PROJECT REPORT
12 - 00

JUNE 2000

Working Document on Fish Quality Labelling for Iceland

FAIR CT - 98 - 4174

Guðrún Ólafsdóttir
Brynhildur Benediktsdóttir
Friðrik Blomsterberg

Skýrsluágrip Rannsóknastofnunar fiskiðnaðarins
Icelandic Fisheries Laboratories Report Summary

Titill / Title	Working Document on Fish Quality Labelling for Iceland		
Höfundar / Authors	*Guðrún Ólafsdóttir, Brynhildur Benediktsdóttir og Friðrik Blomsterberg*		
Skýrsla Rf /IFL report	12	*Útgáfudagur / Date:*	June 2000
Verknr. / project no.	1416	FAIR CT98-4174	
Styrktaraðilar / funding:	*European Commission - DGXIV. FQLM*		
Ágrip á íslensku:	Skýrslan er vinnuplagg þar sem safnað er saman tölulegum upplýsingum um afla, innflutning, útflutning og framleiðslu helstu sjávarafurða á Íslandi ásamt lýsingu á framleiðslukeðju fyrir þorsk og rækju. Einnig eru þar teknar saman upplýsingar sem varða rekjanleika afurða í íslenskum fiskiðnaði. Gerð er grein fyrir gæðamerkingum á íslenskum fiskafurðum, sem aðallega byggjast á vörumerkjum. Að lokum er samantekt frá Fiskistofu um reglugerðir og eftirlit. Skýrslan er hluti af Evrópuverkefni 14 þjóða um gæðamerkingar á fiski (FQLM: Fish Quality Labelling and Monitoring; CT98-4174). Samantektir frá hverju landi voru kynntar á fundi verkefnisins í Bilbao á Spáni í maí 2000. Sambærilegum gögnum var safnað í öllum þátttökulöndunum til að skilgreina fiskiðnaðinn í hverju landi og kanna hver núverandi staða gæðamerkinga fyrir fisk er. Ljóst er að dreifikeðjan fyrir fisk er mismunandi í þátttökulöndunum og hagsmunir og þarfir aðila í keðjunni eru m.a. háðir reglugerðum og þörfum kaupenda í hverju landi. Fundargerð Bilbao fundarins verður innlegg í áframhaldandi umræðu um skilgreiningu á gæðamerkingum fyrir fisk.		
Lykilorð á íslensku:	*íslenskur fiskiðnaður, gæðamerkingar*		
Summary in English:	The report is a working document compiling figures and information about total catch, imports, exports and production of the most important seafood in Iceland. Included is a description of the distribution chain for cod and shrimp. A summary of the transaction points in the distribution chain and the type of information available at each point gives an overview of the traceability of the products. Inventory of fish quality labelling schemes for Icelandic fish products reveals that quality labels are mostly brand labels. Finally, a summary from the Directorate of Fisheries regarding regulations and surveillance is included. The report is a part of the EU project Fish Quality Labelling and Monitoring (FAIR CT98-4174) and was presented at a European plenary project meeting in Bilbao, Spain in May 2000. Similar information was collected in each of the 14 participating countries to give an overview of the fish distribution chain and the status of labelling schemes in respective countries. The distribution chain varies considerably between countries and the benefits and needs of the different parts of the chain are dependent on i.e. regulations and requirements of the relevant customers. The proceedings of the Bilbao meeting will serve as a basis for continued discussion on quality labels for fish.		
English keywords:	*Icelandic fish industry, quality labels*		

"WORKING DOCUMENT ON FISH QUALITY LABELLING FOR ICELAND"

FQLM / CT 98-4174

Bilbao, Spain, May 19-20, 2000

Guðrún Ólafsdóttir - gudrun@rfisk.is
Iceland Fisheries Laboratories,
Brynhildur Benediktsdóttir - binna@fiskifelag.is
Fisheries Association of Iceland
Friðrik Blomsterberg - fridrik@is.is
SIF / Iceland Seafood

1. NOTES ON COMPLETION OF QUESTIONNAIRE

The figures are based on national statistics from the Icelandic Bureau of Statistics. The information about the fish distribution chain has been collected by representatives of SIF the largest fish distributing chain in Iceland selling frozen marine products, salted fish and herring.

2. COUNTRY

Iceland is 103.000 km^2 and has 200 nautical miles fishing limits.

3. DEMOGRAPHIC DATA

3.1 Population size:

278.700

3.2 Average fish consumption (from national dietary data):

45kg/person/year. Figure based on data on total catch and information about exports and imports (whole ungutted fish) (see comments in Appendix I).

4. NATIONAL FISH TRADE BALANCE

4.1 Wild fish catch:

Fish type 1998 Figures – Quantity in tonnes	Tonnes of whole fish caught/year	% Caught for industrial purposes[1]	% of food fish[2] catch frozen at sea whole or headed/gutted	% of food fish catch processed at sea
Marine whitefish	499.600	-	18%*	33%*
Marine oily fish	1.096.050	89%	-	-
Freshwater fish		-	-	-
All shellfish	83.030	-	40%	41%
TOTAL	1.678.680			

*** Estimates of whole/other products – only total figure available for frozen at sea.**

4.2 Aquaculture production:

Fish type	Tonnes of whole fish produced/year
Salmon	2.778
Other marine fish	8
Freshwater fish	1.117
Shellfish	
TOTAL	3.903

[1] 'Industrial purposes' means fish meal and oil, pet food, mink and fish farm feed etc.
[2] 'Food fish' means that caught for human consumption.

4.3 Imports (including direct landings by fishing vessels of other countries):

Note on import figures: There are basically two sets of figures for fish imports in Iceland.

1. Data on imports of fresh and frozen fish/shellfish for further processing. These contain direct landings of foreign vessels and imports in containers. These are live weight figures, and collected directly from processors. They however do not contain salted or processed fish imported for further processing and re-export.

2. Data on imports from trade figures. These include all imports of fisheries products, live, fresh, frozen or processed for processing or consumption, from import reports. These figures are in actual product weight. The data on imports of fresh or frozen fish for processing are therefore also included in the general import figures in product weight and it took a lot of work and effort to exclude them. These figures also contain salted or processed fish imported for further processing and re-export, which are therefore only available in product weight, not live weight.

Fish type	**Tonnes[3] of whole or gutted/headed fish imported per year**	**% of whole or gutted/headed fish imports for industrial purposes**	**Tonnes[4] of processed food fish imported/year Product weight**	**Tonnes[4] of industrial fish products imported/year Product weight**
Marine whitefish	18.000		900*	220*
Marine oily fish	190.100	97,1%	50*	330*
Freshwater fish				
All shellfish	13.000		120*	30* 1.900**
TOTAL	221.100	83,5%		

*Estimates, **Squid for bait

Imports are mainly finfish for further processing and export:

Whitefish – Large share cod, whole/gutted, mostly sea frozen, for processing (freezing) and export.

Marine oily fish – Capelin and herring, whole(direct landings) fresh, for meal/oil production and export.

Shellfish – mainly sea frozen shrimp for processing (freezing) and export.

[3] Expressed as equivalent whole fish weight
[4] Expressed as actual weight of product

4.3.1 Details of whole or headed/gutted food finfish imports:

Fish type	% of whole or headed/gutted food finfish imports
(Chilled) Fresh	
Frozen	5% (in containers – whitefish)
Direct landings by fishing vessels of other countries	25% direct landings – fresh (mostly pelagics) 70% direct landings – frozen (mostly whitefish)

4.3.2 Details of processed food finfish imports:

Fish type	% of processed food finfish imports
Chilled	
Frozen	70%
Preserved (includes dried, salted, marinated, canned etc)	30%
Semi-processed products for further processing, including repackaging	**Not available**

Very small imports of processed food finfish to Iceland for domestic consumption. Also small amounts of tuna, sardines and other species that are not caught in Icelandic waters, frozen, canned or preserved.

Frozen – Mostly whitefish blocks/fillets for further processing and exports – estimates on domestic consumption vs. export not available, but estimated over 95% of whitefish imports re-exported.

Preserved – Mostly salted whitefish for further processing and exports - estimates on domestic consumption vs. export not available, also estimated over 95% re-exported.

4.3.3 Details of whole or headed food shellfish imports

Fish type	% of whole or headed food shellfish imports
Live	-
(Chilled) Fresh	<1%
Frozen	75% (frozen – in containers)
Direct landings by fishing vessels of other countries	25% (frozen – direct landings)

Over 90% of imports, shrimp-frozen at sea, mostly shell on – for further processing and exports.

4.3.4 Details of processed food shellfish imports:

Fish type	% of processed food shellfish imports
(Chilled) Fresh	<1%
Frozen	75%
Preserved	25%
Semi-processed products for further processing, including repackaging.	Not available

Very small imports of frozen and preserved shellfish for domestic consumption.

4.4 Exports (including direct landings by own fishing vessels in other countries):

Data on export of whole/gutted fresh fish in containers, by air and direct sales by vessels are live weight figures, and collected directly from processors/exporters. Exports of frozen whole/gutted fish are taken from trade figures and therefore in product weight which had to be calculated as live weight. Live weight figures for frozen fish are therefore only estimates at the best.

Export figures in general are taken from trade statistics in product weight. These include all exports, also whole fresh and frozen and it took a lot of work and effort to exclude them – figures given for processed food fish are therefore also only estimates at best.

Fish type	Tonnes[5] of whole or gutted/headed fish exported per year	% of whole or gutted/headed fish exports for industrial purposes	Tonnes[6] of processed food fish exported per year	Tonnes[2] of industrial fish products exported/year
Finfish	196.000	2%	361.000	324.000
Shellfish	10.000		25.000	
TOTAL				

Frozen whole/gutted - estimated

[5] Expressed as equivalent whole fish weight.
[6] Expressed as actual weight of product.

Further details of these exports are as follows: In 1998 marine products from Iceland were 718.200 tonnes (product weight) and the export value was, 1.427 Million USD.

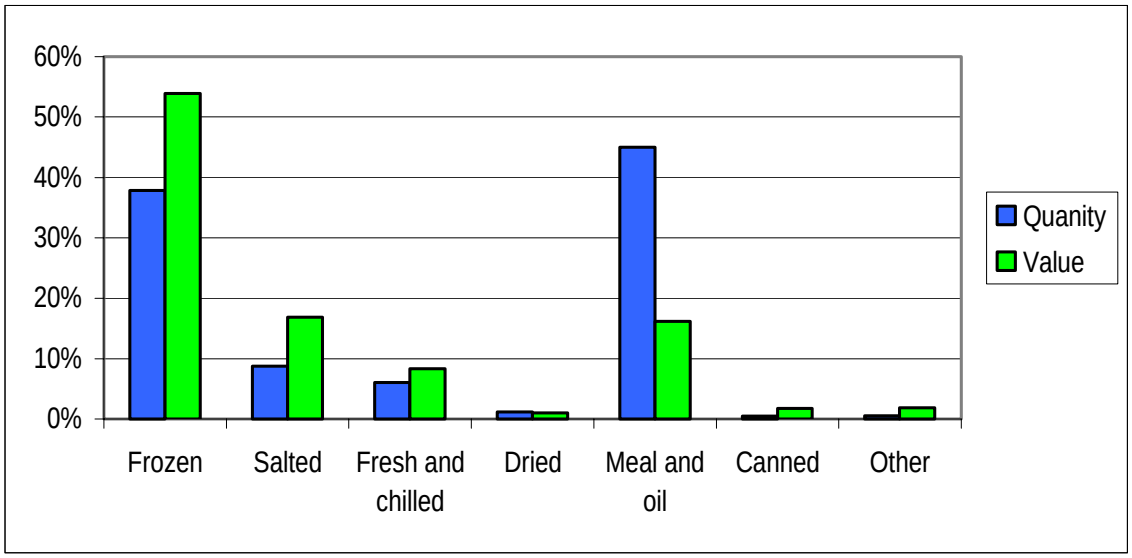


Figure 1. Quantity and value of marine exports from Iceland 1998

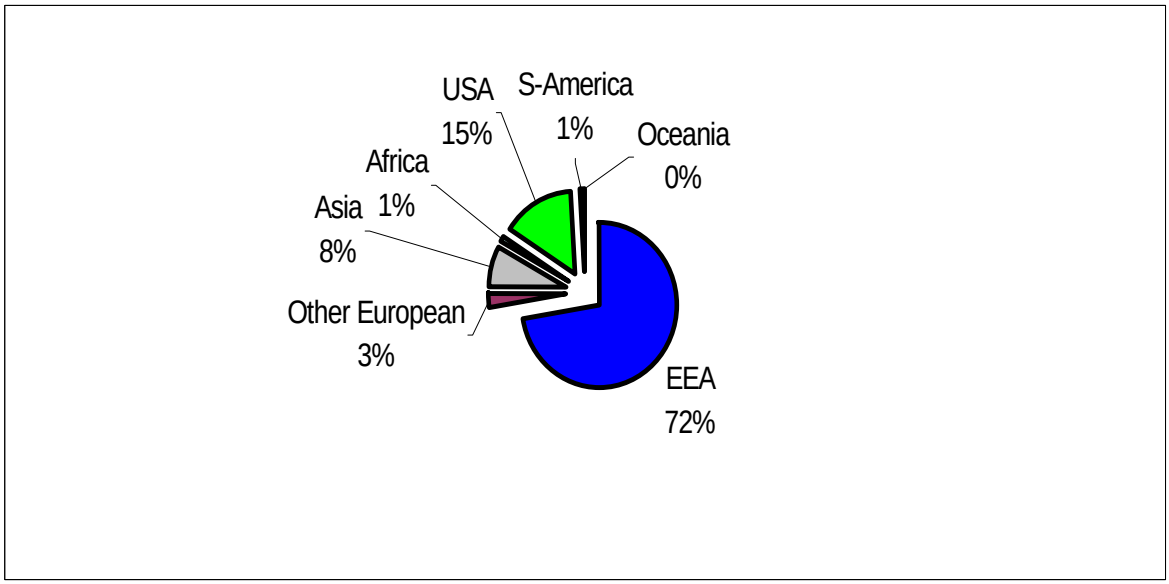


Figure 2. Value of marine exports from Iceland 1998

UK is the largest single market of EEA (European Economic Area =EU+EFTA) with 22% of total marine exports value in 1998. Other large EEA trading partners include France, Germany, Spain and Norway, with 6-8% of export value each. Asian exports are mainly to Japan and Taiwan.

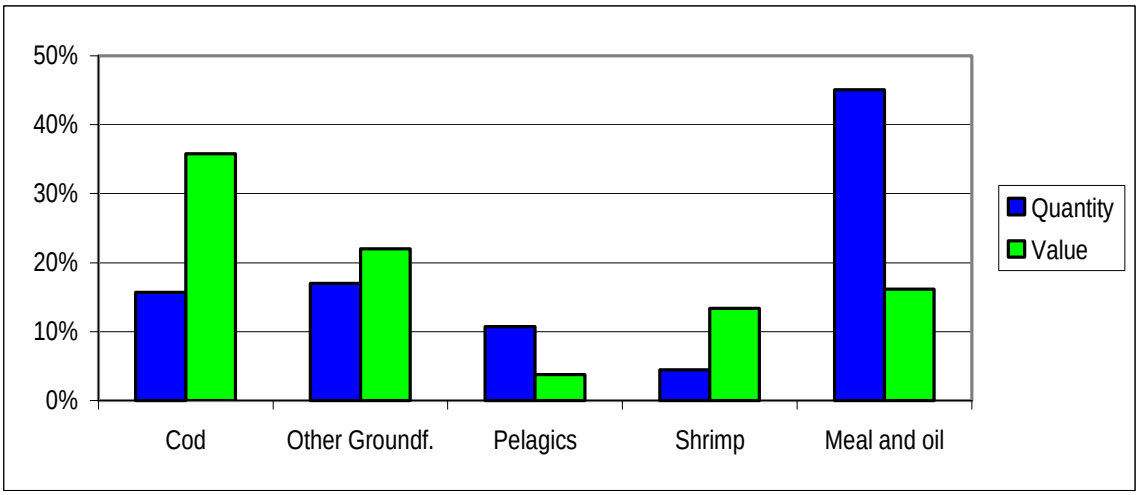


Figure 3. Marine export from Iceland 1998 - main categories

4.4.1 Details of whole or headed/gutted food finfish exports:

Fish type	% of whole or headed/gutted food finfish exports
(Chilled) Fresh	15%
Frozen	82%
Direct landings by own fishing vessels in other countries	3%

Chilled whole/gutted finfish (15%)
- mostly whitefish exported in containers for processing or retail in EU.

Frozen whole/gutted finfish (82%)
- pelagics. Frozen capelin (to Japan and Russia)
- seafrozen whitefish. Largest exports of redfish (to Japan) and Greenland halibut (to Japan and Taiwan)

Direct landings (3%)
- whitefish, (redfish, cod, haddock) in EU (UK and Germany)

4.4.2 Details of processed food finfish exports:

Fish type	% of processed food finfish exports
Chilled	5%*
Frozen	55%*
Preserved	40%
Semi-processed products for further processing, including repackaging	Not available

*Whole fresh and frozen finfish not included

Chilled fillets (5%):
Whitefish fillets, exported by air or in containers.
-Cod and haddock biggest markets USA and UK.
-Redfish fillets to Germany and other EU.
Frozen fillets/blocks – other (55%):
-Cod fillets (USA and UK and other EU)
-Other whitefish and flatfish fillets to EU
-Redfish fillets to Germany and France
Preserved (40%)
-Salted cod to Spain, Portugal and other S-European countries
-Salted whitefish (other than cod) to France for further processing or retail, or for retail in S-Europe.
-Salted herring fillets to Scandinavia (Sweden, Finland)

4.4.3 - 4.4.4 Details of whole or headed food shellfish exports and processed food shellfish exports.

These figures are only available in product weight from trade figures. There are no distinctions between shell-on or processed fresh shellfish. Therefore figures for "Whole or headed food shellfish" and "Processed food shellfish" are given in one table
No landings of fresh shellfish in foreign ports.

Fish type	% of food shellfish exports
(Chilled) Fresh	<1%
Frozen	31% shell-on 68% cooked and peeled
Preserved	<1%
Semi-processed products for further processing, including repackaging.	Not available

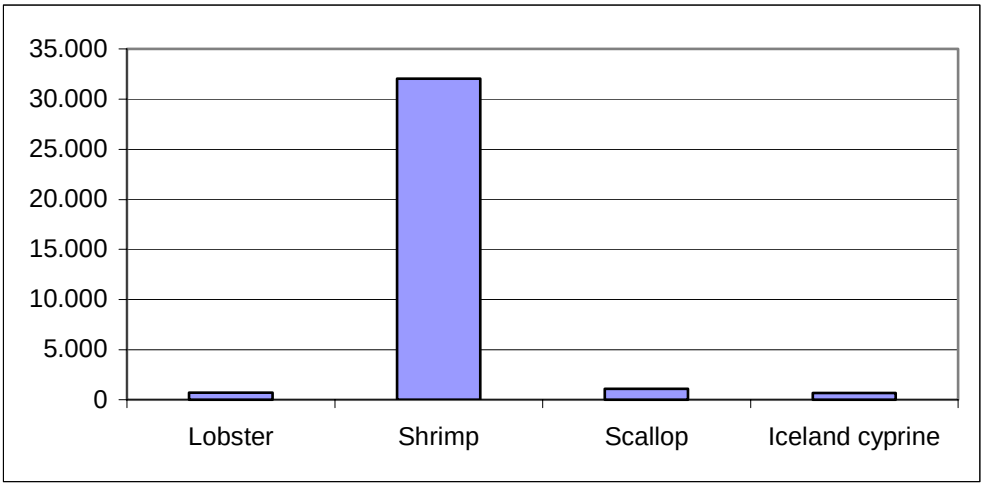


Figure 4. Food shellfish export, by species from Iceland 1998 - tonnes

Largest part 23.000 tonnes cooked and peeled frozen (sea or land) shrimp, biggest markets UK (14.000 t) and Denmark (5.500 t). Around 9.000 tonnes Sea-frozen shell-on shrimp mostly to Japan (2.000 tonnes), France (1.990 tonnes) and UK (1.700 tonnes).

5. DESCRIPTION OF THE DISTRIBUTION CHAIN AND THE STRUCTURE OF THE RETAIL TRADE

The fishing industry is economically very important for Iceland and the value of marine export is about 70% of exports of goods (50% of exports of goods and services). The Icelandic fish industry is profitable and not subsidized. It is estimated that about 95% of the total catch is exported and only 5% is for domestic consumption. The fish distribution chain is similar for the most important species. The products are in most cases exported after primary processing, however in some cases secondary processing or packing is at source. Following figures give the details on cod as an example of the most important groundfish species and shrimps as the most important shellfish in Iceland.

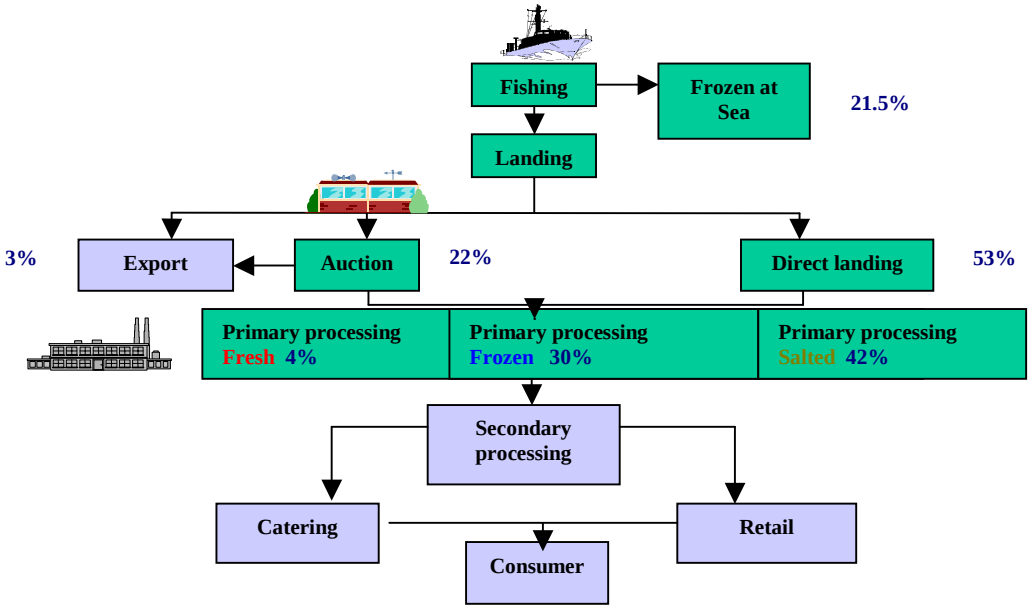


Figure 5. Distribution chain for cod in Iceland.

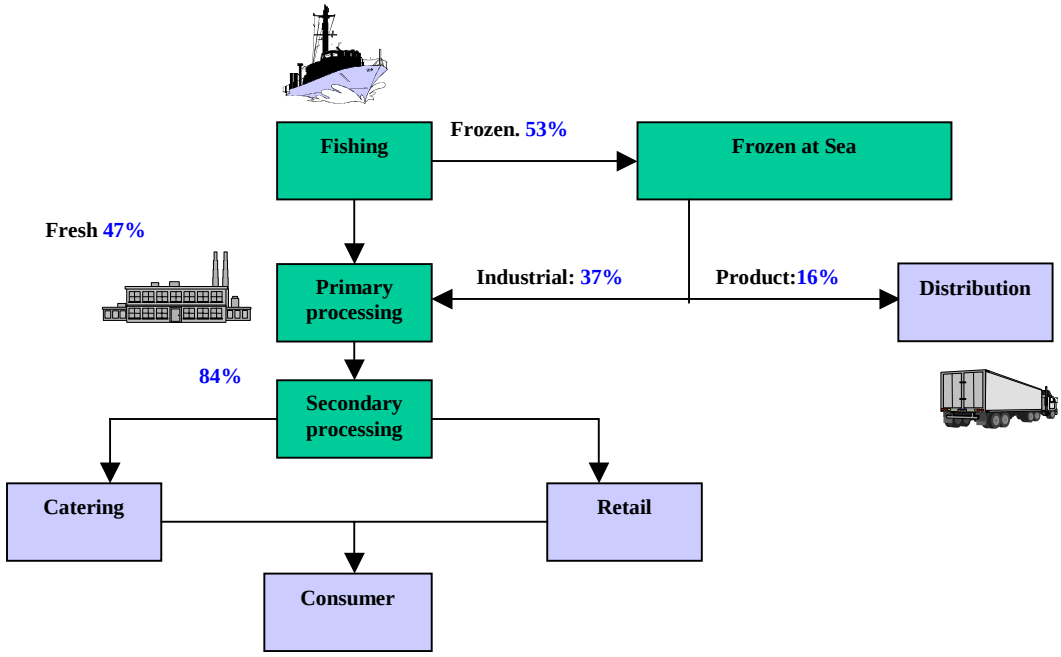


Figure 6. Distribution chain for shrimps in Iceland.

6. TRANSACTION POINTS AND PERCEIVED NEEDS FOR INFORMATION ON FISH QUALITY

Following table summarizes the transaction points along the distribution chain and the information which is available at each point to demonstrate the traceability of the product.

SUMMARY: INFORMATION on TRACEABILITY

	Fishing	Landing	Market	1st Processing	2nd processing	Catering	Retail
Species	Y	Y	Y	Y	Y	Y	Y
Area	Y	N	N	N	N		
Method	Y	Y	Y	Y	N		
Port of landing	Y	Y	Y	Y	N		
Fishing date	Y	Y	Y	Y	N		
Landing date	Y	Y	Y	Y	N		
Days in ice	Y	Y	Y	Y			
Sensory analysis	N	N	N	Y	Y	N/A	N/A
Size/Grading	Y/N			Y	Y		
Temperature	N	Y	Y	Y	Y		
Production date				Y	Y	Y	Y
Producer	Y	Y	Y	Y	Y	Y	Y

Fishing boats/ships.
The boat owners know the fishing area as they keep a logbook as required by law. This information does however not follow the catch to the next stage but is obtainable from the ships if required.

If the raw material is landed directly into processing there is an agreement on the handling procedures on board. This will apply to icing procedures, amount in tubs, bleeding of raw material and day coding. They will then give a report on the age and species distribution in the hold (breakdown of the amount fished per species per day). In some cases, especially with prawns the fishing area is also reported as well as size grade.

Auction Market
On auction market the information supplied with the catch varies. A large part of the landing into auctions is by the smaller boats (dayboats) so the name of the boat, type of fishing and age of raw material is known. There will be information on the handling e.g. whether it is iced, washed and gutted and the auction market will supply the temperature of the catch at time of landing.

Frozen raw material.
Are mostly industrial prawns sold directly to the processor. This raw material will be supplied labelled with the EU establishment number and the date of the fishing trip but in most cases each bag will also be labelled with the fishing/freezing date. The catch is evaluated according to temperature, sizegrade, bycatch, water and general condition of the material.

Primary processing.
All information supplied with raw material is documented at reception by processor. They will document the name of the ship, type of fishing gear, age of raw material the origin of the raw material (i.e. Icelandic, Norwegian) and in some cases the fishing ground (Barens Sea, Flemish cap). In most case the raw material will be processed in lots. The ship and age of raw material define the lots. The label on the final product link it to the raw material. The pallets containing the product also have a label that will distinguish the producer, production date and a pallet number. By providing the pallet number a single production date may be narrowed down to the time it takes to fill the pallet during production in processing that fills many pallets per daycode. In other cases it will provide information to the daycodes on the pallet for products that are produced in small amount per day so more than one daycode is included on the pallet.

Secondary processing.
Can be the same company as the primary processor. Secondary processing logs the production daycodes for the raw material when the product enters further processing. If the secondary producer is using various raw materials then they can break down the labelling of packing date into further lots to secure traceability to raw material. As in primary processing the use of pallet numbers is general.

Retail/customer.
On the packaging of the final product the EU number of the packer is included in the label as well as the datecode for packing. If the information can be supplied to the next link down the chain then full traceablility can be achieved. At the retail side, before distribution pallet number are used for traceability also.

Storage/Transport.
In all stages the product is placed in storage. The main means of identification in the storage and during the transport process, is the pallet number. It is documented into the cold store, out of cold store and by transport company at time of dispatch.

7. INVENTORY OF FISH QUALITY LABELLING SCHEMES OR REGULATIONS

A. Standards between stages of the supply chain

All processing units in Iceland use HACCP as required by law. This applies to freezer trawlers and all processing units, frozen, fresh and salting. In some cases there are certain rules that apply to the fishing boats of fresh raw material. This is based on agreement between the buyer of that catch and the ships.

Before the introduction of HACCP all processing units had a GMP system in place that covered hygiene issues as well as processing and labelling.

B. Labels consumer/customer oriented.

The industry builds on own labels or brand labels. A producer will produce into his own label or a brand label like Samband (both bulk and retail). Behind the brand names are technical specifications that are part of the contract between the producer and the customer. The technical specification includes e.g raw material description (species and quality), processing requirements and labelling requirements. The specification therefore includes descriptions of

the required "Torry" freshness score of the raw material used, limits for various processing faults and microbiological standards. Also this will include a "Code of practice" relating to hygiene and all other aspects of the processing facility. In a similar manner a secondary processor will have requirements for the primary processor and the primary processor will have a requirement for the fishing unit, when there are direct contracts between processor and ship owners.

For salted fish especially there are specified quality grades. Each and every fillet is graded according to e.g. the size, quality and colour before packing and the different grades are a part of the product label.

7. 1 Nature

Own labels and brand labels mentioned above would be classified as voluntary schemes, but at the same time these are based on the mandatory regulatory schemes. The labels are monitored by regular audits by the relevant marketing company.

7. 2 Scope

The scope of the brand labels is related to the packaged products exported as fresh, frozen or salted. The labels are based on technical specifications between buyers and sellers and a "code of practice" relating to hygiene is explained above in sections 6, 7A and 7B,.

7. 3 Orientation

The primary processor buys either directly from the boats/ships and will then have requirements in its contract with the ship. Each step has a contract that reflects the requirements and is basically reflective of the retail sectors/catering requirements.
The key in meeting these requirements through the whole chain is traceability. Each step must be able to trace back information from the customer back to the fishing boats.

7. 4 Regulation

EU based laws and regulations regarding hygiene, own check systems and labelling.
The laws/regulations are implemented by the Directorate of Fisheries, an official body that is responsible for the auditing of sectors of the fishing and processing.

7. 5 Content

Includes product requirements: species, freshness, colour, looseness, processing (temperature, size, weight, glaze, dimensions), packaging and labelling.
Production system: fishing gear, handling procedure ice used, amount per container, temperature, gutted/ungutted,
Product identification and traceability: See before.
Audits are regularly performed at each stage to confirm the code of practice.

7. 6 Origin

Processors and wholesalers have responded to the requirements of the retailers to establish labels based on mandatory regulations and technical specifications to ensure the traceability of the products as explained in section 6.

7. 7 Use

Product identification and traceability throughout the chain at each transaction point has been explained in section 6. In general the traceability applies to all Icelandic marine products (708.200 tonnes). The labelling scheme based on traceability covers all marine products.

7. 8 Financing

Since specific quality schemes have not been established in Iceland we can not evaluate the costs of such labelling system. It is beyond the scope of this working document to estimate the added value obtained by ensuring traceablity and the use of brand labels for Icelandic marine products

7. 9 Promotion

Not relevant

8. REGULATIONS RELATED WITH TRANSACTION

The Directorate of Fisheries is an Icelandic Government institution under the ultimate responsibility of the Minister of Fisheries. Following information is available on the homepage http://www.hafro.is/fiskistofa/dirfish/admin/. The Directorate is responsible for implementing government policy on fisheries management and handling of seafood products. The Directorate enforces laws and regulations regarding fisheries management, monitoring of fishing activities and imposition of penalties for illegal catches. Furthermore, the Directorate is the competent authority responsible for enforcing laws and regulations regarding the handling, processing and distribution of marine products and is responsible for the operation of border inspection posts, controlling imports of fishery products into the European Economic Area. Collection, processing and publication of fisheries data is also the responsibility of the Directorate of Fisheries in collaboration with Statistics Iceland.

The Quality Management Department is the part of the Directorate of Fisheries which is responsible for the Directorates function as the Competent Authority (CA) as regards the handling, processing and distribution of marine products.
The Departments activities focus on ensuring that fishery products from Iceland are processed under satisfactory hygienic conditions and that consumers can rely on their wholesomeness and safety. This Department issues processing licences to processors of fishery products and operating permits to fish markets and fishing vessels, provided that official requirements are fulfilled. If these requirements cease to be met or in case of other violations of the relevant laws and regulations it is this Department (the CA) which decides what is the appropriate action; warnings or withdrawals of licences and permits. The Quality Management Department also issues operating permits to private inspection bodies which it approves on behalf of the CA to conduct regular inspections of hygiene, equipment and own check systems in fish processing establishments and fishing vessels. In order to obtain an operating permit, an inspection body must fulfil conditions for impartiality and independence as well as having obtained formal accreditation in conformity with the IST EN 45004 standard.

The Quality Management Department verifies, with organized site inspections, that operations of fish processing establishments are consistent with official requirements, and at the same time that inspection bodies operate in accordance with regulations. The Quality Management Department also publishes inspection manuals in order to harmonize the work of inspectors.
The Department issues health certificates for exported fishery products, if requested and monitor import of fishery products by operating Border Inspection Posts at six sites in Iceland.

*The Surveillance at Sea Department monitors fishing by Icelandic vessels in the Icelandic EEC, on the Flemish Cap and other international waters, where required in international agreements***.** The Department also monitors fishing by foreign vessels in the Icelandic EEZ, fishing and processing by vessels with on-board processing facilities, fishing gear, validity of fishing permits, catch log entries etc.
The Surveillance at Sea Department monitors the size composition of catches and makes proposals for temporary closures of fishing grounds when catches contain excessive levels of undersize fish. In case of repeated closures of the same grounds the Ministry of Fisheries is advised to issue a regulation closing such areas for longer periods to protect juvenile fish.

The Land Surveillance Department supervises landing, weighing and registration of catches, and issues permits for weighing of catches. The Department´s inspectors travel between and operate in all ports where fish is landed and monitor fishing gear, catch composition, landing and weighing procedures.

Other activities include the monitoring of:

- fishing days of boats on effort quotas,
- fish transportation and the documentation accompanying each consignment,
- containerized exports of unprocessed catches,
- fishing vessels logbooks, and
- landings by foreign vessels.

The Department also collaborates with the Quality Management Department on various projects, such as sealing of damaged or uncleanfish tubs and containers, fish temperature measurements, etc.

9. REFERENCES

Homepage of the FQLM project: http://www.rivo.wag-ur.nl/mktv/index.html (projects).

Homepage of the FQLM project in Icelandic: http://www.rfisk.is/lausnir/merking.htm

Homepage of the The Directorate of Fisheries: http://www.hafro.is/fiskistofa/dirfish/admin/.

Homepage Statistics Iceland: http://www.statice.is/

Appendix I

Comments on studies in Iceland on consumer attitudes towards fish quality and fish consumption

Gudrun Olafsdóttir, gudrun@rfisk.is, Tyri Valdimarsdóttir tyri@rfisk.is
Icelandic Fisheries Laboratories

Comments on studies in Iceland on consumer attitudes towards fish quality and fish consumption

Gudrun Olafsdóttir, gudrun@rfisk.is, Tyri Valdimarsdóttir tyri@rfisk.is
Icelandic Fisheries Laboratories

The Icelandic Fisheries Laboratories are interested in promoting an effort that will lead to better quality of fish in the domestic marketplace and increase product development and supply of fish products. A proposal has been made by the Icelandic Fisheries Laboratories, Fisheries Association of Iceland and the Icelandic Nutrition Council to perform a study on consumers attitude towards quality of fish and to obtain reliable information about fish consumption in Iceland. Factors that influence consumer choices as for example product appearance, packaging, freshness, price and labelling will be included. Efforts will be made to obtain information about consumer attitudes towards different fish products available in stores, such as unpacked and packed fresh fish, ready to eat fish and frozen fish. The market availability of various fish products will also be explored. The results will be used to guide producers in fish product development and to inform consumers about important fish quality factors. The proposal has not yet been funded and it has been difficult to convince the authorities and the fish industry to pay attention to the Icelandic consumers.

Today there is no economical incentive for the fish industry in Iceland to focus on the need of the Icelandic consumers since only 5% of the total catch goes to the Icelandic market. Fish consumption in Iceland has traditionally been one of the highest in the world. However, surveys done by the Social Science Research Institute (published in national newspapers) have shown that the fish consumption is declining especially among the younger generation. The results show that the number of consumers having fish more than once a week is decreasing. In 1994, 57% of the respondents had fish more than once a week and 29% had fish once a week. In 1998 only 43% of the respondents had fish more than once a week and 33% had fish once a week. In the survey from 1998 it is evident that the younger generation is eating fish less frequently than the older age groups**.**

Table 1. Frequency (percentages of respondents) of fish consumption in different age groups (telephone survey 1998)

	Age groups			
	14-24	25-39	40-59	60-80
More than once a week	41%	44%	65%	91%
Once a week	34%	33%	25%	12%

Accurate figures for fish consumption are difficult to obtain since a lot of the fish is distributed directly to consumers from fishermen without registering the sales. Figures for fish consumption in Iceland are available from a study done in 1990 by the Icelandic Nutrition Council. Based on those results the average fish consumption for the age group of 15 to 80 years was about 73 g/day which corresponds to about 80 kg/year of whole ungutted fish. No studies have been done since 1990, but estimated figures have been prepared based on figures from the Icelandic Bureau of Statistics using catching data, export and import figures and in some cases figures on direct sales. These figures indicate that the fish consumption has been similar since 1992 or about 45 kg/year (whole ungutted fish). In a FAO report from 1996 the fish consumption in Iceland is quoted to be 90 kg/year for the years 1992-1994. Based on this contradictory information it can be concluded that reliable data on fish consumption in Iceland is lacking and studies are needed to obtain this information. Telephone surveys to get information about food consumption have proven useful to monitor and obtain reliable information about the trend in food consumption (Haraldsdóttir *et al*. 1999) and the idea is to try to initiate a project to accumulate these figures in addition to information about consumer attitudes towards quality of fish .

References

Haraldsdóttir J, Halkjær J, Holm L, Stender S & Astrup A, 1999. Ændringer i befolkningens fødevareforbrug 1995-1998. Søborg: Ernæringsrådet.
Social Science Research Institute, 1999. Surveys published in Icelandic newspapers 1994-1998. Written information.

Appendix II

"WORKING DOCUMENT ON
FISH QUALITY LABELLING FOR ICELAND"
FQLM / CT 98-4174
Presentation at the plenary FQLM meeting in
Bilbao, Spain, May 18-20, 2000

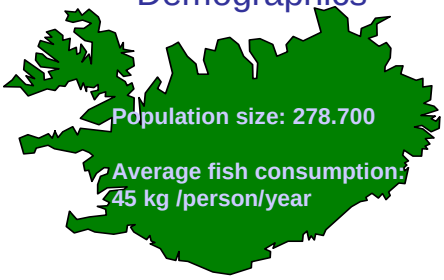
Working document on Fish Quality Labelling

Iceland

Brynhildur Benediktsdóttir - binna@fiskifelag.is
Fisheries Association of Iceland,
Friðrik Blomsterberg - fridrik@is.is
Iceland Seafood /SIF
Guðrún Ólafsdóttir* - gudrun@rfisk.is
Icelandic Fisheries Laboratories

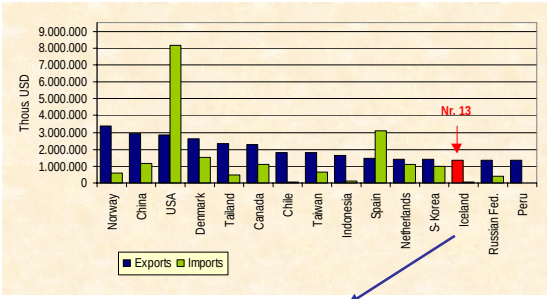
Second European Plenary Meeting CA-FQLM
Bilbao, Spain, May18-20, 2000

Iceland Demographics



- Figures based on national statistics
  - Icelandic Bureau of Statistics

Largest exporters of fisheries products in 1997 - Value in USD

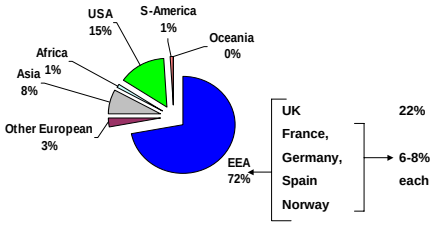


~ 95% of the total catch of Iceland is exported
~ 5% for domestic consumption

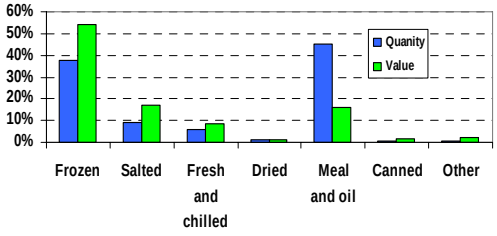
Marine products as % of Icelandic exports

Icelandic fish industry is profitable and not subsidized

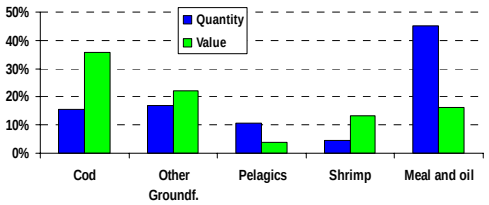
Main export markets - Value of marine exports from Iceland 1998



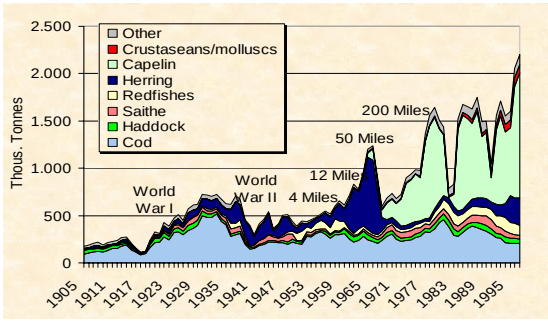
Quantity and value of marine exports from Iceland 1998



Marine export from Iceland 1998 - main categories



Icelandic catches from Icelandic banks 1905-1998



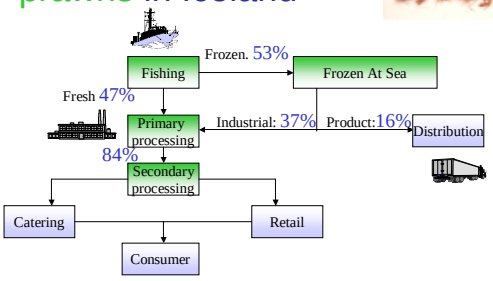
Utilization of Catch (%)

Cod		Shrimp		Herring	
Freezing	50,8	Freezing	99,8	Freezing	12,0
Salting	41,9	Other	0,2	Salting	22,2
Fresh	6,8			Meal & oil	65,8
Other	0,5				

Figures from 1998

Distribution chain for cod in Iceland

Distribution chain for prawns in Iceland



Transaction Points and Information on Traceability

	Fishing	Landing	Auction Market	1st Processing	2nd processing	Catering	Retail
Species	Y	Y	Y	Y	Y	Y	Y
Area	Y	N	N	N	N		
Method	Y	Y	Y	Y	N		
Port of landing	Y	Y	Y	Y	N		
Fishing date	Y	Y	Y	Y	N		
Landing date	Y	Y	Y	Y	N		
Days in ice	Y	Y	Y	Y			
Sensory analysis	N	N	N	Y	Y	N/A	N/A
Size/Grading	Y/N			Y	Y		
Temperature	N	Y	Y	Y	Y		
Production date				Y	Y	Y	Y
Producer	Y	Y	Y	Y	Y	Y	Y

Y - yes , information is available
N - no, information not available
N/A not applicable

Regulations and inspection system in Iceland

- All processing units have HACCP systems
  - EC directives and regulations
- Directorate of Fisheries issues:
  - processing licences to processors of fishery products
  - operating permits to fish markets and fishing vessels
  - operating permits (IST EN 45004) to private inspection bodies to conduct regular inspections

Labels - costumer oriented

- Brand name labels based on:
  - Technical specifications between buyers and sellers
    - raw material description (species and quality)
    - processing requirements
    - labelling requirements
    - codes of practice relating to hygiene
  - Traceability
- Monitoring procedure for traceablity and quality systems by marketing company