



close
to the
sea



Icelandic fisheries in the New Millennium

In the 20th century Iceland changed from being a poor agricultural nation to becoming a modern technological society where the living standards are among the highest in the world. To a large extent this change was possible because of the development in Icelandic fisheries.

The Icelanders began their campaign to gain sovereignty of the country's fishing grounds in order to prevent excessive fishing by foreign fleets and manage Iceland's fishing resources. This campaign lasted for three quarters of the century. Since 1976, the Icelanders have had to adjust their own fishing effort to the productive capacity of the fishery resources and their sustainable utilisation.

Iceland has actively contributed to the framework of international law for the fisheries, as well as regional conservation and management. The world's coastal states have assumed the greatest part of responsibility for the management of the living marine resources and thereby the harvesting of one of the most important sources of food for mankind. As a coastal state, Iceland will continue to work for responsible and sustainable fisheries.

The waters around Iceland, fed by the warm Gulf Stream, offer exceptional conditions for fish stocks to thrive. Understanding the marine ecosystem is the foundation of sensible and sustainable harvesting of these resources. A key role has therefore been assigned to marine research. The Ministry's Declaration of Environmental Considerations opens with this statement:

The Ministry of fisheries aims at achieving sustainable utilisation of marine resources and basing management decisions on the best available scientific grounds. Every effort shall be made to preserve the biodiversity and ecosystem of the ocean.

In the Icelandic fisheries management, annual total allowable catch is decided upon recommendations from the Marine Research Institute. The management is based on a system of transferable quotas for individual vessels. It has the objectives to promote the conservation and efficient utilisation of the marine resources and thus to ensure stable employment and settlement through-out the country. The main advantage of the Icelandic fisheries management is its economic



Minister of Fisheries
Mr. Árni M. Mathiesen

efficiency. Progressive enterprises have chosen to invest in harvest rights. Harvest rights have been transferred to those who exploit them most efficiently. Trading in quotas has encouraged specialisation in processing. The economic efficiency is extremely important for a nation as dependent on its fisheries.

The quota system has served well in keeping the catch within previously determined limits. The actual total catch is quite transparent since, with very minor exceptions, all catches are landed in Iceland. Regarding individual fish stocks the most important achievement in recent years has without doubt been the protection and strengthening of the cod stock, the most important of the Icelandic commercial stocks. This has been achieved using the precautionary approach to fisheries management.

World-wide, the modern day expectations of the fisheries include not only sustainable utilisation of marine resources and the precautionary approach to fishing but also responsible handling of the catch, quality assurance in processing and safe and healthy products. The Icelandic government and the fishing industry call for responsibility in the fishing industry based on the premise that sustainable development in the fisheries is vital for the industry and the nation alike, not only in the biological sense but also in economic terms. Icelanders are committed to sustainable harvesting of marine living resources and confident that fisheries will, in a new century and a new millennium, continue to be the foundation of prosperity in Iceland. ●



Gaining control...



In 1975 200 mile fishing limits became effective for Iceland but until then foreign fleets were catching over 100.000 tons of cod each year. This extension was the last of several important milestones in gaining control over the fishing areas around Iceland.

Iceland first officially declared a fishing limit in 1901 with an exclusive zone of three nautical miles, which remained in effect until 1952. For more than two decades afterwards, the Icelanders campaigned to win full jurisdiction over the fishing grounds around their island and championed the international cause of coastal states to manage fisheries in their waters and prevent overfishing. Known as the "Cod Wars," this campaign saw the fishing limit extended in four stages to reach its present 200 nautical miles in 1975, giving Iceland an Exclusive Economic Zone (EEZ) now covering a total area of 758,000 km².

Internationally, a principle of freedom of access for fishing was effective for the most productive part of the ocean until after World War II. During the next 30 years this principle was gradually replaced with almost complete authority of the adjacent coastal state to manage and control the use of the living resources and the conditions of that use.

The Icelandic claim to 4 mile fisheries limit in 1952 occurred as the International Law Commission was examining a reformulation of

the Law of the Sea pertaining to fisheries. Eventually it was agreed to await the outcome of the first UN Conference on the Law of the Sea in 1958. Both that conference and a subsequent one in 1960 failed to agree on territorial or fishing limits.

This encouraged coastal states to expand their territorial sea or fishing zone to 12 miles.

In the late 1960's a movement towards a third Law of the Sea Conference began. In 1972 Iceland proclaimed a fishing zone limit of fifty miles and consequently entered into "a Cod war" with Britain and West Germany. These states took the dispute to the International Court of Justice but Iceland did not accept its jurisdiction. By the time of its decision in 1974, during the first substantive session of the third United Nations Conference on the Law of the Sea in Caracas, the notion of a 200 mile fishing zone or even an exclusive economic zone was on the brink of widespread acceptance.

"In major respects the experiences of Iceland in attaining extended jurisdiction over fisheries, parallel, but anticipate the evolution of extended jurisdiction through international institutions."

The new international law of fisheries
UNCLOS 1982 and Beyond.
William T. Burke page 9.

...and participating in international cooperation in fisheries

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Conventions to which Iceland is a party

LEGAL FRAMEWORK:

United Nations Convention on the Law of the Sea, UNCLOS (1982). Entered into force 1994.
UN agreement for the Implementation of the Provisions of the United Nations Conventions on the Law of the Sea of 10. December 1982, relating to conservation and management of straddling fish stocks and highly migratory fish stocks (1995).
Has not entered into force.

RESEARCH:

Convention for the International Council for the Exploration of the Sea, ICES (1964). Entered into force 1975.

REGIONAL MANAGEMENT:

Convention on future Multilateral Cooperation in the Northwest Atlantic fisheries.
NAFO (1978). Entered into force 1979.

Convention on future Multilateral Cooperation the Northeast Atlantic fisheries.
NEAFC (1980). Entered into force 1982.

Agreement on Cooperation in Research, Conservation and Management of Marine Mammals in the North Atlantic NAMMCO (1992). Entered into force 1992.





NON-BINDING AGREEMENTS RELATING TO FISHERIES

RIO-Declaration from the United Nations Conference on Environment and Development, UNCED (1992).

UNCED Agenda 21 (1992).

FAO Code of Conduct for Responsible Fisheries (1995).



ENVIRONMENTAL AFFAIRS:

Convention for the Protection of the Marine Environment of the North East Atlantic, OSPAR (1992).
Entered into force 1998.

Convention on Biological Diversity (1992). Entered into force in Iceland 1994.

Convention on the Conservation of European wildlife and natural habitats (1979).
Entered into force in Iceland in 1993.

International Convention for the Prevention of Pollution from Ships (1973).
Entered into force in Iceland 1985.

Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matters (1972).
Entered into force 1975.

International Convention relating to Intervention on the High Seas in cases of Oil Pollution casualties (1969).
Entered into force in Iceland 1980.

Convention on International Trade in Endangered Species of Wild Fauna and Flora, CITES (1973).
Entered into force 1975.

TRADE AGREEMENTS:

Agreement on the European Economic Area (1993).
Entered into force 1994.

Free trade agreements with various countries.

For further information see

<http://www.stjr.is/interpro/utannr/utn-eng.nsf/pages/treaties>

Towards sustainability

THE MANAGEMENT SYSTEM

Soon after gaining control of their exclusive economic zone it became clear to Icelanders that they were overfishing their most valuable fish stocks. Various forms of restriction to fisheries were applied and there was an intensive political debate on different systems of management. Marine research dates back a century in Iceland and the population is well aware of its role and the importance of the fisheries sector as it contributes to nearly half of the foreign earnings of the nation.

In 1983 effort limitations which had been in force since 1973 had proved unsuccessful and the cod stock was in decline. In 1984 it was decided by the supreme legislative authority, the Althingi, to adopt a management system of transferable quotas (ITQs) for individual vessels based on individual vessel's catch performance over the period 1981-1983. Until 1990 there was an effort option in the system that made it difficult to limit catches. The present comprehensive Fisheries Management system is still based on ITQs. The objectives are to promote the conservation and efficient utilisation of the marine resources and thus to ensure stable employment and settlement throughout the country as stated in the first

paragraph of the comprehensive and uniform Fisheries Management Act of 1990. The fisheries management system is continually under revision and development.

In addition to the ITQ system which together with the TAC allocation is the cornerstone of Iceland's fisheries management, there are a number of other measures aimed at supporting the management system. There are rules concerning the type of fishing gear permitted, e.g. the minimum mesh size. Fishing with trawls is prohibited in large areas near the coast which serve as spawning and nursery areas. Grids in fishing gear are obligatory in certain fisheries to prevent catches of juvenile fish. Extensive provisions are made for temporary closures of fishing areas to protect spawning fish from all fishing. Further to this, the Marine Research Institute (MRI) has the authority to close fishing areas temporarily without prior notice if the proportion of small fish in the catch exceeds certain limits.

THE PRESENT QUOTA SYSTEM

The total allowable catch (TAC) is set by the Minister of fisheries and based on the recommendation from the Marine Research Institute (MRI)

Fishing vessels are allocated a fixed quota share of the species subject to TAC. The combined quota share for all vessels amounts to 100% of each species.

The quota share is multiplied by the TAC to give the quantity which each vessel is authorized to catch of the species concerned during the fishing year in question. This is referred to as the vessel's catch quota.

Permanent quota shares and annual catch quotas are transferable.

Individual Fishing Enterprises may not control in value terms more than the equivalent of 8-12% of the total quotas allocated for all species.





THE ACHIEVEMENTS

The main advantage of the Icelandic fisheries management is its economic efficiency. The whole sector including processing and marketing benefit from the fact that the catch can be organised in line with the market and the labour force. Fishing companies have chosen to invest in harvest rights rather than other forms of investment. Harvest rights have been transferred to those who exploit them most efficiently. Trading in quotas for different species has encouraged firms to specialise. In mixed fisheries the transfer of quotas has allowed vessels to adjust their quota composition to the actual species composition of the of the year's catch.

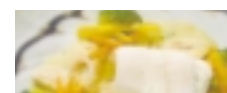
In most cases there is a direct relationship between fishing operations and processing. Vessels and processing plants are largely owned by the same firm. The system of issuing quotas to individual vessels rather than companies has therefore not disturbed the earlier equilibrium that had been established between fishing and processing interests. Considerable changes in the relative importance of local and regional fishing activities have nevertheless resulted from quota trading, as fishing and processing have been transferred to enterprises most economically suitable for them.

The quota system has served well in keeping the catch within previously determined limits. The actual total catch is very transparent since, with very minor exceptions, all catches are landed in Iceland and some 97% of the total catch is exported. Regarding fish stocks the most important achievement in recent years has without doubt been the protection and strengthening of the cod stock, the most important of the Icelandic commercial stocks.

PRECAUTIONARY APPROACH TO FISHERIES MANAGEMENT

There are different ways to implement precautionary approach in fisheries. In 1995 Iceland adopted a catch rule for cod, but catch rules for pelagic fishes had been adopted before. The catch rule for cod, that was revised in 2000 stipulates that an annual quota may not exceed 25% of the fishable stock, and that changes in annual total cod catch shall not exceed 30.000 tons from one year to the next. The catch rule was a result of extensive work by marine biologists and economists to decide upon stability in the fishing sector, the most favourable stock size and efficiency for rebuilding the stock, and taking into account interaction with capelin and shrimp stocks. The application of the catch rule for cod, ensures that the risk of stock collapse is less than 1%.

The International Council for the Exploration of the Sea (ICES) which is the scientific body that provides fisheries management advice to national and regional management i.e. in the North Atlantic and reviews national scientific research, has proposed another way of operating the precautionary approach. In addition to limit reference points for each commercial stock, ICES proposes the addition of a precautionary reference point, a function of the limit reference point, that indicates the risk that management is prepared to take and the uncertainty of the stock assessment and the forecast. ○



ICELAND: EXPORTER OF SEAFOOD, FISHERIES KNOW-HOW AND TECHNOLOGY

Enjoying internationally established contacts, Icelandic firms are in an excellent position to establish trade connections in marketing of all kinds of seafood products world-wide. Some of the largest marketing companies for fish in Europe are Icelandic. Icelandic seafood exporters have managed to establish themselves at the top of the market through their reputation for outstanding quality of raw material and processing standards. Rapid advances in Icelandic fisheries have been accompanied by the development of manufacturing and service industries that draw on long experience of the practical needs of fishing and fish processing operations. Among the leading fields are software products, electronic and digital equipment such as scales for on-board, as well as land-based weighing and process control and graders for landed or even live fish. A wide selection of tubs, boxes and packaging for handling storage and retail of fresh and frozen products are made in Iceland, as well as trawls nets, trawl doors and fishing boats, safety equipment and protective clothing. Icelandic manufacturers have designed and installed many processing plants around the world for companies, ranging from vessel owners to industrial food processors. Services such as know how-in banking and consulting for the fisheries sector world-wide are also in increased demand.



THE ICELANDIC FISHING GROUNDS

Within Iceland's exclusive fishing zone of 758.000 km² are some of the richest fishing grounds in the world. The most productive cod banks are off the south-west coast during winter and off the West Fjords in the north-west all year round. Redfish is mostly found in the south, the west and the south-east. Herring is largely confined to the East Fjords and south-east coast, while capelin feeding grounds are to the north and spawning grounds off the south and west coasts. Greenland halibut is found on deep banks off the West Fjords as well as elsewhere off the north, west and east. Oceanic redfish is harvested along the Reykjanes Ridge, inside and outside the 200 mile limit south-west of Iceland. Other stocks such as inshore shrimp, scallop, nephrops and deep-sea shrimp are fairly localised.

PRESERVING THE MARINE ECOSYSTEM AND ITS BIODIVERSITY

The marine ecosystem is highly complex and interactive. Icelanders are well aware that it is crucial to conserve biological diversity and not to disrupt the overall balance of the ecological web. To pursue the priority aim of sustainable harvesting, measures are taken to ensure that individual stocks are not overfished nor that other stocks become disproportionately large, which also may result in ecological imbalance. An important step towards sustainable harvesting and conservation of biological diversity is multi-species management of stocks. Dynamic relations between stocks have in several areas been thoroughly investigated. For a general application of this approach however, wide ranging knowledge of the interrelationships between the different parts of the ecosystem is required. To meet this, extensive long term multidisciplinary research projects are in progress.



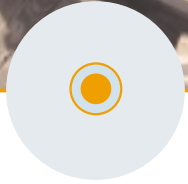
OTHER MARINE RESOURCES

Whaling was practised off Iceland for centuries, at first by foreign nations who hunted in such large quantities as to drive various stocks to the brink of extinction.

In response, the Icelandic government declared a ban on commercial whaling earlier this century, which was first lifted once stocks had recovered. Later Icelandic whaling activities were scaled down and eventually suspended in accordance with the temporary ban on commercial whaling that was adopted by the International Whaling Commission and took effect in 1986. Scientific research has subsequently demonstrated a large growth in the whale population in Icelandic waters and that the size of these stocks can have considerable effect on the productivity of other stocks. It has been estimated, that the productivity of the cod stock is likely to be 10% less than it would be if whale stocks were at same level as forty years ago. Along with seals, whales are becoming an increasingly powerful competitor with the fisherman for the fish in the sea. All scientific evidence suggests that it is safe and prudent to harvest these stocks as other living marine resources.



FURTHER INFORMATION ON MANAGEMENT, STOCKS, CLEAN SEAS, PROCESSING AND FISHING GROUNDS, SHIPS, GEAR OR EFFORT TO NAME BUT FEW ARE ON OUR WEBSITE: WWW.FISHERIES.IS



THE MINISTRY OF FISHERIES

is responsible for management of fisheries in Iceland, the implementation of legislation, and issues regulations to this effect. Its duties are general administration, long-term planning and relations with other fisheries institutions at the international level. The Minister of Fisheries is responsible for the annual TAC decisions. Three bodies assist the Ministry of Fisheries in its management and general administration tasks: the Directorate of Fisheries, The Marine Research Institute and the Icelandic Fisheries Laboratories.

THE DIRECTORATE OF FISHERIES

is entrusted with the day-to-day administration of fisheries. The Directorate is responsible for applying legislation on fisheries management. It collects and publishes data and other fisheries statistics. The Directorate of Fisheries issues fishing permits to vessels and allocates catch quota. Other duties include imposing penalties for illegal catches. The Directorate supervises the transfer of quotas and quota shares between fishing vessels, controls the reporting of data on the landings of individual vessels and monitors the weighing-in of catches.

The Directorate provides supervision on board fishing vessels and in ports of landing, which involves inspecting the composition of catches, fishing equipment and handling methods. The Directorate of Fisheries issues licences to processing plants and supervises their production. Processors have to meet specific requirements concerning hygiene, equipment and quality control. Approved inspection bodies are responsible for inspection of hygiene, facilities and in-plant monitoring of production, both in processing establishments on land and on board vessels. Formal accreditation of inspection bodies is required.

In carrying out its many tasks, the Directorate of Fisheries co-operates with a number of other government institutions, including the Icelandic Coast Guard, the Directorate of Customs and the Directorate

of Shipping. Collaboration with the Harbour Authorities and the Association of Local Authorities permits daily recording of catches weighed in throughout the country. Further information on www.fiskistofa.is

THE ICELANDIC FISHERIES LABORATORIES (IFL)

established in 1934 perform research and analytical work for the fisheries, primarily the processing sector. In later years, the institute is involved in research and services for the food industry in general. The institute carries out extensive research in collaboration with similar establishments in the neighbouring countries and within the European Union. It has close links with the University of Iceland and the University of Akureyri, providing experts for research and teaching in the faculties of food science and fisheries sciences, as well as training courses for people in the industry. The analytical division provides services for assessment of the chemical, microbiological sensory and physical properties of seafood products. The main analytical methods of the institute have been certified under the EN 45001 standard.

Research areas include: technological solutions for the utilisation of new marine resources and established processes, methods for fish safety determination, methods for quality assessment and improvement and the development of new products for the industry. Environmental aspects of the operations in the fisheries have been under study in recent years in co-operation with a number of processing plants. The Institute has extensive experience in sensory analysis of fish and fish products and has an expert sensory panel to assess freshness and spoilage of fish. Further information on www.rfisk.is

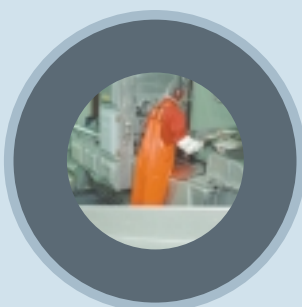


THE MARINE RESEARCH INSTITUTE (MRI)

has been active since 1965, although the history of marine research in Iceland dates back more than a century. The role of the MRI is to acquire knowledge of the marine environment around Iceland and its biota. Its research focuses on marine physics and chemistry, characteristics of the sea-bed, biological conditions and behaviour of marine vegetation, zooplankton and benthic organisms, along with studies on the marine food web. The most extensive field of the MRI's activities, however, is its research and advisory role regarding fishing and sustainable utilisation of the living marine resources, including survey assessment, trials of fishing gear and studies of potentially harvestable species. The MRI takes part in Nordic and international marine research projects. The Institute operates three ocean-going research vessels for its research.

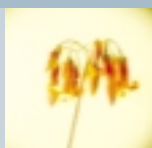


Measurements of the stock size of demersal fish and shellfish are conducted at various times of the year, and the results are used to assess the size and condition of fishable stocks as the basis for TAC recommendations. Echo sounding is used to assess the size of stocks of herring, capelin and oceanic redfish. In cooperation with shareholders and funded by the government, a comprehensive multi-stock management research project is in progress aimed at studying interactions in the marine ecosystem, spanning the whole range of marine life from algae and plankton to large whales. Deepwater research is being stepped up focusing on various unutilised or under-utilised species. The MRI thereby plays a twin role by exploring new possibilities for harvesting as well as providing advice for the long-term sustainable harvesting of fish stocks. Further information on www.hafro.is



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We aim

At achieving sustainable utilisation of marine resources, and to make every effort to preserve the biodiversity and the ecosystem of the ocean.

To ensure and maintain maximum long term productivity through responsible use of all marine resources.

To ensure that all decisions are based on best available scientific and economic information at any time.

To ensure that individuals and enterprises in the Icelandic fisheries sector have clear and generally applicable, non-discriminatory guidelines to follow, that provide them with a positive working environment which will strengthen the sector's competitive position internationally. ●

- For further information on the Icelandic fisheries sector please visit our website www.fisheries.is

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MINISTRY OF FISHERIES ICELAND
 Skúlagata 4
 150 Reykjavík
 tel: (354) 560 9670
 fax: (354) 562 1853
www.stjr.is/sjr

