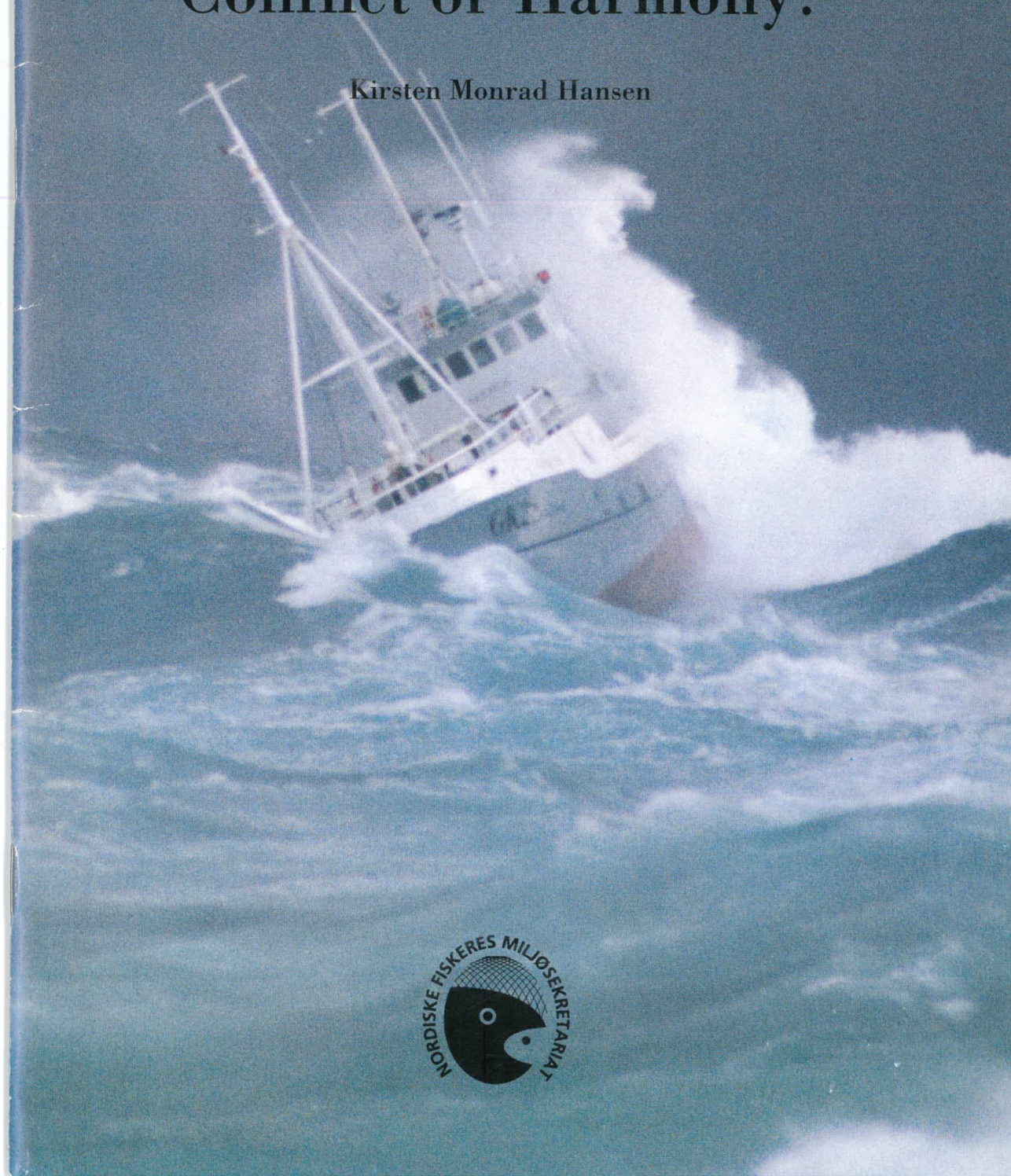


# Fishing and the Environment Conflict or Harmony?

Kirsten Monrad Hansen





Fishing and the environment  
Conflict or Harmony?  
is published in 1997 by The  
Nordic Fishermen's Environ-  
mental Secretariat.

Repro and print:  
AmetsTryk A/S, Esbjerg.

Frontpage: Vessel from Iceland.  
Photo: Snorri Snorrason.

Backpage: Danish trawler.  
Photo: Poul H Moustgaard.



Photo: Carsten Krog.



Photo: Carsten Krog.



Photo: KMH.



Photo: Carsten Krog.

## Preface

The fishing industry more than any other depends on the appropriate management of natural resources and their not being damaged by pollution and/or other human activities.

Long before ministries of environment and fishery, green organisations, etc. even existed, the fishermen of the Nordic countries and their organisations were occupied with problems of nature and natural resources, and the purpose of this publication is to give some insight into their position with respect to these matters in a historical perspective.

It is hoped that this publication will help to dispel some of the many myths about fishermen and fishing that unfortunately are all too common, e.g. that fishermen always think short-sightedly, that they are lacking in respect for natural resources, they exploit ruthlessly, etc. The fact is that fishing is still an industry that is based on hunting, completely dependent on the caprice of nature. No fisherman feels himself the master of nature, but rather as a small and, in bad weather, vulnerable part of it. It is therefore also a cause of great irritation for the fishermen to be lectured by desk-theorists about the "correct" approach to nature.

All this is not said in order to ignore the real problems with respect to nature and the utilisation of resources. As in other industries the fishermen are of course subject to severe economic conditions that sometimes force the long-sighted and "cor-

rect" solutions into the background. The generally low prices of heavily subsidized agricultural products, and the relatively free global competition within the fishing industry, have made it difficult for the prices of fish to keep up with general price increases. The fishermen have therefore had to increase their efforts and their efficiency in order to maintain roughly the same living standards as the rest of the population - this is really the big basic problem in today's management of resources.

This publication is a summary of the report entitled "De nordiske landes fiskeri set i historisk perspektiv", published by The Nordic Council of Ministers and written by the ethnologist Kirsten Monrad Hansen in collaboration with The Nordic Fishermen's Environmental Secretariat.

This secretariat is a collaborative agency for the fishery organisations in the Nordic countries, with the common purpose of strengthening the work against the pollution of their waters. Furthermore, the organisations want to take a more active and visible part in the debate with the authorities and environmental organisations about the use of marine resources, always aiming at a sustainable utilisation, but not always agreeing about the means to obtain this goal.

Carsten Krog  
Head of secretariat  
The Nordic Fishermen's  
Environmental Secretariat



# Introduction

The fisherman's livelihood depends on the amount of living resources in the sea. In general therefore the fisherman has a strong interest in protecting the fish stocks, and thus also in managing these stocks responsibly, even if economic reality sometimes necessitates short-sighted strategies.

The traditional public right to fishing of Western Europe contrasts with that in many other parts of the world. This means that the state's laws of property ownership do not apply to fishing banks, i.e. fishing stocks and fishing grounds are commodities that cannot be bought and monopolised by investors. Protected public rights to fishing thus means that a common prey is pursued rather than that the fruits of a private pro-

perty are harvested. Instead of purchasing one's own raw materials, as in industrial production, the first fisherman to catch the fish also owns it. Thus fishermen "collide" in their pursuit of common prey. A basic trait of protected public rights to fishing is therefore the requirement of regulations to structure the relationship between fishermen or between fishing units.

Thus the public right to fishing is characterised by replacement of the right of ownership by protection and regulations. In other words, "public right to fishing" is a well-defined way of structuring access to the resources, a way in which the in-built competition, or competitive forces, leads to high productivity among the fishermen.



*The public right to fish in the sea has been traditional in Western Europe. However, in freshwater and at the east coast of Sweden, at the Finish coast, and further along the coast of the Baltic Sea, the fishing right has been connected with land ownership. In these areas it is still very common for fishing to be a part-time occupation. Fyke net in Hjälmaren, Sweden. Photo deposited by the National Swedish Association of Fishermen.*

*One reason why fishing is difficult to regulate in detail is that it is still an industry based on hunting. At the same time it is difficult to obtain exact knowledge of the resources, because the fish swim freely in the sea, and because there are many elements that influence stocks of particular fish, e.g. other fish stocks, sea currents, sea temperature and oxygen content, salinity, pollution, sea birds, sea mammals. Photo deposited by the Norwegian Fishermen's Association (NFA).*



When this public right to fishing is coupled with an open market, the all important question concerns the relationship between the resources and the size of the market. A big market leads to increased competition

between the fishermen, and thus to increased pressure on the fish stocks. It is here that one meets problems of over-fishing and the reason for having to protect the resources against over-exploitation.

## Nordic fishing in a historical perspective

For people in the Nordic countries, fishing and catching sea birds and marine mammals have played a central role through the ages, as evidenced by the rich findings of fish bones, shells, and fishing gear in the kitchen middens. Apart from food, several products were obtained from the fish and the animals that were caught, e.g. train oil for lamps and water proofing, down and feathers for bedding, hide for clothing, while the fish remains were used for animal fodder and fertilising.

For most of recorded Nordic history, fishing took place near the coasts with hooks, gill and fyke nets, beach seine, eel weirs, pound nets, etc. This took place directly from the beach using rowing boats and small sailing boats. However, there are a few examples from the early Middle Ages of Nordic

folk fishing from sea-going boats with drift nets and long lines.

For the coastal people, fishing was often part of a mixed economy, which also included farming, animal husbandry, forestry, hunting, and commerce. However, the selling of fish played an essential role at an early stage. From Viking times, dried cod and, later, salted herring in barrels were especially important export commodities, from the Nordic countries to the European continent, and especially to the Mediterranean countries.

Sea fishing by the Nordic countries was first established to a large extent at the end of the 19th century, and during the present century. Thus, fishing as a principal occupation is a late feature in the history of Nordic fishing, and a decisive factor for the develop-





*Fishing as a principal occupation is relatively new in the Nordic countries, developed during the past 100 years. Fishing is still part of a compounded business in several places. The Faroe islands Sept. 1996. Photo: KMH.*

ment of fishing has been the increased possibilities for selling fish and fish products, combined with the technological developments.

By comparison, England and Holland have been fishing not only in the North Sea, but also in remoter waters, at any rate since the 1400s. Deep sea fishing by these nations was based on big shipping companies that owned fleets of vessels, which were sent for North Atlantic deep sea fishing from Grand Banks

in the west to the Nordic waters in the east. To secure supplies for the deep sea fishing fleet and to bring home the fish for the markets, the shipping companies had supply ships, which sailed to and fro between the fishing grounds and the base harbour, while the fishermen stayed out during the entire fishing season. The Dutch were fishing extensively for herring in the North Sea along the coasts of England with the so-called herring busses, which numbered some 2000 vessels at

the peak of the 1600s. These large-scale operations thus made it possible to connect distant fish resources with big European markets.

Nordic sea fishing was in general developed on quite a different background, because it was, and still is, based to a large extent on smaller vessels owned by the fishermen themselves. This development started especially in the 20th century when the hot-bulb engine and the investments in harbours and railways removed the existing large-scale business advantages of the shipping companies.

Instead of getting a job on a big company ship, it became possible for people living in previously remote coastal areas to club together and build their own boats, which, because of near and good fishing grounds, could be much smaller than the old company ships, and still competitive. An expanding private fleet from the North-European outlying areas started to chug across the North Sea.

In this way, the smaller, fisherman-owned vessels became characteristic for the development of modern fishing in Denmark, Sweden, and Norway. Their advantages, among others, are flexibility and being less demanding of capital, while at the same time being efficient through modern technology. The larger vessels require huge concentrations of fish to make fishing economic, while in general the smaller boats can exploit lesser con-

centrations of fish. In this way the North Sea has become for these fishermen the local waters in which, in principle, they can quickly switch from catching one kind of fish to another, depending on their amount. It is therefore a question of relating to the resources in two quite different ways.

An important feature in the establishment of the Nordic sea fishing was the fact that the fishermen had not only to colonize new waters, but also to compete with an already well-established deep sea fishing industry about the available resources of fish. At the end of the 1800s the danish fishermen from North Zealand had to compete with the German fishermen in the Kattegat, and the west coast fishermen had to find their places among the British, Dutch, French, and German fishermen in the North Sea. The Faroe-se had to sail to distant waters for fishing because the waters near them had been over-exploited by foreign fishermen for centuries. The Nordic fishermen thus had to fight their way into a North Sea fishing tradition that had existed for several hundreds of years, while also having to sell their fish to the same markets.

The competitiveness of North Sea fishing has made the Nordic fishermen further develop fishing gear, equipment to search for fish, and new types of vessels to make room for themselves within this field. Furthermo-

*Sea fishing based on large company-owned vessels is an old practice, while the privately-owned fishing vessels were introduced less than 100 years ago. Danish vessel using gill nets. Photo: North Sea Museum.*



*Fishing in north-west Jutland takes place directly from the beaches. This fishing, where the fishermen typically comes home every day, is reflected in catches of fresh fish of high quality and at relatively high prices. Lild Strand 1995. Photo: KMH.*







*Women have played a decisive role in fishing. Apart from arranging the nets and preparing and selling the fish, they were (and still are) left alone to look after the children and home when the men went fishing far away. Dried cod. Photo deposited by NFA.*

re, they have tried as far as possible to exploit fish populations or areas of the North Sea that the established sea fishing had not already exploited.

In this connection it was of great importance that it was not a question of shipping company fishing, in which one or more investors buy the vessels and the working force. Instead the majority of Scandinavian fishing is organised in different kinds of cooperatives, in which the fishermen themselves do the fishing, arrange loans, investments, and running costs, and possibly go in for common ownership of a boat. Each fisherman receives as salary a share of the catch. A specific feature of this cooperative organisation, in contrast to company organisation, is that the primary purpose of fishing is not to give a maximum yield to the capital owner or the investor, but to have fishing as a livelihood for which all the family resources have been

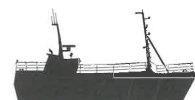
mobilised, and this fact has been a major resource for the Scandinavian countries. While the men mainly worked at sea, their wives removed the herring from the nets, dried and salted the cod, sold the fish, baited the hooks, arranged the nets together with the children, spun the yarn for sewing and mending the gear, just as all loans for investment had to be secured on the family property.

These cooperatively organised fishermen want to do their own fishing and thus help to secure a robust industry. The young men want to have their own fishing vessel, they do not want to be part of a large fleet. The perspective of the fishing companies is the opposite; if they invest in fishing boats, they must have the advantages of large-scale fishing, which demands so much capital that the self-ownership fishermen cannot take part.

## Fishing and exploitation of resources



Gill netter (dinghy) 12 m.



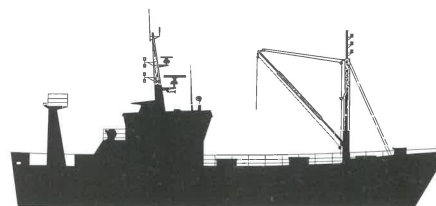
Gill netter 16 m.



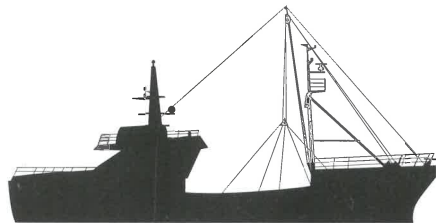
Danish seiner 16 m.



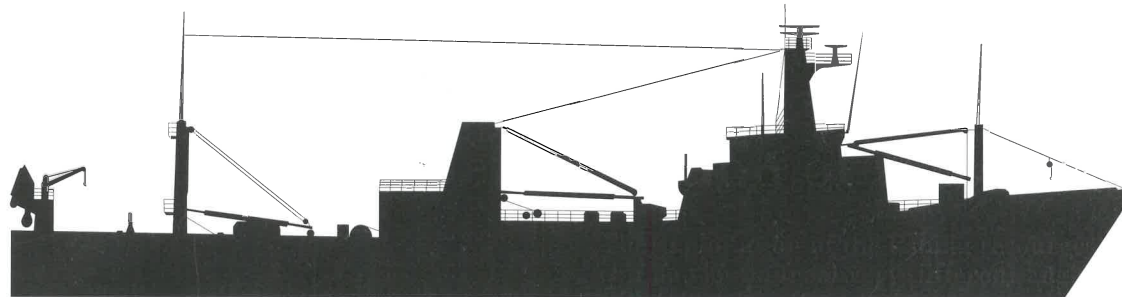
Trawler 22 m.



Industrialtrawler 40 m.



Beamtrawler 40 m.



Factoryship 102 m.

The exploitation of the fishing resources can be viewed from very different angles, which in turn affect decisions as to which kind of fishing should be furthered or hindered. The points of view are numerous, but this section will focus on the exploitation of resources from the perspectives of the State, modes of operation, fishing communities, and the individual fishing units.

It is important for *the State* that the fish resources are used in an economically optimal and rational way, to secure the largest possible income from exports. In principle this means aiming for a high output combined with the lowest total costs, i.e. the economically most efficient gear and vessels, though on the condition that at the same time the resources are secured for the future. For the State therefore the fishermen are solely a means to secure a fishing industry, while the fishing industry is a means of increasing the balance of pay-

*Fishing is carried out with a wide spectrum of gear and vessels. Often smaller boats fish with either line, nets or pound nets, and the larger ones with trawl or seine. There are many examples of overlap and many vessels combine trawl and net. The largest vessels solely uses either trawl or purse seine. Compared with the Atlantic Ocean or other distant waters the North Sea is very small. The largest vessels fishing here are about 40 to 50 meters long.*





Recruitment of the young generation for fishing is of decisive importance for survival of the fishing communities. The sooner they become familiar with the fishing, and accompany their fathers at sea, the better. Strandby, Denmark. Photo: Carsten Krog.

ments and thus creating an economic basis for the State. In some fishing communities and for some countries, this means that big vessels and thus few fishermen are considered the most optimal, but on the other hand it may be most rational to use small vessels, which catch fresh fish of high quality.

For each *mode of operation* of fishing - trawlers, Danish seiners, gill netters, purse seiners, factory vessels, industrial trawlers, pound net companies, etc. - it is important to know how to hinder destruction of the

resources and at the same time to secure one's own livelihood. With respect to regulations, this means that one type of demand asked for by the fishermen concerns a limitation of other modes of operation.

The attitude of the various modes of operation to exploitation of resources is reflected in the many conflicts between the fishermen. A classical conflict is between fishermen using fixed gear such as gill nets, fyke nets, or hooks, and fishermen using mobile gear such as trawl.



a.



b.

Fishery is characterized by heavy costs and the yield is limited by the biological production of the sea. For this reason it is a fundamental problem for the fishery in the Nordic countries that competition within the food area is extremely severe. The industrial production of broilers, pigs, farmed fish etc. as well as unmanaged fishery with very large vessels in distant waters totally determines the price level for fish in the Western World - and hence also the survival of the fisheries sector in our part of the world.

Photos: a) Photo deposited by Norsk Fiskerinæring A/S, b) Karsten Schnack/Biofoto.

For the *fishing communities* it is a question of securing the survival of the local community, i.e. fishing is a way of maintaining the fishing fleet and thus securing the livelihood of the largest possible number of fishing families and people in fishing-related industries. A fishing town and its fishing association are naturally working to improve the community's own fishing possibilities and to maintain them in the future so that there will be no problems in recruiting the young for generation changes. For each community there is a break point with respect to the number of boats that are necessary to maintain the various service functions such as auctions, slipways, and workshops, and not least to secure the generation change and maintain the necessary knowledge about the movements of the fish.

To secure its own survival, however, is the main problem for the *individual fishing unit*. The mutual competition involves securing one's own fishing possibilities rather than the competitors' by creating special expertise, by investing in finding new fishing grounds, and in having more efficient gear, vessels, machinery, and equipment for fish-finding and navigation. It is not the problem of the individual fishing unit that this may push other fishermen out of fis-

hing, because the unit can only survive if it is able to remain competitive. In this cooperatively self-owned fleet, it is the individual fishing unit's own responsibility to maintain its own competitiveness, together with the possibility of planning one's own fishing, which is the essence of the fisherman's "freedom".

The individual fisherman can change between various modes of operation when the competition forces him to do so, and therefore also between various views on the exploitation of resources. Therefore the fishermen's warnings against problematic environmental technology easily disappear in the fishing units' urge to take up the technology in question themselves in order to survive, if the competitors are expected to do the same. The fishing authorities' task is to manage the fishing industry in the most appropriate way, and they are therefore obliged to be attentive, consistent, and able to take quick actions with respect to such warnings from the fishermen themselves. This obligation is even more important with respect to international cooperation because each fishing nation, on the home front, is forced to protect the modes of operation that are most dominant in the national fishing industry.

## The fishermen's attitude to regulations

In retrospect, one can see how there has been massive pressure from the fishermen to protect the fish resources, while at the same time they have been pressing for permission to allow new and more efficient gear, larger vessels, and larger motors. Behind these contradictory suggestions lie the various views on the exploitation of resources, and the fact that the fishing industry is very competitive.

Fishermen are often accused of having ulterior motives for their suggestions about altering the regulations, e.g. to ban a certain type of gear, in order to keep other fishermen out of their area, fishermen who may have developed a more efficient mode of operation than themselves.

But it is not as simple as that, because everybody knows what would happen if the fishing authorities allowed a new, less environmentally friendly mode of operation: each fishing unit would make a virtue of necessity and change to the new method. This is common knowledge, and therefore the fishermen's demand that the resources should be protected against less environmentally friendly modes of operation is also a way in which they want to prevent themselves from taking part in destroying the future basis of fishing. In other words, it is a way of trying to secure the survival of the fishing communities. Thus, the fishermen's desire to prohibit fishing gear that might threaten their resources is an effort to pre-





*For the Nordic fishermen the "freedom" of fishing is decisive. It is the prerequisite of flexible fishing, in which the fisherman himself can decide when and where he wants to fish, and for what type of fish. In general, therefore, fishermen are against regulations that allow an authority to decide how the fishing will be organized. Photo: Poul H Moustgaard.*

vent themselves from making use of it.

Overall, it can be said that the fishermen approve general regulations that involve technical steps towards preservation, such as minimum size limits, size of mesh, pro-

tected areas, etc. However, they are in general against regulations that favour some fishermen in preference to others, because this is against both the catching principle and the concept of freedom.

## Regulations in a historical perspective

Nordic fishing regulations are not all of recent date. There are many examples from olden times of traditional rules and ordinances for various fishing methods and coastal waters. The absence of ownership in the public right to fishing has necessitated traditional regulatory agreements between fishermen, and ordinances have appeared because of pressure from the various fishing interests. Since the fishing was in principle free for all in the western part of the Nordic countries, there were often rules about how the fishing should take place within various local areas, and with which gear and during which periods of the year. In Norway, for instance, there were written regulations about herring fishing in 1274. Finland had rules

for fishing Baltic herring at any rate as far back as 1440, and the Limfjord, the next oldest regulated Danish waters, has had regulations since 1515. The important fishing for herring in the Sound, one of the main sources of income in Denmark from the 11th to the 15th centuries, was regulated in detail by the Danish kings, with respect to who might fish, and how and when, and also how the selling of the fish should take place.

The traditional rules, for instance, deal with the use and arrangement of the fishing gear in the fishing grounds, the minimum distance between the gear, the marking with buoys, agreements about sailing at the same time, about prohibition of fishing on Sundays and holidays, rules about

the use, size, and type of the gear, about quota, protection of special waters, rotation, drawing of lots and other ways of distributing fishing grounds, etc. These regulations can be seen as an expression of the fishermen's desire to preserve the fish stocks, and to have a fair distribution of the resources.

In the past, regulations mainly came into use when there were large concentrated numbers of fish and thus many fishermen in one place, or when it was feared that

the stocks might be overfished. With respect to saltwater fishing, these problems were not serious until the present century. However, discussions about the damaging influence of various gear on fish fry, and on fauna and flora of the sea bed, are much older. Thus, far back, fishermen have paid attention to the dangers of uncritical permission to use still more efficient gear, and in some cases less gentle, because they thought that it might be a danger to the fish stock.

## Examples of fishermen's suggestions to establish regulations

Throughout history the Nordic fishermen have suggested various ways of how best to secure the fish resources for the future. In general, fishermen have never been in doubt that over-intensive exploitation leads to reduction of fish resources. The problems have arisen when an agreement had to be reached on measures to be taken. Among reasons for this are that the ecological conditions vary along the coasts, and that different fishing gear is

used, according to the type of fish, etc. In summary, the point of view from which the exploitation of fish resources is considered plays an important role, whether from the State, the modes of operation, the fishing communities, or the individual fishing units.

Thus, fishermen have usually agreed on legislation for general rules concerning the minimum size limits, and later further increase, of fish that can be caught, on the

*Even though Denmark passed a Fisheries Act in 1888 to cover the whole country, fishermen still have the right to make regulations locally. Common features in this kind of self-management are the wish to protect the fish stocks and the fish fry, apart from making rules for carrying out the fishing. Welled smack loading eels, Bøjden, Denmark. Photo: Poul H Moustgaard.*





establishment of minimum mesh sizes, protection of the areas of spawning and growth, for instance by the ban on using certain fishing gear, protection of spawners, making sure that undersized fish are returned to the sea alive, and not

## Overfishing

Overfishing of the North Sea has long been debated, at any rate since the 1920s. In the years following the First World War, during which North Sea fishing almost came to a standstill, the fishermen enjoyed very good catches, which thus confirmed them in the belief that the intensity of fishing influences the extent, size, and variety of the fish stock. There were many fish, and they were large, for a few years, after which the cat-



Catch of heering in a purse seine. Photo deposited by NFA.

least protection of the sea against pollution from cities, factories, farming, oil- and natural gas-plants etc. From the point of view of the fishermen, introduction of fishing restrictions will not help when the fish stock is dying because of pollution.

ches again quickly decreased. For some years conferences were arranged on "Measures to be taken against overfishing in the North Sea", and 1937 saw the first international agreements on mesh sizes and minimum size limits of several types of fish, as a means of protecting and maintaining the North Sea fish stock.

In 1937, when the Danish legislation on fishery had to be revised, the Danish Fishermen's Association suggested cancellation of the dispensation given to the inhabitants of the Nymindesegab-Blåvandshuk coast (on the west coast of Jutland) to land undersized plaice for their own consumption. The reason given was a desire to secure the plaice fry as far as possible<sup>1</sup>.

At the end of the Second World War, the same debate continued between the fishermen and within fishing circles about how best to prevent overfishing of the North Sea. The situation after the First World War should not be repeated.

Protection of the fish resources is not a modern phenomenon among fishermen, as can be seen from an editorial by Claus Sørensen in the journal of the West Jutland Fishing Association of 21 January 1944. He was a Danish fisherman who had shares in several fishing vessels, was in charge of a salvage company in Esbjerg, and was for many years an outstanding chairman of the above-mentioned fishing association. The title of the editorial was: *What can be done to keep good and yielding fish stocks in the waters around Denmark?*

*"There is only one way to go, but it is also practicable, because it shows how to use only fishing gear that does not destroy the fish fry. But at the same time it would be desirable to*

*create large, protected areas in the waters around Denmark in which, for instance, plaice could develop, and one might think of introducing total protection during the spawning period in January, February, and March for the same fish, since the quality of the female plaice in particular is very poor during that period.*

*Only the following fishing gear should be allowed for commercial fishing in the coastal waters, the Kattegat, the North Sea, and the Skagerrak: Danish seine nets, hooks, gill nets, and large-mesh otter trawl with limited horsepower of the fishing vessels' motors.*

*With respect to herring, the only fishing gear should be purse seine, drift net, and pound net with an appropriate mesh size, but there should be strict control with respect to the release of all fish fry while still alive, and especially flatfish caught in pound net and other fishing gear.*

*If we are to retain fish stocks along our coasts, the small mesh trawl must disappear from our vessels. No fishing gear is more damaging, especially when pulled forward with a powerful motor. Furthermore, the catching of herring fry by beach seine from our coasts during the summer is very damaging for the herring stock, which may have a very local distribution.*

*British, German, Dutch, and Belgian trawlers completely destroyed the North Sea*

*fish stock before the present war, and they will do so again if we do not make an agreement only to allow North Sea fishing with Danish seine net as the only permissible sea bed fishing gear.*

*Because of its slow speed across the sea bed (ca. 1 nautical mile per hour, compared with the 4 nautical miles of the trawl) the Danish seine net only catches good consumable fish, since all the fish fry, because of the slow speed, can pass through the relatively large meshes, and should some fry get on board, they can quickly be released into the sea again. They are never damaged. Also because of the short pulling time - at most 1 hour, compared with the 3-4 hours of pulling by the heavy trawl - the Danish seine net spares the fish fry while fishing."*

After the Second World War, the debate continued on how to avoid overfishing, especially concerning the plaice stock in the North Sea. At that period the plaice was the most important type of fish for Danish fishermen from an economic point of view. The Danish seine net made it possible to land living plaice, an exceptional quality product. The fishermen and the biologists suggested an increase of the minimum size limit for plaice to 260 mm. The proposal was discussed within the protection committee of the Danish Fishermen's Association, after which the matter was submitted to the West Jutland Fishery Associ-

*In the North Sea, Danish seine nets have always been considered "environmentally friendly" gear, with which it was possible to land living plaice. In the first half of the present century, the Danish seine fishermen asked whether large trawlers that landed dead ice-covered fish should continue to be tolerated. Modern Danish seiner, Thyborøn 1995. Photo: KMH.*





ation, which then asked its local branches, many of which supported the proposal.<sup>3</sup>

In the same year the proposal was discussed at the general assembly of the West Jutland Fishery Association, but no agreement was reached. A majority of the fishermen would not support an increase in the minimum size limit unless the law was also enforced with respect to their competitors from the other countries, and therefore they proposed that an international minimum size limit should be applied to the whole of the North Sea.

At the conference on "Measures for the protection of the North Sea Fishery" in London in 1946, the countries involved agreed on an increase in the minimum size limits of several fish, compared with the convention of 1937. However, Denmark, Norway, Sweden, and Iceland called for further increases.<sup>4</sup> The North Sea Convention was created in 1946, but it was not until 1953 (one year later with respect to some articles) that the Convention was ratified by all the countries, i.e. Belgium,

Denmark, France, Great Britain, Iceland, The Netherlands, Norway, Portugal, Spain, and Sweden.

In 1947, it was suggested from the Danish side that there should be an international increase in the minimum size limit for plaice (270 mm), haddock, and cod. An increase was also suggested for the minimum mesh size of mobile gear to 110 mm, compared with the 80 mm enforced in the North Sea, the Skagerrak, and the Kattegat. These proposals were supported by both the West Jutland and the Danish Fishermen's Associations, but they were not passed.

When the North Sea Convention came into force in 1953/1954, Denmark already had higher minimum size limits than the other countries for most of the included types of fish.

The Danish Seafishery Association made another proposal in 1976 about an increase in the minimum size limit of plaice to 270 mm, and furthermore an increase of the mesh size for plaice fishing to 100 mm.

## Minimum size limits

It was not only the sizes of plaice that were discussed. The fishermen and biologists

from the Nordic countries agreed that a general increase in the minimum size limit



*The opinion of the Scandinavian fishermen and biologists in the 1940s was that general regulations that involved technical steps such as larger sizes of mesh, ban on trawl in coastal waters, protected areas, and higher minimum size limits of fish were the best way of protecting the fish resources. Other North Sea countries such as England with large company-owned fleets of trawlers wanted the fishing regulated by the number of vessels. Hauling the trawl bag. Photo: North Sea Museum.*

for fish would help to protect the fish stocks. When the Swedish West Coast Fishermen's Central Association was created in 1930, a main aim was to introduce minimum size limits for fish and larger meshes in trawl and Danish seine nets. One argument that was often repeated in the debate was that an increase in the minimum size limits would increase the sale prices of fish catches.

However, the biggest problem that arises during the discussions is that the Scandinavian fishermen know that, even if they all want higher minimum size limits, their competitors catch far smaller fish, because their minimum size limits and mesh sizes

are smaller. Therefore the fishermen continue to press for higher minimum size limits and mesh sizes at a coming revision of the North Sea Convention. However, it is usually possible to get international agreements only on minimum size limits that are essentially smaller than those wanted by the Nordic countries. The background for this lies in the situation of the fishermen, who are competing for the same fish and the same markets, and in the different modes of operation in question.

Despite this, there are many examples during the last 50 years of proposals for an increase in the minimum size limits from the Scandinavian fishery associations.

## Other forms of regulations

There are several examples of how the fishermen have tried to limit the fishing, some of which will be mentioned here.

Already in 1924, the Swedish west coast fishermen introduced a voluntary limitation to the number of mackerel nets per boat, mainly to secure an even supply for the market and thus higher prices, while at the same time reducing the fishing activities.

In 1931 the members of the Swedish West Coast Fishermen's Central Association voted on a ban to fishing on Sundays and holidays, and the result was 1017 for the ban and 28 against. The result was similar in 1944. The reason for the proposal was that the fishing had increased intensively. The fishermen thought that a way of protecting the fish stock was to limit the fishing activities. They could in fact kill two birds with one stone: they could protect the fish stock, and obtain a better price by reducing the supply of fish to the market.

After the Second World War, when Danish fishermen debated how to avoid overfishing, they also discussed a ban on Sunday fishing, and some local associations made regulations to that effect.

During the greater part of 1995 and 1996, the Swedish fishermen stopped fishing during weekends, though with some

exceptions, e.g. in the Sound. They want other countries to follow suit and introduce a 5-day week; Sweden has raised this question several times internationally, for instance in the International Baltic Sea Fishery Commission.

At the end of the 1970s a few Norwegian fishermen suggested that trawl-free zones should be introduced around Svalbard and Bjørnø. The fishermen thought that these waters served as a "kindergarten" for the fish, and that too intensive trawl-fishing might destroy the resources. The proposal was accepted by the fishing authorities, and these zones were introduced at a distance of ca. 20 nautical miles from the coast.

Since the mid-1980s, the fishermen of southern Norway have practised voluntary closure of prawn fields when the catches contained too many fry. The fishermen would first contact their local fishing association to have the problem solved, and today there are regulations at the prawn fields. When the proportion of fry is too high, the fishing is stopped for a period, to be re-started only when pilot catches have shown normal conditions.

During the first half of the 1980s, the cod fishing was good in the Barents Sea north of Norway where the Russians were also





*The Swedish National Association of Fishermen arranged the first Baltic Sea Conference in 1972, and this initiative was followed by the Baltic Sea Commission. The fishermen were anxious about the fish resources because of the increased fishing pressure, and they wanted international regulations, particularly for the salmon fishing. Hauling the last salmon drift-nets. Photo: Poul H Moustgaard.*

fishing. The Norwegian fishermen did not think it was good for the stock that the catches often consisted of very small fish, even if the minimum size limit were adhered to, and they contacted the authorities

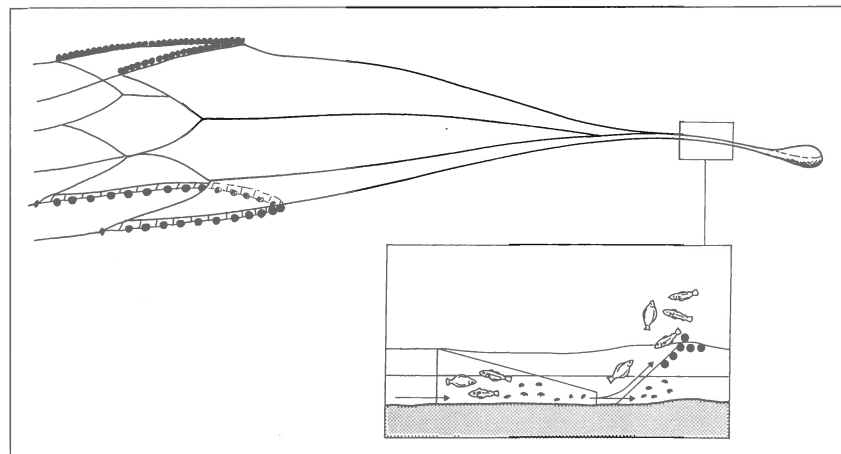
to have the waters closed for fishing for periods. After several approaches to the authorities the waters are now being closed when the catches contain more than 15% of small cod.

## Development of environmentally friendly gear

Apart from proposals for regulations, the fishermen have also seen a need to reduce by-catches, and they have worked, and still

work actively, for the development of selective and non-damaging gear.

A Norwegian fisherman, in the 1970s,



*In certain fisheries sorting grids have proved effective in separating out not only fish fry but also unwanted by-catches in trawl fishing. One advantage of the sorting grid, from the fishermen's point of view, is that the catches are far more homogenous and thus demand less working power to sort.*



*The fishermen and their organizations continue to develop more selective and less environmentally damaging gear that can guarantee sustainable fishery. However, the fishermen's main problem is to obtain prices that reflect the additional expenditure. Photo: Erik Hoffmann.*

ting out prawn fry. For many years the fisherman himself was in charge of the development, but the Nordmøre-grid, as it is called, has since been further developed by other firms, and the sorting grid is now obligatory in all trawl fishing for prawn north of 62° N. Its use has reduced the discard problem to a large extent, and it has become a tool for sustainable exploitation of marine resources. Sorting grids are also used voluntarily by the Norwegian fishermen for trawl fishing of cod.

The National Swedish Association of Fishermen took the initiative to experiment with selection panels for trawl fishing of cod in the Baltic Sea. The Swedish Fishery Works has been in charge of the experiments. Furthermore, Sweden has donated money to the Baltic countries to make it possible for them to introduce these selection panels. These are now used by most Swedish trawlers. Similar experiments take place on the fishermen's own initiative in trawl fishing for Norway lobster and vendace.

started to develop a sorting grid for a prawn trawl that separated out jellyfish and fish. It also proved efficient in separa-

## Bottom scraping gear

Fishing with mobile and bottom scraping gear has been the subject of violent discussions among fishermen for centuries, during which the fishermen have tried to prevent the use of this gear. Even the Danish seine net, which today is considered an environmentally friendly tool, was thought of as highly damaging 100 years ago. Bottom scraping gear is not only considered damaging for the eco-system but also, to the same extent, a threat to traditional fishing. There is thus a collision of various modes of operation.

One of the problems Danish fishermen called attention to was the fact that foreign fis-

hermen were using trawls close to the west coast of Jutland. Fishermen and biologists both knew that these were the nursery areas of plaice. Furthermore, as already mentioned, the Danish fishermen respected both higher minimum size limit for plaice and larger mesh sizes in their gear than the foreign fishermen.

This debate is still going on. In addition, some examples from the past 20 years' debate on the beamtrawl should be mentioned. The beamtrawl is a very efficient gear, but it is considered by the majority as a very damaging tool. Beamtrawl fishing today is on the increase in the North Sea and is





a.

about to take over from the Danish seiners, despite the latter's less energy-consuming and less damaging flat fish fishing.

The Danish fishery organisations presented a paper on beamtrawl fishing in the North Sea for debate at the West European fishery organisations' meeting in Spain in 1973. The Danish fishermen did not want a total ban on beamtrawling, only certain restrictions. The fishermen found it a problem that the undersized fish caught by beamtrawl can hardly survive when they are returned to the sea. Furthermore, concern was expressed about environmental changes on the sea bed and possible damage to the fish fry from the beamtrawling. The restrictions suggested by the Danish fishermen were "a maximum limit to the boats' motor power and possibly also to the weight of the chains. Finally, the introduction of a maximum length of the beams themselves might be considered."<sup>5</sup>

The fishermen from the Danish coastal waters also thought that beamtrawling should be banned from the Kattegat, among

other waters, and negotiations were started with Sweden. The ban was introduced in 1978, and today beamtrawling is banned from the Baltic Sea, the Sound, and the Kattegat. The Nordic fishery organisations do not want any more permits for beamtrawlers in the North Sea, because they know that without such a ban, an increasing number of their own members will be tempted or forced to use beamtrawl for competitive reasons. It would be against the organisations' attitude to protection of the environment, and in the long run it would undermine the present awareness of the environment.

Despite the resistance by the Norwegian Fishermen's Association and the local fishery associations to allowing beamtrawling in Norway, the authorities gave temporary permits in two cases during 1989. These were reviewed in 1992, and the Director of Fisheries did not consider that there was any basis for renewal of the existing permits or for granting new ones. The Department of Fishery, based on available material, could not recommend more licences either. How-

Despite the Scandinavian fishermen's opposition to fishing with beamtrawl, this gear is on the increase in the North Sea. Sweden now has no beamtrawlers, and Denmark and Norway only have a few, of which the Norwegian ones are by far the largest. Photo deposited by Fiskeritidende. Photos a-b: North Sea Museum.



b.

ever, the above-mentioned two permits were made permanent in 1993, together with a further three, against the recommendations of the fishermen.

The basis for the Scandinavian fishermen's criticism of beam-trawling is mainly that they and the fishing communities are worried about the authorities' allowance of still more damaging and more energy-demanding, and thus *less sustainable*, fishing. Their anxiety is deepened by the fight within the EU, because the member countries cannot agree on an appropriate environmentally friendly fishery, since fishing in some countries is dominated by environmentally problematic beamtrawling, a method hardly used by other countries. Accusations have

been made that beamtrawling destroys the fish fry and the flora and fauna of the sea bed, that it changes conditions on the sea bed, and that it causes damage and stress to the fish when the gear is pulled across the sea bed, thus making it difficult to catch the fish by use of other gear. It has also been said that beamtrawling destroys fixed fishing gear when pulled across a fishing area. And not least, other mainly beamtrawling North Sea countries have been accused of artificially maintaining this very energy-demanding fishing method by means of cheap fuel, thus making the plaice market very poor for the Scandinavian fishermen. In this way less damaging modes of operation are forced out of business in all countries.

## Pollution and environmental problems

By tradition, fishermen have played an important role in relation to threats against the marine environment. They have often been the first to point out that pollution might be a threat to the fish stocks and thus to our environment in general. They have been actively involved in creating awareness about environmental problems, and their

actions have had great importance in calling attention to the problems of pollution, and to the solution of these problems.

Already in the 1930s Danish fishermen demanded that waste water from towns and industry should be cleaned, because they noticed increasing pollution of lakes and streams.<sup>6</sup>





*In 1973, the Esbjerg fishermen in Denmark took action against the ship "Grindal", which was dumping poisonous chemical waste from the Grindsted chemical plant. The fishermen blocaded Esbjerg harbour, and the fishermen's organization demanded an end to dumping of chemical waste on the sea bed. Photo deposited by Esbjerg Ugeavis.*

In the 1950s, the Limfjord fishermen witnessed the construction of a chemical plant, Cheminova, on a tongue of land between the fjord and the North Sea. Cheminova had been moved from Zealand, where there had been many complaints, also from fishermen, about pollution. The Limfjord fishermen soon noticed problems on their catches, and they demanded closure of Cheminova, or at least better control of its pollution.<sup>7</sup> It was many years before the authorities listened to the fishermen and realised they had to ban fishing from several waters around the plant.

Many factories deposited poisonous waste products on land and onto the sea bed, or they burned it out at sea, since this was a cheap method of waste disposal. The

authorities allowed this, while the fishermen expressed concern about a threat to their industry. There was not only a risk of dying fish, but also of catches being poisonous.

In 1972 west coast fishermen protested

*In 1987, the Danish west coast fishermen took action against the American-owned sea-burning ship "Vulcanus". This action attracted considerable international attention; it was supported, for example, by Greenpeace. The fishermen won, and seaburning and dumping of chemical waste are now banned from the North Sea. But the exercise was expensive for the fishermen. Apart from lost income during the "Vulcanus" action, they were fined 3.5 million Danish crowns.*

# RED NORDSØEN NU SAVE THE NORTH SEA NOW



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because the Grindsted chemical plant was allowed to deposit poisonous waste in a dune plantation near the coast, whence the chemicals slowly leaked out to the sea, into waters considered to be the primary nursery area for plaice. The fishermen had arranged a local ban on fishing, even with manual seining, in order to protect the plaice fry. The authorities allowed the depositing to continue despite the fact that "science has stated that it may have consequences if it ends up in the sea".<sup>8</sup>

The Norwegian fishermen have been very worried about possible negative consequences

for the North Sea fishing because of the oil platforms. After many years of discussions and calling attention to the problems, the fishermen, the oil industry, and the authorities have started to collaborate. At the same time there has been a development within the oil production towards less environmentally damaging activities. The planned boring for oil in the Skagerrak has also occupied fishermen in Norway, Denmark, and Sweden, where they have protested both to the Norwegian Government and to various environmental agencies, such as the Oslo-Paris Commission.

## Summary

Fishermen get their livelihood from the fish in the sea. A sea that is full of life gives a healthy fishing industry. The fisherman's basic interest has always been a fertile marine environment, without which everything is of little importance. The fisherman is the first to notice when the sea is used for purposes that damage the sea as a healthy food store. It is not without reason that

from the very beginning fishermen have sounded the alarm over the ever increasing use of the North Sea as a dumping ground during the present century. Nor is it without reason that fishermen have made several suggestions concerning general regulations relating to fishing gear, modes of operation, and protection to secure what we today call a sustainable fishing industry.



Vessels for scrapping -  
A result of the Fisheries  
Policy. Foto: Carsten  
Krog.

*Like all other human activity fishery, naturally, has an effect on nature - far more serious are however the effects caused by pollution as pollution influences the very basis of all life in the seas.*



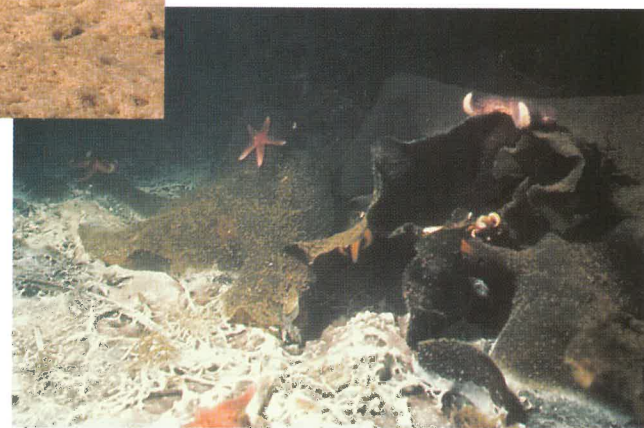
Oil exploration. Photo: Carsten Krog.



Production and use of biological extinguis-  
hers (insecticides etc.) Photo: Carsten  
Krog.



Discharge of nitrogen and phosphate  
from agriculture, fish farming and from  
urbanization may result in algaegrowth  
which leads to oxygen depletion. The  
illustration shows Henne Strand, Den-  
mark, with »whipped eggwhites« origina-  
ting from a particular type of algae which  
grows in water with a high nutritional  
content. Photo: Carsten Krog.



Starfish escaping from oxygen depleted sea bottom covered  
with white sulphur bacteria. Helnæs Bugt, Denmark. Photo:  
Nanna Rask.



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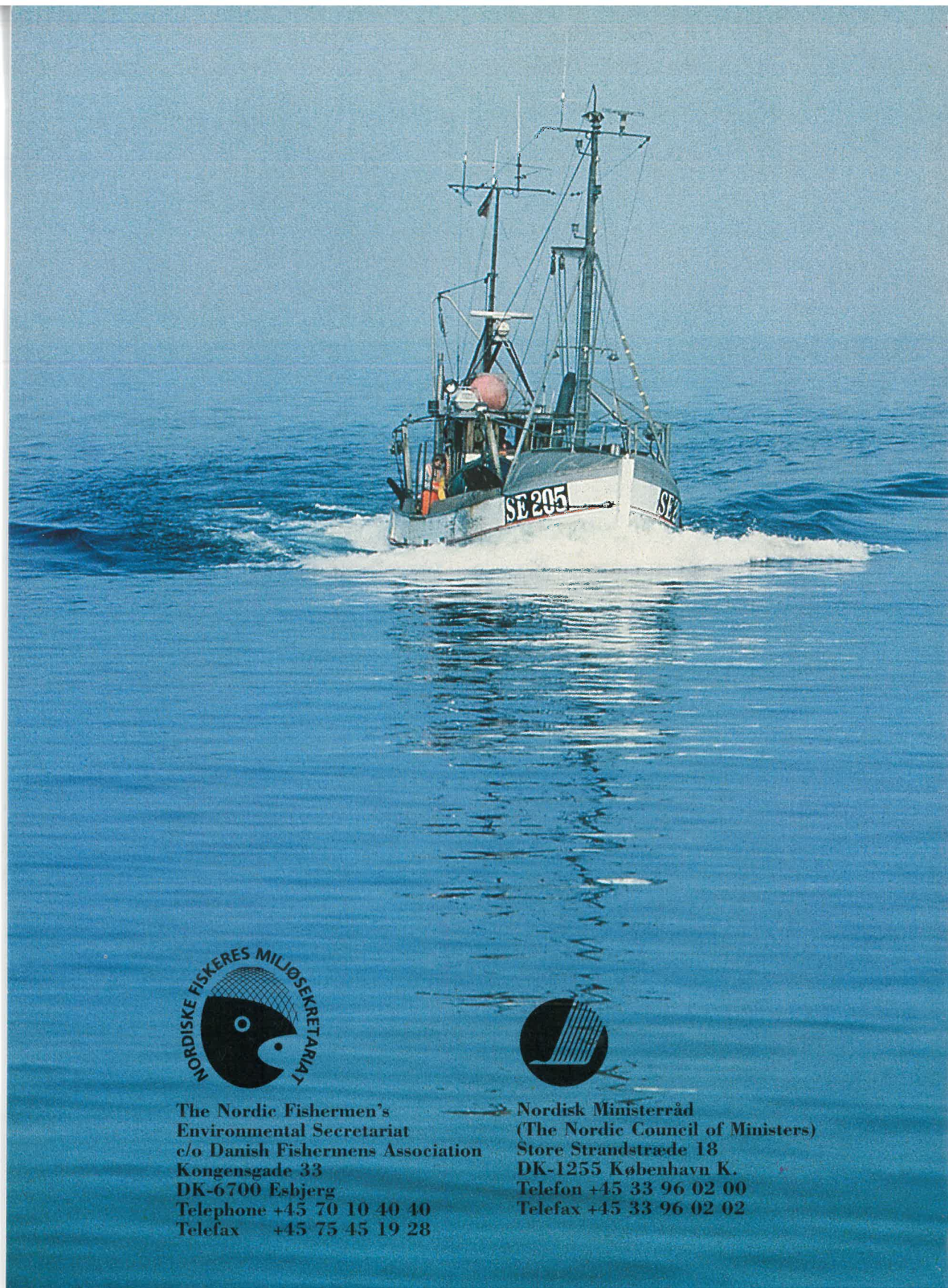


Fishermen and their organisations recognize the need for knowledge about the biological interactions of the sea and therefore want to have as close - and as balanced - cooperation with the biologists as at all possible. Photo: Carsten Krog.

*Fish - an important source of food. Photos: Fiskebranchen, DK. There is no doubt about direct links between diet and health and in this respect, food from the sea is extremely important. Fish contains all amino acids in the proportions the body needs for growth and repair of body tissues. Omega-3 fatty acids protect against cardiovascular diseases. They are also necessary for foetal and infant development. Fish and seafood have a high content of a number of B vitamins. Oil-rich fish are an important source of fat-soluble vitamins A, D and E. Seafood also gives a well balanced intake of a number of minerals.*







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