INDIVIDUAL QUOTA MANAGEMENT SYSTEMS IN NORWAY

Norwegian Authorities

INTRODUCTION

About 45 000 people, or 2 per cent of the work force, are employed in the fishing industry in Norway. The activity is mainly located in sparsely populated coastal areas. The fishing industry is therefore important for the settlement in these areas, especially in the northern part of Norway. About 90 per cent of fish and fish products are exported.

The main objectives of the Norwegian fishery policy are related to resource management which is based upon ecological principles, economic efficiency and maintenance of settlement and employment in sparsely populated areas. These objectives form the basis of the regulation efforts in the traditional fishing industry.

The Norwegian fishing industry has a long tradition. Fishery regulations can be traced back to the 12th century. Today one could, roughly, talk about two types of regulations.

First; practical measures in the cod and herring fisheries where the primary objective has been to secure "law and order" on the fishing grounds, to regulate the relationships between different types of gear and to delineate certain rules as for the execution of fishing operations. These measures were by and large introduced as solutions to problems of crowding -- and put limits on the type and amount of gear rather than on the number of participants.

The second type of regulation is what could be named limited entry proper; measures aimed at restricting, not only certain types of gear, but also the number of participants -- if certain conditions are met. These measures were either introduced as a form of protection against outside investors, restricting the use of new technology as well as ownership rights, or to secure a long-term adjustment of harvesting capacity to stock size.

Since 1970 it has been evident in an increasing number of fishing areas, that the question no longer is to develop fisheries but to limit the fishing effort. As natural resource, the fish stocks were in a unique position. The exploitation was based on the principles of no property right and free competition. These principles where suitable when the fish resources seemed inexhaustible which, in practice, they were up to the middle of this century. Fishing then had minor or no effects on the existing fish resources. But as a result of the technological progress these principles today are threatening the conservation of the resources and the proper economic utilisation.

During the 1970s a new global regime for the fisheries was established shifting the competence to manage marine resources within the 200-mile zone to the coastal States. As for resources that are shared, the States shall seek to co-ordinate and ensure the conservation and development of such stocks. This has made it easier to get a sustainable development in the fishing industry.

Following the new global regime for the fisheries more national regulation has been necessary. Norwegian regulations to limit the fishing effort started with licence limitation, continued with total quotas and quotas for a group of vessels and have been completed with individual vessel quotas (not transferable).

This has limited the opportunity to start fishing. About 80 per cent of the Norwegian fishery in value is today regulated by some sort of licence limitation or vessel quotas, compared to about 50 per cent in 1980, 15 per cent in 1970 and 10 per cent in 1960.

Almost all limited entry programmes, except for the licence limitation in the trawl fishery, have been introduced *after* the resource and capacity problems have arisen. The achievement of the licence limitation programmes then have been to prevent further expansion in the fishing effort.

The regulations have been introduced after suggestion from the fishermen's organisations. Despite this, the regulation system has been criticised for several years by the fishermen, the fishermen's organisations and also by people outside the traditional fishing industry.

The traditional Norwegian fishing industry is still characterised by over-capacity in the fleet and low quotas in the rebuilding process of major fish stocks. This situation has resulted in economic problems for many fishermen and communities dependent on fisheries along the coast.

The system of regulating the fisheries is complicated, detailed and difficult for the fishermen to comply with the rules. Another main problem has been the over-capacity of the fishing fleet and low profitability. By reducing investment and adjust the catch capacity to the resources a considerable improved profitability may be achieved. The regulation system has to be adjusted if a sustainable and profitable fishing industry shall be achieved.

In fixed 1991 prices, the first hand value in the Norwegian fishing industry has fluctuated between NKr 4 billion and NKr 8 billion since 1950 (Figure 1).

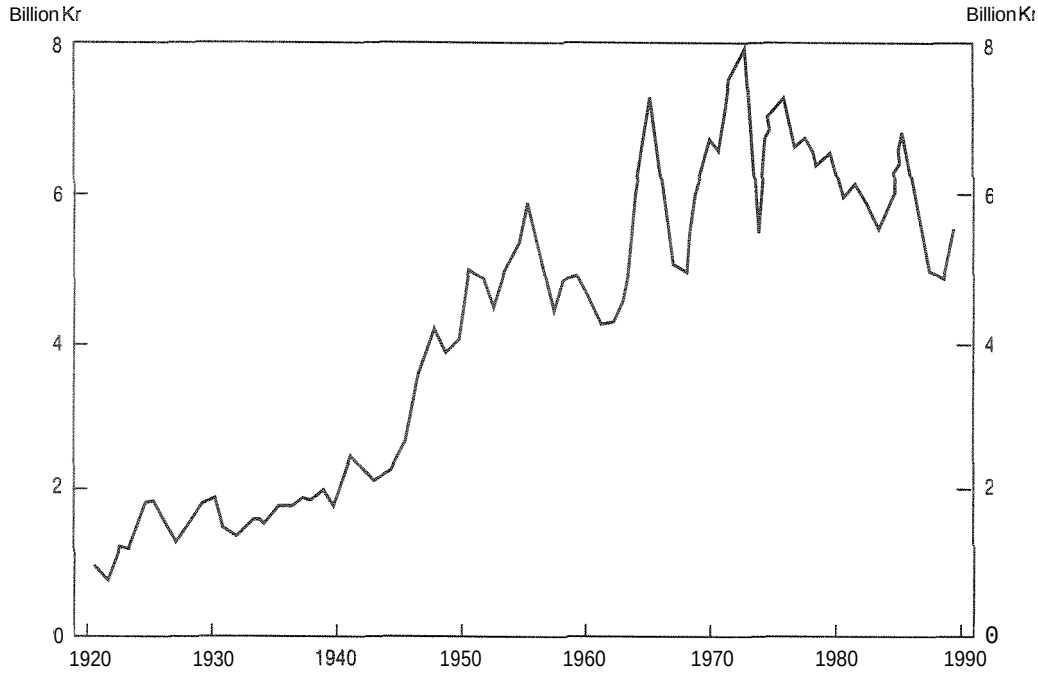
The number of fishing vessels has been reduced from 36 200 in 1960 to 17 400 in 1990 The number of fishermen has been reduced from 61 000 in 1960 to 27 000 in 1991.

A sustainable development is a vital aim in the fisheries policy. Only nature's surplus should be harvested. This applies both to fish and marine mammals such as seals and whales.

Conservation of the fish resources take place on an international basis as about 80 per cent of the Norwegian catch is on shared stock. The major quota negotiations are with Russia (Barents Sea) and with the EEC (North Sea).

Following a period of strict regulations and low quotas, the stocks of the most important fish are entering a period of growth. The eventual aim is to build up the basic stocks to provide a

Figure 1. **Net First Hand Value since 1920 in 1991 prices**



high stable annual catch. Norway places great emphasis on marine research especially multi-species research, which provides us with knowledge of the interaction between the various species. Enforcement is also an essential part of the resource management.

Following a dramatic reduction in major fish stocks in the Barents Sea and a cut in the Norwegian cod quota from 342 000 tons in 1987 to 113 000 tons in 1990 the fish stocks are now growing. This is a result of strict resource management. The fishing mortality has been reduced in order to rebuild the spawning stocks in the Barents Sea. In the North Sea, however, the major demersal fish stocks are still at a very low level. The development of the catch and spawning stocks for the major stocks in the Barents Sea and the North Sea are shown in the Figures 2, 3, 4 and 5.

The main reason for the long term trend of declining stocks has been increasing fishing effort as a result of technological progress. Underlying causes have been insufficient biological and ecological knowledge and a regulation system with insufficient incentives to adapt the capacity to the existing resources. Also it has been difficult to supervise the catch both in the Barents Sea and the North Sea where Norway shares stocks with other countries.

PRE-EVALUATION OF INDIVIDUAL QUOTA SYSTEM

Individual vessel quotas were introduced in the 1970s in some parts of the offshore fishing fleet (purse seiners). Vessel quotas have been introduced in fisheries where licence limitation already [redacted]

ENFORCEMENT

High priority is given to supervision and enforcement. Misreporting of catches creates uncertainty about the fishing mortality and the condition of the stock. The expenses of supervision etc. amount to about 5.5 per cent of the first hand value.

Misreporting will depend on the type of regulation system. It is expected that misreporting will increase with increasing overcapacity in the fleet. A fisherman will probably consider the following when he is tempted to misreport the catch:

-- possible profit;
-- the probability of getting caught;
-- the punishment if caught.

The types of supervision which are needed can be divided in

Supervising the fishing activity (gear/time/area)

This type of control must be carried out on the fishing grounds. The aim is to prevent unexpedient fishing in relation to the fish stock, and to regulate the conditions between groups of vessels.

Supervising the catch (quantity/assortment/specie)

The aim of this type of control is to get correct information about the catch:

-- weighing/measuring deliveries;
-- see that all catches are sold through the established sales system;
-- prevent discard and high-grading.

This has to be carried out both offshore and onshore.

Discard/high-grading is difficult to prevent as long as it is profitable for the fisherman to do so. To prevent this it would be necessary to have observers on board the fishing vessels -- which would be very expensive. Norway has used observers onboard some of the purse seiners in the mackerel fishery.

It is important that the fishermen themselves see how important it is to comply with the regulations, both in respect to future fishing possibilities and with regard to the industry's reputation.

BY-CATCHES AND DISCARDS

Fish caught in contravention of provisions in or issued pursuant to the Salt Water Fish Act and capable of surviving shall immediately be returned to the sea. The Ministry may order the

landing of dead and dying fish caught in contravention with the Act. If such fish is landed voluntarily or on orders, the catch or its value accrues to the fishermen's sales organisation.

The Ministry may prohibit the discarding of catches or dumping of waste from catches into the sea. This has been done for all important fish species.

The problems of by-catches are dealt with in different ways depending on the fishery. In fisheries where vessel quotas are used, by-catches are included in the vessel quota. In the coastal fishery (vessels below 28 metres) by-catch of cod in other fisheries will not be included in the vessel quota of cod. In this fleet an overall by-catch-quota of cod has been stipulated. In 1992 up to 25 per cent of cod and up to 20 per cent of haddock can be taken as by-catch in other fisheries.

The combination of vessel quotas and large difference in prices of small and large mackerel resulted in high-grading a few years ago. Several purse seiners installed sorting machines on board. To solve this problem of high-grading it was stipulated that the catch normally will consist of both small and large mackerel. When delivering 1 ton of large mackerel (above 600 gr.) this will correspond to 3 tons of the vessel quotas.

ADJUSTMENT OF FLEET

Since vessel quotas are not transferable the use of vessel quotas has not resulted in major adjustment of the fleet. The adjustment of the fleet has been stimulated by using sales support and scrapping programmes where the vessel owner has been granted subsidy to withdraw from the fishery. This has reduced the number of participating vessels considerably as new licences have not been issued.

In the cod trawler fleet where one owner may have several vessels, it has since 1990 been possible to withdraw vessels permanently from the fishery and keep the vessel quota within the company until 1995.

The phasing out of financial support and restrictions on investment over the last few years have also contributed to a better adjustment of the fleet.

COSTS OF MANAGEMENT SYSTEM

It is not possible to say whether the Norwegian management system is cheaper or more expensive than in other countries. A comparison made in Norway with the costs in Denmark, Australia and New Zealand showed that the costs in Norway were somewhat higher.

The cost of the fisheries administration was low, about 2-3 per cent of the first hand value, up to around 1970. During the 1970s, the costs increased considerably. The introduction of licence limitation in several fisheries increased the need for administration. Use of quotas and establishing

of the new global regime for fisheries management increased the need for supervision. Today the costs of fisheries administration etc. amounts to about 9-10 per cent of the total first hand value.

RENT GENERATION, TAXING, COST SHARING AND INTERNATIONAL IMPLICATIONS

Estimates show that the potential resource rent in Norwegian fisheries is considerable, up to 30 per cent of the first hand value.

From a business economic point of view the objective seems obvious, you wish to maximise the vessel owners profit. But when you take into account political and socio-economic considerations several objectives will occur. Maximising the resource rent means that profitability will be the only objective. The Norwegian fishing industry has four main objectives of which profitability is only one of these objectives.

Since it has been necessary to grant financial support to the industry, the resource rent has been negative. This means that the resource rent has been used to keep a higher activity in the fishery and in the regions dependant on fisheries.

Although the employment situation and regional development suggest that resource rent should be kept in the fisheries, it would be a reasonable requirement that the industry has a surplus.

INTEGRATION AND ADMINISTRATION OF DIFFERENT MANAGEMENT SYSTEMS

Conservation of the fish resources take place on an international basis as about 80 per cent of the Norwegian catch is on shared stocks. Quota negotiations are held each year. The fishermen's organisations have members in the negotiation delegation.

In Norwegian fisheries, management decisions are largely taken within the framework of corporate structures, i.e. through some form of formalised co-operation between government and [redacted]ser-group participation is facilitated through the Regulatory Council and a few other [redacted]n a long-standing tradition of functional representation in virtually [redacted]

[redacted]efore regulatory provisions a

There are, however, limits to compromise if resource conservation and economic efficiency are the main objectives of fisheries management. At some point "cruel choices" will have to be made.

POST EVALUATION

The Norwegian government has recently presented a report to the Storting (parliament) suggesting future guidelines for the structure and regulation system in Norway.

Several systems have been considered, including transferable quotas and non-transferable fisherman quotas. After hearings with different parts of the industry (fishermen, fish processors, etc.) and local authorities along the coast, the Government decided that the future system should be based on today's system. However some changes in today's system should be made.

The government decided not to suggest the use of ITQ in Norwegian fisheries. There were several reasons for this

-- the fishermen's organisation opposed strongly to the use of ITQ;

-- problems with quota concentration;

-- impacts on regional development;

-- biological impacts;

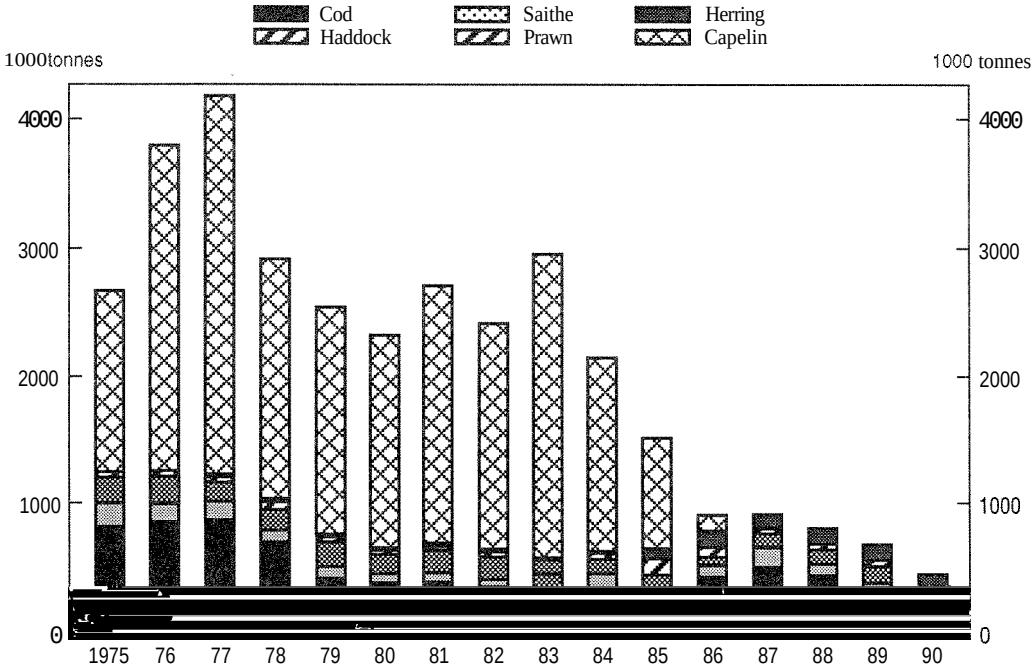
- experience from other countries' use of ITQ.

The future system is suggested to be based on the following:

-- In the coastal fleet (vessels under 20-27.5 metres) the system will be based on free competition within a group quota combined with an individual maximum vessel quota and periodical quota.

-- In the offshore fleet (vessels more than 20-27.5 metres) the system will be based on licence limitation and non-transferable vessel quotas. To stimulate fleet adjustment it will be permitted, if certain conditions are met, to merge licences from several vessels, withdraw the remaining vessel permanently from the fleet and keep the vessel quota for a certain period.

Figure 2. **Catch Barents Sea (All countries)**
1975-1990



awing stock Barents
1975-1992

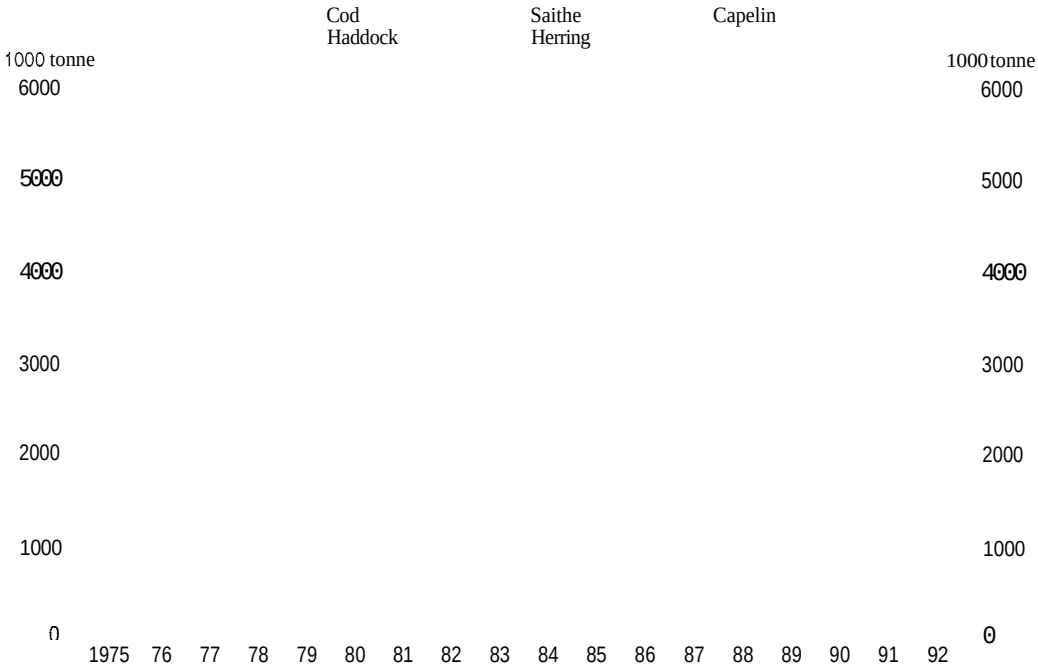


Figure 4. **Catch North Sea (All countries)**
1975-1990

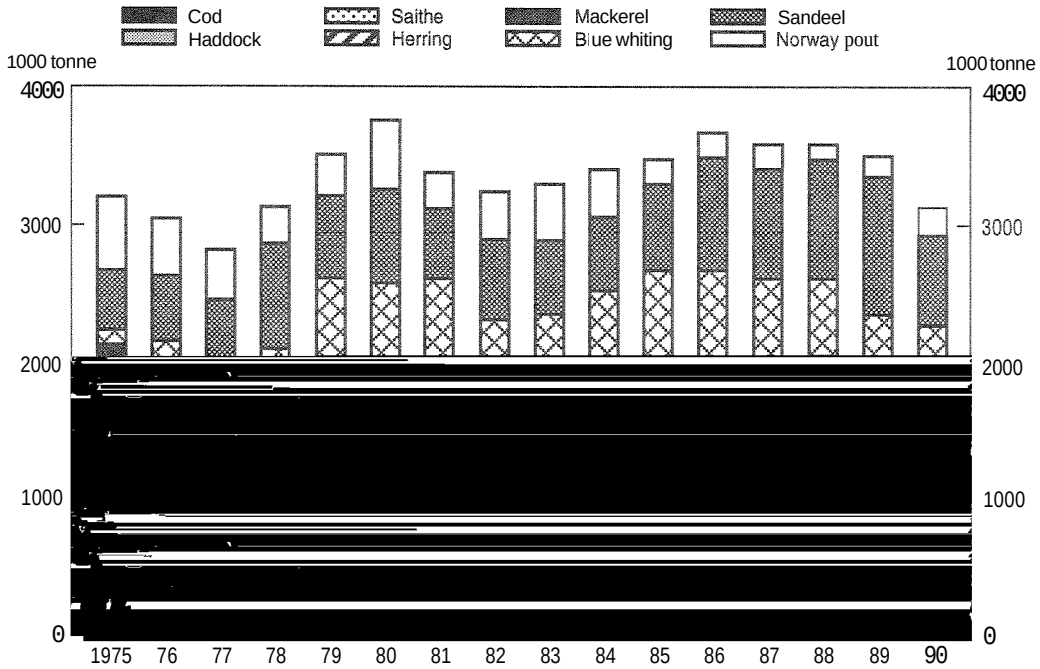
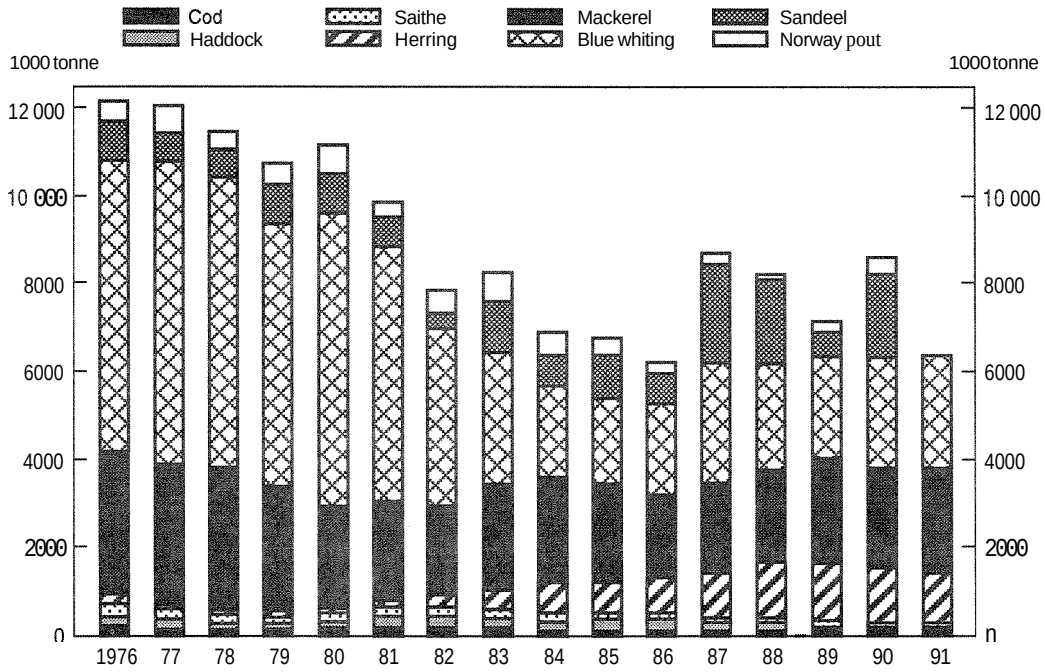



Figure **5. Spawning Stock North Sea**
1976-1991