

THE ICELANDIC FRESH FILLET INDUSTRY 2004

PRODUCTION AND MARKETS

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1. HIGHLIGHTS FROM THIS REPORT

1.1 THE INDUSTRY

The fresh fillet industry in Iceland has matured into a stable and market oriented industry and is the only industry sector that has shown continuous growth in the past decade in terms of groundfish disposition and export revenue. It is based on the concept of value addition, in which processors, transporters and the marketplace have all had a share.

Wetfish exports from Iceland to Europe compete to some extent with fresh fillet export although customers for wetfish are typically a number of traditional filleters and packers, while fresh fillet buyers are large-scale processors that prepare pre-packaged products for retail distribution.

In 2004, the total export value for fresh groundfish and flatfish fillets was 11.5 billion ISK while wetfish exports amounted to 7.4 billion ISK. The export value for fresh cod fillets was 7.3 billion ISK and for fresh haddock fillets over 2.0 billion ISK.

In 2004, about 28,000 mt of cod were used for fresh fillet processing, which represented an increase of over 7,000 mt for this processing sector compared to the previous year. Fresh fillet processing of haddock increased in line with the total catch and amounted to 11,000 mt in 2004, based on catch weight.

In 2004, the total production of fresh groundfish fillets and fresh flatfish fillets was close to 19,700 mt (product weight). On a weekly basis this corresponds to about 380 mt on average, worth over ISK 220 million (FOB) in exports per week.

Fresh fillet processors can be divided into two main groups according to their source of raw material. The first group includes the “pioneers”, i.e. the companies that started processing fresh fillets 15-25 years ago, all located close to Keflavik International Airport. The second group consists of vertically integrated companies in all parts of the country, buying raw material from their own vessels and also processing large quantities of frozen products. Integrated companies usually have an advantage as regards raw material prices.

The concentration of fresh fillet plants in the Southwest has led to massive road transport of raw material from the auction markets, which operate mostly in the Southwest, West and Northwest Iceland.

Fresh fillet production has become quite constant throughout the year and almost independent of monthly landings of groundfish species.

The average export price (FOB) for fresh cod fillets (including portions) was ISK 643/kg in 2004, while the price for frozen cod fillets was 400 ISK/kg. The average price for fresh haddock fillets was 515 ISK/kg but for frozen haddock fillets it was ISK 379/kg.

Packaging costs for fresh fillets (polystyrene boxes and ice mats) is 20-40 ISK/kg depending on the size of the pack, while for frozen fillets the packaging cost is closer

to 8-16 ISK/kg (plastic bags and outer boxes or plastic envelopes, inner cartons and outer boxes).

It is estimated that over 90% of fresh fillet export is by air, and the rest by sea directly to the market. Airfreight cost is 1.20-1.30 EUR/kg, but sea freight cost is close to 0.45 EUR/kg.

One of the main reasons for the positive developments of the Icelandic fresh fillet industry is the fact that all sales have been concluded in communication with customers before the time of processing and export.

Some of the fresh fillet processors have direct contact with the market and are involved in day-to-day sales, but others work through one of the large-scale exporters.

1.2 THE MARKET

The chief market for fresh fillets is the European Union, most notably in the UK, France/Belgium and Germany. This is also the market showing the most rapid growth. The other market of importance is the US market, but it appears more limited and shows less growth.

Almost 90% of fresh cod fillet exports are sold on the EU market, chiefly in the UK, France and Belgium. The largest market for fresh haddock fillets (61%) is in the United States, followed by the UK.

The EU market for fresh redfish fillets is primarily in France and Germany and for fresh saithe fillets in France.

The modern chilled food market for highly perishable goods is driven by a variety of forces that mostly originate in increased consumer affluence and lifestyle changes, on the one hand, and in advances in food technology and logistics, on the other hand.

The image for chilled food is that it is inherently healthier and “fresher” than other foods, more natural and less processed. None of this stands to reason when looking at the attributes for many fresh foods vs. frozen food, including seafood, but the image is that of fresh and healthy - and image is among the chief factors to be considered in a sophisticated market.

The influence of farmed fish products on the chilled market is significant and it seems that in many ways the chilled seafood market has been driven by farmed fish, especially farmed Atlantic salmon.

US statistics show that imports of fresh Atlantic cod and haddock fillets are chiefly from Iceland, with only a small proportion from Canada and insignificant volumes from Norway.

Regular supply of fresh fillets will be the most important factor for business as the market for value-added products grows and in line with regular supply of farmed fish. Supply chain management will be the key to business; large customers will do no business otherwise.

2. OVERVIEW FOR PRODUCTION AND EXPORTS

2.1 AN INDUSTRY DEVELOPS

Processing of fresh fillets in Iceland for export to the markets of Europe and North America started in the 1980s but did not develop into a regular industry until after 1990 and was maintained for a number of years after that by a group of specialised processors in the south-western area of Iceland, close to Keflavik airport. The industry has now matured into a stable and market oriented industry and is the only industry sector that has shown continuous growth in the past decade in terms of groundfish disposition and export revenue.

The success of the fresh fillet industry has been driven by changes in the marketplace that accepts fresh products at a premium price and by changes in logistics that have made fresh fillet export possible at prime quality. But success has also been driven by changes in the processing industry that has grown to understand the value of regular deliveries. In short, the fresh fillet industry is based on the concept of value addition, in which processors, transporters and the marketplace have all had a share.

The following report will highlight the development of the Icelandic fresh fillet industry, its structure and characteristics, with brief discussion of the driving forces in the markets and recent trends favouring fresh products.

2.2 WHAT IS FRESH?

In the United Kingdom, the market for fresh fillets is part of the chilled seafood market, which is well developed and large and in a state of rapid diversification and growth, as will be shown later. Exports from Iceland for this market may be divided into the following main product categories.

1. Fresh fillet products - processed in Iceland from fresh landed catch and exported by air (or sea) to the UK. The fillets are mostly used in fresh prepared retail products.
2. Wetfish, i.e. whole fish (head-on) - gutted or ungutted, exported by sea in container loads. The fish is processed in the Humberside area of the UK into fillets and is marketed as fresh fillet products, including prepared retail products.
3. Frozen-at-sea fillets - exported by sea in container loads, defrosted and used in chilled products, usually in coated products or recipe dishes.

The first product category is of chief interest for this report, but wetfish must be considered also, because wetfish exports from Iceland compete to some extent with fresh fillet export for the same market. The customers for wetfish are typically a number of traditional filleters and packers, while fresh fillet buyers are large-scale processors that prepare pre-packaged products for the retail chains. The use of frozen-at-sea fillets for the chilled market is of great interest but discussion of this is considered outside the scope of the report.

In the United Kingdom, it is customary to talk of the market for fresh and defrosted products as the **chilled** market but in the United States, the term **fresh** is used exclusively and the term chilled is still unfamiliar. The word fresh is applied to seafood products that have never been frozen, but also to products that have been defrosted and are sold as such.

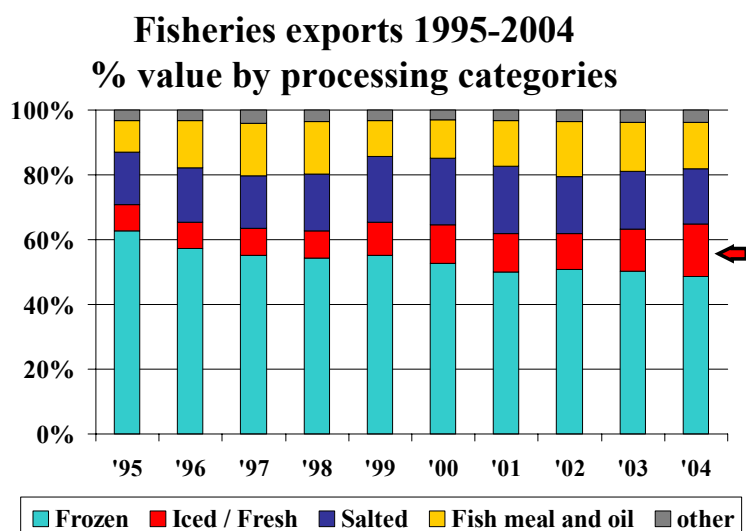
In Germany, France and other countries of western Europe there is no term reserved for products that have been previously frozen, but a variety of previously frozen products or products from frozen raw materials are sold in the unfrozen state, especially in France. Surimi products are examples.

2.3 TOTAL FISHERIES EXPORT OVERVIEW

The overall value of Icelandic fisheries exports has increased significantly in the past decade but changes in the relative importance of the different processing sectors are even more noticeable. They are shown in the next figure and can be summarised as follows:

Frozen products now weigh less in exports than ten years ago. In 2004, they were just under 50% of export value, but ten years earlier they were over 63%. The decrease has been fairly continuous, but it is also evident that it has been compensated for by an increase in production of fresh and iced products, i.e. fresh fillets and whole iced fish. The proportion of fresh and iced products in export value was 16% in 2004 but 8% in 1995.

Exports of salted products, chiefly salted groundfish, have been slightly variable in this period, but close to 17% of export value at the beginning and end of this period. Overall, these three major processing sectors have generated close to or above 80% of Iceland's seafood exports in recent years. Finally, the fishmeal industry supplies 10-15% of export value and other sectors (drying and canning) 3-4%.



Source: Statistical Bureau of Iceland

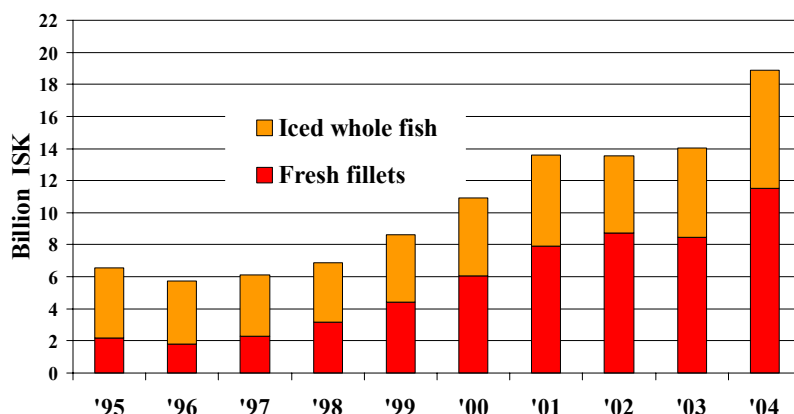
2.4 EXPORTS OF FRESH FILLET PRODUCTS VS. ICED WHOLE FISH

Export of wetfish has a long tradition in Iceland, especially for the markets of Hull, Grimsby, Bremerhaven and Cuxhaven. Around 1990, close to 100,000 mt of groundfish were exported whole, but this practice has decreased significantly since then, with about 25,000 mt exported per year in recent years. In 2003-4, there was an upsurge of wetfish exports with over 45,000 mt exported in 2004. The wetfish markets in UK and Germany remain strong for cod and redfish, but the primary processing capacity in Europe is expected to become more limited, which may benefit fresh fillet processing at source in Iceland. (Own conclusion, based on communication with industry experts).

Wetfish does not only compete partially for the same market as fresh fillets, but is also seen by many of the fresh fillet processors as raw material not made available for them to buy at auction markets. Vessel owners are free to land their catch in the way that suits them and they find most profitable, whether it is for land-based processing in Iceland, on the auction markets in Iceland, or into containers for sales abroad.

The following graph for groundfish and flatfish shows the developments in the past 10 years for exports of wetfish and fresh fillets. The increase in value over the years is mostly due to the positive trend for fresh fillets, which surpassed wetfish in overall export value in 1999. In 2004, the export value for fresh groundfish and flatfish fillets was 11.5 billion ISK while wetfish exports amounted to 7.4 billion ISK.

Export value of fresh fillets and iced whole groundfish and flatfish 1995-2004
FOB values at each year's prices



Source: Statistical Bureau of Iceland.

The following table shows the quantity and value of fresh fillet exports and wetfish exports in 2004 by main product groups.

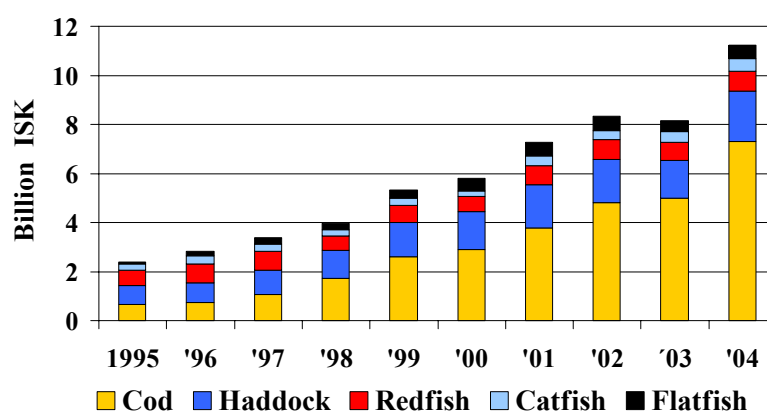
TABLE I. Iced and fresh products export value in 2004, by main product groups – groundfish and flatfish products

Iced/fresh products	Volume in mt of products	Value in million ISK
Fresh cod fillets and portions	11,300	7,300
Iced whole cod (1)	9,100	1,900
Fresh haddock fillets	4,000	2,060
Iced whole haddock (1)	15,800	1,900
Fresh redfish fillets	1,900	780
Iced whole redfish (2)	12,300	1,240
Fresh ocean catfish fillets	900	540
Iced whole ocean catfish (1)	4,600	600
Other fresh groundfish fillets	900	400
Other iced whole groundfish (1)	5,000	700
Fresh flatfish fillets (mostly plaice)	700	440
Iced whole flatfish (1)	3,900	1,100
Total iced/fresh products	70,400	18,960
Of which total fresh products	19,700	11,520
Of which total iced products	50,700	7,440

Source: Stat. Bureau of Iceland. All values are FOB prices,
Key to table: (1) Gutted fish, head-on, (2) Ungutted fish, head-on

2.5 EXPORT TRENDS FOR FRESH FILLETS

Export value of major fresh groundfish and flatfish fillets 1995-2004



Source: Statistical Bureau of Iceland.

The above figure shows the rapid increase in value of fresh fillet export in the past 10 years for the main groundfish species and flatfish. The most significant development is shown for cod fillets, where there has been a tenfold increase in this period. Exports of haddock fillets have almost tripled in value, and exports of flatfish fillets have

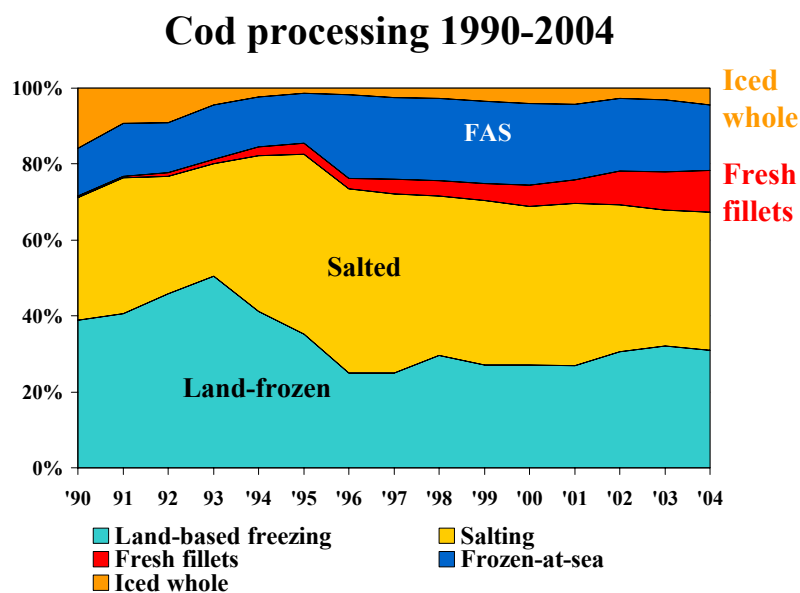
grown fivefold, while exports of redfish fillets and catfish fillets have increased only slowly.

3. FRESH FILLET PROCESSING

3.1 COD PROCESSING

Cod is the chief raw material for fresh fillet processing. The following figure shows the development for cod processing in the period 1990-2004. The total catch declined annually in the early 1990s, increased again in the late 1990s but has been stable in the past few years at 206-225,000 mt. The processing sectors have shown quite variable performance in this period. The largest processing sectors of land-based freezing and salting presently use 67% of landed catch and are relatively stable.

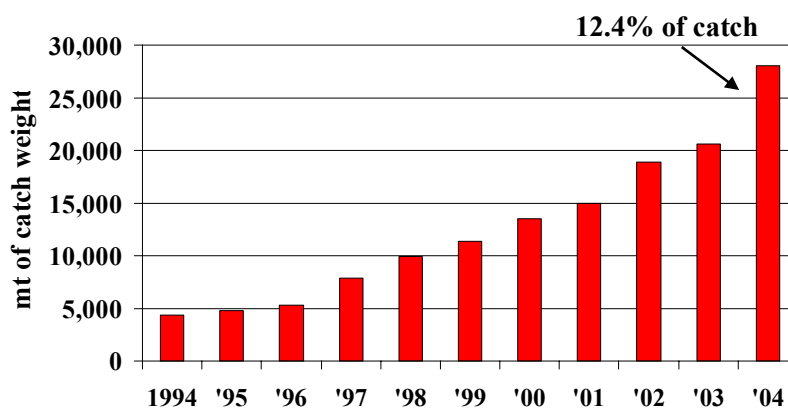
The fresh fillet industry has become significant in cod disposition, receiving over 12% of landed cod in 2004. The frozen-at-sea industry, on the other hand, has shown decline in the past few years and in 2004 utilised 17% of the cod catch. Export of iced whole cod seems to be gaining ground again after a significant decline in the early 1990s. In 2004, over 4% of the cod catch was exported as whole fish.



Looking more closely at the disposition of cod for fresh fillet processing, it is shown in the following figure how the quantity of landed cod used for fresh fillet processing has increased every year in the past decade. The increase was 2-3,000 mt in most years, slowed down in 2003 (when the total cod catch decreased by 6,000 mt) but increased significantly in 2004, when the raw material for fresh fillet processing increased by over 7,000 mt, and the total cod catch by 18,000 mt. In 2004, about 28,000 mt of cod were used for fresh fillet processing. Last year's increase in fresh cod fillet processing was most likely due to a combination of factors, including the

increase in landed catch, growth of the market and increased transport capacity from Iceland.

Disposition of the cod catch for fresh fillet processing 1994-2004



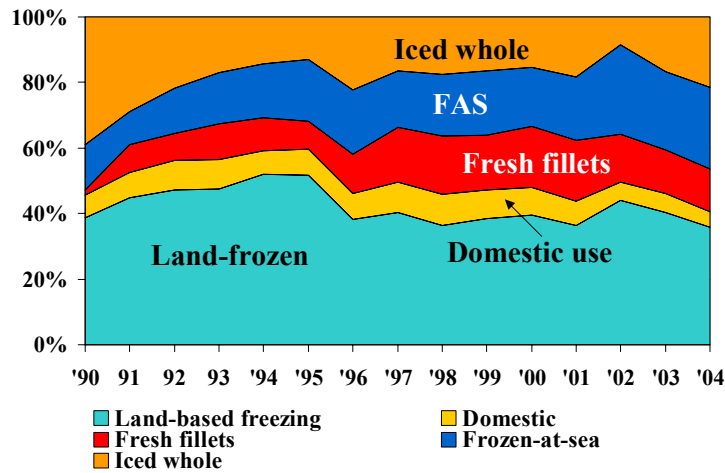
Source: Fisheries Directorate and Statistical Bureau of Iceland

3.2 HADDOCK PROCESSING

The next figure shows the developments in processing of haddock in the period 1990-2004. Haddock is the second most valuable resource for fresh fillet processing, but clearly shows great fluctuations in catch disposition, which is to be expected in view of very variable total landings. In the past two years the Icelandic haddock catch increased from 50,000 mt in 2002 to 84,000 mt in 2004. As shown in the figure, the development of fresh fillet processing is significant in the 15-year period but has remained close to 13% in the past two years. Land-based freezing has declined in proportion and was close to 36% in 2004, while FAS processing has been stable at 25% in recent years. The most significant trend in the past two years is an increase in wetfish export, which in 2004 amounted to over 21% of the catch. Finally, there has been a decline in the use of haddock for domestic consumption, which is presently close to 5% of the catch.

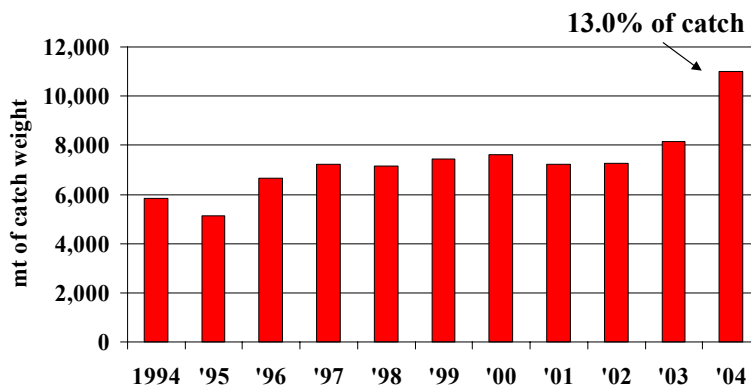
The second figure shows more closely the disposition of haddock for fresh fillet processing. The quantity has increased year by year with only a few exceptions when the total catch decreased too. In 2003 and 2004, fresh fillet processing increased in line with the total catch and amounted to 8,000 mt in 2003 and 11,000 mt in 2004, based on catch weight.

Haddock processing 1990-2004



Source: Fisheries Directorate

Disposition of haddock catch for fresh fillet processing 1994-2004



Source: Fisheries Directorate

3.3 PROCESSORS

Fresh fillet processors can be divided into two main groups according to their source of raw material. The first group includes the “pioneers”, i.e. the companies that started processing fresh fillets 15-25 years ago and are well established in the industry. All of them are located close to Keflavik International Airport, either in Reykjanes or Reykjavik and all developed their business by buying fish at the auction markets and specializing in one or a few groundfish species. These companies were not quota holders (or at least had only insignificant quotas), and thus did not have access to raw material from their own boats. This group includes the following large and medium-scale processing companies:

Tros, Nyfiskur, Flugfiskur, Fiskval, K&G Fish processing, Thorsteinn, Selhofdi near Keflavik

Toppfiskur, Hafgaedi, Saetoppur, Saefold, Hamrafell in Reykjavik or nearby.

The largest of the above companies process close to 20 mt of finished products per week, while most produce 5-10 mt per week.

The second group of producers arrived a little later on the scene of fresh fillet processors, most of them in the past five years. They are all vertically integrated companies, buying raw material from their own vessels and only rarely at auctions. They also produce large quantities of frozen products, including typical by-products from fresh fish processing (fillet pieces, mince). Most often the processing lines for fresh and frozen products are operated simultaneously.

The largest processors in this group are:

In the Southwest:

HB Grandi in Reykjavik and Akranes, **Thorbjörn Fiskanes** in Grindavik

In the North:

Brim in Akureyri, **Samherji** in Dalvik, **Visir** in Husavik, **Fiskidjan** Sauðarkrokur,

In the West and Northwest:

Hraðfrystihus Hellissands in Hellissandur, **Gunnvör** in Isafjörður, **Islandssaga** in Sugandafjörður, **Oddi** in Patreksfjörður,

In the East:

Sildarvinnslan in Neskaupstaður, **Tangi** in Vopnafjörður (recently became part of HB Grandi), **Eskja** in Eskifjörður, **Lodnuvinnslan** in Faskrudsfjörður.

The largest of these processors, such as HB Grandi and Brim, produce 30-50 mt of finished products per week, while many others in this group process 10-20 mt weekly, and a few closer to 5 mt per week.

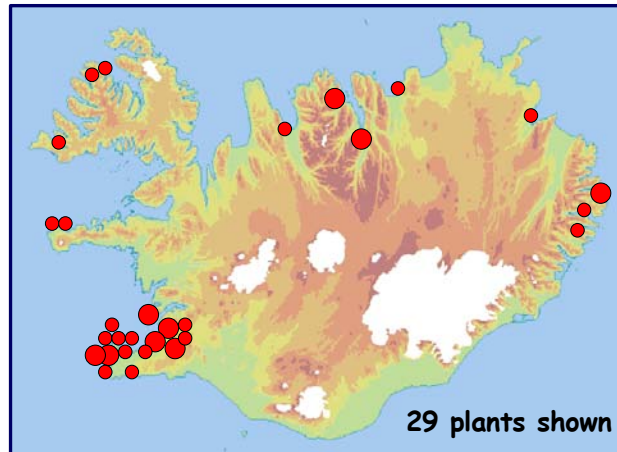
Three more fresh fillet processors represent a group that has considerable own supply but also buys large quantities of fish at the markets. They are: **Nesfiskur** in Gardur (Southwest), **Islandssaga** in Sugandafjörður (Northwest) and **Sjavaridjan** in Snaefellsnes (West).

The above list of producers is not complete in the sense that there are a number of smaller-scale producers. They either produce small volumes in a regular manner or are larger companies that occasionally turn to fresh fillet production.

In 2004, the total production of fresh groundfish fillets and fresh flatfish fillets was close to 19,700 mt (product weight) as indicated in Table I. On a weekly basis this corresponds to 370-380 mt on average, worth close to ISK 220 million (FOB) in exports per week.

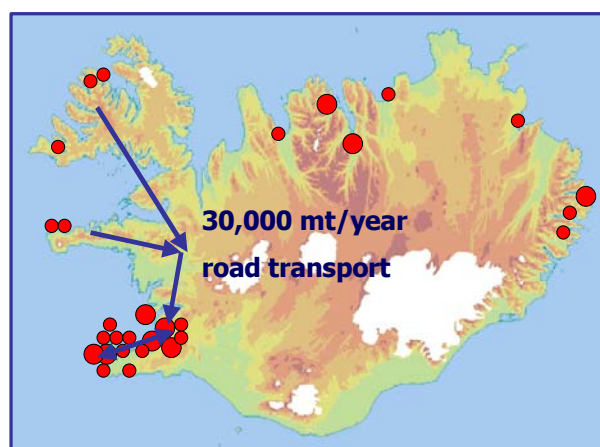
The following map shows the distribution of fresh fillet plants and underlines that fresh processing is still the most significant in the Southwest area, close to Keflavik airport, although it is now common in most parts of the country. A notable exception is the Westman Islands where there is no significant fresh fillet processing. On the other hand, the Westman Islands continue to be the largest landing port for fish that is shipped as whole fish in containers to the Humberside area and Bremerhaven.

Fresh fish fillets processing plants 2004



The concentration of fresh fillet plants in the Southwest has brought about massive road transport of raw material from the auction markets, which operate mostly in the Southwest, West and Northwest Iceland. It has been estimated that up to 30,000 mt of fish, or one third of the auction volume, is trucked to the Southwest every year and in addition about 5,000 mt of fresh fillet products are probably trucked from the West, North and East country to Keflavik. (Industry sources and own deduction for 2003).

Transport of raw material



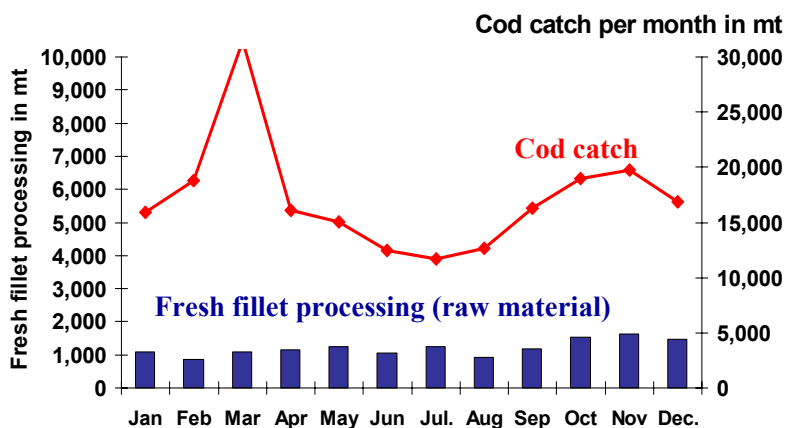
3.4 STABILITY IN PROCESSING

The fish industry of the past had a tendency for variable and seasonal supply to the market that was often out of phase with market needs. Landings from most Icelandic groundfish stocks still vary, but have gradually become more even throughout the year, and the summer fishing of cod and haddock has decreased significantly under the present management regime. At the same time, the requirement for supply chain management has made extra demand on steady deliveries. Freezing plants cannot fall short on deliveries nor can they afford to keep a large stock, but fresh fillet producers have to deliver the contracted volumes on time every day. This requires not only the availability of raw material but also efficient transport to market and daily communication with the market.

The following two figures for cod and haddock show that the fresh fillet industry has recognised the need for supply chain management and that production has become quite constant throughout the year and almost independent of monthly landings. This is in contrast to the salting and freezing industry that still show seasonality, but have the option of keeping products in stock.

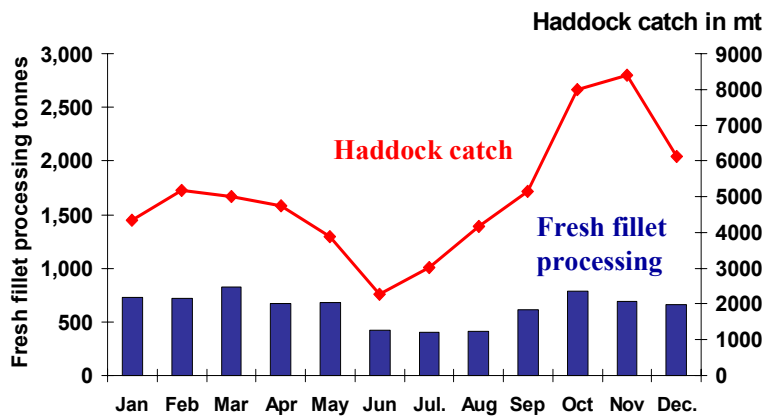
The first figure for cod shows that landings (red line) culminate in the winter season in February/March but fall to low levels in June/August and again increase in the autumn. The monthly landings in 2003 varied from 31,000 mt in March to 11,000 mt in July. Fresh fillet processing (blue columns), on the other hand, varied only from 1,000 mt in August to 1,600 mt in November, based on raw material weight. There is no discernible peak in fresh fillet processing when the landings culminate. On the contrary, fresh fillet processing remains steady and other processing sectors, such as salting and freezing, reach peak activity in the traditional winter season.

Processing of fresh cod fillets 2003



Haddock landings show fluctuations month by month, with a low point in the summer months and a significant high point in late autumn. The monthly landings varied from 2,000 mt in June to 8,000 mt in November. Fresh fillet processing shows a distinct low-point in June/August (400 mt) but is otherwise stable at 700-800 mt per month.

Processing of fresh haddock fillets 2003



Similar considerations apply for the landings and processing of saithe and redfish, but fresh fillet processing is relatively low-scale for these species.

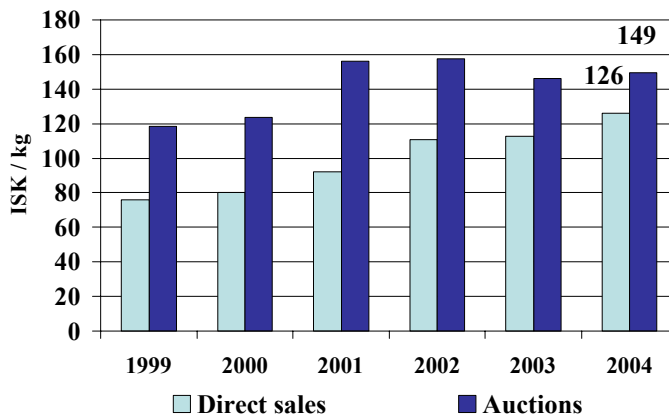
As regards wetfish exports for cod and haddock, it can be concluded from statistics (not shown) that they are more variable on a monthly basis, but do not necessarily reach a low point in summer.

3.5 RAW MATERIAL PRICES

As described earlier, many of the fresh fillet processors buy raw material at auctions, usually fish landed just one to three days after catch. Others buy raw material from their own vessels, either boats landing daily or trawlers landing weekly. This latter group of integrated companies have usually had an advantage as regards raw material prices, which partly explains their rapid growth in fresh fillet processing.

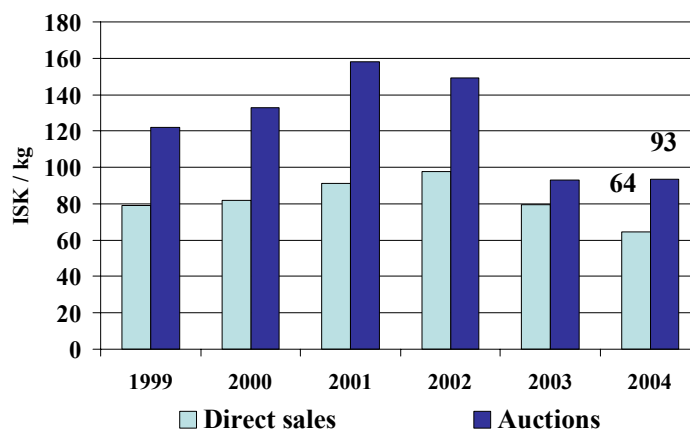
The following figure shows this difference in pricing for cod and haddock in the period 1999-2004. The prices at the auction markets have been much higher throughout this period but it also appears that the prices in direct sales have been approaching auction market prices for some years. In 2004, the price advantage in direct sales of cod averaged 23 ISK/kg and for haddock 29 ISK/kg. Raw material prices for cod in direct sales have been rising in this period but prices for haddock in direct sales have fallen significantly in the past two years, due to increased landings and better catchability. Raw material prices are a decisive factor in overall processing performance as will be shown.

Raw material prices for cod 1999-2004
average price each year- kr/kg catch weight



Sources: Directorate of Fisheries and Fresh Fish Prices Directorate

Raw material prices for haddock 1999-2004
average price each year- kr/kg catch weight



Sources: Directorate of Fisheries and Fresh Fish Prices Directorate

3.6 EXPORT PRICES AND RAW MATERIAL COSTS

The following tables shows how raw material prices affect processing performance for vertically integrated companies on the one hand, and plants buying raw material at auctions on the other hand, but it also shows the price advantage for fresh fillets vs. frozen fillets. It should be noted, however, that export statistics do not differentiate between fillets and fillet portions. Cod portions are the most valuable of exports, and their share in the fresh fillet category may be quite different from their share of frozen fillets, and thus make direct comparison inaccurate..

The following table for cod shows that in 2004 the average export price for fresh fillets was 643 ISK /kg and that, when producing fresh fillets, the processing plants in integrated companies had just over 300 ISK/kg left for processing costs, such as

labour, packaging, electricity, transport to the airport and overheads. On the other hand, the plants buying at auctions had 240 ISK/kg left towards processing costs after paying for the raw material. The cost of airfreight need not be taken into considerations, since prices in the table are FOB prices.

Overall, the prices for frozen cod fillets (land-based freezing) were 400 ISK/kg in 2004, but assuming the same raw material cost as before, it is shown that only 60 ISK/kg remained for processing cost in integrated companies and that raw material prices at auctions were the same as the price for finished products.

TABLE II. Export prices and raw material costs for fresh cod fillets and frozen cod fillets in 2004

	Direct sales	Auctions
	ISK/kg	ISK/kg
Raw material		
Raw material price	126	149
Raw material calculated to 37% fillet yield	340	403
Fresh fillet processing		
FOB price	643	643
Raw material cost	340	403
Difference	303	240
Frozen fillet processing		
FOB price	400	400
Raw material cost	340	403
Difference	60	- 3

Sources: Fresh Fish Prices Directorate and www.sf.is

The next table for haddock shows that in 2004 the average export price for fresh fillets was 515 ISK/kg and that, when producing fresh fillets, the processing plants in integrated companies had about 320 ISK/kg left for processing costs. The plants buying at auctions had 230 ISK/kg left towards processing costs after paying for the raw material.

Overall, the prices for frozen haddock fillets (land-based freezing) were 379 ISK/kg in 2004, but assuming the same raw material costs as before, 185 ISK/kg remained for processing costs in integrated companies but just under 100 ISK/kg in those buying haddock at auctions.

The different packaging costs need to be considered in this context. The packaging costs for fresh fillets (polystyrene boxes and ice mats) is 20-40 ISK/kg depending on the size of the pack, while for frozen fillets the packaging costs are closer to 8-16 ISK/kg (inner cartons and outer boxes, or plastic bags and outer boxes). (Source: Industry information)

Although these figures are subject to some uncertainty, they show clearly the advantage in performance for integrated companies and also the price advantage for fresh fillets as compared to frozen products.

TABLE III. Export prices and raw material costs for fresh haddock fillets and frozen haddock fillets in 2004

	Direct sales	Auctions
	ISK/kg	ISK/kg
Raw material		
Raw material price	64	93
Raw material calculated to 33% fillet yield	194	282
Fresh fillet processing		
FOB price	515	515
Raw material cost	194	282
Difference	321	233
Frozen fillet processing		
FOB price	379	379
Raw material cost	194	282
Difference	185	97

Sources: Fresh Fish Prices Directorate and www.sf.is

4. FRESH FILLET TRANSPORT

4.1 FREIGHT SERVICES

The fresh fillet industry developed in line with freight capacity on board passenger planes and for many years seemed to be held back by erratic and insufficient freight capacity. In the 1990s, Icelandair started regular freight services to central airports in Europe and the United States, notably Liege in Belgium and New York. The present schedule is as follows.

TABLE IV. Airfreighting frequency and destinations

	Flights per week
Icelandair	
Liege, Belgium	6
Humberside/East Midlands UK	4
New York	5
Passenger flights	Many daily
Bluebird Cargo	
Edinburgh	5
Cologne	6

Most of the fresh fillet export is air freighted. Generally speaking, the freight planes carry 20 mt per flight (or more) while the passenger planes carry in the order of 5 mt of fresh fillets (gross weight). It is estimated that over 90% of fresh fillet export is by air, and the rest by sea directly to the market.

Transport of fresh fillets by sea is hampered by voyage time, which is critical because of the perishable nature of the product, and by low voyage frequency, but experimental transport by sea has shown that quality can be maintained well enough for sales on the UK and West Europe markets. It is estimated that less than 40 mt per week are exported by sea, but it is also clear that this mode of transport is likely to increase, due to savings on transport costs, that will be shown later.

There are three shipping lines in operation in Iceland: Eimskip sails twice weekly (Wed/Thurs) from Reykjavik, Samskip sails twice weekly (Thurs/Fri) from Reykjavik and Smyril Line sails once a week (Wed) from Seydisfjordur in the East. The voyage takes three days to the first port in the UK or mainland Europe.

4.2 PACKAGING AND FREIGHT COSTS

Fresh fillet export incurs substantial costs, especially as regards packaging and airfreight. It can be postulated that this has somewhat held back the development of the market, since fresh fillets and fillet portions are among the most expensive items on the chilled market. The following table summarises the transport and packaging cost. The transport cost is based on gross weight (including packaging) but packaging cost refers to product weight, and varies considerably according to unit weight per pack. The processor pays for packaging, road transport in Iceland and usually airfreight but the customer for airport services and road transport in the market country. When the product is transported by sea, it is usually sold under CIF terms.

The table indicates that cost savings of 80 Eurocents can be made by sea transport and it is likely that packaging costs can also be cut by this form of transport, although that needs to be explored experimentally.

TABLE V. Cost of packaging and transport for fresh fillets (early 2005)

	Cost EUR / kg	Equal to ISK / kg
Road transport in Iceland	0.15-0.20	12-16
Airfreight	1.20-1.30	96-104
Packaging for air freight	0.25-0.50	20-40
Sea freight	0.45	36
Packaging for sea-freight	<0.25-0.50	<20-40

Sources: Industry information

5. SALES AND MARKETS

5.1 ORGANIZATION OF SALES

One of the main reasons for the positive developments of the Icelandic fresh fillet industry is the fact that all sales have been concluded in communication with customers before the time of processing and export. In view of the perishable nature of the product this is of the highest importance and has without doubt prevented an imbalance of supply and demand on numerous occasions. The industry is therefore a good example of a market driven production industry.

Co-ordination of processing and sales can only be achieved in co-operation with transport companies. All the indications are that transport companies will be called to answer to the need of the market by increasing the frequency and speed of operations. They need to be an inherent part of the supply chain management for the fresh fillet markets.

Some of the fresh fillet processors have direct contact with the market and are involved in day-to-day sales, but others work through one of the four large-scale exporters – **Tros, Danica, Ferskfiskur** and **Saemark**. Many of the larger processors use both channels for sales.

Tros in Sandgerdi near Keflavik Airport was established in 1977 and is owned by the SIF Group. The company is also a major processor, buying raw material at auction markets. Exports by Tros average 70-80 mt per week, all by air.

Danica in Reykjavik is privately owned and does not have its own processing plant. Exports by this company are 60-70 mt per week.

Ferskfiskur in Hafnarfjordur and Saemark in Reykjavik are privately owned, do not have own processing facilities and export 20-30 mt per week.

In this context it may be mentioned that at least one large-scale customer for fresh fillets employs personnel in Iceland for co-ordinating his supply.

5.2 FRESH FILLET MARKETS

The chief market for fresh fillets is the European Union, most notably in the UK, France, Belgium and Germany. This is also the market showing the most rapid growth. The other market of importance is the US market, but it appears much more limited and shows less growth.

The following table shows the market split, i.e. the proportional value of exports to the EU and US in 2004, and the figures for 2003 for comparison.

Almost 90% of fresh cod fillet exports are sold on the EU market, chiefly in the UK, France and Belgium.

At first sight the US market for cod fillets seems to be decreasing but it should be noted that the total value of fresh cod fillet exports increased from 5,000 million ISK in 2003 to 7,300 million ISK in 2004. This indicates that sales of fresh cod fillets to the US market in fact increased from about 700 million ISK in 2003 to 800 million ISK in 2004. (FOB prices), although the share of exports to the US fell somewhat.

The largest market for fresh haddock fillets is in the United States. The export value to all markets was 1,500 million ISK in 2003 and almost 2,100 million ISK in 2004. The share of the US market for haddock is 61-62% and therefore exports to this market increased from 950 million ISK in 2003 to over 1,250 million ISK in 2004 (FOB prices) and the EU market grew from 570 million ISK in 2003 to 800 million ISK in 2004.

TABLE VI. Fresh fillet exports - market split for major species in 2003 and 2004 by value.

	EU 2003 %	US 2003 %	EU 2004 %	US 2004 %
Cod	86	14	89	11
Haddock	38	62	39	61
Redfish	94	6	94	6
Saithe	94	6	98	2
Catfish	100	0	100	0
Plaice	100	0	100	0

Source: Statistical Bureau of Iceland

The 2004 EU market split for fresh fillet exports is shown in the following table. The UK market and the French market are the most significant for fresh fillet exports. Statistics also show high exports to Belgium, but it is known that large volumes are transported by road from Liege Airport to France and to some extent to Germany also. The statistics for France and Belgium have therefore been combined. The market growth in 2004 occurred chiefly in France/Belgium. Fresh cod fillet exports to these countries were 42% of total exports in 2004, but 37% in 2003. This represents an increase of over 1,100 million ISK in exports taking into account the large increase in fresh cod fillet exports in 2004 mentioned above. Exports to the UK decreased as a proportion of total exports, but increased in value by 900 million ISK in 2004.

The EU market for fresh haddock fillets is the UK, with only very small volumes sold elsewhere. This market is expanding as indicated before.

The EU market for fresh redfish fillets is primarily in France/Belgium and Germany. Total exports increased from 730 million ISK in 2003 to 780 million ISK in 2004 through growth of all these markets. Similarly, the smaller exports for fresh saithe fillets increased from 52 million ISK in 2003 to 63 million ISK in 2004, with the markets of France/Belgium increasing their share up to 70% of exported value.

Figures for fresh catfish fillets and fresh plaice fillets are not as reliable as for the above species, but the indications are that the catfish market may have expanded from ca 440 million ISK in 2003 to 540 million ISK in 2004, with the UK and France/Belgium being the main importing countries. The market for plaice may have

grown from 460 million ISK in 2003 to 530 million ISK in 2004, with UK importing over 90% of the value.

TABLE VII. Fresh fillet exports - EU market split for major species in 2004 by export value. 2003 figures are shown in brackets.

	UK %	France Belgium %	Germany %	Other %
Cod	52 (58)	42 (37)	1 (1)	5 (4)
Haddock	99 (100)	1 (0)		
Redfish	1 (1)	52 (57)	28 (33)	19 (9)
Saithe	10 (11)	70 (45)	12 (8)	8 (36)
Catfish*	(57)	(35)	(2)	(6)
Plaice*	(94)			(6)

Source: Statistical Bureau of Iceland,
2003 figures only were calculated for catfish and plaice

Information on the size of markets for fresh fillets and market character in different countries is not readily available and often fragmented. This is probably mostly due to the fact that fresh fillets are used in a variety of final products, some for the retail market and others in foodservice operations, and as a result fresh fillets are not viewed as a separate market segment, but rather make their appearance in a number of segments, such as natural fish, convenience products, ready-to-eat products and specialty products, to name a few examples from the UK market.

The following brief discussion is intended to describe the driving forces perceived to be at work for chilled seafood products in general, chiefly with reference to the UK market.

5.3 THOUGHTS ON THE DRIVING FORCES IN THE CHILLED MARKET

The modern chilled food market for highly perishable goods is driven by a variety of forces that mostly originate in increased consumer affluence and lifestyle changes together with advances in food technology and logistics.

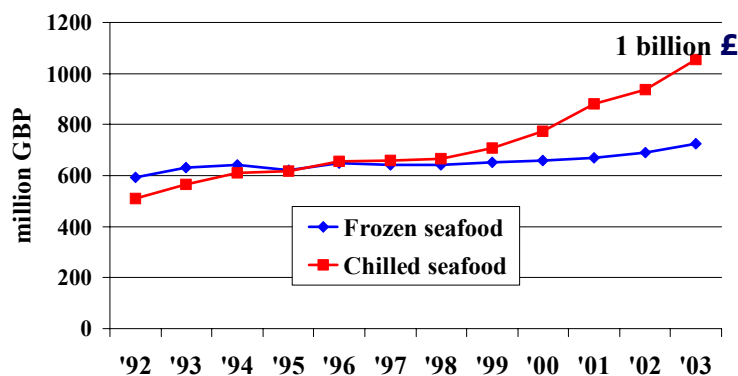
Increased affluence of the consumer means that his food habits are not only ruled by the need for sustenance, but also by the quest for variety, convenience, healthy eating (real or perceived) and many other factors that indicate the growing sophistication of a large section of the consumer market.

The chilled market answers to that need in many ways, and better, it seems, than the frozen food market. The image for chilled food is that it is inherently healthier and “fresher” than other foods, more natural and less processed. None of this stands to reason when looking at the attributes for many fresh foods vs. frozen food, including seafood but the image is that of fresh and healthy - and image is among the chief factors to be considered in a sophisticated market. The fact is that fresh food and food preparations are showing growth in many of the western fish markets, but especially in the retail markets that are supported by advanced food technology and supply chain management. The best-documented example is the UK.

The retailers on their part are allocating more space for chilled food selection and have developed a great variety of pack sizes and presentations.

The following figure shows the development for UK retail sales of seafood in the past 12 years and underlines the growth in the chilled seafood market, especially in the past 4-5 years. In 2003, chilled seafood sales exceeded the GBP one billion mark for the first time, while frozen seafood sales were GBP 750 million. The volume of sales, on the other hand, is very similar for the two sectors - about 140,000 mt in each, indicating that chilled seafood is sold at a considerably higher price (pr kg) than frozen products. For the processor this does not necessarily mean a better performance since raw material cost and processing cost are not taken into account and are most likely somewhat higher in general for the chilled category.

UK retail sales of seafood since 1992 Value in GBP million



Source: Young's Bluecrest Ltd. Original ref: TNS/SFA

The influence of farmed fish products on the chilled market makes an interesting study and it seems that in many ways the chilled seafood market has been driven by farmed fish, especially farmed Atlantic salmon. It has been documented that close to 75% of the 1,2 million mt salmon supply in 2003 was marketed fresh, either as whole fish, fish steaks, fresh fillets or portions. In the UK, sales of chilled salmon products amounted to GBP 200 million in 2003, or close to 20% of the total chilled seafood market, having increased by 6% in the year. (Sources: Young's Bluecrest Ltd and industry information collected worldwide for the Groundfish Forum).

It is tempting to conclude that the availability of salmon worldwide, and possibly trout, tilapia and catfish in selected markets, is driving the fresh markets and certainly this seems to be the case for fresh fish imports to the US market.

In 2003, United States fresh fish imports amounted to about 250,000 mt, primarily farmed Atlantic salmon (170,000 mt), farmed tilapia (18,000 mt) and crabmeat (36,000 mt), but also 27,500 mt of groundfish. The last category, which is only about 11% of the imports, includes a wide selection of products from capture fisheries, including cod, haddock, redfish and various flatfish of North Atlantic origin. This

market may be increasing slowly as indicated in the previous section but research of import data shows that imports of fresh Atlantic cod and haddock fillets are chiefly from Iceland, with only a small proportion from Canada and insignificant volumes from Norway. (Source: www.nmfs.noaa.gov)

5.4 CONCLUDING REMARKS ON THE FRESH FILLET MARKETS

- The market for fresh fillets is driven by an increasing interest in healthy and fresh food. Market demand for fresh fillets and portions is therefore likely to increase, especially if prices become more competitive. This is expected to apply to the retail markets of most West European countries.
- Transport by sea is the logical way to bring cost down, provided that frequency, speed and refrigeration is taken into consideration.
- Export of fresh fillets from Iceland is likely to replace wetfish export to the UK, as primary processing capacity decreases in the Humberside area.
- Regular supply will be the most important factor for business as the market for value added products grows and in line with regular supply of farmed fish.
- Supply chain management will be the key to business; large customers will not do business otherwise.