7. Fisheries

Continuous overfishing is putting European fisheries at high risk of collapse, as recognised by the European Commission in its 2001 Green paper on the Common Fisheries Policy. EU Multi Annual Guidance Programmes (MAGPs) were insufficient to address excess fleet capacity, although the EU fishing fleet decreased in tonnage (6%) and power (12.5%) during the 1990s. Many fish stocks of commercial importance in European waters appear to be outside safe biological limits: 62-91% of commercial fish stocks in the North East Atlantic, 100% in the West of Ireland Sea, 75% in the Baltic Sea, and 65-70% in the Mediterranean Sea. In addition, the highly migratory fish species of tuna and swordfish are also overexploited. During the same period, aquaculture production has increased considerably in the EEA18 countries, although this can have adverse environmental impact and interfere with other uses of coastal waters.

In March 2001, the European Commission adopted the first ever Green Paper on the future of the EU Common Fisheries Policy (CFP). It contains a critical review of elements of the CFP and aims to stimulate a wide-ranging debate about its future shape since many of the most important fish stocks are on the verge of collapse, and the renewal of fish stocks is being seriously hindered by too many fish being caught too young.

Securing an economically viable and self-sufficient fisheries sector is among the objectives of the Green Paper; public aid to the sector (at present some 1.1 billion EUR — while the total production of the sector is seven billion EUR for fisheries landings and two billion EUR for aquaculture) should encourage conservation, not work against it by encouraging over-investment in the fleet. Alternative sources of employment like aquaculture and processing need to be found to help coastal communities reduce their dependence on fisheries and compensate for job losses, while avoiding additional impacts on the environment.

The current harvest is in most cases not sustainable for roundfish and only in some cases sustainable for flatfish. Several deep-sea species show signs of overexploitation. New objectives are therefore aimed at:

- the adoption of multi-annual and multi-species fishing quotas, based on the precautionary principle, in order to tackle the problems resulting from annual decisions on single species;
- eco-labelling of fisheries products and more selective fishing;
- more effective fleet reduction programmes, which need to be made simpler to administrate and monitor. A reduction of fishing mortality of at least 40% is necessary;
- strengthening and harmonising fisheries control in the Community, (through the setting up of a Joint Inspection Office);
- the integration of the Mediterranean into the CFP through the improvement of fisheries advice, the reviewing of technical measures and the strengthening of control and enforcement.

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7.1. Size of the fishing fleet

Tonnage and power are the principal determinants of fleet capacity and therefore of the pressure exerted on fish stocks. Between 1989 and 2000, the tonnage of the EU fleet decreased by about 7% to just over 2 million tonnes. In contrast, the tonnage of the EFTA fleet increased by 31% to about 570 000 tonnes in 2000. In the case of the Accession Countries, a strong decline was observed in the first half of the 1990s, to about 530 000 tonnes in 1995. Between 1989 and 2000 the aggregate power of the EU fleet decreased by about 12.5% to about 7.6 million kW; the difference being due to the relatively larger decrease in small vessels.

Subsidies for the construction, modernisation and running costs of the EU fleet provided through the Structural Funds and the Financial Instrument for Fisheries (Regulation 2792/1999) have aggravated the pressure on fish stocks. Of the monies allocated in the 1994-99 programme for the purposes of fleet-oriented aid, 60% went into adjustment of the fleet and 40% to its modernisation. The decline in fleet capacity overall, with the main reductions in Spain, has not led to an improved status for fish stocks. Advances in technology mean that new vessels exert a greater fishing pressure than older vessels of equivalent tonnage and power. In a number of countries modernisation and decommissioning of the fleet has led to a decrease in total power, but still a slight net increase in tonnage.

The EU Multi Annual Guidance Programmes (MAGPs) are currently focused on reducing fishing effort (defined as the product of the capacity of a fleet with the days spent at sea) through scrapping of vessels and keeping them in port. In the 4th MAGP cuts of 30% in the fishing effort for stocks on the verge of collapse and 20% for those that were overfished were agreed. However, MAGPs have not proved sufficiently ambitious to address excess fleet capacity particularly since they are complex to administer and have not always been adequately enforced.

EU Multi Annual Guidance Programmes have so far failed in delivering permanent, structural reductions in fishing effort. Although the EU fishing fleet declined between 1989 and 2000 in terms of vessel numbers (-10%), tonnage (-6%) and power (-13%), the decrease has not led to a corresponding improvement in the status of fish stocks. The much smaller fishing fleet of Norway and Iceland has dramatically increased in numbers (58%), in tonnage (31%) and in power (6%) during the same period.

Quality of information ★★
7.2. Status of fish stocks

Fisheries are only sustainable if the status of all fish stocks are within safe biological limits (SBL).

The ratio of the number of overfished stocks to the number of commercial stocks per fishing area indicates that fisheries in the North East Atlantic and the Mediterranean are not sustainable. For most of the NE Atlantic 62–91 % of commercial stocks are outside safe biological limits while the figures for the West of Ireland Sea, the Baltic and the Mediterranean are 100 %, 75 % and 65–70 %, respectively.

Concerns regarding the status of the stock in NE Atlantic include:

- almost all roundfish stocks, which have declined and are currently unsustainable;
- the dramatic decline in cod and hake stocks, which led to cuts of up to 50 % in total allowable catch (TAC) in 2001;
- whiting stocks with TAC cut to 35 % for the west of Scotland;
- deep-sea species, which show signs of overexploitation;
- flatfish stocks, which are heavily exploited, however close to sustainable levels;
- pelagic and industrial species, which are in better condition, but need to be subject to reduced fishing rates.

As a result of this unsustainable status of fish stocks in the NE Atlantic, a 10 % cut in the total allowable catches for 2001 for most of the species has been implemented. Knowledge of the biology of deep-sea species is insufficient, but it is suggested that stocks can only sustain low rates of exploitation.

In the Mediterranean, demersal stocks are outside safe biological limits. Small pelagic stocks in the same area exhibit large-scale fluctuations, but do not appear to be fully exploited anywhere, except for the case of anchovy in the Balearic, Adriatic and Aegean Seas.

Particular concerns have been raised over the exploitation of bluefin tuna and swordfish. The migratory nature of these species hinders data collection and consequently sustainable management. Bluefin tuna catches exceed the sustainable rate by 25 % and despite the recommendations from the International Commission for the Conservation of Atlantic Tuna (ICCAT) (for both the Atlantic and the Mediterranean), no measures (despite reductions in Total Allowable Catch) have been enforced or respected as yet.

Definitions

Commercial fish stocks are defined as those stocks upon which the fishing effort is focused in each area and a profit aimed at. A fairly reliable picture of stock development can be generated by comparing trends in recruitment over time (the number of new fish produced each year by the mature part of the stock), spawning stock biomass (the mature part of a stock), landings (estimate of the most likely removal from the stock, sometimes including discards) and fishing mortality (the proportion of a stock that is removed by fishing activities in a year). A given stock can be considered outside Safe Biological Limits when the spawning stock biomass is below the biomass precautionary approach reference point (Bpa) or when fishing mortality exceeds a fishing mortality precautionary approach reference point (Fpa).

Within the EU, reference points have been established for about 10 stocks in the NE Atlantic and Baltic Sea to date, but no such points have been defined for the Mediterranean stocks.
Most fish stocks of commercial importance in European waters appear to be outside safe biological limits. For most of the NE Atlantic 62-91 % of commercial stocks are outside safe biological limits while the figures for the West of Ireland Sea, the Baltic and the Mediterranean are 100 %, 75 % and 65-70 %, respectively.

Note: the term ‘overfished’ is used in the sense of ‘Stocks outside safe biological limits.’

Source: OSPAR; ICES; FAO; Papaconstantinou and Farrugio; Eurostat; EEA

Quality of information 🌟🌟
7.3. North Sea Cod Stock

North Sea cod (Gadus morhua) is a key fish stock in the NE Atlantic and a valuable indicator of sustainability in fish resource exploitation and management. The spawning stock biomass reached a historic low in 2001 and the risk of stock collapse is high. In February to April 2001, a large part of the North Sea was closed for cod fishing for 10 weeks to protect juvenile cod, as part of an emergency recovery plan. Currently the Total Allowable Catch (TAC) has been set at approximately 50% of the 2000 TAC. Fishing mortality for North Sea cod has been above the precautionary limit since 1980. With the exception of the 1996-year class (fish born in 1996), recruitment to the North Sea Cod stock has been below average since 1987. The 1997 and 2000 year classes are estimated to be the poorest ever recorded (ICES, 2001).

The cod stock spawns widely in the North Sea and high concentrations of cod eggs are found in the English Channel, on the Dogger Bank and along the Scottish coast. The main areas for growing are the German Bight and the southeastern part of the North Sea. Towed gears in mixed roundfish fisheries, which include haddock and whiting, take cod. They are also taken in directed fisheries using fixed gears. By-catches of cod occur in flatfish and shrimp fisheries, especially in the Southern North Sea and in fisheries for Norway lobster.

The total catch of cod in the North Sea has decreased from 300 000 tonnes in 1981 to 59 000 tonnes in 2000 (ICES, 2001). ICES has recommended a recovery plan that will ensure recovery of the spawning stock to a level in excess of 150 000 tonnes. If it is not implemented, ICES recommends that fishing mortality is reduced to the lowest possible level in 2002. Reductions in TAC alone are not considered effective in regulating fishing mortality; restrictions in fleet efforts should also be implemented. In addition, a change in the fishing patterns, and attempts to reduce discard, by-catches and under-reporting of catches, should be considered.

The North Sea Cod stock is overfished in all waters of and adjacent to the North Sea. The spawning stock biomass is calculated to have been below the critical limit for the last 17 years and reached a historic low in 2001.

Note: Management precautionary approach reference point: Bpa = biomass precautionary approach is set at 150 000 tonnes.
Source: ICES; Eurostat

7.4. Aquaculture production

Aquaculture has benefited from European Community financial support since 1971. Limited at first to inland fish farming, Community support was extended to other areas in the late 1970s. Between 1994 and 1998 the aquaculture sector accounted for 5.1 % of Structural Fund expenditures under the Fisheries Instrument for Fisheries Guidance (FIFG) (213 million EUR). The FIFG requires stricter Environmental Impact Assessment (EIA) provisions than Directive 85/337/EEC and also provides an incentive for sustainable aquaculture, since a higher rate of public aid (up to 10 % more) can be paid to aquaculture projects where investments are directed towards techniques that significantly decrease their environmental impact.

Between 1970 and 1999 there was a fourfold increase in aquaculture production within the EEA18 countries, mainly to the tighter fishing quotas and an increase in fish consumption. Norway accounts for a quarter of total European production, largely due to success in the mariculture (marine aquaculture) of the Atlantic salmon. In 1999 the share of mariculture in the total fisheries production in Europe amounted to 14 %.

Aquaculture production per coastal unit is an indication of the potential impact on these coastal waters, but the impact will depend on the culture technique. The countries with the highest aquaculture production per km of coast in 1999 were The Netherlands (296.4 tonnes/km), followed by France (105.2 tonnes/km), Spain (85.1 tonnes/km), Germany (79.6 tonnes/km) and Italy (54.9 tonnes/km). However, for The Netherlands, France and Spain, the majority of this aquaculture is shellfish production, of which there is evidence of a lower environmental impact than fish farming. Molluscs accounted for a significant proportion (64 %) of EU aquaculture production in 1999. In contrast to the EU, molluscs accounted for less than 1 % of total production in 1999 in the Accession Countries.

Figure 7.4. Aquaculture production in coastal and inland waters, EEA18 and Accession countries

Note: Shellfish not included for Accession countries (see Fig 7.5.) Aquaculture can give rise to significant environmental impacts including discharges: of organic matter, phosphorus, nitrogen, disinfectants, antifoulants, flesh colourants and medicines (including vaccines); quality of bathing water and the loss of recreational space; the depletion of oxygen in bottom waters; accidental introduction of alien species; genetic dilution due to escaped farmed fish breeding with wild populations; exchange of diseases and parasites between wild and farmed fish; potentially a large input of wild fish as fishmeal for a relatively low output of farmed fish. Source: Eurostat, New Cronos database

Figure 7.5. Total aquaculture production in 1999, EEA18

Notes: No data available for Liechtenstein. Diadromous fish are those that migrate, either from the sea into the freshwater parts of rivers to breed or from freshwater to the sea. Salmon is thus a diadromous fish; it makes up almost all of the Norwegian production. Source: Eurostat; DPMA/French Ministry of agriculture and fisheries

Aquaculture production has increased in the EEA 18 countries, particularly fish production. This represents a potential increase in pressure on water. However, it is difficult to quantify these impacts at a European or regional level due to insufficient data.

Quality of information ⭐⭐