.

"Maintaining the Cold-Chain" refers to the activity of packing the finished food products and maintaining its optimal storage temperature, no matter frozen or chilled, throughout the chain from the manufacturer to the consumer. This would help maintain the food product quality.

Chart 4.2 Cold Chain Breaks



Source: DKMC Industry Survey

The cold chain is basically in place with all necessary components of the chain. Although there are not many recorded incidents of economic losses due to the breakage of the cold chain, the functioning of the chain is suspect. Currently, most of the bigger companies in the industry employ their own cold trucks and cold rooms. Despite this, the survey revealed that the cold chain in Malaysia breaks very often as product handling is still poor. Transporters, cold room operators, retailers and even consumers generally lack knowledge in handling chilled and frozen food.

The following are the points of possible breaks in the cold chain:

- When food gets transferred in and out of the cold store
- When food is in the possession of the transporter (distributors), while in transit
- When food is being transferred from the transporter to the store at retailers
- When packed food products are moved onto the shelves of the retail outlets
- After consumer purchased the food at retail outlets and before consuming

As Chart 4.2 shows, this Cold-chain can be broken 7 times.

As the cold chain breaks, food products could be exposed to room temperature (in the range of 34°C). Example, frozen burger patties that needs an optimal temperature of -4 °C would have experienced temperatures up to 24°C for a certain period of time, during any of the points of possible cold chain breaks. This fluctuation in temperature would cause the burger patty to form a layer of crystallized ice on the outer portion of the meat which faces direct contact with the atmosphere. This crystallized ice layer is the condensed air particles that have undergone many huge temperature fluctuations.

The challenge of maintaining the chain becomes even more difficult when trying to maintain a halal food chain.

4.3 Components of Cold Chain

4.3.1 Equipment Suppliers

The equipment suppliers' refers to those involve in:

- Construction of cold room (Cold Room Builders)
- Cold truck cabinet building (Cold Truck Cabinet Builders)

The cold room and cold truck cabinet building segments are explained below:

a) Cold Room Builders

Services provided by these builders range from building custom made cold room facilities where an entire factory block is turned into a cold store, to just building confectionery cold cabinet shelves (e.g. to accommodate frozen pastry).

They build facilities as per the requirements of their particular customer. The following are some of their capabilities and average costs:

Table 4.1 Estimated Cost for Cold Room Facilities

Facilities	Temperature Specification	Estimated Cost (RM '000)
Chiller/Freezer Room, 2 door (e.g. 120' 90' 12')	+5°C to -25°C, 85% humidity	1,850
Freezer/Storage Cabinet, 4 door (e.g. 10' 3' 5')	+5°C to -35°C, 85% humidity	160
Quick Freezer Role-In Tunnel, 2 door (e.g. 60' 20' 7')	+5°C to -35°C, 85% humidity	650

Source: Risha Refrigeration Company

The cost of constructing a cold room facility depends on the following customer requirements:

- Type of product
- Weight of product
- How many products on a tray
- The size of the tray needed
- Number of trays that can be stacked in one rack
- Total weight in one rack
- Number of racks loaded per hour
- Temperature of the product prior to entering the freezer
- The required temperature inside the freezers
- The time needed to freeze the product
- Number of hours per day products need to be frozen

All the cold room builders import most of their chilling and freezing technology from European countries such as Holland, France, and Germany. It was a common comment among the interviewed, that every one of the builders still has some kind of contact with European partners who helped in bring into Malaysia, newer and more advanced freezing techniques.

b) Cold Truck Cabinet Builders

These types of cold truck cabinet builders are given special licenses by the *Lembaga Perlesenan Kenderaan Perniagaan* (L.P.K.P.). According to industry sources, only five business licenses of this kind have been issued in Peninsula Malaysia.

These companies mostly construct cold trucks for the local food manufacturers. Cold truck building varies from 1-ton trucks to 20-ton trailers. These cold trucks are custom made by the builders according to customer's specification.

Most of the cold truck cabinet builders in Malaysia use multi-ply composite technology for the truck body. The machinery and technology are purchased from a truck body builder from European country. The lightweight, strong, durable composite truck body is ideal for refrigerated truck body and hi-lift catering truck. The reefer box is compatible with mostly Thermo King, Carrier, Mitsubishi refrigeration system or eutectic plates system, which is reputed to have the fastest cooling down time in the market.

The following are some of the refrigerated truck's common specifications:

Table 4.2 Refrigerated Truck's Common Specifications

Chassis	<ul style="list-style-type: none"> To fit any chassis
Box size	<ul style="list-style-type: none"> From small van to 40'x8'x8' semi-trailer
Box thickness	<ul style="list-style-type: none"> From 12mm to 125mm
Core materials	<ul style="list-style-type: none"> Polyurethane, Expanded Polystyrene, Extruded Polystyrene or PVC foam
Finish	<ul style="list-style-type: none"> Glass Reinforced Polyester (GRP), Aluminium, Stainless Steel, Colour Coated Steel, Ply, etc in various thickness
Colour	<ul style="list-style-type: none"> White or natural finish. Other colour available on quantity
Floor finish	<ul style="list-style-type: none"> Stainless Steel, Laminated PU, Inverted Hat Aluminium Profile, Aluminium Checker Plate, Ply
Door	<ul style="list-style-type: none"> Double Hinged, Single Hinged, Manual Rolled-up, Automated Rolled-up, Hatch, Slide Curtain, Sliding Wall
Optional Accessories	<ul style="list-style-type: none"> Load Restraints, Tail Lift, Flexible Bulkhead

Source: Industry Survey

c) Key Equipment Suppliers

The following are key players identified in this segment:

Table 4.3 Selected Major Equipment Suppliers

Company	Location	Annual Turnover for 1999 RM '000
MS Cooling Sdn Bhd	Balakong	5,678
NKR Perkasa Continental Sdn Bhd	Selayang	4,210
Risha Sdn Bhd	Ampang Jaya	2,050
Rigidfoam Industries (M) Sdn Bhd	Sungai Buluh	4,798
Wong Brothers Electrical & Refrigeration Industry	Jalan Ipoh	6,786
Thermal Insulation Sdn Bhd	Desa Pandan	5,100
TM Cooling Technology Sdn Bhd	Kepong	3,780

Source: Turnover figures are from Registrar of Companies

The market size is currently at RM43 million. Companies mentioned in the previous section as key players hold 75% of the equipment supplier market share.

Table 4.4 Market Share of Equipment Suppliers

Distribution	Ann. Turnover 1999 (RM '000)	Percentage
Key Players	32,402	75%
Others	10,800	25%
Total:	43,202	100%

Source: DKMC Industry Survey

d) Supply Chain Integration

Most of the major players in this segment work and share expertise among themselves. Since each of the builders has their own niche (e.g. cold store builders for pastry, cold store builders for meat products), they would pass on the contact to the respective food product's expert builder. This show of unity and the desire to share between builders is attributed to the fact that all of these players have been in this business for a long time and have carved a clear niche for themselves.

In terms of supply chain integration, the following are the cold truck cabinet builders' customers:

- Value add food processors
- Service support agents.

All of these builders win their contracts by tendering. We gathered that some builders win contracts through strong recommendations from other satisfied current customers. It was also apparent that there were no big-scale advertisements posted on the printed media by any of the builders other than the fact that they were listed in the Yellow Pages.

e) Technology Used

Cold room builders in Malaysia consider themselves specialists in designing, manufacturing and installing polyurethane panels. General Purpose Steel Container and Expanded Polystyrene (EPS) Insulated Panel for Cold Room are part of the common material used to build refrigerated cabins.

There are many different methods of cooling and freezing that are necessary to maintain the quality of food. The down-line of this industry, which includes the cold-truck operators and the cold storage owners, would be the ones directly affected by this quality issue. This is so because food processors would be concerned in ensuring their produces are transported to their destination without any lost in quality.

The following are some of the most common and affordable methods required in the Malaysian cold storage industry:

- Plate-cooling
- Mechanical refrigerating
- Blast-freeze

We can conclude that the current cold cabinet builders are able to fully meet their customers' requirements.

f) Issues

During the study, we gathered that there are a large number of small local builders who use cheap and lower grade Polystyrene (EPS) Insulated Panel materials, are locally available but considered not suitable for proper refrigeration of cold stores. These builders who provide services at cheaper costs fail to understand that cold storage need proper quality insulation panels to be able to keep cold air from escaping. Customers who use these cold storage builders' services suffer from having to cope with lesser food quality products.

A cold storage cabinet that allows cold air to escape consumes more energy and brings the food quality down. A customer that uses the facilities built by this type of builder would constantly be paying more in utility bills and have food that lasts for a very short period of time.

There are only a number of licensees in Malaysia in terms of mobile storage cabinet builders. The reason behind this would be the strict approval policies set by a number of government agencies. *Lembaga Perlesenan Kenderaan Perniagaan*, SIRIM Berhad, *Jabatan Pengangkutan Jalan Raya* and the Registrar of Companies are the Government agencies in charge of overseeing the setting up and operations of these companies. Many industry sources view this as very bureaucratic.

New local builders who want to start businesses providing cold-truck storage cabinets see it as a policymaking flaw to restrict licenses. Many customers of these cold-truck store builders are unhappy, as the cost of manufacturing are deemed quite high. From the information gathered there were instances a builder charged up to RM182, 000 for a 4-ton truck. According to builders instead, raw materials (high quality panels from overseas) account for more than 60% of their manufacturing cost and this, therefore, forces them to increase the price of producing a mobile cold store unit.

g) Growth Prospective

From all the interviews conducted we can conclude that this market is still very young and has the capacity of growing even further in the next 10 years. According to the General Manager of Risha Refrigeration Company, only 40% of the storage industry in Malaysia are aware of the latest technology and the rest are lagging behind practicing "stuff the food in and chill the room down" concept. Since the rate of production is constantly increasing many of the food producers are also forced to rely on third party cold stores to store their produces.

According to builders, many manufacturers would need to allocate certain portions of their plant or even look elsewhere for in-house satellite cold stores, to facilitate the increasing demand. Many of the cold store builders are, indeed, bullish about the prospect for this segment.

4.3.2 Value-Added Food Processors / Manufacturers

This business segment is the mover of the entire industry. The value-added food processors depend heavily on the support of the entire supply chain. It needs the suppliers to constantly provide raw materials and services to it, and also needs forwarding agents to distribute its value-added food products to the appropriate destinations (e.g., local retailers, foreign markets).

Some of the major value-added food processors are shown in Table 4.5.

Table 4.5 Selected Major Value-Added Food Processors

Company	Location	Annual Turnover for 1999
		RM '000
Prima Agri-Products Sdn Bhd	Bangi	27,802
Ben Fortune Pastry Mfg (M) Sdn Bhd	Sunway	4,500
Ayamas Food Corporation Berhad	Port Kelang	201,086
De-Luxe Food Services Sdn Bhd	Glenmarie	6,700
KG Pasteries (M) Sdn Bhd	Shah Alam	20,000
Mas Catering Sdn Bhd	Sepang	197,037

Source: Annual Turnover Figures from Registrar of Companies

Table below shows the Value-Added Product (VAP) of one of the food processors

Table 4.6 Further Processing Poultry Products (FPP) at One of the Fast Food Establishment

1. Processing from the two plants: 85,000 birds a day I) 12 working hours and II) 8 working hours
2. 30,000-35,000 birds or (35-40%) goes for FPP (1,000-1,200 metric tonne)
3. Percentage of FPP: <ul style="list-style-type: none"> • nuggets 40% (35-40%) • burgers 18% (15-20%) • frankfurters 13% (10-15%) • balls 12% (8-12%) • others 12% (10-13%)

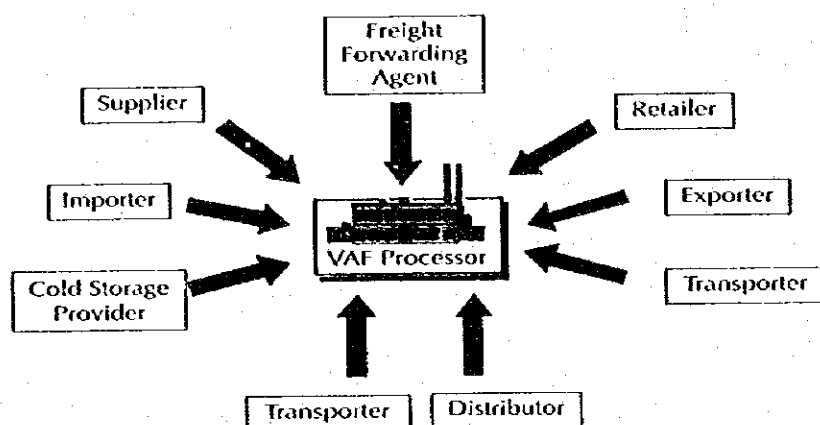
Source: Industry Survey

Many of the equipment suppliers (e.g. cold store builders) and other support service providers covered in this study have had at least some links with the above-mentioned companies.

a) Supply Chain Integration

Being the heart of the chilled and frozen industry, this segment needs to be closely connected with the other business segments (e.g. suppliers) as can be seen in the following chart:

Chart 4.3 Supply Chain Integration



In examining the diagram from a macro point of view, it is obvious that all the business segments play a vital role in the business operations of a Value-Added Food (VAF) Processor.

The following highlights the main players:

Supplier	Some of its supply may arrive from local farmers who bring in their own food produces via trucks and some are foreign suppliers who get container loads into Malaysia.
Importer	This player would be covered later in the report. This importer plays the middleman to ease some of the food producer's operations where they help source the required raw material overseas and ship it to the processor's docks.
Forwarding Agent	The agent supports the food processor by managing its shipping project, from foreign ports to our local port and then to their doorstep.
Transporter	This player would appear in the picture when the food producer himself does not have sufficient or any cold trucks to transport their produces.
Cold Storage Provider	Similar to the one above this service provider would be used during times when there is a lack of storage space or when the food produces need to be stored in the ports for export.
Exporter	This player would manage the logistics from the shipment docks of the food processor to the foreign market. They would also manage the haulage services to the port and on to the ships.
Retailer	Finally all the produces would reach retailer who serves the consumer and, thus, start off an entire cycle of demand from the value-added food producer.

b) Issues

The interviewed food processors' entire common plea was the lack of cooperation from the local raw food suppliers in emphasising food quality. The supply of low quality materials and services from local suppliers to the food processors has forced some to look abroad for supply.

Food processors agree that this does not mean that farmers do not grow quality food crops in Malaysia. They merely wanted to point out that the local farmers' preferences are focused in serving the export market first before satisfying the local demand. Hence, exporters buy over the high quality local produces. Mas Catering Sdn Bhd, one of the major players who supply 40 different airlines flying into the KLIA, claimed that not having a Malaysian food export quota to govern the local producer's supply to the local market may be the reason behind this problem.

c) Growth Prospective

All the interviewed food producers see good prospect in the chilled and frozen food for at least the next 10 years. During the interviews with major business operations, it was understood that many partnership programs are under way to work closely with local farmers and also cold storage operators. These programs are planned to set-up a preferred customer/supplier status among the down-line.

Talks are also in progress by one of Malaysia's major local food processors to build the largest cold store warehouse in Southeast Asia. When completed, this warehouse would be the largest cold store owned by a food processor. This information was disclosed in one of the interview sessions with a cold store builder and verified by the local food producer.

4.3.3 Freight Forwarding Agents

The freight forwarding agents or Importers (Distributors) work to manage the shipment of the imported supplies from local ports to the food processor's plant. Managing exports also are part of the service they provide. Each of the agent's service varies according to their business capacity.

The following are services provided by forwarding agents:

- International Air/Sea Freight Forwarding
- Container stuffing/Unpacking according to specification
- Custom Forwarding / Documentation (Air/Sea - Import and Export)
- Chilled and frozen warehousing and transportation
- Project Management with haulage services

Local forwarding agents have close ties or partnerships with foreign freight forwarders who can take over the movement of the consignment overseas. This also covers custom clearance at the port, transportation, and warehouse.

Freight forwarding agents play a dominant role in linking local food processors with their foreign customers and visa versa. They basically assist food processors by managing the shipments via ports and customs. These players consider food processors as their major clients in the chilled and frozen food industry.

All the forwarders agree that export operations are much more complex than import operations. All that needs to be done in import operations is customs documentation clearance before the food product is sent on its way to the food processor plant. The export operations are considered to be more complex where precise coordination and project management is needed to handle the various parties involved, such as haulage providers, as well as customs clearance documentation and estimated time of arrival of the international cargo vessel.

a) Major Freight Forwarding Agents

There are approximately 700 freight forwarding agents in Malaysia, a figure we gathered from various business directories since there is no information database of all the operators.

The following table lists the main companies servicing the chilled and frozen food industry:

Table 4.7 Freight Forwarding Agents in the Chilled and Frozen Food Industry

Company	Location
Pok Brothers	Glenmarie
United Logistics	Subang Jaya
Selamat Supplies	Sunway
Bina Kon	Port Klang
Ben Food	Kuala Lumpur

Source: DKMC Industry Survey

The industry survey showed that these agents are able to manage the market demand. Factors that make these agents major players are the locations these agents have direct links with. Example, only a certain portion of the agents interviewed has foreign counterparts in certain South African locations.

b) Supply Chain Integration

In conducting the interviews with different forwarders we identified that the services provided by forwarding agents varies to a very large extent.

The following are some of the most common combination of services:

- Customs clearance, cold storage, and transportation
- Container depot operations
- Sourcing foreign suppliers and making arrangement to import into Malaysia
- Transportation, cold storage, and shipment project coordination

Out of all the services mentioned some agents prefer to stick to their niches and still call themselves freight forwarding agents. For example, out of the five parties interviewed only one of the agent (Bina Kon (M) Sdn Bhd) provides the following:

- Reefer Maintenance & Repair (M & R) business
- Represents as an authorised service agent for reefer manufacturers from around the world
- Container maintenance and repairing

Generally, customers for this segment are food processors.

We gathered that other common forms of customer-agent relationships are done through long-term contracts because the freight forwarding agent's foreign counterpart are where the food processor has exporting links to.

c) Issues

In concluding the study on the freight forwarders, it was evident that forwarders are not under direct scrutiny of any Government agency except during the issuance of the freight-forwarding license. Interviewees believe that any intervention by Government agencies would surely slow down the chain's lead-time with bureaucracy and red tape.

The normal daily issues faced by these agents are constant under-cutting by other agents who provide a rushed job with lesser charges. The agents interviewed felt customer should be willing to pay for good quality services, rather than contracting an agent for so much less and being short-changed later.

Agents in other regions are able to perform the same kind of services provided by the agents in Klang Valley. However, they are not well equipped in terms of cold trucks.

The lack of any agency or association set-up to monitor the well being of the freight-forwarding agency is also an issue. There is an Association of Forwarding Agents at Port Klang (AFAPK) but in enquiring on the association's operations, it was understood that the association was only set-up during the currency crises in 1998 to look into the 15% - 25% drop in imports and slow growth in export markets at that time.

Freight forwarding agents are also affected with debt collections. AFAPK had to act as mediator to assist members in collecting long outstanding debts. Other than the occasional awareness class, the Association has not planned many activities.

d) Growth Prospect

Growth in this segment of the chain is huge and is expected to grow in folds in the coming years. A monitor agency, therefore, is needed to bring together the process of overseeing and monitoring the chilled and frozen food freight-forwarding industry.

4.3.4 Support Service Providers

The support service providers could be categorised into 2 groups:

- Transporters – includes Container haulers and In-land transporters
- Cold Storage Providers

This segment is like engine oil on a piston engine in motion. Its fluidity and efficiency provides a smooth ride without any major breakdowns. Support service providers make the vital link of bringing foreign supply to the doors of the local food manufacturers and also to ensure that the value-added food produces get to the right place at the right time with the right amount.

The transporters and cold storage service segments are explained below:

a) Transporters

Ideally chilled and frozen food should be transported and distributed using thermally insulated vehicles or containers that are equipped with appropriate refrigeration systems for maintaining desired temperatures. However, due to economic or logical reasons, the local distribution network generally uses less costly methods to transport chilled and frozen foods. For example, when delivering within Klang Valley, chilled vegetables are sometime transported in ambient temperature vehicles or at best, vehicles with air conditioning facilities.

Vulnerability of chilled and frozen product to temperature rise depends on the mode of transportation of the food item. In the local distribution network, road transportation is one of the major transportation mode. Local transporters normally do not practice temperature measurement system as it is not required by the local consumer or regulators.

The following sections describe the container haulers and in-land transporters segments:

(1) Container Haulers

The hauliers are the container operators who operate in seaports to facilitate the loading and unloading of containers from cargo ships coming into our ports (sea freight accounts for 80%-90% of the total imports of RM248,870,000 for 1999 (source: Department of Statistics). They also facilitate in the pulling of containers to and from cold stores and food processors plants.

Container haulers are controlled and licensed by the Transport Ministry. These haulers service the links between the international shipping liners who bring cargo in and out of Malaysia at the three main ports (Pasir Gudang, Port Klang, Penang).

Only five companies are licensed to operate as container haulers in Malaysia (refer Table 4.8).

Table 4.8 Container Haulers in Malaysia

Company	Location (Head Office)
Kontainer Nasional	Petaling Jaya
Konsortium Logistik Bhd	Petaling Jaya
Multimodel Freight Sdn Bhd	Petaling Jaya
Diperdana Corporation Bhd	Port Klang
MISC Haulage Services Sdn Bhd	Port Klang

Source: DKMC Industry Survey

All of these container haulers operate throughout the country. The forwarding agents (who play the role as project shippers) do bookings for these hauliers to haul the cargo (container) to and from the ports to specified locations.

(2) In-Land Transporters

The in-land transporter is a sort of distributor who services the various geographically located food processors all over the country. The food processors would contract the in-land transporters to send and receive the value-added food produces to and from either cold stores or directly to their consumers.

Transportation providers are trading partners with trailers and prime movers that move chilled and frozen food from point A to B. According to statistics from *Lembaga Pelesenan Kenderaan Perdagangan Semenanjung Malaysia*, a total of 248 licences were issued for operating refrigerated trucks during the period of 1990 to 1999.

Table 4.9 Number of Refrigerated Trucks Licences

Year	No. of licence
1990	32
1991	3
1992	8
1993	19
1994	26
1995	42
1996	66
1997	41
1998	10
1999	1
Total	248

Source: Lembaga Pelesenan Kenderaan Perniagaan Semenanjung Malaysia

The key players in this segment and their capacity are listed in Table 4.10 and Table 4.11 respectively.

Table 4.10 In-land Transporters

Company	Location
Sanjungan Sekata Sdn Bhd	Balakong
Sin Kang Sdn Bhd	Cheras
Sit Tatt Sdn Bhd	Kuala Lumpur
G-Force Sdn Bhd	Shah Alam
Aman Freight Sdn Bhd	Port Klang

Source: DKMC Industry Survey

Table 4.11 Types of Cold Trucks Owned by the Transporters

	3-5	8-10	20	40	Total trucks	Total capacity
	Metric ton				Units	Metric ton
Sanjungan Sekata Sdn Bhd		20	6		26	290
G-Force Sdn Bhd		8	22	10	40	920
Sin Kang Sdn Bhd	10	40	25	25	100	945
Aman Freight Sdn Bhd	5	16	5	4	30	440
Total	15	84	58	39	196	2,595

Source: Information attained from Logistic Managers from the respective companies

According to the General Manager of one of the companies identified above, the four transporters above command approximately 60 percent of market share of business in the chilled and frozen food industry.

(3) Supply Chain Integration

These transport operators use trucks ranging from 1-ton to 40-ton refrigerated trucks to manage the client base all around the peninsular.

During the study, it was gathered that more and more food processors have their own refrigerated trucks, and would outsource these transporters during high seasonal demand when their own cold trucks are not able to transport the goods.

In-land transportation operators are contracted on a short-term basis only when their customers face transportation shortages. These instances rarely happen because most of the in-land transporters prefer long-term contracts (six months at least). Customers also prefer long-term contracts, as there are more discounts and lesser problems in getting services when needed.

The following Table 4.12 lists the major cost drivers that are tabled in a contract to a customer:

Table 4.12: Major Cost Drivers

Cost Drivers	Estimated Rate of Charge
<u>Expenses:</u> Wages of Driver Driver Commission Administration Cost	RM380.00 per person * 2.5 person/30 trips per month 1 person gets RM150 per trip Est. RM900/30 trips per month
<u>Truck Expenses:</u> Diesel Toll Charges Loading/Unloading Parking Tyre Repair & Maintenance	0.65 cent per every 30Km Whenever applicable RM10.00 per trip Whenever applicable 1.1 cent per every 1000Km RM3,000 per month
<u>Other Expenses:</u> Mobile phone for Driver	Est. RM500 per month

Source: DKMC Industry Survey

The above cost structure is applicable to all cold trucks with tonnage capacity ranging from one-ton to 10-ton. It should also be noted that the above cost rates are an estimate given by one of the major in-land transporter in the chilled and frozen supply chain.

(4) Issues

During the study, it was also gathered that transportation companies do not have enough market share to sustain for long in this business. Competing with other more diverse service providers, such as freight forwarding agents (who provide transportation services as value-added services), makes it difficult to penetrate let alone get new business.

According to one of the transportation operator, they are left with only a small market share to compete among other transporters while the rest are snapped up by freight forwarding agents. So these transporters have no choice but to either adopt newer services (e.g. cold storage) or work on partnership programs to combine businesses (Yokohama transporters are working-out a program with Iglo Sdn Bhd to provide an integrated value-added service).

The transporters claim they are treated unfairly by their suppliers, cold-truck builders, and also by the market.

Since the Government controls the cold-truck builder's licensing, not many companies are given the license to operate such a business in Malaysia. The Government also had not established a ceiling on prices for these newly built cold-trucks, and therefore, this small group of suppliers charge very high prices for newly manufactured cold trucks. According to one of the transport operators, much cheaper and more technologically advanced cold-trucks can be purchased from abroad but as per the Government's regulations, imports of these equipments are not allowed. Transporters are left to pay a high price for something that could be purchased for a lesser price.

On the other hand other bigger freight forwarding agents who can operate on a much wider scale take up the transportation market, which makes food processors more inclined to hand their contracts to the freight forwarding agents.

b) Cold Storage Providers

The cold stores play a role as buffer stockholders for the food producers. Buffer stocks would include raw food imports and also value-added food products. These service providers are sought after when food processors run out of cold storage space. Other occasions when these stores are used are when forwarding agents import goods from foreign suppliers.

Most of this business segment's operators are specialized third party suppliers. As mentioned earlier, these service providers are sought after when food processors run out of cold storage space or when forwarding agents import goods from foreign suppliers.

During the study, it was understood that these operators want to be called "Multi Temperature Control Facilities Operators" because most local operators can vary the temperature according to the needs and specification of the food products stored. They are able to achieve temperatures ranging from +20°C to -30°C at their cold store facilities.

The following are major cold storage providers:

Table 4.13 Cold Storage Providers

Company	Location
G-Force Sdn Bhd	Shah Alam
Siti Tatt Logistics Sdn Bhd	Kuala Lumpur
Tamadain Bonded Warehouse Sdn Bhd	Port Klang
Iglo (M) Sdn Bhd	Port Klang
Ng Kee Cold Store	Klang
Folin Food Processing Sdn Bhd	Petaling Jaya
Forever Fresh Coldstore Technology Sdn Bhd	Shah Alam
Subang Coldrooms Sdn Bhd	Subang
Selayang Cold Storage	Selayang

Source: DKMC Industry Survey

Within the last few years most cold storage operators (Multi Temperature Control Facilities Operators) have invested in modernizing their facilities. Cold room concepts in Malaysia involves two kinds of facilities:

- Bulk cold room
- Pallet cold room

Bulk cold rooms were used during the past where the packed food products are stacked up in the cold stores. There were no racking shelves available and food was easily damaged. At present there are some cold store providers who still use these facilities, trying to attract customers with their low rent.

More modern pallet cold rooms are being built with a racking system that is much neater and very organized. Walk-in lift trucks and reach trucks are used to stack up goods on ISO pallets (1.2m by 1.0m). These pallets are then stacked on deep shelves that are four rows high. Iglo Sdn Bhd at Port Klang build such an entire complex and are renting out spaces for importers and exporters of chilled and frozen food.

Some of the prominent services provided by the cold store emphasised maximum privacy and security, where rooms can be rented on a dedicated basis. Some cold store operators offer individual cold rooms ranging from 15'x13'x12' to 30'x15'x14' and individual refrigerated rooms from as small as 500 sq ft.

One of the specialized cold room service provider situated at the Port Klang operates from 2,000 sq ft to 30,000 sq ft of refrigerated rooms. They also provide individual rooms that can be bonded or non-bonded.

The following is the estimated cold room space available for commercial rental in Klang Valley:

Table 4.14 Estimated Cold Room Space Available in Klang Valley

Cold room operators	Cold room space Sq. ft.
Konsortium Logistik Bhd	110,000
G-Force Sdn Bhd	80,000
Sitt Tatt Logistics Sdn Bhd	60,000
Tamadam Bonded Warehouse Sdn Bhd	50,000
Iglo (M) Sdn Bhd	40,000
Ng Kee Cold Store	40,000
Folin Food Processing Sdn Bhd	40,000
Forever Fresh Coldstore Technology Sdn Bhd	30,000
Subang Coldrooms Sdn Bhd	25,000
Selayang Cold Storage	20,000
Others*	96,250
Total	591,250

Note: * Extrapolated. The industry survey indicated that the 10 cold room operators' combined cold room space is estimated to be approximately 80% of the overall market size in Klang Valley.

Source: Information attained from Logistic Managers from the respective companies

These cold store operators have the facilities and systems to cater to the smallest consignments and the largest projects. Currently, the average cold store operates on more than 1,000 sq ft of temperature sensitive storage.

Freezing and chilling stores are charged on a different rate. On an average, a large cold storage space would be charge RM5,500 for freezing and RM4,800 for chilling services. A small cold storage space could go for RM2,000 for freezing and RM1,800 for chilling.

The major revenue driver in this business segment would be the space that is rented by the customer. The following Table 4.15 shows the industry's average price structure of a cold store provider:

The following are the average price structure of a cold store provider:

Table 4.15 Average Price Structure of a Cold Storage Provider

Size (in feet)	Freezing (RM per Calendar Month)	Chilling (RM per Calendar Month)
Large:		
30' x 15' x 14'	5,355.00	4,725.00
30' x 15' x 12'	4,590.00	4,050.00
25.5' x 15' x 12'	3,401.00	Not available
Medium:		
21' x 15' x 12'	3,913.00	2,835.00
25.5' x 12' x 12'	3,021.00	2,754.00
Small:		
15' x 13' x 12'	2,006.00	1,872.00

Source: Information attained from Logistic Managers from the respective companies

Each of the cold stores places great emphasis on quality of service. One of the cold store service providers provide specialised staffs trained to handle all types of temperature sensitive cargo to manage all available cold storage facilities.

Most of the established cold stores have multiple chillers to avoid overstraining any particular unit that can lead to unforeseen breakdowns. Backup generators are also installed to ensure that there is no disruption in power supply.

(1) Supply Chain Integration

Exporters and importers would normally use larger cold store operators who situate themselves at the ports before or after clearing customs. Smaller cold store operators have located themselves closer to the food processing company to capture the 'spill-over', which describes a situation when the food processor temporarily runs out of storage space.

When the products first arrive at the Multi Temperature Control Facilities, they are normally packed in cardboard boxes. Operators would normally wrap food products in the boxes using stretch wrapping technique. The entire load of food products brought into the store is segregated in pallet loads and stretch wrapped. This is done in order to maintain constant temperature throughout the load when the products are stored in the facility. These wrapped pallet loads are then stacked up on racks in a blast freezer to freeze the products to -20°C in about 30 minutes. Once completed, the load would then be stored in a cold store within the facility.

In Malaysia, all major players use the latest technology to manage these operations. Equipments like dock leveller and computerized stacking systems are used at storage facilities at Port Klang (e.g., Tamadan Sdn Bhd & Iglo Sdn Bhd).

(2) Issues

Normal issues faced by all the cold storage operators are the maintenance of the cold stores. As mentioned, some of the local cold cabinet builders use low quality panels to construct the cold store. This in time would start to rot and leak out cold air, which is generated inside the cold cabinets. Operators face high operational costs due to poor quality panels.

The following are some examples of operational costs:

- Refilling air-condition gases frequently
- Paying higher utility bill
- Paying compensation on damaged goods
- Empanelling using the same low quality material

4.3.5 Food Service Providers

The food service providers mainly comprise fast food chain operators and caterers and are described below:

a) Fast-Food Chain

The fast-food industry in Malaysia is now worth approximately RM900 million a year and expanding (source: Malaysian Business, July 16, 1998). As shown in Table 4.16 there are about 716 fast food outlets in Malaysia.

Table 4.16 Number of Fast Food Outlets in Malaysia 2000

Companies	Number of Outlets
KFC	277
Pizza Hut	74
Ayamas (under KFC)	52
McDonald's	140
Burger King	7
A&W	47
TAZA	6
Marry Brown	75
Kenny Rogers	18
Shakey's Pizza	20
Total	716

Source: Industry Survey

The fast food industry is dominated by KFC Holdings, which together with its other food services subsidiaries, cover approximately 50 percent of the market share, followed by McDonald's at 30 percent.

The recent Ringgit's depreciation reduced profit margins for fast food services. For the chicken industry, the main factor is the cost of food on sale. With the economy recovering, prices have gone up by as much as 10-15%. For example, the price of KFC's Snack Plate meal rose from RM 5.30 to RM 5.95 while the price of its Dinner Plate meal jumped from RM 6.60 to RM 7.95. Being the key player in the fast food industry, KFC Malaysia still ranks the second lowest in terms of prices among all the KFC outlets in the ASEAN region. Expanding fast food and retail outlets has definitely contributed to a greater demand for value-added meat products.

The range of products used by fast food restaurant are breaded chicken parts, nuggets, patties, sausages, marinated chickens, sauces, spices blend chicken, satay, and chicken balls.

b) Caterers

Caterers are another key player in the food service sector. Airline caterers such as MAS Catering and KLAS are the big consumers of chilled and frozen food. Turnover of the major airline caterers are about RM6 million per month. The main items purchased by these airlines caterers are processed meat, frozen snacks, frozen food ingredients and vegetables, and frozen seafood.

Potential institutional buyers of chilled and frozen food are hotels, schools, hospitals, and Government Agencies.

The hotel sector consumes only a small portion of chilled and frozen food. The catering activities in other institutions such as schools and hospitals are usually tendered to independent caterers. These caterers normally use a lot of "fresh" or unprocessed foods to prepare the required meals. There is presently no centralised caterer to support the institutional buyers.

Our survey with the caterers revealed that operators are willing to use minimally processed vegetables and ingredients in their daily operation in order to reduce preparation time and labour work. Currently, it appears that there are no suppliers able to supply minimally processed vegetables and food ingredients at the quantity and quality required by caterers.

4.3.6 Retailers and Distributors

Chilled and frozen foods are normally distributed through the hypermarket and supermarket chains. The growth of this retail sector serves as an indicator of the growth of the chilled and frozen food industry.

In Malaysia, it is estimated that the number of retail outlets especially the new retail outlet concept of 'one-stop shopping mall', is increasing. There were 22 hypermarkets and more than 100 supermarkets in Malaysia in year 2000, excluding small retailers.

Table 4.17 Number of Hypermarkets / Supermarkets in Malaysia, 2000

Companies	Number of Outlets
Makro	8
Carrefour	6
Giant	8
Tops	39
Jaya Jusco	7
Hock Choon	15
Ocean	8
Econsave	7
Billion	20
X-tra	4
Total	122

Source: Industry Survey

Supermarkets are dumping grounds for a wide variety and brand names of frozen and chilled meat poultry and seafood products. In addition, established supermarket chains and hypermarkets are retailing a wide range of locally produced ready to cook finger foods.

For a small size supermarket, sales of chilled vegetables and fruits is about RM120,000 per month with tomatoes, carrots, some green vegetables, oranges, apples, and grapes among the popular items. Sales of frozen food products, such as frozen vegetables, meals, snacks, meat and seafood are about RM124,000 to RM140,000 per month while chilled seafood products account for approximately RM10,000 to RM12,000 per month due to supply constraints. Sales of chilled chicken and meat is about RM44,000 to RM60,000 per month and non-halal meat is about RM17,000 per month. Japanese type of foods (normally in chilled form and some ready-to-eat) rings up sales of about RM40,000 to RM80,000 per month. Total sales of a small size supermarket is about RM200,000 to RM400,000 per month. For comparison, a larger supermarket is about RM1.5 million per month (including other non-food sales).

According to the retailers interviewed, fresh vegetables and fruits (local fruits), chilled vegetables and fruits, frozen vegetables (mix vegetables, french fries, potatoes) and processed meat and seafood (chicken, beef, nugget, sausages) are among the high potential products. Haram food products are not as popular and their shelf space allocation is minimal.

Retailers usually deal with several main suppliers per category to avoid supply shortage. Upon receiving the products, retailers will check the chilled and frozen products. 100% checking is carried out for perishable products (chilled foods) and about 70% for longer shelf-life foods (frozen foods). Retail stores use standard chillers and freezers to display the products. Space allocation for chilled and frozen foods depend on the store's space. The medium and large-scale retailers usually have their own cold rooms separated for halal and non-halal foods.

Retailers normally buy in big quantities and some retail price is pre-set by the suppliers. The gross profit margin of retail sales is between 10-30 percent. The gross profit margin for the various segments are 15-30 percent for local products, 15-25 percent for imported products, 15 percent for fresh vegetables and fruits, 20-30 percent for processed meat, 30 percent for chicken or meat cut, and 15-20 percent for value-added processed food.

In terms of food handling, the staff is normally trained in house either by their head office, supervisor or the experienced senior staff. The cold chain, however, often breaks during loading and unloading of goods. When goods leave the warehouse or arrive at the retailer's site, handlers/transporters would switch off their electricity power to save on costs.

The study team conducted a retail audit to assess the range of chilled and frozen foods available in the market. Refer to Appendix 6 for selected retailers and their product's range, purchase and retail prices.



Cold storage



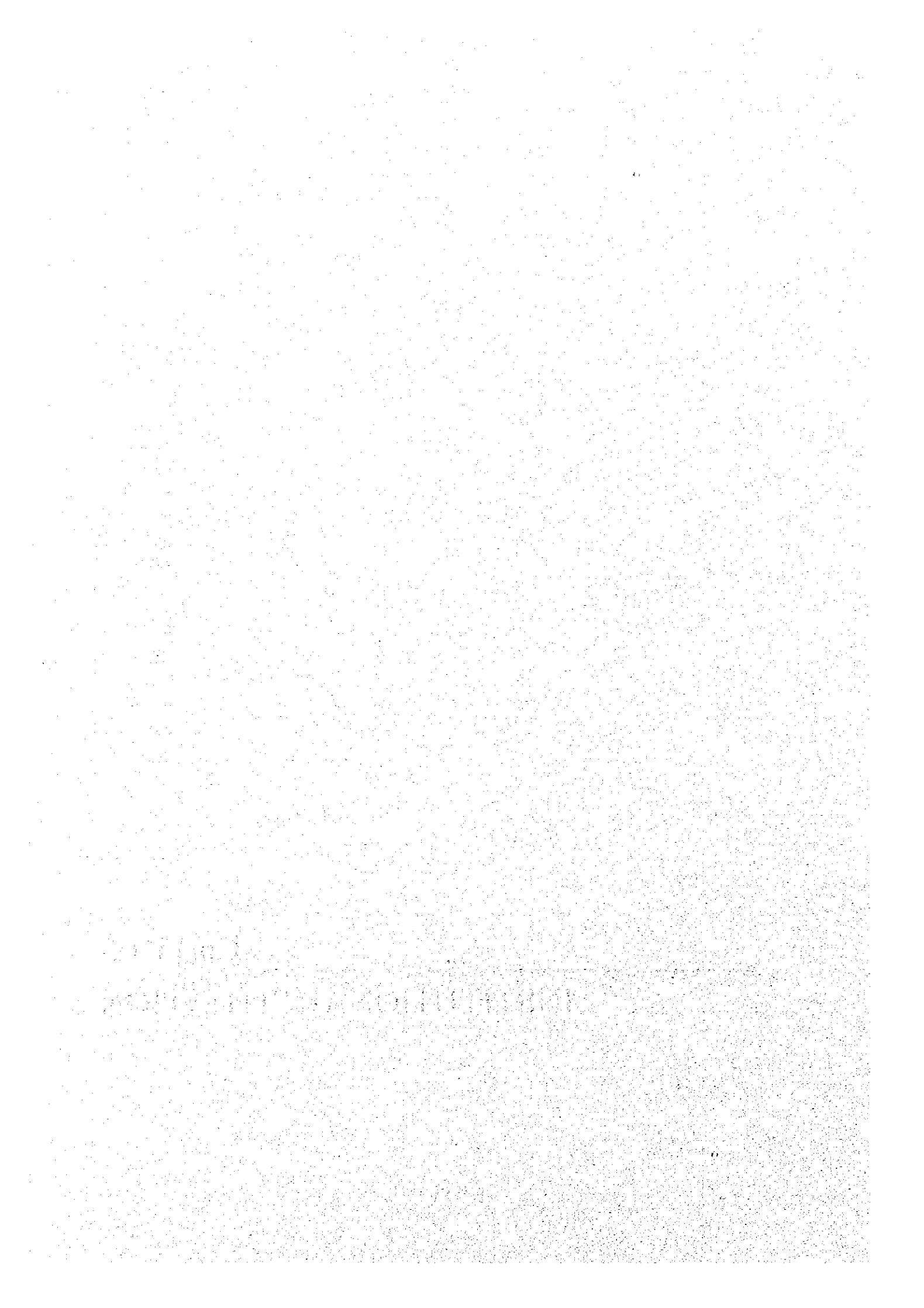
Cold room



Cold truck

Chapter 5

INSTITUTIONAL SITUATION



CHAPTER 5

INSTITUTIONAL SITUATION

The chilled and frozen food industry in Malaysia is at an infancy stage. Most players who are actively involved in the industry are mainly small and medium-sized companies except those in the frozen seafood, poultry, and meat industries. Most of these small and medium scale players have limited funds and skills to expand their production and market. The Government tries to assist these SMIs to improve and to facilitate the growth of the industry such as providing various support programmes for SMIs including those in the chilled and frozen food.

5.1 Related Agencies and their Major Roles

There are several Government agencies that play significant roles and have direct or indirect impact on the chilled and frozen food industry. The following are the main roles of the relevant Government agencies in relation to chilled and frozen food:

a) Ministry of Agriculture (MOA)

- Increase income of farmers, livestock breeders, and fishermen by increasing output from agricultural, livestock and fishery activities through efficient use of the nation's resource.
- Increase food production for domestic consumption and for export as well as to diversify agricultural, fishery, and livestock activities, seizing domestic and overseas market opportunities.
- Increase farm productivity and create small and medium agro-based industries. One of the main hindrances of increasing the supply of food ingredients and chilled and frozen food is the lack of expertise and skilled farmers. The Ministry of Agriculture has carried out projects such as Group Farming Project and Farm Family Development to address this issue.
- The purpose of the Group Farming Project (1984) was to increase farm productivity and farmers' income through large and organised crop development and as such, capitalise from the economies of scale.
- The Farm Family Development aimed to create small to medium scale agro-based industries through the development of food processing and agriculture crafts projects. Upgrade the farm family's quality of life in an effort to balance economic development with social development.

The following are departments under the MOA:

(1) Department of Fisheries

- Develop and manage the national fishery sector.
- Bring about changes in the country's fishery sectors so as to operate in a commercial, modern, and progressive way to ensure adequate supply for the nation's need.

(2) Federal Agricultural Marketing Authority (FAMA)

- Promote Malaysian agriculture-based products to the domestic and overseas market through campaigns, exhibitions, and consulting services.
- Under the 7th Malaysia Plan, FAMA has been allocated RM92.1 million to implement its strategy and carry out programs to assist the country to improve the market for agriculture products. FAMA's strategy under the 7th Malaysia Plan is to achieve the following:
 - (i) Ensure Malaysia is self sufficient in food supply, and produces high quality food safe for consumption
 - (ii) Improve distribution network efficiency
 - (iii) Improve food supply chain efficiency
 - (iv) Improve local food products' competitiveness
 - (v) Increase local and international markets size
 - (vi) Develop the food manufacturing sector and downstream of the food industry
 - (vii) Improve market development of fresh agricultural products and agriculture based-products
 - (viii) Maximise the return for farmers and consumers

The following are some of the exhibitions FAMA participated in and promoted Malaysian products:

- (i) Royal Agricultural Show in England
- (ii) Anuga Fair in Germany
- (iii) Saitex in South Africa
- (iv) Sial in France
- (v) Malaysia Week Sharjah U.A.E (Royal Agriculture Show 1996)
- (vi) Shanghai Fair in China
- (vii) Waregem in Belgium

(3) Malaysia Agriculture Research and Development Institute (MARDI)

- Provide related technical, commercialisation, and entrepreneurial development services. A statutory body mandated to undertake research services in tropical crops (except oil palm and rubber), livestock and food.
- Improve product quality, production processes and technology to assist the growth of the industry. MARDI is one of the key Government agencies, aside from MOA, that conducts R&D. The following are the types of R&D carried out by MARDI:
 - (i) Technology development for food and agriculture products such as Omega-3 egg formula and for Pressed Foliage production
 - (ii) Food and industrial crop research
 - (iii) Livestock research
 - (iv) Food technology research
 - (v) Strategic, environment and natural resource R&D activities
 - (vi) Economic and technology management R&D activities
 - (vii) Aquaculture product research such as fish breeding, prawn culture, genetics, and biotechnology
- MARDI also invites entrepreneurs, venture capitalists, and investors to explore the possibilities of commercialising research findings. This includes frozen complete meals, packaging and handling system for prawns, probiotic milk beverage, snacks from tuber flours, and value-added agricultural products.
- Other facilities that MARDI offers to improve the agriculture and agriculture-based, and food industries are:
 - (i) Analytical Laboratory Services

The main purpose is to provide food analysis service (including testing in general, physical condition, fat and oil, preservatives, halal elements, nutrition elements, vitamins and microbiological), quality assurance, and agricultural analysis.

 - (ii) Entrepreneur Development in Food Processing

Food entrepreneurs can access technical and business information on the food industry, and expert technical services.
- Consulting and project management services undertaken such as:
 - (i) Developed HACCP plan for frozen aquaculture product
 - (ii) Set-up of a ready-to-eat meals processing plant in Johor
 - (iii) Developed HACCP plan for frozen seafood products
 - (iv) Conducted feasibility study and technical assistance on setting-up frozen seafood products
 - (v) Devised HACCP plan for frozen seafood products
- MARDI also provides training in relation to agriculture and food.

(4) Federal Land Development Authority (FELDA)

- Improve settlers' quality of life with dedicated and efficient land management while contributing towards the Nation's Vision of increased productivity.

b) Ministry of International Trade And Industry (MITI)

- Develop the country's industries and formulate industrial plans such as the Industrial Master Plan. These plans include the improvement of agriculture and food sectors.
- Review fiscal and non-fiscal incentives.

The following are departments under the MITI:

(1) The Malaysian Industrial Development Authority (MIDA)

- Promote and co-ordinate Malaysia's industrial development.
- Process applications for manufacturing licenses, and incentives for projects including the chilled and frozen food industry.

(2) Royal Customs And Excise Department

- Issuance of licenses for import / export of item listed in the Custom Prohibition of Import / Export Orders under the Customs Act 1967 including those related to the chilled and frozen food.

(3) Malaysian External Trade Development Corporation (MATRADE)

- Provide trade-related information for Malaysian exporters and foreign importers.
- As an external trade promotion arm of MITI, MATRADE has been organising and participating in foreign trade exhibitions and promotions. Table 5.1 shows a few food-related trade fairs organised by MATRADE.
- MATRADE also organises seminars and workshops to update and familiarise Malaysian exporters on various trade related matters such as the ASEAN Joint Investment (Promotion Mission to Japan), and participated on several Trade and Investment Missions to California, Oregon and Colorado, and Romania.

(4) Small And Medium Industries Development Corporation (SMIDEC)

- Promote small and medium industries' development through advisory services, fiscal and financial assistance, infrastructure facilities, market access, and other support programs.
- Foster linkages between SMIs and large companies and multinationals (MNCs) to develop business networks including chilled and frozen food players who mainly fall in the SMIs category. The Industrial Link Programme has been carried out to fulfil this objective.

Table 5.1 Examples of food-related trade fairs organised by MATRADE

Exhibitions	Product Group
The 1st SIAL China, Beijing China	<ul style="list-style-type: none"> Beverages, dairy products, preserved foods, food ingredients, confectionery, biscuits and pastry, fresh and dry food, vegetables, diet and biological products, fresh poultry and meat, frozen and fresh processed food and fresh and frozen seafood product
Ethnic Food 2000, Birmingham, UK	<ul style="list-style-type: none"> Ethnic (non-European) food and beverages products including – sauces, confectionery, food ingredients (spices, curry powder, pastes and accompaniments), frozen food, chutneys, snack food, meat, noodles, pickles, ready-to-eat meals, fruit juices, soft drinks, fresh, canned and dry food, restaurant and catering products and food packaging materials
International Exhibition of Food & Beverages Exhibition – Sial, Paris, France	<ul style="list-style-type: none"> Delicatessen, cured meats, fresh meat and offal, fresh poultry and game, fresh fruit, vegetables and dried fruits, alcoholic and alcohol free beverages, organic health food and children's products, preserved products, grocery products, confectionery, biscuits and pastry, frozen products, fresh seafood, food ingredients and dairy products
Fine Food Australia 2000, Melbourne, Australia	<ul style="list-style-type: none"> Bakery, confectionery, dairy, drinks, meat, and seafood

c) Bank Pertanian Malaysia (BPM)

- Play a key role in funding agricultural project in Malaysia. BPM provides a range of banking and financial services to meet customers' needs in line with national development

d) Central Bank of Malaysia (BNM)

- Promote monetary and financial stability and foster a sound and progressive financial sector.
- Facilitate the growth of industries by providing necessary financial support such as Fund for Food and Export Credit Refinancing scheme (ECR) that aim to make Malaysian products more competitive overseas.

e) Road Transport Department

- Provide services in matters pertaining to vehicles and driving licenses and enforcing the Road Transportation Act 1987 to ensure competent drivers and safe vehicles. This includes licenses issued to transport companies, which use cold trucks to carry chilled and frozen food.

5.2 Trade Associations In Malaysia

Broadly, food manufacturers in Malaysia belong to one or more of the many umbrella associations where common issues, especially commercial and legislative issues of the industries, are brought up for discussion. The association with the biggest representation is the Federation of Malaysian Manufacturers (FMM) with a membership of about 240 food-based companies. Another association, the Malaysian Frozen Food Processors Association, looks after the seafood industries. For importers of frozen meat, there is the Meat Importers' Association. The small and medium industries could also seek assistance from the Small and Medium Industry Development Corporation (SMIDEC) and SMI Consultative Committees.

a) Federation of Malaysian Manufacturers (FMM)

FMM, as the association is commonly called, was established in 1968 and is the largest private sector economic organisation in Malaysia representing over 2000 manufacturing and industrial service companies of varying sizes. It is the recognised and acknowledged voice of the industry with a membership of 243 food manufacturers. Under this main body, there are various Industry Groups that look after the interests of each specific sub-sector. The following are sub-sectors in the food group:

- Malaysian Food Manufacturers Group (MAFMAG) – 46 members
- Bottled Water Group (MAFMAG CMG)
- Malaysian Food Canners' Association (MFCA) – 15 members

The following are the chilled and frozen food manufacturers who are members of the FMM:

- Sinnah Food Industries
- Tee Yih Jia Food Manufacturing Sdn Bhd
- Sydney Cake House Sdn Bhd
- MacFood Services (M) Sdn Bhd
- KG Pastry Manufacturing Sdn Bhd
- Ayamas Food Corporation Bhd
- Ramly Food Processing Sdn Bhd

b) Malaysian Frozen Food Processors Association

The frozen food industry has its beginnings in early 1960. At that time, there were few factories and the export volume was low. By the late 60s, more seafood companies entered the scene and the competition increased. In view of the industry's growth potential, the Malaysian Frozen Foods Processors Association (MFFPA) was formed in 1970. The objective of the MFFPA is to bring together all frozen food processors so that they have more bargaining power and can protect their interests, both locally and abroad.

Members of the industry continuously strive to obtain a larger share of the world market through product enhancement, improved product quality and marketing strategies, as well as competitive pricing.

Encouraged by the support of the Malaysian Government, the industry has been expanding rapidly since the early 1990s. Malaysian frozen seafood has maintained its strong presence in Europe, Australia and Japan. It has also successfully penetrated non-traditional markets including China. At present, Malaysia supplies approximately 1.5 to 2 percent of the world's seafood. This percentage, small as it may seem, translate into a vast potential for growth. With a good track record of growth and given the dynamism of the members, the frozen seafood industry is poised to be one of the dominant players in the Malaysian food export industry.

During the current economic slowdown, several industrial sectors faced hard times but the MFFPA members were largely unaffected. Confronted with a reduction of export credit facilities, a weaker currency, possible export bans, and aggressive competitors from around the world, MFFPA members still maintained their competitive advantage. As a result of their efforts, the industry is internationally recognised with stronger exports and a steady, uptrend inflow of foreign currency.

By coming together under the MFFPA umbrella, members show their willingness to co-operate and importantly, their level of maturity. The MFFPA can continue to play a key role in ensuring all seafood products for export are of world standard, with full assurance of hygiene, good manufacturing and commercial practices.

c) Malaysian Meat Importers Association

This association was established in 1995 and has a membership of 24 companies. Although the main products imported are meat and meat-based products, other products include chilled and frozen vegetables. The following are the top five member companies in terms of annual turnover are:

•	Lucky Frozen Sdn Bhd	-	RM70 million
•	Patrick Sdn Bhd.	-	RM50 - 60 million
•	Ng Kee Cold Storage Sdn Bhd	-	RM50 - 60 million
•	Angliss Food Sdn Bhd.	-	RM55 million
•	Pok Brothers Sdn Bhd	-	RM40 - 45 million

The products come mainly from India, Australia, New Zealand, US, EU countries, and are categorised into:

(1) Commodity products

- Indian Beef
- Mutton
- Beef Offals
- Vegetables

(2) Fine Foods

- Chilled beef, including beef from US which is airflown
- Veal
- Dairy products

Imported vegetables are in chilled and frozen form (50%), fresh (27%) and preserves and other (23%). Of the chilled and frozen form, approximately 15% are in frozen form, and consists mainly of french fries, peas, and mixed vegetables.

The meat business is competitive and has low profit margins, with commodity products at less than 10% and fine foods at 15 - 18%.

The major customers of meat are:

- Wet Markets - 65 % (mainly Indian beef)
- Food Service Institutions (Hotels, restaurants, airlines) - 25 %
- Government Institutions (Defence forces, hospitals, schools) - 10 %

Supply to Government Institutions is via tender if the Government runs the food service establishment. Otherwise, the deal is direct between supplier and operator.

Most of the member companies have their own transportation vehicles and cold storage facilities. However, for long haul, they do engage third party transporters.

Although there is reasonable growth in this business, competition is stiff among members with each trying to carve a niche for themselves. At the same time, the big corporations such as McDonald and KFC also import these products direct from the source.

5.3 Related Government Policies

Malaysia adopts a multilateral trading system that is liberal, predictable, and stable, and is eager to trade with a large number of countries and diversify into non-traditional markets.

Malaysia's main trade policy objectives are to promote and develop exports of manufactured and value-added resource-based products. This will strengthen and expand Malaysia's trade through closer economic and trade cooperation and will progressively open the service sector to trade.

This openness has resulted in the Government's review of the downward tariff structure. In granting tariff protection, the degree of domestic raw material utilisation, level of local value-added activities and industry technology, are taken into account. The tariff protection granted is reviewed from time to time to adapt to the industry's needs and consumers' welfare.

The Government has formulated various policies for different sectors and industries to guide the country towards achieving its goals. For the purpose of this study, below are policies that currently provide authorities directions to develop the agriculture and food processing industries:

a) 3rd National Agricultural Policy 1998 – 2010 (NAP3)

There have been two NAPs since 1984. The NAP3 stretches over the period of 1998-2010. The current issues identified in the NAP3 are the increase of food import bill, which amounts to RM10 billion in 1997, and the shortage of labour in agriculture leading to employment of a large population of immigration workers.

The NAP3 aims to achieve a balanced development between the agriculture and manufacturing sectors, and to deepen linkages with other economic sectors. For example, integrating cattle and sheep with plantation crops will also increase beef and mutton production. The policy will promote further diversification of animal protein suitable for commercial production such as rabbit and deer.

Vegetable production will be expanded substantially to meet local demand and exports. The policy also emphasises quality and standards as the consumer is shifting to a diet rich in fibre, minerals and vitamins but low in fat, calories and salt. Therefore, the production of high value vegetables, both highland and lowland, using cost-effective methods, will be promoted.

The NAP3 also aims to promote Malaysia as a 'halal' food centre for processing, producing and certifying of 'halal' food.

The Policy has made specific plans for the various sub-sectors of agriculture (paddy, livestock, fisheries, fruits and vegetables), industrial crops (oil palm, rubber, cocoa and forestry), new products and future industry group (biotechnological products, speciality natural products, floricultural products, aquarium fish, and aquatic plants), and other economic crops (coconut, pepper, cassava, sweet potato, maize, tea and coffee). These sub-sectors are expected to grow 3.8% a year, while the food products share in the agricultural GDP is expected to increase from 26.2% in 1995 to 32.3% in 2010.

Agriculture will continue to be an important economic sector for the country as a provider of food and raw materials for resource-based industrial development. It is believed that the Malaysian agriculture is poised to increase its productivity and competitiveness.

b) Steps Planned by the Malaysian Government to Increase Food Production (2000-2005)

This section discusses some issues pertaining to the efforts undertaken by the Ministry of Agriculture to address issues pertaining to the production of food supplies in the country. Among the sectors that contribute to the country's food supply include fishery, livestock, and crop. The following are the steps undertaken by MOA to increase agricultural production¹:

¹ The information given here were obtained from the Ministry of Agriculture on 10 October 2000.

(I) Fishery Sector

• Sea Fishing along Shoreline

The collection of fish from the sea along the Malaysian coastline is expected to increase from 1,043,985 metric tons in 1998 to 1,137,100 metric tons by 2005. The following are steps the Government is taking to increase fishery output:

- (i) Develop and manage sustainable fishery via licensing fishing vessels, zoning fishing waters, creating artificial fish shelters ("*tikun*"), establishing sea parks ("*taman laut*") and sea reserves ("*rizab laut*"), developing aquatic culture, and introducing user-friendly fish-catching technology.
- (ii) Encourage new investment in fishing industry, especially in Sabah and Sarawak, in order to exploit the available fish resources, in particular, pelagic.

• Fishing in Deep Seas and International Waters

Based on the potentials of current fishery resources, the collection of fish from deep seas and international waters (especially tuna) is expected to increase from 131,086 metric tons in 1998 to 178,600 metric tons by 2005. This expected increase is the result of the following efforts:

- (i) Encouraged large-scale deep-sea fishing investment especially in Sabah and Sarawak, with resources yet exploited.
- (ii) Developed fully equipped and integrated fish landing infrastructure as well as upgraded the existing infrastructure to cater to the need of deep-sea fishing.
- (iii) Exploited fishery resources, especially tuna, from international waters in the Indian Ocean via developing tuna fishing vessels and a fishing port in Pulau Pinang.

• Aquaculture Fishing

Production of fish from aquaculture is expected to increase to 408,634 metric tons in 2005 from 133,062 tons in 1997. The following are efforts planned by the Government to achieve this target:

- (i) Development of intensive and planned aquaculture activities that are sustainable to avoid any negative effects on the environment. Detailed studies will be conducted to identify potential fishing areas; maximise the use of lakes and dams, rivers, irrigation canals, gulf and lagoons; identify high yielding species of fish; rehabilitate and increase the natural stock of fish; and prepare code of practice to develop sustainable aquaculture.
- (ii) Encourage and support commercial and large-scale private sector participation in the industry particularly from the corporate sector.
- (iii) Continuous support given to the critical upstream activities such as fish hatchery, fish feed industry, and aquaculture equipment manufacturing, through developing aquaculture infrastructure and research facilities.

(2) Livestock Sector

• Integrated Beef Production

Efforts will be taken to produce 20,000 tons of beef annually, which will contribute toward fulfilling about 34% of the total domestic production of beef. Sixteen areas for the existing Integrated Ruminant Rearing Projects (PINTAR) will be upgraded and 23 new areas will be created including in Sabah and Sarawak.

The following are among the efforts to be taken toward achieving this goal:

- (i) Creation and provision of veterinary service programs in relevant areas
- (ii) Provision of advisory and consulting services
- (iii) Provision of extension services
- (iv) Provision of cattle breed on a loan basis
- (v) Aiding in the acquisition of supplies required by the industry
- (vi) Marketing of livestock

• Zoning Disease Free Area

Efforts will also be taken to ensure the livestock are free from disease. This is particularly important in order to protect the economic interest of the country as well as to achieve the necessary accreditation for exporting beef.

The following are some suggested activities:

- (i) Enhance disease monitoring and surveillance program
- (ii) Control the spread of diseases
- (iii) Carry out specific disease eradication program
- (iv) Carry out research in the field of disease diagnostics, epidemiology, and vaccines
- (v) Implement related laws and regulations

• Incubation Centre for the Processing of Halal Products

An area of 100 acres with fully equipped processing plant and facilities, and methods of certification of food quality and halal status, will be suggested.

The following are activities to support this effort:

- (i) Prepare the necessary infrastructure
- (ii) Veterinary inspection service
- (iii) Technology transfer on product processing
- (iv) Halal food product certification
- (v) HACCP and GMP certification and implementation

(3) Crop Sector

• Rice

Implementation of a rice industry development project aimed at increasing rice production via yield enhancement.

The following are some activities that will be carried out:

- (i) Production of 124,060 tons of certified rice seeds in order to ensure high yielding rice is grown
- (ii) Unification of rice fields into 10,000-hectare size so that it can be economically operated and managed
- (iii) Preparation of a rice field of 550 hectares outside the rice bowl area for planting cash crops and rearing of livestock in order to increase farmers' income
- (iv) Implementation of double cropping of rice in 10,000-hectare rice mini estates in selected areas in Sarawak
- (v) Rehabilitation of a 10,000-hectare of rice field in Sarawak under the Department of Drainage and Irrigation scheme

• Fruits

Development of fruit industry aimed at increasing fruit production in order to meet local demand and for export. Among the fruits emphasized are include star fruit, papaya, *cempedak*, watermelon, *ciku*, *dokong/duku langsung*, durian, guava, *limau*, mangosteen, mango, pineapple, jackfruit, banana, and rambutan.

The following are the programs and activities that will be carried out during 2001-2005:

- (i) Development of 5,000-hectare size of commercially run orchards so that they can be managed effectively and efficiently.
- (ii) Rehabilitation of the orchard clusters (*dusun berkelompok*) of about 20,000 hectares in order to increase productivity via the use of technology and well-equipped infrastructure.
- (iii) Implementation of a new 2,500-hectare orchard in Sarawak.

Production of planting materials to encourage planting of high yielding crops. The following are among the distribution of planting materials that will be produced:

- (i) Seedlings (2.9 million)
- (ii) Sultur (8.7 million)
- (iii) Tissue culture (440,000)
- (iv) Seeds (120 kg)

- **Vegetables**

Implementation of a vegetable strategy aimed at increasing the production of vegetables to meet local demand and for export.

The following are among the programs and activities that will be carried out:

- (i) Implementation of a commercially scaled, well-managed vegetable-farming project in order to increase vegetable production and yields. Under this project, 2,505 hectares of vegetable farming areas will be developed.
- (ii) Project involving planting of selected field crops on 16,300 hectares of land such as sweet corn, cassava, and sweet potatoes.
- (iii) Production of seeds by the Department of Agriculture under the Field Crop and Vegetable Seed Production program (*Skim Pengeluaran Biji Benih Sayuran dan Tanaman Ladang*). The purpose of this project is to encourage vegetable farming while reducing the country's dependence on foreign supply of vegetable seeds. Under this project it is hoped that the country fulfil 14% of its field crop and vegetable seeds requirement.

- **Coconut**

Development of coconut growing area that will be implemented via replanting of high yielding crop and rehabilitation of less productive coconut areas.

The aims of the various programs are to increase annual coconut yield from 5,000 nuts per hectare to 20,000 nuts per hectare.

The following are among the programs and activities that will be carried out:

- (i) Production of 600,000 seedlings to be supplied to farmers
- (ii) Purchase of 590,000 seedlings from the private sector to distribute to farmers
- (iii) Opening of a "seed garden" in order to increase the seed supply
- (iv) Establishment of 100 units of Seed Collection Centre to facilitate seed collection
- (v) Implementation of 9,750 hectares of coconut areas in Sarawak involving new programs such as replanting and rehabilitating non-productive coconut areas

- **Other Potential Crops**

Development of certain potential crops or commodities is expected to help the country in fulfilling not only local demand but also for export. Potential commodities can also be an alternative activity for farmers who want to diversify their earning potential.

The crops that have been identified for this effort include herbs, "*ratus roselle*" spice, cocoa, coffee, mushroom and honey.

The following are among the programs and activities that will be carried out:

- (i) Development of a 1,000-hectare herbs project
- (ii) Development and planting of the following crops:

- *Roselle* (500 hectares)
- *Coffee* (500 hectares)
- *Cocoa* (5,000 hectares)
- *Mushroom* (25 hectares)
- *Honey* (25 hectares)

- **Permanent Park for Food Production (*Taman Kekal Pengeluaran Makanan*)**

The purpose of TPKM is to create a permanent food production zone as well as to encourage private sector's participation in food crop production.

It is expected that 3,000 hectares of land will be developed for TPKM which could house 600 entrepreneurs.

- **Sago**

Under the Eight Malaysian Plan (RMK8), a program for sago planting using the mini - estate approach will be implemented in Sarawak. The following are targets identified under this program:

- (i) Planting sago on a 12,000-hectare land at the rate of 2,400 hectares per year.
- (ii) Building canals 500 m in length for the purpose of transporting sago trunks from plantation areas to factories for processing.
- (iii) Building sales centres and promoting sago products in main towns.

- **Pepper**

Under the Eight Malaysian Plan (RMK8), development of the pepper and *ratus roselle* spice industry program will be implemented with the aim of strengthening the socio-economic position of smallholders in Sarawak. The following are the steps to be taken:

- (i) Helping farmers/smallholders to plant pepper/*ratus roselle* on a commercial scale. Target land area for planting of pepper is 250 hectares.
- (ii) Helping farmers/small holders to plant pepper/*ratus roselle* on new areas or to replant pepper on 2,250 hectares of non-productive land.

c) Second Industrial Master Plan 1996 – 2005 (IMP2)

The first Industrial Master Plan (1986-1995) laid down the foundation of growth for the manufacturing sector. Rapid growth will have to be sustained in the next decade in order to achieve the objective of becoming a fully developed industrialised nation by 2020.

The Second Industrial Master Plan (IMP2) as in the NAP3, focuses on improving competitiveness through strengthening industrial linkages, both forward and backward, enhancing value-added activities, and increasing the productivity of the manufacturing sector. It also outlines initiatives to exploit the potential synergy between agriculture and the manufacturing sector. The key agricultural sub-sectors identified for development under this plan includes fisheries, livestock, fruits and vegetables, and floriculture.

The following are the IMP2's three broad objectives:

- Ensure a continued and rapid economic expansion through the accelerated growth of the manufacturing sector to meet the objectives of the New Economic Policy (NEP)
- Promote optimum and efficient use of the nation's natural resources through value-added manufacturing activities
- Lay the foundation for the development of indigenous technological capability

The IMP2 mission is to commercialise the industry, encourage joint ventures and overseas investments, provide and promote livestock production zones, and develop agricultural and food industries.

The agricultural sector is expected to grow at 2.6% p.a first half of IMP2 and decline marginally to 2.5% p.a during 2001-2005 period. Currently, it is expected that share of the GDP will decline from 13.6% in 1995 to 10.5% in 2000 and 8.2% in 2005. This sector remains an important contributor to output and growth during the period.

IMP aims to have a clear and transparent procedure for 'halal' regulations, import and export policies; and the establishment of an authoritative and globally recognised 'halal' certification systems. The Government supports the industry by providing investment, infrastructure facilities, liberal importation and credit facilities.

The common objectives of the IMP2 for fish and fish products, and livestock and livestock products are developing high value-added products through integration with the manufacturing sector. The livestock production focuses on meat preparation, preservation, and the packaging. For example the beef-processing sub-sector encompasses the range of fresh, chilled, frozen, canned and retort pouch beef such as beef patties, burgers, and nuggets.

The IMP2 promotes cluster based industrial development emphasising concurrent development of supporting clusters including the service sector, to achieve a broad-based, resilient and internationally competitive industry.

Industrial cluster development calls for the concurrent development of interlinked activities comprising of manufacturers, suppliers, critical supporting service providers required infrastructure and related inter-dependent institutions.

The IMP2 identified 22 industrial clusters to be developed (more clusters could be added later if deemed necessary). The following are the 22 clusters classified into three broad groups:

- Internationally Linked Cluster
- Policy Driven Cluster
- Resource-Based Cluster

The report will focus on the third group, which is food-based. The following are the potential clusters to be developed as outlined in the IMP2:

Table 5.2 Potential clusters to be developed in IMP2

Industrial Group	Potential Clusters
Agro-based and food products	<ul style="list-style-type: none"> • Fish and fish products • Livestock & livestock products • Fruits and vegetables • Floriculture

To ensure the success of the "Manufacturing Plus Plus" concept and the cluster-based industrial development concept, the IMP2 emphasises the development of a strong and efficient economic foundation, comprising of the following:

- Human resource development
- R&D technology development
- Availability of fiscal and non-fiscal incentives
- Development of critical support services
- Development of broad based supporting industries especially small and medium industries

d) Seventh Malaysian Plan (1996 – 2000)

(1) Agriculture Development Under Seventh Malaysia Plan (SMP)

Modernising the agriculture sector to become a high value-added producer of food and industrial raw materials remains the main thrust for agricultural development during the SMP period. In meeting this challenge, agricultural development strategies continue to be directed at improving productivity and enhancing competitiveness by encouraging greater private sector involvement in large-scale commercial agriculture.

Under this broad policy framework, the public sector's role is focused on supporting the private sector, particularly smallholders, through extension services and R&D. Also an integral part of the agricultural development effort is the National Economic Recovery Plan (NERP) to increase domestic food production and reduce imports.

During the remaining Plan period, the third National Agriculture Policy (NAP3) will guide agricultural development. This policy seeks to address the challenges and constraints faced by sectors and stresses adoption of agro-forestry and product-based approaches. Development efforts will continue to focus on expanding and modernising domestic food production.

The Plan continues to promote the use of modern technology and management, encourage large-scale and organised agriculture and shift agricultural production from mono-cropping to mixed farming as well as from monoculture to polyculture to intensify land use, and increase productivity.

(2) Progress of Agriculture Development under the SMP (1996-1998)

The first three years of the SMP was extremely challenging for agriculture development. Besides having to deal with constraints of labour shortage and lack of suitable agriculture land, the sector also faced temporary adverse circumstances such as El Nino and problems caused by haze. The sector was also burned with higher imported input prices following the currency depreciation. During this period, prices of many industrial commodities were also depressed in world markets. Although the currency depreciation increased the value of agricultural exports in terms of domestic currency, structural problems continued to hold down production. In view of these unfavourable conditions, the agriculture sector recorded a slight decline in value-added over the period.

(3) Prospects for Agriculture Sector under Remaining Period of the SMP (1999-2000)

In contrast to the difficult times experienced during the review period, prospect of the agriculture sector in the remaining Plan period is expected to be significantly better. The expected improvement is attributed to several factors including better prices, the oil palm sub-sector's recovery, expansion of productive areas under oil palm, strengthening food sub-sector (a result of measures implemented under the NERP) and wider adoption of labour-saving technologies. In view of this development, agricultural output during the remaining Plan period is expected to grow by 5.2% p.a. compared to the Plan's target of 2.4% p.a.

(4) Allocation

During the 1996-1998 period, expenditure of various public agencies involved in agriculture and rural development totalled RM6, 030.7 million. This expenditure comprised 52.8% of the total revised Plan allocation of RM11, 422.4 million. The largest expenditure item was rural development, followed by in-situ development and irrigation and flood mitigation.

Agricultural development during the remaining Plan period (1999-2000) continues to be guided by the thrusts and strategies of the NERP and NAP3. Modernisation measures will continue to be implemented to further contribute to rural sector development. These measures are expected to generate a positive growth in the agriculture sector during the remaining Plan period.

5.4 Other International Policies

The followings are other policies relevant to the chilled and frozen food industry:

a) ASEAN Free Trade Area – AFTA

The main objective of AFTA is to attract investments into regional economies, to accelerate and sustain growth and development, synergise ASEAN complementarities, and optimise collaborative economic strengths of member countries. With the introduction of the Common Effective Preferential Tariffs (CEPT), intra-regional trade tariffs are brought down to 0-5% over a 15 period year effective 1993, ending by 2008 (2003 for the six original members of ASEAN; Brunei, Indonesia, Malaysia, Philippines, Singapore, and Thailand). To date, almost 97% of manufactured, processed and unprocessed agricultural has been included in the Common Effective Preferential Tariffs (CEPT) Scheme. For example, the highest tariff applicable to Malaysia is on wood and wood articles at 7.0% and lowest tariff is on chemicals at 0.8%.

Malaysia's target of tariff reduction to the range of between 0-5% was achieved on 90% of the products in the CEPT scheme.

AFTA's sensitive agricultural products refer to the Unprocessed Agricultural Products submitted by member countries who determine what products are considered sensitive to them. The inclusion of Unprocessed Agricultural Products in CEPT was effected on January 1, 1996. The AFTA Unprocessed Agricultural Products are divided into three separate lists; i.e., for immediate inclusion, temporary exclusion, and those considered sensitive. The products in the immediate inclusion and temporary exclusion lists will be completely phased into the CEPT scheme by 2003. Products brought into the Inclusion and Exclusion lists will be subjected to the same conditions as other products in the list. As for products in Sensitive List, appropriate mechanisms will be established to phase them into the CEPT scheme by 2010.

ASEAN Preferential Tariff Arrangement (PTA) is an arrangement entered into by the ASEAN Member Countries in 1977. PTA offers preferential tariff treatment to products originating from ASEAN states. This is to make products among the ASEAN countries more competitive. The preference rate will be based on the Margin of Preference (MOP), which is tariff preference, and an instrument for preferential trading arrangement under PTA where tariffs will be a marginally lower than the MFN (Most Favoured Nation) tariff rates.

If a product enjoys CEPT and PTA lists, traders will enjoy the lower of the two-tariff rate. With the CEPT and PTA, imports and exports within the ASEAN region will be more competitive with the rest of the world.

b) Asia Pacific Economic Co-operation (APEC)

The main objectives of APEC is to narrow economic disparities among member countries and increase the participation of members countries in APEC's Business Advisory Council (ABAC). ABAC presents to leaders its report, outlines the proposal for liberalising and facilitating trade and investments.

There is also the Individual Action Plan (IAP), which requires member parties to dismantle tariffs from 1.1.97 to achieve free trade and investment by 2020. The service regime is also relatively open, allowing market access in most service areas.

An overview of APEC's tariff policies shows that all member-economies have relatively high rates of tariff protection on their respective processed food industries. The following lists the various food industries:

- Meat and meat products – APEC countries maintain lower tariffs for meat of sheep and horses than meat of bovine animals and swine. The bound rates for processed meats are generally higher than fresh meat in the APEC region.
- Fish and fish products – tariffs are generally low, averaging 14% for fish and fish products.
- Dairy and animal products – the bound rates of these products are generally high, averaging 43.65%.
- Vegetable and vegetable products – varies across commodities, ranging from as high as 45.5% to 20%.
- Fruits and fruits products – the bound rates are a range of 31.6% to 18.9%.

c) The Generalised System of Preferences (GSP)

The GSP is where Developed Countries grant preferential treatment to eligible products from Developing Countries. Preferential treatment is in the form of Reduced Import Duty granted without reciprocal obligation on the part of the developing countries.

The following are GSP's objectives:

- Increase export earnings of preference-receiving countries
- Promote their industrialisation
- Accelerate their rate of economic growth
- Enable exports of developing countries to be competitive in the developed countries' market

With GSP, Malaysia enjoys a preferential treatment in exporting its goods to developed countries. For example, Malaysia's export of fish-based products enjoys 'zero' import duty in the Japanese market.

With lower tariffs and the preferential rates, traders in the food industry will be more competitive in the world market.

d) World Trade Organisation – WTO

The following are some general information on the WTO:

- Established in 1995 following the Uruguay Round of General Agreement on Tariffs and Trade (GATT)
- Empowered to enforce global commerce rules with the imposition of economic sanctions
- WTO rules are much broader (than GATT), covering food and environmental standards, regulation of services, copyright and patent law, and farm policy.

The following are general policies of the WTO:

- Enhance the working of the multilateral trading system
- Negotiate and continue trade liberalisation

e) International Policy Council on Agriculture, Food and Trade (IPC)

The following are some general information on the IPC:

- Founded in 1987 as an independent group in food and agriculture from 20 developed and developing countries
- Empowered to establish a market-oriented agricultural trading system

The following are general policies of the IPC:

- Create and implement workable international trading systems based on national policies focused on efficiency and competitiveness
- Based on the premise that domestic policy reforms should reduce direct government intervention in markets in order to support the production of sufficient food supplies at reasonable costs

5.5 Availability of Funds

The main funding schemes, incentives, and allowances are currently provided to the chilled and frozen food industry and other supporting industries by the Central Bank, Bank Pertanian Malaysia, and SMIDEC. For example, until December 1999, SMIDEC approved 218 applicants for Industrial Technical Assistance Fund (ITAF) to assist the development of small and medium-sized companies. Such facilities are crucial for chilled and frozen food industry, as most of the players in this industry comprise small and medium scale players where capital and funding are the major hindrance for expansion. The following are funding facilities associated to the chilled and frozen food industry:

a) Funds For Food

The Central Bank of Malaysia set-up a RM700 million Fund for Food in 1993 to promote investment in food production. The scheme provides finance at a reasonable cost where the maximum lending rate is set at 4% p.a. with a maximum tenure of eight years.

b) SMI Fund

SMI fund has been set up promote new SMIs investments in selected sectors (manufacturing sector, agro-based industry, and services), and also to assist those SMIs that need more funds to improve on their productivity for the domestic and export market. This SMI fund programme attracted about 50 banks and financial institutions' participation. The amount of fund allocated for a project can range between RM50,000 to RM5 million with a maximum interest rate of 5% and a maximum repayment period of seven years.

c) Special Loan Schemes

(1) Bank Pertanian Malaysia

Term loans, *Pembiayaan Perdagangan* and *Niaganeka Tani* offered by Bank Pertanian Malaysia are available to parties interested in carrying out agriculture-based activities including processing and marketing. The following are specific types of loans and schemes offered:

- (i) Project loan
- (ii) Paddy Scheme
- (iii) Equipment Scheme
- (iv) Leasing
- (v) Fund for Food (financed by Central Bank)
- (vi) Advance to Fixed Depositors
- (vii) Hartani Loan
- (viii) MAP Scheme (Mechanisation and Automation for Agriculture Program)
- (ix) Letter of Domestic and Credit that is issued or negotiated for all trading transactions involving agro-based goods or products

(2) SMIDEC

SMIDEC also offers several schemes to SMEs in the chilled and frozen food industry. The following are examples of funds available:

(i) Financial Package for SMEs (PAKSI)

This financial package provides soft loan scheme for project and working capital financing. The amount provided range from RM50,000 to RM3 million with an interest up to 5% and a maximum seven-year repayment period.

(ii) Industrial Technical Assistance Fund (ITAF)

The ITAF offers assistance schemes to match grants to SMEs. The following lists areas and activities that can benefit from this:

ITAF 1 – consultancy and advisory services in business planning and development

ITAF 2 – improve and upgrade indigenous technology through the development of new products, designs and process

ITAF 3 – upgrade productivity and quality, and achieve international standard and certification

ITAF 4 – enter the export market and enhance competitiveness

(iii) Quality Enhancement Scheme

This scheme is aimed at assisting Bumiputera SMEs involved in manufacturing to modernise and automate in order to increase quality and productivity.

5.6 Tax Incentives

To facilitate the growth and development of the agriculture and agriculture-based industries, the following describes several incentives offered by the Government:

a) Pioneer Status

Companies granted Pioneer Status are either fully or partially exempted from paying corporate tax for period ranging from five to 10 years. This incentive is suited for investments that involve relatively small capital outlay and are able to profit within a short time, and remain profitable throughout the incentive period.

b) Investment Tax Allowances (ITA)

Companies granted with the ITA incentive are given allowances up to 100% of the qualifying capital expenditure (mainly expenditure incurred on plant and machinery excluding land) incurred over a five-year period. The tax credit can be used to offset against taxable income indefinitely into the future until the tax credit is completely used. The ITA incentive is suitable for capital-intensive projects, which may not be profitable in the initial years.

c) Reinvestment Allowances

This is given to manufacturing companies that do not enjoy the Pioneer Status or ITA incentives. To encourage reinvestments, manufacturing companies in operation for at least 12 months can apply for this incentive. Companies that incur qualifying capital expenditure are also eligible for this allowance. 60% of the qualifying capital expenditure is given as an allowance to offset against 70% of the taxable income.

d) Agricultural Allowances (by MIDA)

A person or a company implementing agricultural activities can claim capital allowances or agricultural allowances under Schedule 3 of the Income Tax Act 1967.

e) Deduction for Capital Expenditure on Approved Agricultural Project

Deduction for capital expenditure on Approved Agricultural Projects has been provided for under schedule 4A of Income Tax Act 1967.

f) Incentive for Food Production

The Malaysian Budget 2001 proposed tax incentives be given to both the company that invests in the subsidiary company engaged in food production and the subsidiary company itself.

Other available related tax incentive schemes that promote technology invention and R&D for Malaysian industries, including food manufacturing, and chilled and frozen food processes are:

g) Incentives for Research and Development (R&D) (by MIDA)

Various incentives are given to companies that perform scientific and technological research with the objective to use the results of their study to produce or improve materials, devices, products, produce, or processes. This, however, *do not include* the following:

- Quality control or routine testing of products or materials
- Research in social science or humanities
- Routine data collection
- Efficiency surveys and management studies
- Market research or sales promotion

The following are specific incentives for R&D:

Table 5.3 Incentives for R&D

Incentive	Company Entitled for the Incentive
1. Pioneer Status with full tax exemption for 5 years or Investment Tax Allowance (ITA) of 100% on qualifying capital expenditure incurred within 10 years. The ITA can be used to offset 70% of the statutory income in the Year of Assessment	<ul style="list-style-type: none"> A contract R&D company – the company provides R&D services in Malaysia to companies other than its related companies
2. ITA of 100% on qualifying capital expenditure incurred within 10 years. The ITA can be used to offset 70% of the statutory income in the Year of Assessment	<ul style="list-style-type: none"> An R&D company – the company provides R&D services in Malaysia to its related companies or any other companies.

5.7 Food Legislation

The following are the principal legislations governing the Malaysian chilled and frozen food industry:

- Food Act 1983
- Food Regulations 1985
- Import Regulations and Restriction on meats and meat based products, such as Animal Ordinance 1953, Animal Rules, 1962, Animal (Importation) Order 1962

General food items are covered under Food Act 1983 and Food Regulations 1985 while meat and meat products are under the Animal Ordinance 1953 which controls the importation of meat and meat products into the country.

For chilled and frozen products that do not contain meat, milk or eggs, the manufacture, and sale of these products do not need to undergo any registration process as long as they comply with the Food Act and Food Legislations. For import of these products, Health Certificates must accompany the consignment.

For products containing meat, the manufacturing premises are under the supervision of the Dept. of Veterinary Services, while seafood products are under the supervision of the Dept. of Fisheries. The Dept. of Veterinary Services makes it mandatory for exporters (including from East Malaysia) to have the Veterinary Logo if the importing country requires Veterinary Certificates. To apply for the Veterinary Logo requires the company to have Hazards Analysis Critical Control Point (HACCP) in place.

At the same time, export of seafood requires HACCP Certification, which is under the jurisdiction of the Ministry of Health.

5.7.1 Food Act & Regulations

In Malaysia, the Food Act 1983 protects the public against health hazards and fraud in the preparation, sale and use of food. The above Act came into force on 1 October 1985. Section 34 of the Food Act 1983, makes various regulations related to all categories of food, and cited as the Food Regulations 1985.

All food sold in Malaysia must comply with the Food Regulations 1985 and all food premises are under the purview of the Food Act 1983. The Food Act empowers authorised officers to take samples of food for analysis, to enter premises for the purpose of inspection, to order premises to improve their sanitary condition, and to order closure of unsanitary premises. With the exception of a few food products, e.g., mineral water and packaged water, there is no pre-registration requirement of food products prior to sale. This is unlike our ASEAN neighbours (e.g., Thailand, Philippines, and Indonesia) where any new product would have to be registered with and approved prior to sale.

There is no restriction to the import of chilled and frozen foods into Malaysia as long as the by relevant Health Certificates accompany the products. These products must comply with the specific regulations together with other regulations concerning labelling, food additives, pesticides residues, food contaminants and microbiological aspects. Failure to comply with these regulations can lead to, if convicted, a fine, imprisonment of not more than 5 years or both.

To import and export meat products, specific Regulations under these categories of products apply (see Chapter 5.7.2 on Specific Industry Regulations and Standard). The specific sections of the Food Regulations 1985 covering the four main categories of chilled and frozen food under this study are as follows:

- Complete meals and snacks category falls under the Cereal, Cereal Product, Starch and Bread category, Regulations 42 to 75.
- Food ingredients category falls under the respective spice category (Regulations 283 to 333A).
- Meat, seafood and vegetables category fall under the following categories:
 - (i) Meat Regulations 141 to 155
 - (ii) Seafood Regulations 156 to 170 for Fish and Fish Products
 - (iii) Vegetables Regulations 209 to 222 for Vegetable and Vegetable Products

The following are the temperature requirements specifically spelled out by the Food Regulations 1985:

Table 5.4 Temperature Requirements by the Food Regulations 1985

Meat Chilled Meat	<ul style="list-style-type: none">• Regulation 142: between minus 1° C to 10° C and includes frozen meat that has been thawed at a temperature of not more than 10° C.
Frozen Meat	<ul style="list-style-type: none">• Regulation 143: below minus 18° C and shall not have been thawed before sale.
Seafood Chilled Fish	<ul style="list-style-type: none">• Regulation 156: between minus 1° C to 10° C and includes frozen fish that has been thawed at a temperature of not more than 10° C.
Frozen Fish	<ul style="list-style-type: none">• Regulation 156: below minus 18° C and that has not been thawed before use.
Vegetables* Frozen Vegetables	<ul style="list-style-type: none">• Regulation 212: below minus 18 C and has not been thawed before sale.

*Note: The Food Regulations 1985 does not classify chilled vegetables specifically.

5.7.2 Specific Industry Regulations and Standard for Poultry, Beef, Pork, and other Livestock

The Department of Veterinary Services (DVS) act as a one-stop agency for processing permits for export of livestock products or importation of livestock products into Malaysia. Being one of the oldest Government departments, inheriting British experiences and Veterinary sciences and animal husbandry administration, it can be said that DVS is well organised and clear-cut in its protocol for executing policies, laws and regulations. There is, however, a overlap of responsibilities between DVS and the Ministry of Health (MOH) over some food products that requires either a Health Certificate or Veterinary Certificate in order to be exported. This often gives rise to confusion over who should be the competent authority.

The DVS has long established proper administrative procedures for the trading and marketing of livestock and livestock products both locally and internationally. Any food products, be it pastry which contains meat of significant content, is subjected to the set food regulations and guidelines established by the Government (i.e., MOH, MOA, and MOSTE). The MOH HACCP certification is clear for all food items and is the competent authority to certify the establishment and award it with a HACCP certificate. But when importing countries require a Veterinary Health Certificate, Zoo Sanitary Certificate or a Phytosanitary Certificate, the competent authority is the DVS.

Singapore for example, requires that any food item for export to Singapore containing meat content in excess of 5% must be accompanied with a Veterinary Health Certificate. This means that besides Singapore's requirement for a HACCP certificate, the intending exporter must also apply to DVS for a Veterinary Health Certificate. This type of information needs to be made clear to the industry.

The Veterinary Health Mark logo under the veterinary inspection and accreditation program has been well established and recognised internationally with DVS as the competent authority. This includes all the chilled and frozen food associated with poultry, beef, pork and other livestock species. The Veterinary Inspected protocol also includes a HACCP program (documentation, records) as well as HACCP plant audit and GMP audit. Activities such as slaughtering, processing, meat retailing premises, meat repacking plant, boning and packing plant, small poultry slaughter house, and rabbit slaughterhouse are documented under VHIM 1 to VHIM 7 of the veterinary code of practice.

Until 1999, 58 Veterinary Inspected Certificates have been awarded to food companies, including those involved in chilled and frozen meat and meat products.

5.7.3 Other Regulations

The following are other regulations governing the sector:

a) HALAL Logo

In Malaysia, the Halal Logo on the food product, although voluntary has a competitive advantage. The Halal Certification is under the jurisdiction of JAKIM, which has outsourced recently the auditing process to Ihlam Daya Sdn Bhd (IDSB). For more details, refer to the HALAL Documentation on Chilled and Frozen Food in Chapter 6.3 of this report.

b) HACCP Certification

HACCP is an abbreviation for Hazard Analysis of Critical Points, and is a management system for food safety. It is logical in its systematic assessment of all aspects of food safety, from raw material sourcing, processing and distribution, and finally to the consumers. Government recognition of HACCP as the most effective means of managing food safety is increasing worldwide. USA and EU have made it mandatory for exporters of seafood and meat products to comply with HACCP standards. The official HACCP System is elaborated in Codex Alimentarius Commission established by the Food and Agriculture Organisation and World Health Organisation.

HACCP has been adopted by Malaysia as a standard for Food Safety under SIRIM's standard, MS-HACCP. All exporters requiring HACCP Certification will go through the application under the Certification Scheme of the National HACCP committee.

c) Veterinary Logo

For meat processors, and milk and milk based products manufacturers, some importing countries, including Singapore and East Malaysia require Veterinary Certificates from the Government. For DVS to issue Veterinary Certificates all exporters must first apply for the Veterinary Logo. The Veterinary Logo requires manufacturers to have HACCP in place. The HACCP approach adopted by the DVS under this Veterinary Logo scheme differs from the MOH Scheme, and this has caused confusion among food manufacturers.

d) ISO 9000 Quality System

ISO 9000 is a standard on Quality Management and has also been adopted as a Malaysian Standard by SIRIM under MS ISO 9000. Companies who are certified ISO 9000 have achieved the standard on Quality Management in line with international standards, and the products comply with the quality standards established. ISO 9000 Quality System is often used as a marketing tool and a competitive weapon to gain customers' acceptance.

e) ISO 14000 Environmental Quality System

There is a drive towards complying with the ISO 14000 standard to ensure the industry operates in an environmentally friendly way by controlling its discharges. Other measures include source reduction, and usage of permitted refrigerant. Currently, not many chilled and frozen food manufacturers are well versed with the ISO 14000.

Below is the summary of legislation requirements.

Table 5.5 Summary of Legislative Requirements

Food Item	Food Regulations	Animal Ordinance 1953	HACCP Certification	HALAL	ISO 9000 & ISO 14000
General food import & export	Mandatory. No prior registration needed for manufacture, import or export	Not Applicable	Voluntary	For competitive advantage	For competitive advantage
Seafood Import & Export	Mandatory	Not Applicable	Mandatory for export. EU No. to be given by MOH, pending HACCP Certification	For competitive advantage	For competitive advantage
Meat, processing, import and export	Mandatory	Mandatory. Permit to given by DVS	Mandatory, and part of Veterinary Logo requirement	For competitive advantage	For competitive advantage
General food containing meat products	Mandatory		If Veterinary Certificate is required for export, mandatory to have HACCP in place, under the DVS Veterinary Logo scheme.	For competitive advantage	For competitive advantage

List of companies certified to the various standards is detailed in Appendix 6.

5.8 International Regulatory Aspects

Codex Alimentarius is the reference standard for International Trade under WTO, which is the only international organisation dealing with the global rules of trade between nations. Its main function is to ensure that trade flows as smoothly, predictably and freely as possible. At the heart of the system - known as the multilateral trading system - are the WTO's agreements, negotiated and signed by Governments.

Codex Alimentarius comprises standards and technical regulations related to hygiene practices, food safety systems, including Hazard Analysis of Critical Control Points (HACCP), HALAL, and standards on Commodity products such as milk, cocoa, and mineral water.

Due to the many technical regulations concerning food products, two agreements were included among the Multilateral Agreements on Trade in Goods, annexed to the 1994 Marrakesh Agreement which established the World Trade Organisation (WTO).

The following describes the two organisations:

a) The Agreement on Technical Barriers to Trade (TBT)

This Agreement seeks to ensure that technical regulations and standards, including packaging, marking and labelling requirements, and analytical procedures for assessing conformity with technical regulations and standards, do not create unnecessary obstacles to trade.

b) The Agreement on the Application of Sanitary and Phytosanitary Measures (SPS)

This Agreement acknowledges that Governments have the right to take sanitary and phytosanitary measures necessary for the protection of human health. However, the SPS Agreement requires them to apply these measures only to the extent required to protect human health. It does not permit member Governments to discriminate by applying different requirements to different countries where the same or similar conditions prevail, unless there is sufficient scientific justification for doing so.

The SPS and TBT Agreements both acknowledge the importance of harmonising standards internationally so as to minimise or eliminate the risk of sanitary, phytosanitary and other technical standards becoming barriers to trade. Standards, guidelines, and recommendations established by the Codex Alimentarius Commission are chosen as benchmarks against which national measures and regulations are evaluated.

5.9 Quality and Safety Standards

5.9.1 Definition of Quality

There is no specific definition of quality accepted by all stakeholders in the chilled and frozen food industry. Quality can be defined in many ways depending on who the stakeholders are and their agendas.

The consumers' perceptions of quality are many and varied. The following are some of their perceptions:

- Good taste, texture, colour, and overall appearance
- Attractive packaging
- Convenient to use
- Reasonable price (relative to similar products of another manufacturer)
- Nutritious
- Halal status
- Promotional items
- Product consistency
- Strong brands
- Customer services, e.g. consumer handling, enquiries, and complaints; telephone etiquette, and company corporate activities

The industry's perception of quality means meeting the requirements of both the authorities and consumers. This implies that the food must first comply with regulations including food safety and also meet the expectations of the consumers who will finally make the choice on purchase.