STUDY TOUR
TO ICELAND
Report No. 519

13th-17th May
1998

STUDY TOUR TO ICELAND

Scottish Delegation

13th-17th May 1998

As part of a series of study tours, Seafish organised this visit to Iceland, mainly to investigate their approach to fisheries management and in particular their use of Individual Transferable Quotas (ITQs). Though a universal invitation was sent out the eventual delegation were all from Scotland and were:

Alex Smith	Chairman, Scottish White Fish Producers' Association Ltd.
Sandy West	Scottish White Fish Producers' Association Ltd.
John W. Buchan	Scottish White Fish Producers' Association Ltd.
John H. Goodlad	Vice President of Scottish Fishermen's Federation and Shetland Fishermen's Association
Craig Egner	Assistant to the Chief Executive, Scottish Fishermen's Federation
Crick Carleton	Senior Partner, Nautilus Consultants

John E. Tumilty	Technical Director, Seafish
Neil B. McKellar	Chief Economist, Seafish

The programme, which turned out to be a very comprehensive one, was organised by Oli O. Klemensson, Senior Economist at the Central Bank of Iceland. He also accompanied the group to most of the meetings.

In addition to the formal programme described below, individuals took the opportunity to meet with people outside and investigate Icelandic fisheries products.

Wednesday, 13th May

17.30 hours Oli Klemensson, Senior Economist, Central Bank of Iceland

This began as a briefing about the meetings which had been set up for the next few days. However it turned into an opportunity to ask questions and get an overview of the Icelandic management system.

Thursday, 14th May

09.00 hours Federation of Icelandic Ship Owners, Landsamband Islenskra utvegsmanna (LIU)

Sveinn Hjortur Hjartarson, Chief Economist
Dr. Kristjan Poravinnsson, Marine Biologist

They began by describing the Federation, which was founded in 1939, and had nine staff, including an elected Chairman/Managing Director. Membership consists of around 300 individuals and corporations, who own over 500 vessels. There had been some reduction in the number of vessels in membership over the last few years, but it was felt that this was more attributable to a move towards freezing at sea, using fewer larger vessels, than to ITQs leading to concentrating of ownership.

The historical background to ITQs was given. This began with extension of limits in the mid seventies and after the Cod Wars, there was massive over-investment by Iceland in ships and plants. By 1983 there were crises in cod, capelin and herring fisheries with 25 to 50% over-capacity. As a response ITQs and effort limitation were introduced in parallel in 1984. Since then there have been many changes, including six by Parliament. In 1990 a uniform system of ITQs was adopted. Quotas per vessel were allocated on the basis of three quota years before 1984.

Asked whether ITQs are a good thing, LIU representatives thought it was good for owners and for the nation. As fish accounts for 75% of value of exports, the economy is very dependent upon them. Prior to 1990 inflation was running at an annual rate of over 20%. Asked about the operation of the ITQ system, it was explained that all landings of Icelandic fish are weighed by individuals/harbour authorities licensed for this purpose. Transfer of quota is allowed, with certain restrictions. The person buying the quota must have a vessel that can catch the quota purchased and at least 50% of that quota held must be fished in any one of two years. Only Icelanders can own ITQ, though some non-national ownership in equity of fishing companies is allowed. To buy a new vessel there is requirement to take out 130% capacity.

Most vessels, of consequence, in Iceland are company owned and skippers and crews are employees. Crews receive between 36-40% share of earnings. Employers also contribute 6% for pension and give holiday pay. The recent strikes were partly attributable to the ITQ system. Costs of buying quota are currently:

80p per Kg leased
£6-7 per Kg in perpetuity.

As a consequence owners have been reducing crews' share to buy additional quota and this is something which the crews were unhappy about. The last dispute was ended by Parliament declaring it was illegal for fishermen to strike, so the fundamental issues have not been resolved.

10.00 hours University of Iceland, Faculty of Economics and Business Administration

Professor Ragnar Arnason
Dr. Birgir Runolfusson (author of a report since circulated to the group)
Dr. Tryggvi Berbertsson

Ragnar Arnason gave a brief overview. The conditions for transfer of quota became clear. In order to buy ITQ a buyer must have a vessel (or access to a vessel) which in one of two consecutive years must take at least 50% of its entitlement. In the past "ghost vessels" existed. Also no vessel could have more quota than it was capable of catching (this still to be tested in the courts). Clearly vessels have to be operative and capable of fishing.

While quota is attached to a boat, the ITQ owner does not have to be the boat owner. Speculation in ITQs is therefore possible.

According to the academics, who produced evidence, there has not been much relocation from the villages, because of ITQs. Before ITQs there was some evidence of loss from these places. This is because people prefer to live in Reykjavik than the western fiords and not because of ITQs. The South West, which includes the capital, has actually seen a decline in quota in recent years. With auctioning of fish, processors can be independent and not own vessels. There seems to have been more rationalisation with processors moving away from remote locations, than fishermen who have tended to stay. This may have to do with fishermen being well paid but process factory workers are not.

Regarding ownership concentration, it certainly seemed like the larger companies were getting bigger. However the really big increase was with very small companies which increased from 800 to 1,800 and have now fallen back to 1,000. As the fleet is reducing some concentration is inevitable. Freezing at sea requires big vessels and hence larger companies. Ragnar Arnason was quite adamant that ITQs were neutral to concentration of ownership. Also ownership of big companies was increasingly spread around Iceland society. All, except two, of the eight largest companies were publicly owned. Ownership of quota by the banks was quite extensive.

Annual quota value, which could equate with some measure of profit, was estimated by the academics at between US$250-300 million. According to Oli Klemensson, profits have declined over the last two years, but this has been a result of very heavy investment.

Around a fifth of the quota belongs to the fleet of skipper owned vessels. Virtually all species are now covered by ITQ, though a very few small boats remain on effort limitation.

Though ITQs are denominated in percentages for permanent quota, annual leasing is by weight. This is simply because of convenience.

As far as future developments are concerned, there is the possibility of a tax or a royalty being introduced. At present owners are only liable to the normal tax regime that applies to all Icelandic business. On the issue of Icelandic only ownership of ITQs, it was pointed out that the Iceland authorities allow up to 25% direct ownership and 40% indirect and direct combined by non-nationals in companies.

Overall the academics did not think that cheating would account for more than 5% of quota landings. However they were much less sure that there were very few discards, as this seems to be a feature of most quota regimes, despite the law that bans them.

13.30 hours Ministry of Fisheries

Arni Kolbeinsson, Secretary General
Kristjan Skarphedinsson, Chief Economist

The Secretary General explained that crises with the stocks developed at the end of the seventies with pelagic fish and at the beginning of the eighties with demersal. This led to more radical management solutions being sought and by 1990 the law that sets out most of the rules now in operation was agreed. Annually, in June, the Ministry sets TACs. While advice is given by ACFM it is the Icelandic Minister who finally decides. For cod and capelin there is now a long term strategy in place. Advice on cod stocks includes (1) age composition of catch; (2) CPUE; (3) survey results. There is also dialogue with the fishermen. It was also pointed out that mesh size for demersal fishing has been 155mm until recently, when it was reduced to 135mm. Grids are also compulsory in shrimp fisheries. There is no minimum landing size regulation in Iceland, as all catch has to be landed (under the no discard rules).

Overall there seems to be a responsible attitude to fisheries, because it is so key to the Icelandic economy. Generally bigger vessels are excluded from the 12 mile limit. Smaller vessels, which had proliferated under previous arrangements that allowed loopholes, were all controlled from 1988 onwards.

On enforcement, the Secretary General explained there were licensed weighing stations all round the coast, where all of the landings were weighed. This was the beginning of a complete system of enforcement. Logbooks are also kept, but this serves as a cross check rather than forming an integral part of the enforcement system. There also seemed to be an automatic call to say a vessel is going to sea and then another when its coming home. The whole system was very transparent and landings are on the Internet, hence there is a trust in the system and those operating it. Export figures, which represent a high proportion of Icelandic fish, could also be used as a check. Penalties are also very high and quite frequently served. Every month six or seven licences are revoked, with a minimum of two weeks for minor offences.

ITQs had undoubtedly created wealth for a number of individuals and the issue of distribution remained unresolved. There was still a debate about the merits of a tax on quotas or an auction of the rights.

It was estimated that between 60 and 70% of landings were taken by companies with an interest (not necessarily control) in processing. Vertical integrated companies were clearly important players, though more recently horizontally integrated companies were also buying quota. There is a limit on the proportion of a quota which can be held by a single company. On eight species no company can own more than 10% of cod or 20% of the others.

In 1991 55 companies had	55% of quota
and the biggest company owned	4% of quota.
In 1997 55 companies had	62% of quota
and the biggest company owned	7% of quota.

The Ministry confirmed what we had been told at the University about the Reykjavik area losing quota to other parts of Iceland in recent years.

There had been no decline in the number of fishermen (6,300 man years) since the introduction of ITQs. However this may have been partly attributable to the increase in freezing at sea. This might mean a replacement of shore based jobs with ones at sea.

Asked about the possibility of the introduction of ITQs into EU, the Secretary General felt it would be difficult to prevent quota hopping. Enforcement would also be more difficult.

15.00 hours Fisheries Directorate

Gudmundur Karlsson
Arni Muli Jonsasson
Ossur Kristinsson

Asked about the discard issue, there seem to be two approaches. First, inspectors on board vessels could call for short-time closures, of between one and two weeks. Second, regulation was also used. In 1993 there were many closures and more recently other alternatives were being tried. These included use of the "hour glass" selector in the gear - Icelandic version of the sortex grid.

The Directorate did not have any vessels or aircraft of their own. Their nine inspectors, usually ex skippers, go to sea on commercial fishing vessels. They recommend closure if the proportion of small fish in the catch becomes too great. The Marine Institute actually have the final say, but they usually take the inspector's word. The Coastguard are used for enforcement.

Enforcement seems to depend heavily on a paper trail, following the fish, from one of the 65 ports in Iceland with licensed weighing facilities. Penalties are also heavy, transparent (published details) and quite frequently imposed.

The group were also shown the Directorate's computer system, which holds details of every single Icelandic fishing vessel and its entitlements to fish. These are continuously updated as the vessel catches fish.

Information weight and value of landings are also available through the Directorates URL on the Internet.

16.00 hours Icelandic Freezing Plants Corporation plc

Kristjan Hjaltason, Marketing Director
Vilkjalmar Arnason, Press Secretary

IFPC is a global sales and marketing company for frozen fish products. It sources from both Icelandic and overseas producers, who totalled 128 in 1997. Since its establishment IFPC has almost always been Iceland's largest exporter in terms of volume and value. In 1997 it held an 18% share in Iceland's total merchandise exports and more than 40% of all exports of frozen seafood products.

Though an Icelandic company it has more employees in the UK.

IFPC Operations in 1997

Location	Employees	Sales (tonnes)	Sales (Bill ISK)
Iceland	105	-	-
UK	688	31,000	10.6
USA	573	40,500	12.3
8 Other Countries	64	104,500	18.9
TOTAL	**1,430**	**176,000**	**41.8**

Coldwater Seafood (UK) Ltd. was formed in 1996 by a merger of Icelandic Freezing Plants Ltd. and Faroe Seafood Ltd. It holds 20% share of the UK frozen fish market.

Throughout the visit it was stressed that processors need boats for security of supply. The visit was largely marketing orientated and reinforced the importance of fish to Iceland.

Major problems for IFPC in recent times have been the low cost of Alaskan pollock and cheap Russian fish.

Friday, 15th May

9.00 hours Ship Officers' Guild and Federation of Icelandic Seamen

Benedikt Valsson, Chief Economist and General Director
Two other Directors

Having had the virtues of the ITQ system extolled, almost exclusively, until now, it was refreshing to hear some objections and concerns.

All of the three recent strikes were connected to issues connected to the management system. Trawler owners had tried to tie wages to quotas and as a result fishermen were receiving a lower percentage of earnings as owners tried to pay for more quota. Where companies had processing interests they paid lower prices for fish and this had a depressing effect on crew earnings.

Normally in vertically operated companies, fish prices were fixed by reference to:

(i) auction prices;
(ii) price of leasing quota.

Unions believe price is the key to the disputes and would like all fish to go through an auction, as opposed to the 20% which currently does. The last strike, in March, which was concluded by Parliament declaring it illegal for fishermen to strike, also introduced a new law to set up a "quota market". Also there is a commitment to set up an institute to look into fish prices by June 1999.

From September 1998 all quota swaps, except intra company, must go through the quota market. While this will not guarantee fishermen's rights, it is hoped that greater transparency will help. Each year 50% of quota (or equivalent) is swapped. This is a notional amount rather than half the quota. A purchase and a sale each count, so it is maybe more like 25% of quotas changing hands.

The Unions also think that the quota market will make the requirement to take 50% in one of two consecutive years a requirement to take 50% each year. If not used quota should go back to Government. They cover small boat owners as well as crews on larger boats, but they do not cover processing. Also, unlike New Zealand, their members do not hold ITQ. This is not a legal problem but a political one as they have come out against the system.

They blamed ITQ system for the high level of discarding which they said now happened. This seemed to be more a feature of any quota system than ITQs particularly. The Unions also felt there was a large gap between the top and the bottom. It was more difficult to enter the industry. Also costs in their view had not been as well evaluated as benefits.

13.50 hours Auction at Keflavik

Olafur Por Johannsson, General Manager

The group were given an opportunity to see the electronic auction actually functioning in Keflavik. This system was established in 1992 and links 11 fish markets in 16 locations. It sells nearly 50,000 tonnes of fish worth $60 million annually.

Next the group saw a "remote" auction at Sangerdi.

Saturday, 16th May - Visit to Westman Islands

13.00 hours Bergur-Huginn HF

Magnus Kristinsson, Managing Director

It was hoped that a visit to the Westman Islands would allow the group to meet more family boat owners akin to the ownership structure in Scotland. Unfortunately Magnus Kristinsson, though owner of a family firm with two boats, was not really like Scottish skipper owners. From having had a fleet of a few vessels the family currently owned a freezer trawler and a fresh fish catcher.

He was quite happy with the ITQ system and had formed part of the negotiating team set up to solve the dispute between LIU and the Unions.

Most of his vessels' catch seem to be sent to the UK, in what appeared to be a highly profitable arrangement, irrespective of the strength of Sterling.

N. B. McKellar
Chief Economist
May 1998

APPENDIX I

THE ICELANDIC FISHERIES MANAGEMENT SYSTEM

Overview

- The ITQ system
  - Commercial fishing permits
  - The allocation of quota shares
  - The allocation of catch quota
- Supervision of the ITQ system
  - Weighing in of catch
  - The Loðs computer system in catch surveillance
  - Penalties
- Free access to information

Figure 1

Number of vessels in the Icelandic fishing fleet

• Hook and line boats:	1.009
• Small fishing vessels:	575
• General fishing vessels:	293
• Trawlers:	130
– thereof factory vessels:	43

Figure 2

The allocation of quota shares of af new species

Example of catfish, subjected to the ITQ system in 1996/1997

One vessels catch the last 3 years:	39.696 kg
Total catch of all vessels the last 3 years:	29.742.496 kg
The allocated quota share for this vessel equals: 39.696/29.742.496 :	0,1067725%
TAC of catfish for 1996/1997:	10.500.000 kg
ITQ of this vessel for 1996/1997:	**11.211 kg**

Figure 3

TAC for demersal species in 1996/1997

	TAC	Estimated catch of the hook and line fisheries	Allocated catch quota
Cod	186.000	25.854	160.146
Haddock	45.000	2.200	42.800
Saithe	50.000	1.900	48.100
Redfish	65.000		65.000
Gr. Halibut	15.000		15.000
Plaice	12.000		12.000
Catfish	13.000	2.500	10.500
Witch	1.200		1.200

Figure 4

The allocation of catch quota

TAC*quota share = catch quota

Example:

TAC of cod (equivalent to gutted fish)	
1996/1997 is	124.117 t.
The quota share in cod of a certain vessel is:	0,1%
The catch quota of this vessel is:	124,12 t.

Fig.5 Number of landings by ports where landings were more than 500 (fishing year 95/96)

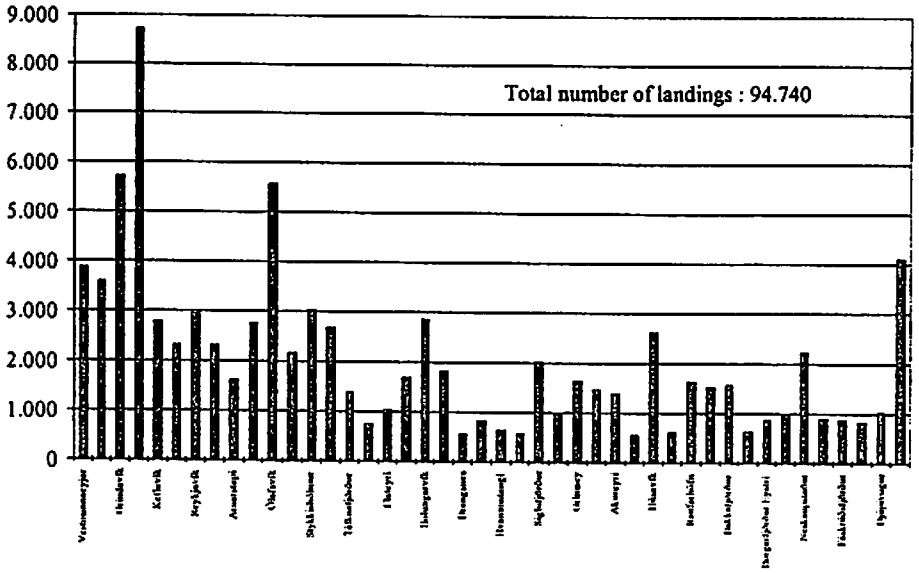


Figure 6

The catch quota status of a vessel

Vessel: 2165 Baldvin Þorsteinsson EA 10
Date of last landing: 09.04.1997

CATCH QUOTA STATUS* 03.05.1997

	Cod	Haddock	Saithe	Redfish	Catfish	Halibut	Plaice
Alloc.quota	1.417.382	278.524	483.247	804.597	7.040	161.895	28.621
Transferals	679.461	-10.232	-2.981	650.000	0	-100.000	-20.378
Catch quota	2.096.843	268.292	480.266	1.454.597	7.040	61.895	8.243
Catch	1.304.982	265.544	92.527	1.336.744	2.776	60.031	159
Status	791.861	2.748	387.739	117.853	4.264	1.864	8.084

*All numbers are in kilograms

Figure 7

Factory vessels and catch quota

	Landed product at port	Yield factor in the relevant trip	Catch to be deducted from catch quota
Cod, skinless and boneless	48.783 kg.	39,9%	122.263 kg
Haddock, skinless and boneless	14.237 kg	40,7%	34.980 kg

Figure 8

Catch in excess of catch quota 95/96 in demersal species

	Excess catch (volume) in kg.	Excess catch (% of alloc. catch)
Cod	146.492	0,15%
Haddock	6.254	0,01%
Saithe	2.828	0,01%
Redfish	49.647	0,08%
Greenl. Halibut	13.607	0,07%
Plaice	19.742	0,17%

Figure 9

A landing of a vessel

Landing port	Arrival nr.	Ship	Landing date	Fishing gear	Ships owner
Reykjavik	952336	1838 Freyja RE	24-okt-95	Trowl	Gunnar I Hafsteinss,

Buyer	Product nr.	Product	Recording date	Weight (kg)
Faxamarkaðurinn hf.	AKA	Redfish	25-okt-95	205
Faxamarkaðurinn hf.	ALAS	Ling - gutted	25-okt-95	30
Faxamarkaðurinn hf.	ALUS	Halibut - gutted	25-okt-95	45
Faxamarkaðurinn hf.	ASTS	Catfish - gutted	25-okt-95	812
Faxamarkaðurinn hf.	ATOS	Cod - gutted	25-okt-95	22.345
Faxamarkaðurinn hf.	AUFS	Saithe - gutted	25-okt-95	1.040
Faxamarkaðurinn hf.	AYSS	Haddock - gutted	25-okt-95	10.269
		Total weight (kg):		**34.746**

Figure 10

Three methods to impose penalties

- Fines because of illegal catch
- Withdrawal of the commercial fishing permit
- Legal procedure

APPENDIX II

DIRECTORATE OF FISHERIES

DIRECTORATE
OF FISHERIES

Ingólfsstræti 1 IS-150 Reykjavík
Tel: 354 569 7900 Fax: 354 569 7991
URL: http://www.hafro.is/fiskistofa/

Administration

The Directorate of Fisheries is under the jurisdiction of the Minister of Fisheries. By law the Directorate has been entrusted with the implementation of laws and regulations covering fisheries and fish processing. The Directorate is responsible for implementing fisheries management laws and regulations including supervision of processing and handling of fishery products. The Directorate's Computer Division engages in the collection and publication of data relating to fisheries management, marine research and all relevant statistics on fishing and processing.

The Directorate of Fisheries is responsible for the issuing of fishing permits for commercial purposes at the beginning of each fishing year or season, and also to new vessels replacing others which had earlier been assigned quotas. Furthermore the Directorate determines the annual quota share for each fishing vessel, based on its allocated share in the total allowed catch for each species as determined by the Minister of Fisheries. It issues the quota and collects relevant fees for fishing licenses. Other duties include imposing special fines for illegal catches. The Directorate supervises transfers of total allowable quotas and quota shares between fishing vessels, controls the acquisition of all data on each vessel's landings and monitors the weighing-in of fish catches. The Directorate collects and registers all publications and reports relating to fisheries, i.e. catch administration, marine research and statistical data based on reports submitted by buyers of landed fish and compiled by the Fisheries Association of Iceland.

The Directorate controls supervision on board fishing vessels and in ports of landing, which involves inspecting the composition of catch, fishing equipment and handling methods. Inspectors review all reports from fishery establishments to the authorities, in order to verify stated quantities and composition of catch.

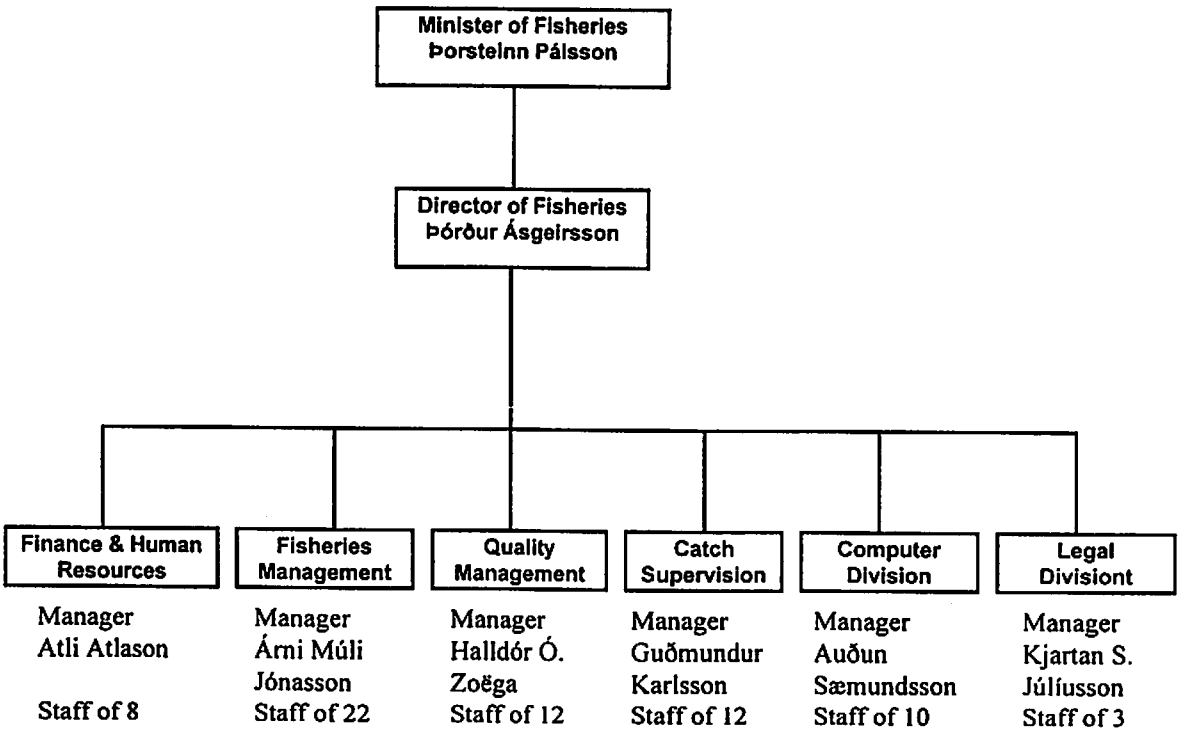
The Directorate of Fisheries issues licenses to processing plants and supervises their production. The processors have to meet specific requirements as regards sanitation, equipment and quality control in order to obtain a license.

DIRECTORATE
OF FISHERIES

Ingólfsstræti 1 IS-150 Reykjavik
Tel: 354 569 7900 Fax: 354 569 7991
URL: http://www.hafro.is/fiskistofa/

Organisation Chart of the Directorate of Fisheries.

The Directorate is organised into six divisions: Finance and Human Resources, Catch Administration, Quality Management, Legal Division, Computer Division and Catch Supervision.
At present there are 68 employees working for the Directorate.



April 1998.

DIRECTORATE
OF FISHERIES

Ingólfsstræti 1 IS-150 Reykjavik
Tel: 354 569 7900 Fax: 354 569 7991
URL: http://www.hafro.is/fiskistofa/

Finance and Human Resources Division

The Finance Division is responsible for the management of the Directorate's finances. It collects license fees, payments for services rendered and manages purchasing of goods and services. The division handles budgeting, planning and cost control, besides being in charge of management of human resources and administration of the main office.

Fisheries Management Division

The Fisheries Management Division issues commercial fishing permits and allocates catch quotas to Icelandic fishing vessels and maintains records of those rights.
Fisheries Management monitors compliance with rules on renewal of fishing vessels.
Fisheries Management collects data on fishing and landed catches of Icelandic fishing vessels and on utilization of their catch quota. The Division distributes the information through regular and organised channels.
Fisheries Management monitors landing of Icelandic fishing vessels and compliance with rules on weighing and recording of catches.
Fisheries Management handles inquiries and questions related to those subjects.

Catch Supervision Division

Supervision at sea is undertaken by inspectors on board fishing vessels, who monitor catch composition, handling methods and fishing equipment. In collaboration with the Marine Research Institute, inspectors can prevent any attempts at illegal activities within the fishing limits such as taking of undersized fish by closing off defined areas for up to 7 days.
In accordance with the Agreement on the European Economic Area, Icelandic inspectors must be on board foreign fishing vessels fishing within the Icelandic Exclusive Fishing Zone.
Membership in NAFO requires that Icelandic inspectors supervise catches on board any vessel fishing in Canadian waters.

DIRECTORATE
OF FISHERIES

Ingólfsstræti 1 IS-150 Reykjavik
Tel: 354 569 7900 Fax: 354 569 7991
URL: http://www.hafro.is/fiskistofa/

Quality Management Division

The main responsibility of the Quality Management Department is to ensure that processors and exporters of fishery products comply with official requirements concerning the protection of the consumer as regards product quality, safety and identity, including application of own check systems in all processing plants and vessels. Numbered processing licences are issued by the Quality Management Department to all processing plants and to all vessels holding fishing permits.

Approved inspection services are responsible for day-to-day inspections of facilities, hygiene and own check systems. The Quality Management Division approves the inspection bodies and monitors their activities in accordance with regulatory requirements. The Division issues health certificates for fish and fishery products for exports, upon request.

Legal Division

The Legal Division is responsible for enforcement of Act no. 37/1992 on Imposition of Special Fines for Illegal Catches. The Legal Division evaluates and decides the rate of penalties exacted for illegal catches, and is in charge of collection of payments in such cases. Cases in which the Directorate's decision is disputed may be referred to a Judicial Committee appointed by the Minister of Fisheries, and from there to courts of law.

The Legal Division monitors the catch status of Icelandic fishing vessels and revokes fishing permits temporarily in cases of over-fishing and or non-compliance with legal fisheries codes(Act no. 57/1996).

DIRECTORATE
OF FISHERIES

Ingólfsstræti 1 IS-150 Reykjavik
Tel: 354 569 7900 Fax: 354 569 7991
URL: http://www.hafro.is/liskistola/

Computer Division

The Computer Division serves the Ministry of Fisheries, the Marine Research Institute and the Directorate of Fisheries with over 200 employees. The services are divided into three sections: Development of Software for the Marine Research Institute, Development of Software for the Directorate of Fisheries, and Systems Section.

Development of Software for the Marine Research Institute is in charge of development and maintenance of software for the Institute. Among its tasks is the writing of data input programs for scientific studies conducted by the Marine Research Institute, developing of programs for information processing and preparation of lists and reports based on research data.

Software Development for the Directorate of Fisheries is responsible for development and maintenance of software for the Directorate. It maintains and updates the catch quota database, develops programs for information processing and prepares reports and lists from the catch quota records. It co-operates with port authorities in utilizing on-line data reporting from ports of landing assisted by the System Section.

The Systems Section is in charge of installations, network cabling and hardware and software for work stations and servers. It also handles hardware installations and communication with hardware suppliers and their technicians, and engages in systems programming and systems administration.
The systems Section serves all users of the information system, and handles installation and adaptation of programs for personal computers.

APPENDIX III

SUPERVISION AND ENFORCEMENT

FISKISTOFA

Ingólfsstræti 1
150,Reykjavík
Sími: 569 7900
Fax: 569 7990

FISHERIES MANAGEMENT IN ICELAND

Administration and surveillance

By Thordur Asgeirsson, Director of Fisheries

Icelandic Directorate of Fisheries

The main feature of the Icelandic fisheries management is the ITQ system. ITQ = individual transferable quotas. Other important elements are for example fishing gear regulations and closures of fishing grounds to protect small fish and spawning areas.

The fishing gear regulations aim at protecting small fish from being caught by enforcing minimum mesh sizes in nets, seines and trawls and recently new inventions have made it possible to increase considerably the selectivity of trawls, even to the extent of reducing to very small levels any fish as a by-catch for example in shrimp trawls.

The closures of fishing grounds are probably more frequently used protection measures in Iceland than anywhere else. In addition to permanent closures of large areas known to be important growing up areas of small fish and to temporary closures of known spawning areas, Icelandic regulations have since 1976 empowered the Marine Research Institute to close, for up to 7 days, just through radio announcements, areas of any size, if fish inspectors or even the fishermen themselves detect quantities of small fish in the ongoing catches which exceed acceptable levels. Such short time closures to protect small fish are being announced for one area or another up to three times every week throughout the year.

However important these and other measures used in the Icelandic fisheries management are, I will not elaborate upon them but instead turn my attention to the main issue of discussing the ITQ system.

FISKISTOFA

Ingólfsstræti 1
150,Reykjavík
Sími: 569 7900
Fax: 569 7990

I. THE ITQ SYSTEM

A. Commercial fishing permits

It is not allowed to engage in commercial fishing within the Icelandic exclusive fishing zone without an official fishing permit from the Directorate of Fisheries. Permits are at all times bound to vessels. New fishing permits may be issued to more than one vessel in place of a single vessel which ceases operation, and more than one vessel may cease operation in return for a single addition to the fishing fleet; provided that such exchange does not lead to an increase in the capacity of the fishing fleet. The purpose of this rule is to discourage over investment in fishing capital and in such a way to reach an equilibrium between the fishing capacity and the sustainable yield of the stocks.

In April 1997 the number of vessels holding commercial fishing permits were as follows:

Figure 1. Number of vessels

A vessel holding a commercial fishing permit can fish any species not managed by the ITQ system without limits, but gradually all important exploitable marine stocks have been included in the ITQ system. The species involved are: cod, haddock, saithe, redfish, greenland halibut, plaice, catfish, witch, herring, capelin, off-shore and in-shore shrimp, lobster and scallop.

The ITQ system applies to the whole Icelandic fleet with one exception. Vessels under 6 GRT fishing with hook and line, may elect to be exempt from quota restrictions, in which case they are subjected to a limited number of fishing days, which are 84 in the current fishing year. In order to keep trace of the fishing days of each vessel a computer system has been employed. The skipper of the vessel has to phone a certain number when leaving port and punch in a code number for the vessel in question, and then the use of one fishing day will automatically be recorded. This

Ingólfsstræti 1
150,Reykjavík
Sími: 569 7900
Fax: 569 7990

record is then checked against information of landings which are recorded in a system I will discuss later. This procedure to record the use of fishing days has worked quite well.

B. The allocation of quota shares

The Minister of Fisheries decides which species are to be subject to the ITQ system and the annual total allowable catch (TAC). When the Minister decides to include new species in the ITQ system, the quota share of each vessel is based on its catch performance during the previous 3 fishing seasons. The Directorate of Fisheries allocates to each vessel a share in the TAC in the same proportion as its share in the total catch of the previous fishing seasons.

Figure 2. Example of the allocation of quota shares of a new species

This quota share is only allocated to vessels holding a commercial fishing permit. It is permanent and hence it remains unchanged from year to year unless it is transferred to another vessel. The quota share of a vessel can be transferred wholly or in part and merged with the quota share of other vessels. The transfer of quota shares has to be reported to the Directorate of Fisheries and are not valid until the transfer has been confirmed.

C. The allocation of catch quota

Annually, before the beginning of each fishing year, which lasts from September 1 to August 31, the Minister of Fisheries issues a regulation determining the TAC.

Figure 3. TAC for demersal species in 1996/1997

Ingólfsstræti 1
150,Reykjavík
Sími: 569 7900
Fax: 569 7990

These decisions have during the last years been consistent with the recommendations of the Marine Research Institute. When the Minister has made his decision the Directorate of Fisheries allocates the TAC in accordance with the vessels quota shares. Thus the catch quota of a vessel is a simple multiple of its quota share and the TAC.

Figure 4. The allocation of catch quota (allocated in equivalents of gutted fish)

The catch quota like the quota share is only allocated to a vessel, which holds a commercial fishing permit. And like quota shares, it is transferable within the fishing year, wholly or in parts between vessels holding commercial fishing permits. The transfer of catch quota has to be reported to the Directorate of Fisheries and is not valid until the Directorate has confirmed the transfer.

The freedom of transfers of both quota shares and catch quotas are the main caracteristics of the ITQ system and the key to making this approach superior to other methods of managing fisheries as the transfers fight off the tendency included in other systems of over investments in the fishing capacity.

F I S K I S T O F A

Ingólfsstræti 1
150,Reykjavík
Sími: 569 7900
Fax: 569 7990

II. SUPERVISION OF THE ITQ SYSTEM

A. Weighing in of the catch

In an ITQ system it is obvious that uniform rules concerning the weighing in and recording of catch are necessary, as well as an efficient system to supervise the utilisation of the catch quotas of each vessel. As experience shows there will always be some shipowners and captains who will, because of financial gain, try to avoid to weigh in catch, which should be part of the vessels catch quota.

All catch of Icelandic vessels inside the exclusive fishing zone must be landed, weighed and recorded in Iceland in accordance with the law and regulations. There are minor exceptions of this rule which I will not discuss here.

There are approximately 60 ports of landing in Iceland. The quantity of landed catch varies substantially from port to port. In accordance with Icelandic law the port authorities are responsible for the correct weighing and recording of the catch and transmitting this information to the Directorate. Additionally, the Directorate of Fisheries employs approximately 20 inspectors, of whom 11 travel between ports to conduct surveillance, 5 are usually on board fishing vessels, while 4 work in the Directorates office.

Figure 5. Number of landings by ports

All landed catch is weighed by certified scale operators, who are employed by the local port authorities. Very few exemptions (10) from this rule are processing plants and fish markets so located that the catch is landed directly from the vessel into the reception or raw material storage of the plant which in such case has been approved by the Directorate to employ certified scale operators to do the weighing and rapporting

Ingólfsstræti 1
150,Reykjavík
Sími: 569 7900
Fax: 569 7990

rather than to have to transport the catch some distance to the official harbor scale and back.

The ports of landing are connected to the Directorate through a computer system called "Lóðs", and they are responsible for transmitting data to the Directorate daily. Plants which themselves employ a certified scale operator can however, submit their data to the local port of landing within 3 days.

Accurate and prompt recording is important, since the status of the catch quotas of each fishing vessel is based on that information. Up to date information also simplifies the management of the ITQ system considerably.

Figure 6. The catch quota status of a vessel.

The catch recording system is linked to the ports accounting systems and the port fees calculations are based on quantity of landed catch recorded in the "Lóðs". The ports therefore have a financial interest in controlling that all landed catch, whether weighed on the port scale or not, is duly recorded in the computer system.

The quota allocated to each vessel is based on the weight of gutted catch, which requires figures for all landed catch to be converted into the equivalent of gutted catch. In the cases of whole (ungutted) fish a standard coefficient is used. The reason for quota being allocated based on gutted catch is that in Iceland the majority of vessels land gutted fish and this is encouraged to ensure the quality of the products.

In the case of factory vessels a certain procedure has been formulated. These vessels need a special permit to process fishery products, f. ex. to flatten or fillet fish on board, on the condition that several requirements concerning equipment, facilities and hygiene are met.

Ingólfsstræti 1
150,Reykjavík
Sími: 569 7900
Fax: 569 7990

These factory vessels are required to check their yield factor at certain intervals, and keep samples thereof, specially marked. At the end of each fishing trip the vessels send a report to the Directorate containing information on the catch, processed products and the average yield during that trip. When the vessels reach their ports of landing the final products are weighed in per se. The Directorate on the other hand records the relevant yield factor based on the yield report and calculates the weight of the catch equivalent to gutted fish. This is then deducted from the vessels catch quota.

The Directorate can without warning decide to compare the yield samples with the yield factor that was forwarded to the Directorate and with the processed products. If there is any deviation the yield factors are lowered significantly.

Figure 7. Processed products and the catch quota

A good yield factor means that the catch and therefore the catch quota is being utilised more efficiently.

B. The utilisation of the "Lóðs" computer system in catch supervision

In an ITQ system like the Icelandic one it is essential that a vessel does not fish without having sufficient catch quota. Fines are imposed on catch beyond the catch quota.

Because of this it is important that the catch status of each vessel can be monitored at all times. That is where the computer system "Lóðs" plays a key role. Before the system was set up, the catch status was controlled by instructing owners of fishing vessels to submit quota reports enumerating the catch of each species that is subject to quota regulations. Information about the catch of each vessel was from 10 to 40 days old when received at the Directorate from the skippers who kept correct delivery dates, and even older from those who were late in forwarding their reports. These

Ingólfsstræti 1
150,Reykjavík
Sími: 569 7900
Fax: 569 7990

reports were then recorded in a computer system before information could be obtained.

This delay in obtaining information on the catch quota status of vessels made supervision difficult and it was possible for vessels to fish well beyond their catch quota before the authorities could stop them. Hence, fishing beyond the catch quota created quite a problem.

The computer system "Lóðs" has simplified the supervision of the catch quota status of each vessel and made it possible to stop vessels without sufficient catch quota quickly. This is done by a continous check of the catch quota status of all vessels at the Directorates office, and by sending a notice to those shipowners who have or are about to fish up their catch quota. They are given few days to submit their comments to the Directorate. This is necessary as wrong recording in the computer system is possible. If the shipowner who has fished up his quota cannot challange the Directorates figures or transfer immediately quota to his vessel from another vessel which has enough unused quota to cover the transfer the Directorate withdraws the vessel's fishing permit and sends notice thereof to the shipowner, the captain of the vessel and the Coast Guard. If a vessel continues to fish after its permit has been withdrawn, it is brought to port, the shipowner and the captain are indicted and the catch is confiscated.
Recurrent fishing in excess of the catch quota can result in a long-term withdrawal of the commercial fishing permit.

Because of the utilisation of the computer system "Lóðs" it has been possible to reduce overfishing substantially so that it hardly constitutes a problem anymore.

Figure 8. Catch in excess of catch quota in demersal species in 95/96

In all fishery management systems the problem of undesirable catch being discarded is well known. A solution for this problem is hard to find. In an ITQ system it may be

Ingólfsstræti 1
150,Reykjavík
Sími: 569 7900
Fax: 569 7990

tempting to throw catch overboard when the vessel does not have enough catch quota or when the catch is less valuable than usually, for example when the fish is small. Shipowners of course want to maximise their financial gain from their catch quota.

Various measures are been used to minimise this problem such as the closure of fishing grounds and fishing gear regulations as mentioned in the beginning. As I said earlier I do not intend to discuss these resources here, but I think it is of interest to address the question whether the use of the computer system can be of help to counteract the discarding of catch.

Last year a new act concerning the conduct of harvesting the marine resources entered into force. In this new legislation there are several provisions intended to encourage responsible fishing. An example is the stipulation that a vessel is not allowed to commence a fishing trip unless it has catch quota that is deemed sufficient to cover its probable catch, including by-catch, with regard to the fishing gear used. According to this rule it is not enough for the vessel to have enough catch quota for the species aimed at but also for other species that might be caught at the same time.

Obviously it can be difficult to enforce this rule and it can be hard to prove that it has been broken, especially because undesirable catch might have been thrown overboard, because of the lack of catch quota.

Through the computer system the Directorate can gather information about the catch, broken down by species and fishing gear for each and every vessel and fishing trip.

Figure 9. A landing of a vessel

This information enables the Directorate to compare the catch of different vessels and notice any discrepancies from the norm by a single vessel as regards composition of the catch. If such a comparison gives reason to suspect illegal discards, inspectors from the Directorate monitor the vessel in question especially, i.e. the landings and the

Ingólfsstræti 1
150,Reykjavík
Sími: 569 7900
Fax: 569 7990

weighing in of the catch. They might go out on a fishing trip and even stay on board for several trips. Thus, catch control and administration do make various uses of the computer system, which has been successfully designed to make the Icelandic fisheries management efficient in securing economic and responsible fishing.

C. Penalties

In order to ensure that any system works, penalties must be imposed on those not following the laws and regulations. In Iceland three different penalties are prescribed.

Figure 10. Three methods to impose penalties.

1. Fines because of illegal catch

   At the end of each fishing year the total catch of a vessel is compared with its total catch quota. This is done by comparing the catch according to the "Lóðs" computer system with reports submitted by the buyers of fish. In these reports the name of the vessel that sold the fish is stated. This enables a comparison in computers. Any discrepancies are investigated and any wrong recordings are corrected. After this the correct catch status of the vessel is compared with its total catch quota and a fine is imposed for any excess catch. The fine reflects the value of the catch so that no one can benefit by overfishing especially since the cost of catching the fish cannot be deducted and will be borne by the shipowner.

2. Withdrawal of the commercial fishing permits.

   As I said before the Directorate can withdraw the commercial fishing permit of a vessel. This penalty is used quite often, especially in case of excess catch but also for other violations, such as violation of the rules concerning the weighing of the fish. The withdrawals can last from 2 weeks up to 1 year depending on the nature and seriousness of the violation.

Ingólfsstræti 1
150,Reykjavík
Sími: 569 7900
Fax: 569 7990

3. Legal procedure.

It depends on each incident whether fines or withdrawals are deemed sufficient or whether the violation is referred to the police. If that is done the police then investigates the violation and it is then up to the public prosecutor to decide whether to indict or not. Penalties have been made more severe with a new Act, that was passed last year. According to this Act the minimum fine is higher than the average fine was before and severe and deliberate violations can be punished with imprisonment up to six years. This new Act reflects the fact that in Iceland violations against the Fishery Management Act are being considered more and more serious.

F I S K I S T O F A

Ingólfsstræti 1
150,Reykjavík
Sími: 569 7900
Fax: 569 7990

III. FREE ACCESS TO INFORMATION ABOUT HARVEST RIGHTS, FISHING AND CATCH

All information regarding the quota shares, catch quota, transfers and landed catch are according to the law open to everyone. The Directorate publishes this information on the Internet and English pages are currently under construction.

This free access to information is normal as according to the law the marine stocks in Icelandic waters are the common property of the Icelandic nation. The free access is also necessary to eliminate suspicion and to contribute to a more open and elaborate administration. Furthermore, it contributes to a correct and accurate discussion about fishery management.

Catch Supervision on land

Within the Directorate of Fisheries 14 employees are responsible for inspection and monitoring of landed catch, thereof 11 inspectors. Some of the inspectors are located in different parts of the country, one in Western Iceland, in Northern Iceland, one in Eastern Iceland and one inspector in the Westman Islands, the rest have their base of operation in Reykjavík, travelling between landing harbours as needed.

The duties of the inspectors are numerous, including e.g.:

- Monitoring of landings, weighing and recording of catches
- Supervision of fishing equipment and catch composition
- Measuring of otoliths and sex determination of fish
- Control of exports of catch in containers
- Monitoring of fish receptacles and transports of fish
- Monitoring of fishing boats restricted to pursuit days and control of their use.

Furthermore the inspectors are expected to explain and instruct those concerned on correct procedures implementing existing rules and regulations.
The inspectors collaborate with several government institutions, among them the Marine Research Institute and the Icelandic Coast Guard. The co-operation with harbour authorities and authorized weight controllers in ports of landing permits daily recording of weights of landed catches in the entire country.

The monitoring of weighing and recording of landed catch is without doubt the most time consuming responsibility. Some further explanations are needed:

The most important procedures of controlling weighing and recording of catches:

1. Control of weighing catch on harbour scales
2. Control of authorised weight controllers employed by processors by special dispensation
3. Control of yield assessment and weighing of catch on board processing vessels
4. Control of transports of catches
5. Control of exports of unprocessed fish in containers

Control of weighing catch on harbour scales.

There are 65 ports of landing. Inspectors control whether catch is brought to the harbour scales and subsequently monitor the correct transmitting of data to the Directorate's computer system "Lóðs". They also control that receipts and weight notes are correctly completed.

Control of authorised weight controllers working for processors by special dispensation

The Directorate regularly audits processors holding special dispensation for weighing catches. The authorized weight controllers are checked, weight notes compared and sampling procedures surveyed. Any deviations from current laws and regulations result in a warning and for repeated occurrences or serious transgressions, the processor's dispensation for weighing catches will be withdrawn.

Control of yield assessment and weighing of catch on board processing vessels

The control is carried out regularly by inspectors ascertaining that the rules on yield assessment are adhered to as well as weighing and recording of the vessel's catch. This is carried out by examining how the weighing and recording is performed and by comparing yield reports, yield samples and processing samples. It also includes checking proper procedures when deviations are detected, how corrective measures are taken and that correct warnings and punishments are issued. Processing vessels authorized to process on board were 49 in 1997.All authorized vessels in operation were monitored.

Control of transports of catches

Vehicles transporting catches are controlled regularly. The drivers have to show a transport receipt establishing that the catch has been weighed correctly, the receipts correctly completed and quantity and species are in accordance with the statement on the receipt in question. This kind of control also concerns quality control; in case the vehicles are not closed or covered as required, the matter is transferred to the Quality Management Division of the Directorate. A special project was carried out in 1997 concerning fish tubs. Damaged tubs were discarded and sealed by a special badge of the Directorate in order to prevent any further use of them. Any further use of sealed tubs was punished by destroying their contents.

Control of exports of unprocessed fish in containers

The control of exports of unprocessed fish is achieved by inspectors supervising the loading of containers in ports of landing and recording any relevant information on their contents. Containers are also inspected in co-operation with shipping companies.
A description of the container's contents is then compared to the exporter's statement and sales information from buyers abroad. Any deviations in stated quantities and species from the original statement, and adequate explanations are not forthcoming, the police is notified and /or the vessel in question loses its fishing permit.
Container inspections were 189 in 1997.

Transgressions and punitive measures

In most cases where rules and regulations have not been honoured, advice and warnings prove to be sufficient. However in some cases punitive measures have to be taken. Any violations against Fishery Management Acts and relevant regulations are investigated and prosecuted in accordance with the Criminal Proceedings Act. It is the duty of the Directorate to refer such cases to the police authorities in question.
In 1997 20 cases were referred to the Police, sentences were passed in 8 cases and 9 fishing permits were revoked.

14 May 1998.

APPENDIX IV

COMPUTERISED AUCTION

CASS - Computerized Auction and Sales System

▶ CASS is

Auction in Njardvik

- ▶ An advanced computer system designed especially for fish auctions.
- ▶ A flexible information system enabling fish auctions to increase efficiency and productivity.
- ▶ Used for:
  - ▸ Conducting auctions
  - ▸ Gathering sales and fee information
  - ▸ Settling buyers' and sellers' accounts
- ▶ Suitable for use either by a single auction or to serve a number of remotely located auctions.

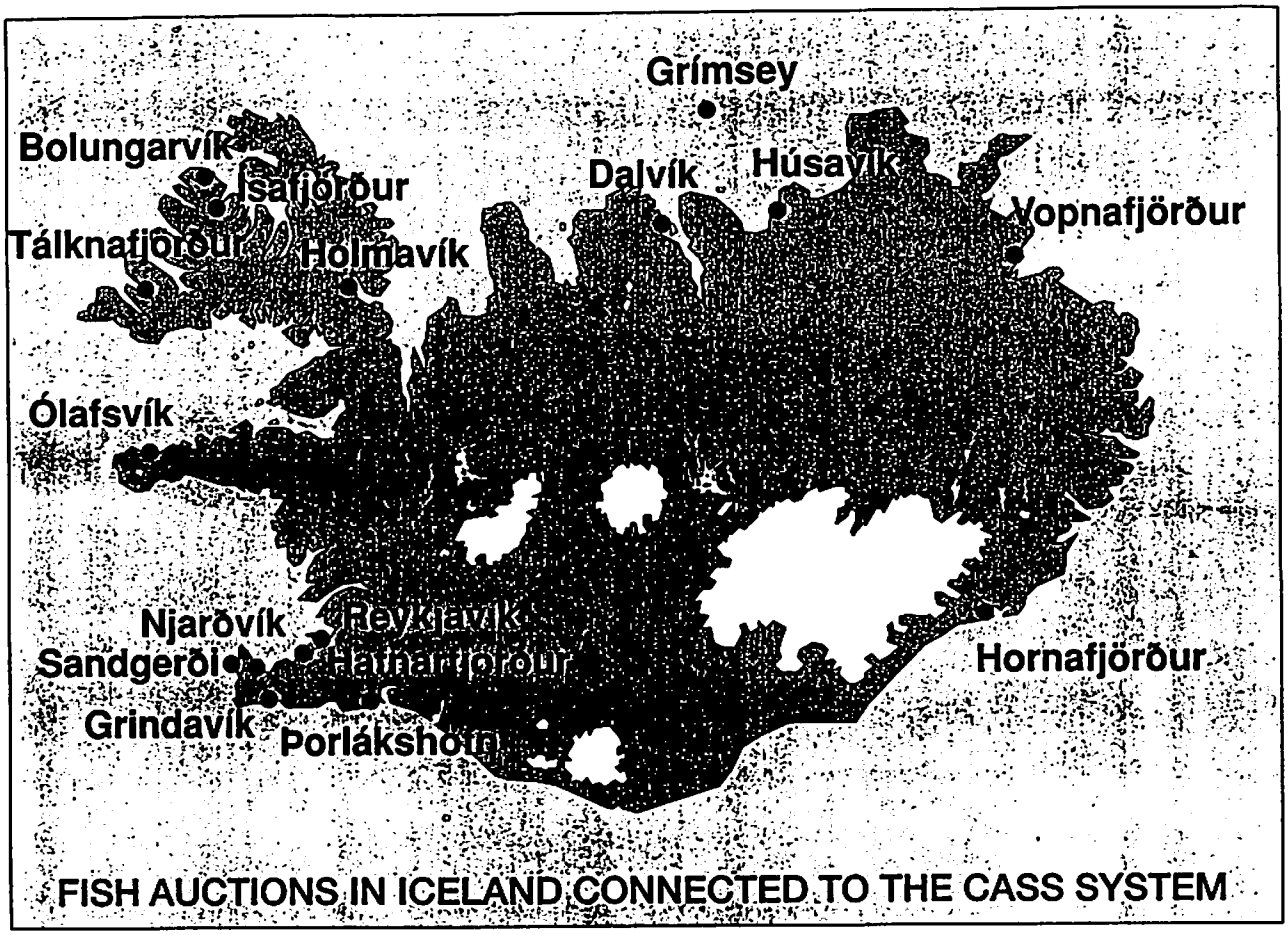
MODEM

▶ Main functions

- ▶ Record information about supply of fish before auctions.
- ▶ Record information about sales during auctions.
- ▶ Supply and maintain connections to remote auction places, if auctions are conducted in more than one location.
- ▶ Maintain detailed information about customers, both buyers and sellers.
- ▶ Maintain information about fees to be collected by the fish market from buyers and sellers.
- ▶ Issue invoices to buyers, keep track of payments and maintain information about their credit balance in real time.
- ▶ Issue financial statements to sellers and disburse.
- ▶ Provide computerized dial-in service for buyers and sellers.
- ▶ Serve as an information database. Supply various sales reports, information and statistics which are available for any time period since inception of the system.

Auction in Sandgerdi

Reiknistofa fiskmarkada hf
Computer Centre for Fish Auctions
RSF
P.O. Box 45
260 Njardvik, Iceland
Tel.: +354-421 5302
Fax: +354-421 5708
Internet: http://www.arctic.is/fin/rsf



FISH AUCTIONS IN ICELAND CONNECTED TO THE CASS SYSTEM

▶ Advantages of CASS

- ▶ Powerful reporting and statistical system - all data is stored in a database for future reference. Sales and fee information is readily available for any time period. Reports for individual sellers, buyers, harbours, fish species, auctions, etc. or a combination thereof.
- ▶ All data is real-time - sales information can be accessed during and immediately after auctions.
- ▶ System controls that a buyer is not allowed to conclude a purchase unless sufficient credit is at hand.
- ▶ Early (temporary) invoices to buyers and financial statements to sellers can be issued any time.
- ▶ Flexible - users define their own set of codes for fish species, quality, size, age, etc.
- ▶ Multiple fee structure defined by users - reports can be generated for sales fees, service charges, transportation fees, etc.
- ▶ Inexpensive and easy to connect to the CASS - a PC and a modem is all that is needed for a connection.
- ▶ Customers can be granted restricted access to the system via dial-up modem.

▶ RSF

- ▶ Established in 1992 as a computer centre for fishmarkets. RSF is a joint-stock company owned by four fishmarkets.
- ▶ RSF is the owner and maintainer of the CASS system in Iceland.
- ▶ Connects 11 fish auctions in 16 different locations scattered along the coastline of Iceland into a single market area. RSF conducts auctions, invoices buyers, disburses sellers and forwards payments to port authorities and government funds as well as to fish auctions for services rendered.
- ▶ Sold 46,500 tons for $58 million in 105,000 transactions in 1995.

The fish auctions concentrate on selling fish while RSF handles the paperwork for them with the aid of the CASS.

RSF

Reiknistofa fiskmarkada hf
Computer Centre for Fish Auctions

RSF
P.O. Box 45
260 Njardvik, Iceland
Tel.: +354-421 5302
Fax: +354-421 5708
Internet: http://www.arctic.is/fin/rsf

APPENDIX V

LIST OF REPORTS OBTAINED BUT NOT DISTRIBUTED

LIST OF REPORTS OBTAINED BUT NOT DISTRIBUTED

1. Ministry of Fisheries Iceland - Close to the Sea.
   An up-to-date review of Icelandic fisheries.

2. State of Marine Stocks in Icelandic Waters.
   Prospects for the quota year 1997/98.
   This publication is mainly in Icelandic.

3. Annual Report 1997 - Icelandic Freezing Plants
   Corporation plc.

4. The Icelandic Fisheries - evolution and management
   of a fishing industry.
   Ragnar Arnason, University of Iceland.