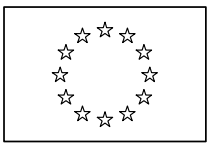

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Review of the management of deep-sea fish stocks

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1. INTRODUCTION

The scope of this review is limited to the deep-sea fisheries carried out in Community waters and in the regulatory areas of the North East Atlantic Fisheries Commission (NEAFC) and the Committee for the Eastern Central Atlantic Fisheries (CECAF). It does not therefore consider the fisheries that operate in other regulated areas, such as those of the Northwest Atlantic Fisheries Organisation (NAFO), the South East Atlantic Fisheries Organisation (SEAFO), or unregulated areas of the high seas.

The review also concentrates more on the management of deep-sea fish stocks than on broader ecosystem considerations, such as the protection of vulnerable habitats. This is simply a matter of focus, and does not imply that the Commission considers that the impact of deep-sea fisheries on the ecosystem is of lesser importance.

Deep-water species are generally considered to be those that live at depths of greater than 400 metres. At those depths there is very little light, so the food chain is dependent on detritus falling from the upper layers of the water column and productivity is therefore very low. Deep-water fish species are typically long-lived, slow-growing and late-maturing. They are also generally of low fecundity. All of these characteristics make them particularly vulnerable to over-fishing.

With some exceptions, the fisheries on deepwater species have developed and expanded before sufficient information was available on which to base management advice. This has been particularly true during the last decade, where exploitation has increased on a number of species as fishing extended into deeper waters or new areas. Landings and fishing effort data are poor, and discards largely unreported even though they may be significant. This has made it difficult for the International Council for the Exploration of the Sea (ICES) to suggest a level of exploitation that might be sustainable, but it does note that most exploited deepwater species were considered to be harvested outside safe biological limits, and that there should be immediate reductions in fishing effort. New fisheries should be permitted only when they expanded very slowly, and are accompanied by programmes to collect data that would allow evaluation of the stock status.

Most deep-water fisheries take a mixture of species. For example, about 70 deep-sea species have been recorded in the catches of trawlers targeting roundnose grenadier. Very little is known about the ecosystem effects of deep-sea fisheries, other than the direct damage that can be caused to the habitat by the fishing gears used. ICES has called for all the relevant information to be made available to the working group and the development of direct monitoring programmes, for example using research vessels.

2. OVERVIEW OF COMMUNITY REGULATIONS CONCERNING DEEP-SEA FISHERIES

Total allowable catches (TACs) were first introduced for some of these species in 2002 (Council Regulation (EC) No 2340/2002)[1] based on a Commission proposal that took account of a ten-year track record in fishing (1990-1999). Since the scientific advice on deep-sea

[1] OJ L 356, 31.12.2002, p. 1–11

stocks is available every two years, Regulation 2340/2002 fixed the deep-water TACs for 2003 and 2004.

After the enlargement of the Community in 2004, quotas had to be fixed for the new Member States according to Article 57 of the Act of Accession. Unless this was done the new Member States would have had to stop fishing on entry to the Community, even though they had legitimate fishing opportunities beforehand. Council Regulation (EC) No 2269/2004[2] fixed the quotas for accession states using a similar method to that used to allocate quotas in Regulation 2340/2002, but on the basis of their historical track record of catches for 1993-2002 instead of 1990-1999. In Regulation 2269/2004 the quotas for the new Member States were added to those in Regulation 2340/2002 for the existing Member States, resulting in increased Community TACs. The resulting overall allocation keys were used form the basis for setting the TACs amongst all Member States in subsequent years. The allocation of TACs was a contentious issue, because those with established fisheries were allocated higher shares of the resources than those with aspirations to develop alternative fishing opportunities but little track record, at a time when the traditional fisheries centred on cod were becoming severely restricted.

The TACs and quotas Regulation was complemented by Council Regulation (EC) No 2347/2002[3] establishing specific access requirements and associated conditions applicable to fishing for deep-sea stocks. This Regulation aimed to cap the expansion of fishing effort on deep sea species by obliging all vessels that capture more than 10 tonnes deep-sea species in year to have a deep sea fishing permit, otherwise their of deep-sea species would be limited to 100 kg per fishing trip. Moreover, the total capacity of vessels holding deep-sea fishing permits was restricted to the aggregate capacity of the vessels that fished more than 10 tonnes of deep-sea species in any of the years 1998 – 2000 inclusive (2000 – 2003 for the new Member States). Regulation 2347/2002 also introduced special reporting and control requirements, including agreed sampling schemes, observer coverage and the requirement to land only to designated ports. Further requirements concerning the collection of data are specified in Commission Regulation (EC) No 1581/2004[4].

Regulations 2340/2002 and 2269/2004 were replaced by Council Regulation (EC) No 2270/2004[5], which fixed the TACs for deep-water stocks for 2005 and 2006. This Regulation also introduced TACs on a number of stocks for which catches were not previously restricted. In addition, in the light of scientific advice that the stock of orange roughy in Division VI was heavily depleted, this Regulation introduced a closed area for this species to the west of the United Kingdom and Ireland. Vessels fishing within the closed area cannot land any orange roughy. Vessels fishing for orange roughy that transit the closed area must maintain their speed above 8 knots to ensure that no fishing operations are carried out in the area.

The main body of scientific advice for deep-sea stocks is issued every two years, but there is sometimes specific advice for certain stocks, or decisions taken in the context of the regional fisheries organisations, that require specific measures to be taken within a relatively short deadline. An example is the recommendation adopted by NEAFC that fishing effort on deep-sea stocks should be reduced by 30% in 2005 and 2006. Rather than amending Regulations

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2 OJ L 396, 31.12.2004, p. 1–3
3 OJ L 351, 28.12.2002, p. 6–11
4 OJ L 289, 10.9.2004, p. 6–53
5 OJ L 396, 31.12.2004, p. 4–12

2347/2002 and 2270/2004, the Commission included requirements to reduce fishing effort in kW days by 30% with respect to 2003 levels in its proposals for the Council Regulation (EC) No 27/2005[6] and Council Regulation (EC) No 51/2006[7] fixing fishing opportunities for 2005 and 2006 respectively in order to comply with the NEAFC recommendation. However the Council of ministers accepted only two successive reductions of 10% in effort in 2005 and 2006.

3. EFFECTIVENESS OF THE REGULATIONS

There are two aspects to be considered when assessing the effectiveness of the regulations. The first is whether the measures adopted are adequate to protect deep-sea stocks. The second is whether those measures have been properly implemented and have therefore achieved the results intended.

3.1. Are the measures adopted adequate?

3.1.1. TAC levels

Attempts to regulate deep-sea fisheries are relatively recent. Moreover they were motivated by the need to stop or slow the rapid expansion of fisheries on species about which very little was known. The lack of basic knowledge on the biology of deep-sea species and of the deep-sea ecosystem means that the TAC and effort limitations that were fixed were somewhat arbitrary. Full compliance with the precautionary approach would have required the setting of much lower TACs and effort limits, or even the closure of the fisheries.

The TACs set for 2003 and 2004 were a step in the right direction but in most cases too high for the stocks to sustain. Moreover, the declared catches of most stocks were considerably lower than the TACs, suggesting that the TACs were not restricting the fisheries. In proposing TAC levels for deep sea stocks for 2005 and 2006 the Commission therefore attempted to make sure that they were genuinely restrictive by using the real level of catches, not the existing TACs, as the baseline. Where scientific advice indicated a need for a significant reduction in fishing effort or catches but did not specify a particular figure, a 30% reduction in catch opportunities was proposed. Where scientific advice indicated a need to reduce fishing effort or catches by a specific figure, then that figure was used to calculate the proposed TAC. However, in order to mitigate social and economic impact, the proposed TAC was never less than 50% of the catch in 2003.

The Council of ministers was unable to accept the Commission's methodology, adopting instead more modest reductions of a maximum of 15% with respect to the existing TACs rather than the declared catches. This was because of the political difficulties of presenting apparently large reductions in fishing opportunities on deep-sea stocks when these were seen as alternatives to the declining shelf fisheries. However, for the stocks for which TACs were proposed for the first time in Regulation 2270/2004, the Council accepted the Commission's proposal for reductions of between 30% and 50% of the real level of declared catches.

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[6] OJ L 12, 14.1.2005, p. 1–151

[7] OJ L 16, 20.1.2006, p. 1–183

The table in the Annex compares the resulting TACs for the 2005 and 2006 with the declared catches for 2005. In most cases, the catches were considerably less than the TACs, suggesting that the TACs are still not restrictive.

3.1.2. Suitability of TACs for the management of deep-sea stocks

With a few exceptions, deep-sea fisheries catch a mixture of species, though only one or two of them may be deliberately targeted. Some deep-water species with ranges that extend to the slopes of the continental shelf, such as ling and tusk, may also be taken as by-catches in shallow-water demersal fisheries.

For TACs to be effective in mixed fisheries, the TACs for the individual stocks should be fixed relatively to one another at levels that minimise discards and by-catches. This is extremely difficult to achieve, even in shallow-water mixed fisheries where there is much more information available on catch and discard rates. For deep-water stocks, the individual TACs have been set only on the basis of officially reported catches from all fisheries combined, with hardly any information on the catch composition for each of the distinct fisheries involved or on discard rates. Moreover, of the 48 species listed in Annexes I and II of Regulation 2347/2002, TACs are set for only 9 of them. Most of the other species are taken too sporadically or in quantities too small to make it feasible to set TACs. Unfortunately, the restricted number of species managed by TACs has encouraged the misreporting of the species in the catches to avoid counting them against the quotas.

Another problem of trying to manage deep-sea stocks using TACs is that relatively little is known about the geographical stock structure of deep-sea species. The TACs are therefore often set over huge management areas, partly to prevent the misreporting that could occur if TAC areas were defined more narrowly. The danger of inadvertently excluding an area from the TAC regime was illustrated by the development of a targeted roundnose grenadier fishery in the Norwegian waters of ICES Area III. Regulation 2270/2004 fixed a TAC of 1590 tonnes for ICES III, but specified that this applied to Community and International waters. The TAC did not therefore cover Norwegian waters, even though the track records of catches on which it was based included catches taken in Norwegian waters. This loophole was exploited by a number of Danish vessels that were legally fishing under historical rights recognised by Norway, which increased their catches of roundnose grenadier to more than 14,000 tonnes in 2005.

Despite the difficulties and shortcomings, the TACs have probably had some effect in curbing fishing mortality on some of the main targeted species. However, it is clear that the long-term management of deep-sea stocks must complement the TACs with other measures, in particular the restriction of fishing effort.

3.1.3. Effort management on deep-sea stocks

Under Article 4 of Regulation 2347/2002, the capacity of vessels with deep-sea fishing permits is limited to the aggregate capacity of all the vessels that caught more than 10 tonnes of any mixture of deep-sea species in any of the years 1998, 1999 or 2000. This capacity ceiling was intended to limit the expansion of deep-sea fisheries, but in practice has probably had no effect.

One reason is that some deep-sea stocks are taken as a by-catch in fisheries targeting shallow-water species. The examples of ling and tusk have already been mentioned. Another example is that of argentines, which are listed as deep-water species in Regulation 2347/2002 but which are taken as a by-catch in blue whiting fisheries. This means that the capacity ceilings include vessels that are not targeting deep-sea stocks, and represent a much larger proportion of total fleet capacity than the relative importance of deep-sea fisheries would suggest.

A second problem is that Article 4 requires the cumulative capacity of all vessels that caught more than 10 tonnes in any one of the years from 1998 to 2000 to be included in the ceiling. If one vessel caught 10 tonnes of deep-water species in only one of those years, and another vessel caught 10 tonnes in only another of those years, the capacity of both vessels would be included in the capacity ceiling. The result is that the ceilings are unrealistically high and do not restrict the number of vessels targeting deep-sea species.

This shortcoming has also undermined the effectiveness of the effort reductions imposed by Regulations 27/2005 and 51/2006, which require 10% and 20% reductions respectively in the number of kW-days deployed by vessels holding deep-sea licences with respect to the levels deployed in 2003 (the year in which Regulation 2347/2002 came into force and therefore the first year for which reliable effort data are available). Since many of the vessels holding deep-sea licences are not targeting deep-sea stocks, the effort reductions do not necessarily reduce the exploitation rate on them, and may even unnecessarily restrict the fishing effort of some other fisheries. Indeed, to avoid that the nominal reduction in effort on deep-sea species is dominated by effort reductions in the blue whiting fishery, which take a by-catch of argentines, Regulation 51/2006 excludes argentines from the list of deep-sea species for the purposes of the effort calculations.

When considering the adequacy of the measures adopted, it should be noted that it is not immediately clear whether or not the two successive 10% reductions in effort for 2005 and 2006 with respect to the effort levels in 2003 are sufficient to comply with the NEAFC Recommendation that fishing effort on deep-sea stocks should be reduced by 30% from recent high levels. This issue is discussed further in section 4.2.4 on the reporting of fishing effort levels by the Member States.

3.2. Implementation of the Regulations:

3.2.1. Scientific sampling and observer programmes

Article 8 of Regulation 2347/2002 required Member States to set up an observer programme to collect information on the activities of vessels with deep-sea licences. These were to have been evaluated by the Commission within 6 months of the entry into force of the Regulation.

This deadline could not be met. When Regulation 2347/2002 was adopted, the Member states with allocations for deep sea resources were Belgium, Denmark, France, Germany, Ireland, Netherlands, Portugal, Spain, Sweden, and the United Kingdom. By the end of March 2003, three months after the entry into force of Regulation 2347/2002, a sampling plan had been received only from Germany. Sweden informed the Commission that it considered its catches of deep-sea species

too small to warrant a sampling plan. Following written reminders, sampling plans were provided by France, Germany, Ireland, Portugal, Spain and UK. No sampling plans were submitted by Belgium, Denmark, Netherlands and Sweden, though STECF noted that the deep-sea quotas for all those countries are very small. Following enlargement, the new Member States should also have submitted sampling plans, though none were received.

A major shortcoming Regulation 2347/2002 is that there is no clearly defined sampling strategy, which means that even if the requirement to implement a sampling plan is fulfilled the quality of the data that are obtained may be poor, or it may be difficult to pool the data from different Member States. The report of the ICES deep-sea working group refers to the use of data collected as part of an observer programmes in the case of only a few stocks, for example roundnose grenadier in Vb, XII, VI and VII.

3.2.2. Lists of designated ports

According to Article 7 of Regulation 2347/2002, landings of deep-sea species in excess of 100kg can be made only at designated ports, a list of which should have been transmitted to the Commission within 60 days of the entry into force of the Regulation. Within 30 days thereafter, the associated inspection and surveillance for deep-sea species at those ports should be communicated.

Lists of designated ports were submitted by all Member States, but the associated inspection and surveillance procedures were received from only Belgium, Denmark, France, Germany, Ireland, Latvia, the Netherlands, Poland, Portugal, Spain, Sweden and the United Kingdom.

Once again, it is a shortcoming of Regulation 2347/2002 that no guidelines are given for the inspection and surveillance procedures. Moreover, the inspection of landings of deep-sea species are usually carried out alongside the inspection of much larger quantities of demersal landings, and are sometimes considered to be of lower priority.

3.2.3. Lists of vessels with deep-sea licences

Only Portugal and Spain have complied with the requirement under Article 7 of Council Regulation (EC) No 1627/94[8] to submit a list of vessels that are issued with deep-sea fishing licences.

3.2.4. Reporting of fishing effort

Article 9 of Council Regulation 2347/2002 states that Member States must communicate for each half calendar-year the information on catches of deep-sea species and the fishing effort deployed, expressed as kilowatt fishing days, broken down by quarter of the year, by type of gear, by species, as well as information concerning the catches of the additional species listed in Annex II of the same Regulation.

[8] OJ L 171, 6.7.1994, p. 7–13

The half-yearly reports were to have been used to provide detailed information on the fishing effort levels by gear type to enable the more precise identification of deep-sea fisheries in order to better target the effort reductions. The Community has strongly advocated such an approach at successive NEAFC annual meetings. However, none of the Member States routinely reported this effort information, though a few provided more detailed information for the most recent years following a request from the Commission.

However, information was provided by some, but not all, Member States in response to a request from the Commission to provide aggregate fishing effort levels for the years 1998 – 2004. This request was made in order to evaluate whether or not the 10% reduction in fishing effort for 2005 with respect to the effort levels in 2003 required by Regulation 27/2005 was likely to be enough to comply with the NEAFC recommendation to reduce fishing effort by 30% from recent high levels.

Aggregated effort data for the years 2000 – 2005 (or estimates of fishing effort for the years prior to 2003 when Regulation 2347/2002 entered into force) have been supplied by Denmark, France, Ireland, the Netherlands, Portugal, Spain, Sweden, Germany and the United Kingdom. These data indicate that the fishing effort in 2005 was at most 65% of the effort deployed in 2000, suggesting that the Community has indeed complied with the NEAFC recommendation.

3.2.5. Monitoring and control

Article 7 of Regulation 2270/2004 introduced an orange roughy protection area. Vessels with a deep-sea fishing licence that enter the area are not allowed to retain on board, land or tranship any quantity of orange roughy, nor land any quantities of orange roughy at the end of their fishing trip unless all gears carried on board are lashed and stowed during the time in the area and the average speed during transit is at least 8 knots.

The implementation of these measures requires close monitoring of the VMS data, and in particular that an alert is triggered when the speed of one of the vessels drops below 8 knots. This does not appear to have been effectively implemented in any Member State. In particular, alarms at the Fisheries Monitoring Centres (FMC) are generally not set to give an automatic warning when a fishing vessel is fishing or is in transit in regulated areas. This means that although technically possible, the FMCs do not keep the local inspectors informed of any suspicious activities by specific vessels on the fishing ground. If this was done, it would allow such vessels to be targeted by inspectors when they arrived in port.

In section 4.1.3 it was noted that the definition of vessels requiring deep-sea fishing licences was too broad, including many vessels with only marginal catches of deep-sea stocks. As well as limiting the effectiveness of deep-sea effort limitations, this can also lead to control problems for non deep-sea stocks. This is because as the holder of a deep-sea fishing licence, a vessel can legitimately fish in areas where a Member State has deep-sea quotas. However, this does not mean that the vessel necessarily targets deep-sea stocks in those areas. The deep-sea licence has, in some cases, provided legitimacy for fishing activities in areas where the vessel has no right to fish the species actually being targeted.

4. CONCLUSIONS

- Many deep-sea stocks have such low productivity that sustainable levels of exploitation are probably too low to support an economically viable fishery. It must therefore be recognised that current levels of exploitation on those stocks must inevitably be reduced, either by choice in order to conserve the stocks or else because the stocks become fished to depletion. Moreover, stock recovery times are so long that the reductions in exploitation must be regarded as permanent, not as a means to rebuild stocks to allow higher exploitation rates in the longer term.

- In any case, the measures currently in force have been too poorly implemented to protect deep-sea stocks.

- Current effort controls apply to all fisheries combined, yet some are likely to be more sustainable than others. The most pressing need is for better information on the distinct fisheries that are catching deep-sea species so that the fishing effort levels can be adjusted in each of them individually according to the target species and by-catch species. Licences to take part in each of the fisheries should be dependent on the vessel having a suitable track record.

- The sampling schemes to collect scientific information should be decided after consultation both at Community level and with other NEAFC contracting parties. One of the major criticisms that could be levelled at the existing legislation is that despite the obligation to collect and report data there was little or no guidance on how to do it. The sampling schemes therefore differed in content and quality between Member States. Moreover, since there was no agreed reporting format the data that were collected were difficult to aggregate. Reporting formats should therefore be clearly specified and the data made more easily available to scientific working groups.

- Monitoring and control procedures must be made more rigorous, including clear procedures for reporting VMS data.

- There should be a greater emphasis on collecting relevant data to assess the ecosystem impact of deep-sea fisheries, both from commercial fishing vessels and from co-ordinated research vessel surveys.

ANNEX

Utilisation rates of quotas 2005

Species:	Zone	TAC 2005-2006	Catches 2005	Utilisation
Deep Sea Sharks	V, VI, VII, VIII, IX	6763	3294	49%
Deep Sea Sharks	X	120	16	13%
Deep Sea Sharks and *Deania histricosa* and *Deania profondorum*	XII	243	148	61%
Black scabbardfish	I, II, III, IV	30	3	10%
Black scabbardfish	V, VI, VII, XII	3042	2977	98%
Black scabbardfish	VIII, IX, X	4000	3389	85%
Black scabbardfish	CECAF 34.1.2.	4285	3195	75%
Alfonsinos	I, II, III, IV, V, VI, VII, VIII, IX, X, XII, XIV	328	302	92%
Tusk	I, II, XIV	35	5	13%
Tusk	III	40	7	18%
Tusk	IV	317	115	36%
Tusk	V, VI, VII	604	452	75%
Roundnose grenadier	I, II, IV, Va	20	2	8%
Roundnose grenadier	III	1590	881	55%
Roundnose grenadier	Vb, VI, VII	5253	3388	64%
Roundnose grenadier	VIII, IX, X, XII, XIV	7190	5683	79%
Orange roughy	VI	88	67	76%
Orange roughy	VII	1148	260	23%
Orange roughy	I, II, III, IV, V, VIII, IX, X, XI, XII, XIV	102	60	59%
Blue ling	II, IV, V	119	27	22%
Blue ling	III	25	1	5%
Blue ling	VI, VII	3137	3066	98%
Red seabream	VI, VII, VIII	298	223	75%
Red seabream	IX	1080	430	40%
Red seabream	X	1136	1119	98%
Forkbeards	I, II, III, IV	36	5	14%
Forkbeards	V, VI, VII	2028	1545	76%
Forkbeards	VIII, IX	267	269	101%
Forkbeards	X, XII	63	36	57%