

DRAFT REPORT

North Western Waters Regional Advisory Council Focus Group on “Deep water Species” February 5th, 2007 CNPMM - Paris

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1- Welcome and Adoption of the Agenda:

The Chairman, Marc Ghiglia, outlines the purpose of the meeting: to discuss the data used in the assessment of a number stocks of deep-sea species. The management measures and calculation methods of the assessments will be discussed at a later stage. This meeting will thus allow exchanges with the scientists in view of the next ICES working group on deep-sea species. The agenda was adopted. Members noticed the absence of NGO representatives.

2- Analysis of data per fishing operation: See presentation N°1 IFREMER (Alain Biseau).

Pascal Lorange (IFREMER) presented the results obtained from joint work with French professionals that enabled fishing operation data to be obtained per trawler fishing operation targeting deep sea species. The ICES working group had considered that the log book data per statistics box needed to be clarified.

This work allowed the creation of a database of over 22.000 hauls realised between 1992 and 2007 (this work is ongoing). The data collected included: name of vessel, skipper, power of vessel, month, duration of haul in order to evaluate the yield, geographical position at the start and at the end of the haul (calculation of an average position), rectangle, minimal and maximal depth, catches of all species (blue ling, scabbard, sikis, grenadier...).

The data structure is not stable over time: from 1992 to 98 = mostly trawlers from Concarneau of approximately 34 m / from 2000 to 2004 = trawlers from Lorient and Boulogne of a bigger size. However, data is well balanced with regard to years, depth and seasons (2006: more data at the beginning of the season).

Results: All species are not systematically present in a same haul (non-uniform link with their distribution). It is possible to catch some species and not others (blue ling and orange roughy can be preferentially caught). This was confirmed by questionnaires when observers were onboard. As regards blue ling, the catch takes place between 500 and 1100 m with maximum catches from March to May. Data shows the aggregation behaviours (hauls with very high or very low catches). The trend of landings recorded in the database between 92 and 2007 is increasing, but data is not corrected for the vessel factor (modification of sample size and types of vessels) and the evolution of the geographical distribution of fishing.

However, landings per unit of effort (LPUE) (i.e. corrected for part of the vessel–power factor) also show an increase. An analysis of data by a GLM model showed that the vessel impacts the data. All the other tested factors have an effect: the year, the month, the depth, the area, the rectangle, the skipper, the vessel and the type of vessel. Therefore, catches vary according to all of these factors. However, more data is needed for a more accurate analysis of these effects.

Comments and recommendations: It has been highlighted that the fleet targeting deep sea species has been reduced and that it is therefore more difficult to obtain enough data for the analyses. The opportunity to carry out analyses on specific interactions was underlined (what is caught with which species?).

It was asked if data was validated by an observer programme or by analysing logbooks. A comparison between data haul per haul and data from logbooks has not yet been carried out. In relation to observer programmes, there are still too recent (2004) to be used as validation. However, these programmes have shown that there is no discard of blue ling or black scabbardfish and orange roughy (professionals confirmed that there never was any discard in catches in relation to blue ling). Grenadier fishing on the other hand has shown discards.

Phil Large (chairman of ICES deep-water species group) expressed the need to use a longer series of data. Effectively, LPUE indicate stability since 2000, but previous data shows a decrease of LPUE since the end of the 80's. He underlined the problem of commercial data: the time-space pattern of exploitation is developing, therefore GLM (models) are difficult to interpret. He expressed his wish that the data be published scientifically for validation by scientists before using them in the ICES working group.

Marc Ghiglia explained that 2007 was incomplete in the database and gave an incorrect impression of the decrease in the blue ling LPUE in 2007 (only January and February were analysed). Traditional months of fishing (February to May) represent a share of landing that is less and less important. The better repartition of catches during the year leads one to suppose that there is a modification in blue ling behaviour.

Ian Gatt underlined the importance of data from professionals as they are the only ones available. In the United Kingdom, there is only one scientific campaign that lasts one week concerning deep-water species, and it is therefore very partial.

⇒ **Continue and refine haul per haul analyses so that it can be used in stock assessments.**

3- BLUE LING: see presentation N° 2 Phil Large (CEFAS – chairman of the ICES deep-water species group).

Available data:

The data available for the assessment of stocks is weak, the structure of the stock is uncertain. Investigations carried out at the beginning of the 90's lead to think there were two distinctive separate stocks: North (XIV, Va, a small part of Vb), South (VI, VII, Vb and XIIb). A genetic study is necessary to determine if there really are two stocks.

Some biological data:

- The maximum distribution of stock is between 300 and 1500 metres, being the higher abundance between 600 and 1000 m.
- No information concerning neither diet nor any possibility of marking in order to know migrations because of dead fish during hauling with gut inversion.

- Biological parameters indicate that it is a gadidae (approximate life-span of 30 years, $M^1 = 0.15$ and high fertility).

Total international landings indicate two peaks. One in the middle of the 80's corresponding to the development of the French fleet and one at the beginning of the 90's corresponding to the development of Scottish and Irish fleets, then one notices a gradual decrease of landings linked to the policy of quotas. The ICES "deepwater species" group feels that the tendency to decrease is a strong tendency.

Data from scientific campaigns does not specifically target blue ling (i.e. not very informative) and Scottish commercial data is biased because there was a change in targeting towards deepwater species, therefore, the French data is the more useful data. The average length is used as an indicator of biomass level. It comes from the size distribution of French commercial catches and indicates a decrease over recent years in relation to the 90's.

Assessment:

Several methods were used, and the methods indicate different biomass levels but the trends are identical. Exploitable biomass in 2004 was estimated at 15% of the exploitable biomass in the 60's. However, the results of the assessments are to be treated with caution, as these assessments are exploratory. Other methods will be developed and tested within the framework of the European project, POORFISH. Mr Large encouraged that even more precise work should be carried out on catches per unit effort (CPUE).

The ICES recommends:

- No targeted fishery,
- Implementation of closed areas that are closed to fishing in order to protect spawning fish (aggregation).

Comments and recommendations:

The French professionals indicated their disagreement concerning the perception of the stock situation. Mr Moguedet's theory indicates that the fishery dates back to before the beginning of the 80's (data available from 1973 on – see document 3). Therefore, the ICES data isn't complete as it is based on the analysis of data dating from the end of the 80's. Mr Ghiglia explained that the professionals thought they had access to another section of the blue ling population at the end of the 90's and they believe that the population has been stable since that date. In addition, the levels of catches estimated as defendable would correspond approximately to 2% of the total biomass, i.e. approximately 3.000 t, which corresponds to current catches.

Mr Large explained that this stock is vulnerable due to its aggregation behaviour, but this stock could recover more rapidly than other deepwater stocks thanks to its biological characteristics. He does not think he can recommend a fishery level at 3.000 t as assessments are not robust enough to allow for a figure to be recommended. Spanish representatives were concerned about the impact of measures taken for blue ling on their hake fishery (by catch of 1 to 2% of blue ling).

Mr Lourido affirms that this is a stock that it will be able to recover if suitable measures are accordingly adopted. In this respect, he reminds the necessity of assessing the impact of the measures to be implemented for other fisheries such as hake (with blue ling by-catches from 1 to 2 %) He also makes a comment regarding the closure proposal on the West of Scotland: he believes that it would be necessary to review the selection criteria, insofar as the suggested statistical rectangles comprise bathymetries from 100 to 1,500 metres, while existing already some precedents of exceptions to gears depending its specificity (deepwater gillnets, access to Irish MPAs by pelagic trawlers).

¹ M: natural mortality

Mr. Lourido states that hake is caught by the Spanish longline fleet at depths between 300 and 600 metres, not having any incidence on Blue Ling. He concludes by saying that these data might be easily contrasted and have been already presented to both European Commission and Council.

Mr Penas from the Commission raised the issue of the reasoning for maintaining the CPUE since 2000 (while the exploitable biomass has been showing a decrease). Mr Levisage explained that fishing during the spawning season represents a smaller and smaller share in the catches and that catch levels remain stable outside the aggregation areas. Therefore, this stability cannot be attributed to fishing in aggregation areas. It was also suggested to assess the benefits of a model in size class (in view of the age related problems for this species).

The main problem for the analysis of this species is the gap between the data input necessary for operating the models and the data available. It was proposed to analyse the sex ratio of catch composition. This can only take place on board (i.e. landing gutted), but Mr Lorange (IFREMER) specified that one should first analyse the effective benefit of such data and the objective of their use.

⇒ **The group members requested that:**

- **The ICES “deepwater species” working group integrate the fact that there are no blue ling discards in the fishery,**
- **the data prior to 1980 be integrated (Moguedet).**

4- POORFISH project: see presentation N°4 by Phil Large (CEFAS)

Mr Large presented an analysis concerning area closure scenarios for blue ling. Data obtained from French and Scottish catch data indicates:

- Peak of catches: for France in April in VIa and in March in VIb, and in April for Scotland,
 - main areas of catch: Rose Mary Bank, North of the Rockall Bank and the fringe of the Hatton Bank.
- A questionnaire was sent in parallel to the scientists, NGOs and public and professional organisations. It confirmed the concentration of catches over the spawning season and enabled the spawning areas to be identified more precisely.

The Poorfish scientists compared the results obtained in the spawning areas identified and the proposal to close areas as proposed under the TAC and Quota Regulations by the European Commission. Superimposition is good even if the areas proposed for closure are more restricted than the identified spawning areas. The Poorfish group wishes to bring forth knowledge in order to refine the EC proposal by:

- Taking into account the depth of the areas and thus enabling a reduction in size of the areas proposed for closure. The scientists thus believe that it will be easier to obtain agreement from the professionals to close smaller areas.
- Reducing the period of closure to March and April only for VI a and b (and not May),
- Submitting these proposals to the ICES “deepwater ecosystems” working group,
- Theoretically modelling the effect of the closure in 2008.

Comments and recommendations:

Mr Marc Ghiglia was surprised by the proposals made by Poorfish, which were meant to develop new assessment methods for stocks with poor data, whereas they have actually made recommendations on the closure of areas without analysing the impact of other management measures (limitation of catches / seasonal tides, quota...).

Mr Alvaro Fernández (IEO) was concerned by the status of area XII that is dealt with by the Long Distance RAC and whose competent representatives were not present to discuss the issue. Mr Legarrec requested that explanations be given for the reason for the proposed closure south of Faeroe.

The question of a closure to all gear or to some gear only was approached and the problem of monitoring was raised. How can we control that vessels are bottom liners and not trawlers or netters?

Mr Juan Carlos Corrás reminded everyone that the Commission's proposal did not concern vessels catching less than 5% of blue ling.

Miss Mercedes Rodríguez and Mr Jesús Lourido call again attention on the selection of closure areas in relation to the catches data within statistical rectangles comprising depths between 100 and 1000 metres and affecting to other fisheries like hake not affecting Blue Ling. They remind that there are precedents of exceptions such as those applied to pelagic trawlers in Irish MPAs and those applied to hake gillnets.

Mr Ghiglia highlighted the fact that the Council had prompted the EC to propose measures for blue ling, without anticipating the type of measures, yet here, we are apparently only talking about closing areas. He proposed that real time closures be considered (as currently tested in Scotland for Cod) because aggregations are not always stable over time. Besides, he also evoked the problems of monitoring that the Commission will no doubt underline should a proposal taking the bathymetry into account be considered.

The position of the French professionals was to consider an effective reduction of catches during the spawning season within the framework of an annual reduction. The Scots would go for a spatial closure but with a reference to bathymetry.

Mr. Ian Gatt prefers an spatial and temporal closure (from April to may) that also contains specific references to bathymetric characteristics of the fisheries because the former proposal affects to general areas affecting other fisheries like hake or white pollock without any influence on blue ling.

Mr Penas pointed out that the EC proposal was not adopted, and therefore there was no more need to consider it. If alternative measures to area closures are proposed, they will have to be justified scientifically. However, if scientists recommend that the best measure is that areas be closed, the EC will follow this recommendation. Implementation exemptions (for bottom liners in particular) will be considered.

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It was proposed that a new request be submitted to the STECF concerning management measures for blue ling. Mr Penas pointed out that the possibility of introducing this question in the STECF schedule will be discussed at the Spring session as the STECF annual program is full already. However, an extraordinary meeting could be organised.

5- GRENADIER: see presentation N° 5 Pascal Lorange (IFREMER)

The presentation focused on the west of the British Isles and the Hatton Bank. Spawning takes place from May to November west of the British Isles. Grenadier is found between 600 and 1500m. Few things are known about the migration of the species. Longevity is estimated between 50 and 70 years. The age of first maturity is estimated between 8 and 10 for males (i.e. 8-10 cm – anal length), females between 9 and 14 (i.e. 11-12 cm). There were very few catches before 1989, international landings were then stable in the 90's (between 10 and 15.000 tonnes) and then they showed a peak in the years 2001- 2003 with a strong increase of landings from area XIIb (Spanish trawling fishery developed on Hatton).

CPUE are difficult to interpret. Therefore, other indexes of abundance will be used:

- 6 fishing areas were identified and the CPUE trend is different for each area,
- Data from scientific campaigns are even less balanced than the data from commercial catches. However, an index was calculated with a broad confidence interval, this index shows a decline in stock abundance between 1985 and 2000.

Besides, a decrease in the size of catches has also been observed. This species is subject to discards, but apparently, there were no modifications in the distribution of discard size according to French commercial data. This stock poses a problem for setting a size-age key, (for a 17 cm fish, the estimated age varies from 15 to 35). Regarding abundance according to depth, signals coming from scientific campaigns and commercial data do not agree. The possible impact of fishing on the decrease in abundance of the stock at certain depths will have to be discussed at the next ICES working group, this could bring certain hypotheses for stock assessment into question. The results of different assessment methods were presented. It appears that it might be interesting to develop further models of population dynamics for the indicators concerning:

- statistics of catches and effort per small area (CPUE per small area),
- average length of catches,
- depth of the abundance peak,
- proportion of large individuals in catches and landings.

Comments and recommendations:

Spanish and French data seem to indicate different average catch sizes. Does this mean there are two stocks? Mr Lorance explained that the scientists consider that there is only one stock as there are no hydrological or morphological barriers for the dispersal of larvae.

Mr Alvaro Fernández (IEO) pointed out that the Spanish fleet concerned by this fishery were not represented here, but in the Distant Waters Fishery RAC. They could be invited at the next meeting. Mr Lamothe proposed the use of a global model (less restrictive in data) rather using the VPA method that requires the use of a Size-Age key, the reliability of which is not good.

Mr. Lourido and Miss Mercedes Rodríguez affirm that the Spanish fishing industry that have any influence on such fisheries are not represented in this meeting, but they offer themselves to transmit the invitation to participate in forthcoming meetings. They remind that the fisheries in no-Community waters fall perhaps within the competence of the Long-Distance (High-Seas) RAC, and that might eventually be necessary to collaborate with them in this issue.

Mr. Velasco announces that he will give communication to the Spanish General Secretary of International Relations, competent in this matter.

⇒ Mr Lorance stated that work was carried out in parallel on a global model and an age model (VPA) to find out which one is most coherent. At the end of the year, research programs should be set up on this theme.

6- BLACK SCABBARD: see presentation N°6 Phil Large (CEFAS)

Available data:

The structure of the stock is uncertain. For the assessment, 2 stocks were identified, but there are doubts on one or two stocks exist. A genetic study should produce results on this subject within two to three years. The species spreads out between 200 and 1600 m in depth. An identified spawning area has been located around Madeira. Very little information is available on the migration of this species (impossible to mark them using the usual methods). There is a strong uncertainty in relation to longevity of between 8 and 32, for a length at first maturity of approx. 110 cm

Assessment:

Total international landings appear relatively stable for areas VIII and IX between 1988 and 2005. For areas Vb, VI, VII and XII: an increase at the beginning of the 90's to around 5.000 t then a decrease in the 90's, new increases in catches to reach approx. 9.000 t in 2002, followed by a major decrease linked to quota policy. This species shows an important seasonal variation in CPUE (strong CPUE in winter). A finer analysis of CPUEs using a reference fleet and by applying a GLM should be carried out. There is a possibility that part of the stock may experience a depletion phenomenon in much localised areas.

Other abundance indexes are used among which the CPUE of trawlers from the Faeroe Islands that indicate a very high peak in 2002 followed by a decline, but this could be due to modifications of the exploitation depth rather than to changes in abundance. Observation Data since 2002 (distributions in length of catches per term) of French trawlers fishing in VIa will also be used in time. The Portuguese bottom liners CPUEs appear to have been stable in the last ten years.

Several assessment methods were used but there is no reference point for this stock and one should consider other methods of assessment. As with the blue ling, the Poorfish project will work on a probabilistic model to take into account the numerous uncertainties, but the results will only be operational in 3 to 4 years. In the mean time, we should improve the analysis of CPUE data.

The ICES recommendation indicates that the series of CPUEs from trawlers fishing in the north of the area show an important decline in the stock with a historical low level in 1999. Since 2000, there has been a weak increase, but the ICES is not sure that this will result in an increase of stock levels. The ICES recommend a level of exploitation equal to the level prior to the expansion of the fishery (1990-1996) i.e. maximum landing of 3.500 t. Management measures that can be taken need to take into account other species present in the fishery.

Comments and recommendations:

The issue of the link between indexes of abundance of trawlers from the North and Portuguese bottom liners was raised. Mr Large stated that there might be a separate stock exploited by the Portuguese around Madeira and the Azores. But if it is the same stock, we need to work towards understanding the differences between the indexes of abundance.

Mr Large pointed out that the ICES group had very few perspectives to improve the assessment of this stock in the short term. Mr Alvaro pointed out that the scientists should be humble in their recommendations and acknowledge that this species that is not very well known.

Professionals asked what collection of data would be necessary to improve knowledge. Mr Large indicated that it is very difficult to answer that question but that it was possible:

- to progress in the knowledge of the structure of the stock (extend the ongoing studies),
- need for more research scientific campaigns (Scotland is the only one to do it but 5 years of data are needed before it can be exploited),
- in regard to the regulations on deep-water species SFP of 2003 making onboard observers compulsory, there is no co-ordination between Member States. ICES could work on a common protocol of observation.
- Mr Alvaro added that the correct filling in of logbooks is also very important and that national administrations should reinforce sampling at landings to obtain reliable size distribution data.
- Mr Lorange encouraged the collection of haul non-haul data to obtain more refined CPUE data and enable analysis in the long term.

⇒ Mr Large pointed out that the main problem is financing. If the States and the professionals want to continue the exploitation of deep-water stocks, the States, the European Commission and the armaments will have to make resources available.

7- Deepwater sharks:

Mr Ghiglia highlighted that another ICES working group “Elasmobranches” deals with deep-water sharks, even though the same vessels fish them. Mr Large informed the members that experts from the deep-water species group would attend the “Elasmobranches” group for the assessment of deep-water sharks.

The European context of the action plan envisaged by the European Commission for the conservation and management of sharks was recalled. Mr Corrás said that the vessels which he represents no longer catch these species because fishing is prohibited beyond 600 m for netters and direct fishery (only allowed as by-catch-) is forbidden for all fleet segments.

Mr Lourido reminds that the Spanish fleet NEVER has had any vessel using deepwater gillnets targeting neither anglerfish nor sharks.

Miss Mercedes Rodríguez remarks the necessity of differentiating deepwater and pelagic sharks, and considering their interaction with the different fisheries.

⇒ The next meeting will deal with sharks and will take place after the ICES Elasmobranches group (beginning of March). It will provide the opportunity to:

- analyse available catch data on deep water species,
- discuss identification problems,
- make proposals for the improvement of data collection.

8- Program and next meetings:

The next meeting will take place during the second semester (proposition to be submitted to debate and approval of the Executive Committee of the 15/04), it can deal with:

- results from the ICES deepwater species group,
- results from the ICES elasmobranches group (for the part on deepwater sharks),
- discuss the action plan for sharks, with a focus on deepwater sharks (see point 7).

⇒ Mr Ghiglia will be responsible for communicating the request for this meeting to the next executive committee and, if there is positive feedback, will then propose an agenda to the group members.

The meeting is adjourned at 17 hours.