FISHERY COUNTRY PROFILE	Food and Agriculture Organization of the United Nations	FID/CP/NOR
PROFIL DE LA PÊCHE PAR PAYS	Organisation des Nations Unies pour l'alimentation et l'agriculture	January 2005
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THE KINGDOM OF NORWAY

GENERAL ECONOMIC DATA

Area:	386 270 km^2
Shelf area (to 200 m):	approx. 155 000 km^2
Length of coastline:	25 148 km
Population (2003):	4 560 000
GDP at producer's price (2002):	US$ 221 579 million
Agricultural GDP (2002):	US$ 3 619 million

FISHERIES DATA

Commodity balance (2001):

	Production	Imports	Exports	Total supply	Per caput supply
	tons live weight				kg/year
Fish for direct human consumption	2 028 743	420 110	2 224 137	234 717 (stock variations 10 001)	52.2
Fish for animal feed and other purposes	1 170 661	-	-	-	

Estimated employment (2003):	
Marine capture, full time:	13 260
Marine capture, part time:	3 999
Aquaculture, full time:	4 371
Aquaculture, part time:	3 325
Value of landings* (2003):	US$ 1 583 million
Value of aquaculture (2003):	US$ 1 390 million
Trade (2003):	
Value of imports:	US$ 560 498 000
Value of exports:	US$ 3 676 581 000

*National landings in domestic ports

STRUCTURE AND CHARACTERISTICS OF THE FISHING INDUSTRY

The long Norwegian coastline is home to very rich fishing grounds, making Norway the biggest fishing nation in Europe, ranking number ten in the world measured by volume and third in export value. Aquaculture is an important part of the fisheries sector (in 2002 - 43%) and the national economy. Norwegian farmed Atlantic salmon accounts for over half of the world's supply.

Marine fisheries

Catch profile

The domestic fleet landed a total of 2,743,184 tonnes in national ports in 2002, valued at about US$ 1.6 billion. Forty per cent of this was destined for reduction, the majority of which was pelagic species. The second most important group in terms of landing volume, but highest in terms of value, was groundfish, which includes cod, haddock, redfish and pollock.

The largest landing of a single species is herring (569,800 tonnes in 2002). This decreased by approximately 300,000 tonnes between 1998 and 2002. Herring landings were matched by blue whiting during this period. In 2000, 553,478 tonnes of blue whiting were landed. Other important species in terms of volume are cod and saithe.

The percentage of landings for frozen and minced fish products and roe increased by approximately 16 per cent between 1998 and 2000 but dropped 5 per cent by 2002. The proportions of fish for meal, oil and feed remained relatively constant at 40-45 percent of the total national landings in domestic ports.

In 2001 over 50 per cent of the national landings in foreign ports were fish for reduction. The amount of fish for reduction increased gradually between 1999 and 2001, as did its relative importance in total landings.

In terms of value, cod represented approximately half of the landings by foreign vessels in domestic ports (2001). Other species landed by foreign vessels in domestic ports include mackerel, herring and fish for reduction.

Value

The total value of national landings into domestic ports reached US$ 1,583 million in 2003. The most important species of the Norwegian marine capture fisheries by value is cod (US $ 423 million in 2001). Although herring landings were more than double that of cod 2001, the considerably lower price of herring means its value was substantially less (US$ 289 million in 2001). Although the volume of herring landed decreased by six per cent, the value almost doubled between 1999 and 2001 because of an increase in herring prices over this period. while cod landings decreased by 13 per cent in value and 19 per cent in volume. The value for other species, e.g. plaice, haddock, redfish and Norwegian lobster (Nephrops norvegicus), also increased while the total landings decreased. There was also an increase in volume of low value species, particularly seaweeds, which accounted for only 0.3 per cent of the value, but almost seven per cent of the total volume.

Fishing units

The fleet was comprised of 9,931 vessels in 2003. This was 25 per cent less than 1999 when there were 13,196 vessels. The main species targeted by these vessels are cod and herring, which account for 22 per cent and 20 per cent of the landing value respectively. Over 90 per cent of the vessels are shorter than 18 metres, with most being between six and 12 metres long.

The fleet is divided into coastal and offshore administrative categories. The offshore group consists of four segments, which are the industrial trawlers, purse seiners, longliners and cod-, saithe- and shrimp-trawlers. The coastal fleet is itself administratively split according to vessel length, i.e. vessels 15-28 metres long and vessels less than 15 metres long.

The coastal fleet consists of relatively small vessels, mostly between eight and 13 metres long. The coastal fleet generally targets demersal species with a variety of fishing gear, including gill nets, hand-lines, long-lines and Danish seines. Cod are the main species both in terms of volume and value, followed by haddock, anglerfish and saithe. These vessels are operated by 1-2 fishermen and are on average 10.5 GT. Although these small coastal vessels represent over half of the fleet that operates throughout the year, they account for just seven per cent of the total value of the landings.

The cod-, saithe- and shrimp-trawlers are one of the most important segments of the Norwegian fishing fleet. They are mostly owned by the processing industry and crewed by 18 people. These trawlers target cod, which accounts for 60 per cent of the value of this fishery, haddock, saithe, shrimp and Greenland halibut. Many of the vessels have both a cod and a shrimp fishing licence.

In terms of value, herring is the most important species targeted by these vessels, accounting for 38 per cent of the landing value. This is followed by mackerel (28 per cent), blue whiting (19 per cent), and capelin (12 per cent). This segment of the Norwegian fishing fleet has the highest share of total value of landings (19 per cent). In terms of volume of landings, pelagic trawlers and purse seiners land approximately 40 per cent of

the total landings although they account for only two per cent in terms of vessel numbers. Long-liners and coastal vessels are regulated by annual permits, in contrast to offshore vessels, which are regulated by licences.

Main resources

Marine fisheries have traditionally been of great economic importance along the Norwegian coastline, especially in western and northern coastal regions. The North Sea, Kattegat and Skagerrak yield herring, sprat, cod and other groundfish, and the Norwegian and Barents Sea give rise to Arctic-Norwegian cod, capelin, shrimp, herring and mackerel.

The most important Norwegian cod stock is the Arcto-Norwegian cod, which migrates between the economic zones of Norway and Russia. Despite the TAC-regime, the stock declined in the 1970s, reaching a low point of both stock and catch in the late 1980s. It is argued that the degree of compliance with the TACs for the Arcto-Norwegian cod was very low, but strict regulation of the Norwegian share of the TAC in 1990-91 paired with favourable climatic conditions lead to a partial recovery of the cod stock. The dissolution of the Soviet Union due to more lax TAC compliance by the Russian fleet, coupled with Icelandic trawlers exploiting the so-called Loophole in 1993, jeopardized the resource conservation policy for cod in the northern areas.

Many of the stocks in the North Sea are at a historically low level, especially demersal stocks, and are in need of protection. However, the Norwegian spring spawning herring is increasing due to large spawning classes and the mackerel stock is still high.

At the beginning of the 21st century the situation of the Norwegian coastal cod was poor; the quota was subsequently halved to 20,000 tonnes. The state of the Northeast Arctic cod was however in good shape, with predictions of increases in spawning stock biomass. The Northeast haddock stock was also considered to be in a good state. The capelin stock is naturally subject to large fluctuations in size and reached a very low level at the turn of the century. To protect the stock from further demise, the capelin fishery was closed in 2004, as was the redfish fishery.

Fishery areas

Fishing activity takes place along the Norwegian coast, with most of the catch taken from within the EEZ. Arctic cod is taken from the boundary area between Russia and Norway; the Barents Sea is fished under annual agreements with Russia for cod, haddock and capelin.

Marine mammals

Between three and five commercial vessels hunt seals in the East Ice. Seals may also be hunted for recreational and specific research purposes. There are mainly two species of seal caught, harp and hooded seals. The number of seals caught decreased by a third between 1995 (15,981) and 2002 (10,691). The seal meat is used for human consumption, as are the oils. The fur and the skin is processed into suede and leather for a variety of products.

Whaling by Norwegian vessels is carried out in the Norwegian zone of the North Sea, along the coast of northern Norway, eastwards and off Spitzbergen and Jan Mayen. The catch is used for meat, blubber and animal feed. Norwegian minke whales are hunted using ordinary small fishing vessels, approximately 18 metres long, which are licensed for whaling. The vessels are re-rigged for the whaling season and equipped with modern explosive harpoons.

Commercial whaling ceased between 1988 and 1992 after the 1986-moratorium imposed by the International Whaling Commission on commercial whaling. However, whaling for research purposes was continued until 1991, when whaling completely ceased. As Norway opposed the decision and the moratorium was not binding, commercial whaling was resumed in 1993. Catch has since increased to 671 in 2002. The number of vessels whaling remained relatively stable between 1998 and 2002 (34).

Sami fishery

The Sami are indigenous people of Norway. They live throughout the polar regions of Norway, Sweden, Finland and Russia's Kola peninsula, with the largest population in Norway. They are traditionally nomadic and live off fishing in the fjords in combination with other trades, such as reindeer herding. In Norway the largest concentration of Sami people is in the county Finnmark, the second largest in Tromsø, with some Sami communities in Nordland, the southernmost of the three northern counties of Norway.

After the transition of the national fisheries in 1990 from open access fishery to a quota system, the fishing fleet was divided into two groups. In one of the groups, the vessels receive guaranteed quotas. These vessels have historically landed most of the catch. The other group generally consisted of smaller vessels. This second group was assigned a group quota, also known as Olympic quota, where once the total quota was reached, fishing was suspended regardless of whether each vessel landed any fish. The Sami fishery fell into the second category and was threatened by this, as they could not compete for the quota.

Currently, the Sami receive local investment funding in the shape of favourable loans, which are managed by the Sami Parliament. There are increasing calls for greater recognition and protection of the Sami people. At the end of August 2004 the Sami Parliament presented the Norwegian government with a report raising these issues. As part of this, the Sami Parliament suggested regional fisheries management as a means of accounting for the need of the Sami and so help prevent their demise and preserve their traditional lifestyle.

Inland fisheries

The commercial inland fishery is negligible, with most inland fish taken recreationally.

Recreational fisheries

Salmon is the main species targeted by recreational fisheries in Norway, both at sea and in rivers and in lakes, together with sea trout and Arctic char. While most salmon are caught at sea, sea trout and Arctic char are predominantly caught in freshwater. In 2000 approximately 1,164 tonnes of fish were caught, of which 525 tonnes were caught in rivers and 639 tonnes in the sea. Salmon was the most abundant fish, both in the sea (627 tonnes in 2000) and in rivers (423 tonnes).

Recreational fishing may only be conducted using handlines, rod and nets with a total length of 210 metres, long lines with up to 300 traces and a maximum of 20 pots or traps. Recreational fishermen who are not Norwegian citizens are subject to further restrictions. They are only permitted to fish using hand-held gear, i.e. hand lines or rods, and they are not allowed to sell their catch.

Aquaculture

The production of farmed fish has risen steeply since the industry was established at the beginning of the 1970s as a supplement to agriculture, to the point that Norway now

accounts for almost half of the world production of farmed Atlantic salmon. During the last 30 years the aquaculture industry has represented an important industry, especially to small coastal communities, and being an important source of foreign exchange. Most of the Norwegian sea-farms are cage systems located along the coastline, with deep sheltered fjords constituting ideal conditions for aquaculture.

The total volume farmed in 2003 was 582,061 tonnes; the value of the aquaculture production in 2003 was US$ 1.39 billion. Atlantic salmon and rainbow trout farmed in sea cages are the two most important species farmed in Norway, representing approximately 88 per cent of total production volume and value. In 2003 507,413 tonnes of Atlantic salmon were produced. The production volume of rainbow trout was 69,128 tonnes in 2003.

There is also cultivation of shellfish, including mussels (1,367 tonnes in 2003), the edible oyster and scallops. Of these species, mussels are the most important both in terms of value and volume, representing 90 per cent of both value and volume.

The aquaculture industry is also looking into diversification of the species used for production. New species that are being farmed include Arctic charr, halibut, cod and some shellfish.

FISH UTILIZATION

Post-harvest use

The processing industry mainly consists of a large number of small and medium-sized businesses scattered along the coastline. The majority of plants produce saltfish, stockfish and klipfish. Saltfish is usually made from cod, ling, tusk or saithe. The fish is headed, bled, split, then, with the backbone removed, is laid in salt for three weeks. Stockfish is usually cod or haddock cured by being split and dried in the open air without salt, and klipfish is salted cod. In 2002, 22,150 tonnes of klipfish were exported to Portugal. Other major exports of cod products were frozen fillets (United Kingdom), salted fish (Portugal) and stockfish to Italy.

Although salting, drying and smoking processes are still the most common forms of processing, the number of plants producing these products has been decreasing and making way for other processes, such as freezing and the production of fish oils and fishmeal.

The last five years have seen a number of changes in the Norwegian fish processing industry driven by high costs, negative trends in exchange rates and deteriorating access to EU markets. There has been substantial investment in modern facilities and equipment, including quality assurance, skills development and marketing initiatives. The industry has rationalised somewhat with a concentration of ownership in the whitefish sector and the sector processing pelagic fish such as herring, capelin and mackerel. A number of producers also relocated to EU countries where costs were lower and market access more favourable.

Fish markets and marketing

Norway is one of the world biggest exporters of fish products. Nonetheless, the domestic market is still important to the national industry, as reflected in the high Norwegian consumption levels (see below). Fishermen’s sales organisations manage and coordinate the sale of catch. These organisations are independent and based on direct membership of the fishermen and indirect membership through fisheries associations. There are six such

organisations throughout Norway, including the Norwegian Raw Fish Organisation, which deals with fish, shellfish, molluscs and small whales landed in Norway between Nordmøre and Finnmark, and the organisation Norges Sildesalgslag, which deals with the sale of pelagic fish.

FISHERY SECTOR PERFORMANCE

Economic role

The share of Norway's gross domestic product (GDP) derived from fishing, sealing and whaling and fish farming was 0.7 per cent in 2002, which is a slight decrease from 0.8 per cent in 1978. This is lower than agriculture, hunting and forestry (0.9 per cent in 2002). The highest contributor to GDP is the oil and gas extraction industry (17.6 per cent in 2002). The fishing industry plays an important role in many of the coastal areas, where a considerable number of people rely on the industry for employment. Alongside fishing activity, employment is generated indirectly through shipbuilding, gear manufacturing or packaging and transport of fish products.

Fishing vessels and processing plants are largely privately owned and run, with most services and infrastructure being public.

Supply and demand

Norwegians have an annual supply of 54.7 kg of fish and fish products per caput. Over the last decade there has been an increase in consumption by 30 to 50 year olds, while other age groups have started to eat less fish and fish any products. There is a long tradition of fish consumption in Norway, with about 30 per cent originating from household recreational fishing in the coastal zone.

Fish accounts for approximately 16 per cent of the average daily protein intake of Norwegians (17.1 g per day per capita). This is less than provided by meat (20.7 g per day per capita), milk (23.1 g per day per capita) and cereal (excluding beer, 29.9 g per day per capita) protein sources. The supply of fish consumed mainly comes from freshwater fish and demersal marine species, accounting for approximately 19 kg per capita per year each.

There is an increasing national and international demand for certification that the seafood is safe to eat and of good quality. In response to this the Norwegian Food Safety Authority was launched at the beginning of 2004; it is responsible for seafood safety and quality, as well as fish health and ethically acceptable farming of fish.

Trade

Imports

In 2003 the value of imports was US$ 560.5 million, which is approximately 45 per cent more than in 1995. The volume also increased over this period of time. The largest single import species was fresh mackerel, destined for reduction and representing approximately 19 per cent of the imports. Since the mid-1990s both import volume and value have increased. Most of the imported fish products are fish and marine mammal fats and oils, as well as fresh or chilled whole fish. Most imports are sourced from EU Member States, in particular the UK and the USA.

Exports

Norway is among the three largest fish and fishery product exporting nations in the world. The EU, in particular Denmark and France, is the largest market. Other important

destinations include Japan and Russia. In terms of value, the fisheries sector is the second largest single export industry, after oil and gas, and represented 5.7 per cent of the exports in 2002.

Approximately 90 per cent of the landed and farmed fish is exported; the remaining 10 per cent is sold in the domestic markets. The value of exported fish (both wild caught and farmed) doubled during the 1990s. In 2003 it reached: US$ 3.7 billion.

Frozen, fresh and chilled whole fish are the major export products. Frozen fish are mainly destined for non-OECD countries and Japan, with fresh and chilled fish largely destined for Denmark.

Employment

Over the last fifty years the number of active fishermen decreased significantly. This can somewhat be attributed to the increased efficiency in fishing methods and equipment, resulting in labour being substituted by capital, but the largest cause is the general economic development of the country and creation of more attractive employment opportunities. The highest employment in full- and part-time fishing is found in the northern regions of Norway, while the south has the least.

The largest decrease was in the full-time sector, which accounts for approximately two thirds of the employment. Employment in this sector decreased from 17,087 in 1996 to 13,260 in 2003. In contrast, employment in the aquaculture sector increased, both in the full- (4,371 people employed in 2003) and the part-time (3,325 people employed in 2003) sectors.

Total employment in the processing sector has declined slightly in recent years.

FISHERY SECTOR STATUS TRENDS

After the herring stock collapsed around 1970, a licence limitation system for the fleet fishing for the meal and oil industry, and strict quota controls were introduced. The capelin fisheries are also regulated by licensing, determining the overall catch quota for each vessel by the size of the vessel. Although the North Sea herring and the Atlanto-Scandian herring stock have partly recovered, a ban was placed on the capelin fishery in 2004 to protect low spawning stock biomass.

There are increasing concerns over escapees from the aquaculture industry. Aquaculture units need to be constructed so as to provide minimal risk of fish escaping and are also required to carry out routine monitoring around farm facilities. Proprietors are required to report escapes and suspected escapes immediately to the Directorate of Fisheries. The government has also established criteria for environmental testing of pharmaceuticals to improve the environmental health near fish farms. These measures are aimed at minimizing harmful effects of aquaculture on the environment and indigenous wild fish populations

FISHERY SECTOR DEVELOPMENT

Constraints

Given that Norway exports a significant proportion of its fish, global market conditions are particularly important. World market prices for frozen finfish fillets have been falling because of increased availability of cheaper products from Russia, Alaska and South America. European Union trade barriers have also have increased in the form of customs duty on processed fish products. It reduced profitability of the Norwegian fisheries sector

and will continue to be important determinants in the sector's performance.

Development strategies and plans

A master plan for Norwegian fisheries development was adopted by the Norwegian Parliament (Storting) in 1998. Key policy elements include responsible management of resources, increased marketing effort and product development, and better utilization of secondary products, including heads and guts.

In March 2002 the government produced a White Paper stating the need for the principle of sustainable development to be integrated into management plans. More specific targets set by the White Paper include further development of the fishing industry and the implementation of an ecosystem based management and precautionary approach. The Paper also acknowledges the need to strike a balance between commercial interests, e.g. fisheries, aquaculture and the petroleum industry, and the need to protect the marine environment and biological diversity. Other future governmental plans are to reduce the fleet capacity to a level that will allow efficient harvesting of the marine resources in a sustainable way.

In order to meet these objectives the government has made plans to place more emphasis on research into the marine ecosystem and to establish a new comprehensive legal framework ('Marine Resources Law') covering all living marine resources. The fleet capacity reduction will be aided by a proposal to establish structural adjustment schemes.

Research

The first fisherman's training school in Norway was founded in 1939. Norwegian scientists cooperate closely with other countries and research organizations such as the International Council for the Exploration of the Sea (ICES). Chilean and Norwegian scientists cooperate on research into aquaculture.

The overall planning, promotion, evaluation and allocation of national research funding is the responsibility of the Research Council of Norway. It is publicly financed and responsible for strategic long-term development of Norwegian research.

Universities provide the core of basic research and the education of scientists, with the Universities of Tromsø, Bergen and Oslo prominent in this respect. The Department of Fisheries and Marine Biology, University of Bergen, has its main activities in fisheries science, marine biology and ecology. The Norwegian College of Fishery Science is a university faculty connected to the University of Tromsø, and is the main institution for higher fisheries education in Norway.

The Centre for Fisheries Economics, Norwegian School of Economics and Business Administration, Bergen, is specialised in bio-economic modelling, economics and market research.

The Norwegian Institute of Fisheries and Aquaculture in Tromsø is a contract research institute for the Norwegian fisheries and aquaculture industry. Norwegian Marine Technology Research Institute (MARINTEK) in Trondheim undertakes marine technology research and development services for national and international companies and organisations.

LINKS TO FURTHER INFORMATION

Department of Fisheries: http://www.odin.dep.no/

Statistics Norway: http://www.ssb.no/

Institute of Marine Research: http://www.imr.no/

Norwegian Institute of Fisheries: http://www.fiskforsk.norut.no/

Norwegian Ministry of Fisheries and Coastal Affairs in association with the Institute of Marine Research, the Directorate of Fisheries, the National Institute of Nutrition and Seafood Research and the Norwegian Food Safety Authority: http://www.fisheries.no/