CONSEIL CONSULTATIF POUR LES EAUX OCCIDENTALES SEPTENTRIONALES | NORTH WESTERN WATERS ADVISORY COUNCIL | CONSEJO CONSULTIVO PARA LAS AGUAS NOROCCIDENTALES

MEETING REPORT

NWWAC online workshop on the management of the hake northern stock

6 June 2023, 10:00 – 12:00 CET

1. Welcome and introduction by Suso Lourido Garcia, Chair of NWWAC Working Group 2

The Chair Suso Lourido Garcia welcomed all participants to the meeting. He particularly thanked the DG MARE representatives, the MS representatives and the expert who joined the members of the North Western Waters Advisory Council (NWWAC) for this workshop.

He explained that hake fisheries in the North Western Waters are regulated by the Commission Regulation (EC) No 494/2002, also called the hake plan, and the technical measures regulation (Regulation (EU) 2019/1241). The hake plan sets out a number of provisions, including the establishment of a "hake box" with specific mesh size limitations off the coast of Ireland. The plan was established to help rebuild the northern hake stock, however, according to the latest ICES assessment, the stock's spawning biomass has been above MSY $B_{trigger}$ since 2009 and fishing pressure has declined and has been around F_{MSY} since 2013.
In light of this, the NWWAC organised the present workshop to review recent research on the northern hake stock and consider whether and how the 2002 hake plan should be reviewed.

The Chair introduced the panelists:

- Maria Moset, policy officer at DG MARE Unit D3
- Dorleta Garcia, senior researcher in AZTI and one of ICES ACOM vicechairs
- Jean-Marie Robert, policy officer at Pecheurs de Bretagne and industry vicechair of the NWWAC

2. Regulatory framework: the 2002 Hake Plan and the Technical Measures Regulation – presentation by Maria Moset, DG MARE

Maria Moset thanked for the invitation and started her presentation by pointing out the complexity of the regulatory framework relevant to the hake northern stock. There are three main legislative pieces: Regulation 3440/84, Regulation 494/2002 and the Technical Measures Regulation (TMR). Her presentation focused mainly on the latter and she gave an overview of all technical measures relevant to the stock.

The minimum conservation reference size is 27mm and the twine must be of thickness greater than 6mm for single-twine netting material or greater than 4 mm for double-twine netting material.

The TMR states that the baseline for the codend mesh size in towed gears is 120mm or 100mm in ICES 7b-k. However, there are several derogations (provided that COD, HAD and SAI catches do not exceed 20%). First of all, the TMR also states that when directed fishing for hake, 80mm can also be used in combination with a square mesh panel. In this case, there are two more derogations. One is referring to article 5 of Regulation 494/2002 and therefore to the use of 100mm, and the other is referring to the use of a square mesh panel of 100mm as stated by article 2(5) of Regulation 737/2012 (under certain conditions). Finally, the Delegated Regulation 2021/2324 on technical measures in the Celtic Sea, Irish Sea and West of Scotland also impacts parts of the hake box with different codend and square mesh panels configurations. This regulation includes derogations on bottom trawls as well.

Same baseline mesh size is to be used in static gears (120 mm) Referring to the content of part C of Annex VI of the TMR, Moset underlined that it needs to be read in coordination with article 9 of the TMR (conditions for the use of static gears). Under the condition of point 9.1 in the Annex, article 9(7) allows 100mm in waters with a charter depth of 200-600m, and though Regulation 494/2002 sets the mesh size at 120mm, the TMR would prevail.

Moset concluded her presentation by referring to the NWWAC advice on the definition of directed fishing, which had been received and considered by the Commission. She pointed out that it would be interesting to focus on a specific definition for hake directed fisheries.

When considering the possibility of reviewing the hake plan, Moset indicated two main strands of work to consider:

- The Commission has implementing powers under articles 8.4 and 24 of the TMR, but they cannot be used to change mesh sizes, closed areas or define directed fishing;
- Regionalisation can be used as stated by article 15 of the TMR and it would be the best way forward to modify regional annexes.

She then mentioned the next reporting obligation on the TMR which is expected for the first part of 2024. ACs will be consulted as well.

Before closing her presentation, Moset pointed out the functional mailbox MARE-TECHNICAL-MEASURES@ec.europa.eu to which questions on the TMR can be addressed.

The Chair thanked Moset for her insightful presentation and opened the floor for questions.

Jean-Marie Robert highlighted the complexity of the TMR and asked for clarification on the following. Looking at paragraph 9(1) of Part C in Annex 6, the additional information about depth creates confusion, as the information is not the same provided by the legal definition and figures from the main body of the regulation. This leads to many questions as it looks like there are specific conditions between 0 and 600m, not between 200 and 600m. Then, article 9(7) also refers to mesh sizes and twine thickness. The body of the regulation states that gillnet fishing is banned beyond 600m.

Patrick Murphy mentioned the issue of catch compositions. In particular, it is not clear when they apply. Vessels are doing their best to stay within the catch compositions established by the regulations and the different type of derogations that are there. "*However, we see different applications of the*

same article across Member States and consequently vessels being arrested". Has DG MARE liaised with enforcement agencies and the Member States to go through these technical measures and clarify their application? Referring to the reporting on the TMR, he pointed out that STECF should also be asked to review what would happen if derogations were removed. Would it make it impossible for vessels to operate? What effects would that have on the fleets and on fisheries economic viability?

Emiel Brouckaert mentioned Regulation 1954/2003 which includes a definition of biological sensitive areas and asked what the link is with the recovery and the management of the hake northern stock. He reported that coordinates of biological sensitive areas are very similar to the ones included in Regulation 494/2002. Regulation 1954/2003 also includes a reference to juvenile hake. Should this regulation be considered in the management of the recovery of the hake northern stock? He then pointed out that Regulation 494/2002 still contains a reference to Regulation 850/1998, one of the preceding regulations on technical measures, which is no longer in force. He asked how this should be considered.

Moset replied that many aspects are new and stem from the complexity NWWAC members referred to. In order to be able to provide a more comprehensive answer, she invited participants to submit these questions in writing to the functional mailbox she mentioned before. Referring to derogations, she agreed on the difficulty with the interpretation. The initial draft regulation was simpler but got more complex during negotiations with new provisions being introduced. One of the consequences is that there is no direct link with Regulation 494/2002. However, the NWWAC can use regionalisation powers to modify the content of the Annex and this can be applicable to all comments raised. Regarding the issue between paragraph 9(1) and article 9(7), she clarified that the main body of the regulation is the one to follow, i.e. the derogation from the ban is between 200m and 600m. In her opinion, the main solution to the issue of catch compositions in the different regulations is defining directed fishing for hake using article 27 of the TMR.

3. WKANGHAKE findings – presentation by Dorleta Garcia, AZTI

Dorleta Garcia started her presentation by giving an overview of the 2021 ICES assessment.

The previous assessment model took into account 7 fleets, which were divided by metiers and by fishing areas. The model was considering 7 surveys, of which 3 are contemporary from France, Ireland and Spain. The model uses length-based data, including those reported by the sector, and a natural mortality value of 0.4, assuming that weight-at-length and maturity are constant.

Since 2012 the stock has been exploited according to MSY and very good recruitment was observed in 2010, which led to significant increase in biomass and increases in catches. One of the issues encountered in the previous assessment was a retrospective pattern. This pattern was likely due to the overestimation of the abundance indexes and the model trying to follow them year by year. In 2021, ICES decided to have a benchmark for the stock, aiming for an in-depth review of the data and of the model. The southern hake had to be benchmarked too, since the assessment had taken the stock from cat 1 to cat 3. The expert group decided to benchmark both stocks jointly since the stocks had been benchmarked jointly historically and the dynamics of both stocks are quite similar.

Other problems in the assessment to be addressed in the benchmark included:

- Revision of growth that was based on estimated values from 2012
- Natural mortality value
- Convergence problems
- Revision of selectivity parameter ranges that were too narrow
- The relative weight of different data sources

Following the benchmark in February 2022, the following changes were applied:

- Use of a sex disaggregated model. This because hake is characterised by growth dimorphism by sex, with males reaching 80cm in length and females reaching 120cm.
- The model is now estimating steepness, which measures stock productivity at low biomass leves.
- Variability in selectivity since 1998 in all fleets has been included using random walks.
- Down-weighting of length composition data
- Inclusion of Irish IAMS survey, which provides a larger spatial coverage and accounts for larger individuals on which information is lacking (only the Porcupine survey is available for these individuals).
- Catch outside areas 7 and 8 have been disaggregated into trawl and “non trawl” since 2013.
- Discards since 2014 were externally extrapolated before being included in the model.

Garcia compared the results of the assessments done before and after the benchmark. Sex-ratio data came from the PORCUPINE and IAMS survey. Biological data were “borrowed” from Mediterranean hake stocks, which are considered more appropriate than the data used before. However, this is something to be revised in the short term.

A drop in average weights has been observed in recent years, however this was not included in the assessment due to lack of time and data (lack of data due to the fact that hake arrive at port gutted).

Garcia mentioned that biomass reference points have increased, but the ones prior to the benchmark were quite low. The fishing mortality reference points have slightly decreased. Overall, the management advice from ICES is quite in line with previous advice. Last year there was a significant increase but in line with what is reasonable given the retrospective pattern and recruitment fluctuations.

Following the benchmark, the 2022 assessment includes 9 fleets and 8 surveys. It continues to be based on length data. Weight-at-length and maturity keep on being constant. Natural mortality became age dependent. The model is sex disaggregated and the SSB is based on females only. With this new assessment, exploitation levels are slightly below FMSY and downward trend in biomass but still above Btrigger. This because recruitment levels observed in the past years are quite low, with recruitment indices at historical minimum. The model is now able to estimate low biomass, but for the PORCUPINE survey there is likely an overestimation.

Looking at catches by area, catches have decreased in all areas in comparison to the high catches from the period around 2017. However, in area 8 catches are more or less similar to those recorded in 2013.

In areas 6 and 7, catches are quite below the ones recorded in 2013, which is surprising. Catches have decreased in the North Sea as well.

Garcia then mentioned the results of a simulation study of increasing mesh size in 8abd for pair trawlers as it shows how the fleet can be impacted by a change from 100mm to 120mm and it could be relevant to the discussions in the AC. There aren't significant impacts on hake catches or fleet revenue but catches below MCRS would decrease significantly.

Murphy thanked Garcia for the comprehensive presentation. He asked about the impact of the changes in catches into different areas that isn't reflected in the overall TAC. How has that been fit into the model changes in one area over another? The same would be said for the fleets. He pointed out that fishers are observing more catches even on grounds where they wouldn't find hake before. He asked whether the reason why the scientific assessment sees the biomass decreasing is because the larger fish are being caught more, and that would be the females, leading to poor recruitment. Murphy explained that it is very hard for fishers to be implementing technical measures to avoid smaller juvenile fish, target the larger fish, and then have decreasing recruitment. Finally, he asked about data of the reduced catches. "*For us when we have smaller quotas to catch that means we're going to have smaller catches. It isn't reflective of the fleet, because our vessels actually have to tie up to the pier wall when they don't have quota*". He wondered if this is also part of the data included in the assessment.

According to Robert, the big news in the assessment is that the biomass (and related reference points) is estimated by looking at females only. Regarding the growth differences in males and females, all biological parameters should be dissociated and considered according to sex. It is difficult for fishers and managers to understand why the assessment is only based on females, does this mean that only female catches are going to be considered and included in the model? And if the assessment is based on females only, how is the TAC established for both sexes?

Referring to Murphy's first comment, Garcia explained that scientists are reporting what the official MS data are showing, but she would be happy to discuss this mismatch more in detail in a dedicated meeting. She felt that the issue of how the overall TAC is taken into account regional differences is out of scientists' remit and more a question for managers. She confirmed that small individuals are taken into account by the model. Length distribution information is available for both discards and landings, even if the quality of length data is better for landings. Recruitment data mostly comes from surveys and is then adjusted according to catch data. Garcia then explained that the assessment analyses both males and females and that there are biomass estimates for the whole stock. However, for reference points only females are taken into account because they are considered to be more important in terms of stock recruitment. She confirmed that all the biomass is used to calculate the catch advice. Finally, she explained that biological parameters are indeed considered in function of sex.

The Chair asked if the model showed any relationship between the abundance of spawning stock and recruitment and in particular if this would be a direct or proportional relationship.

Murphy added that fishers do not specifically target males or females, but the overall biomass. This makes management decisions very difficult. He then reiterated that advice is not given specifically to areas, but there are quotas for area 6 and 7 overall. Therefore, if the fleet moves, and it has a different

impact on one area and the recruitment is better in another area, this isn't reflected in the advice. He then asked if the model has taken into account the new technical measures implemented by fishers allowing smaller fish to escape.

Garcia replied that unfortunately the model cannot take the spatial dimension into account, therefore taking into account the differences between areas is very difficult. She is hopeful that progress can be made in the coming years in this regard. She found surprising to hear that the sector is observing great abundance of small individuals when the surveys don't record that. If gear selectivity increases and different exploitation patterns occur, the model will adapt accordingly. In relation to the Chair's questions, the relationship between spawning stock and recruitment is relatively weak. However, with low biomass, recruitment is going to be low too.

4. Considerations on 100mm vs 120mm mesh size – Jean-Marie Robert, Pecheurs de Bretagne

Robert's presentation addressed practical considerations on technical measures. The debate on the best mesh size to target hake started in the early 2000s and was also addressed by STECF. France has quite a lot of data available on hake fisheries and especially comparative data. French vessels fish everywhere with 100mm as they believe it is the best mesh size for hake, but use the 120mm mesh within the hake box since the adoption of the technical measures regulation in 2019.

Based on French landing data, the peak of catches is around 60-65cm length when using the 100mm while the average length is 75cm with the 120mm mesh. In both cases, there are very few discards below the 27cm MCRS. However, in proportion, far more juveniles are caught with the 120mm.

As mentioned by Garcia, there are differences in growth between males and females. A median zone can be observed around 40cm until 70cm where there is more balance in the catch between males and females. Catches between 70cm and more than 1m length were all females.

Comparing again the performance of the two mesh sizes, the 100mm seems to be more efficient in terms of the proportion of juveniles caught and a balanced exploitation regarding the sex ratio. Most of captures recorded with 100mm are between 40 and 70cm. This is very important especially considering the reproductive capacity of the stock. Data shows that mostly bigger individuals over 70mm and some smaller juveniles below 40mm are caught with the 120mm.

A study done in Ireland by BIM in 2011 shows that, while there are no extremely huge differences, the 100mm allows for a more targeted hake fishery and limits bycatches (for example of cod) in comparison with the 120mm. Moreover, the study showed that the use of the 100mm mesh resulted in a higher percentage of hake (76%) in the catch.

Robert concluded that the optimisation of the hake-netters exploitation is far more complex than a simple identification of the mesh size that produces the highest average length. Having considered additional parameters, 100 mm appears to be a better regulatory mesh size, which then should apply everywhere in ICES subarea 7, as it protects larger, female individuals and ensures reproduction of the stock. The 100mm mesh size should be proposed for all areas and regardless of depth.

Further details are needed regarding the articulation between the TM Regulation and the 494/2002 Regulation.

Daragh Browne referred to BIM research as he had worked on it and highlighted that the marketable size of hake is important as it drives fishing behaviour at sea. "*When we did that trial, we identified 60cm as a size below which the value was quite low and there were large quantities. The study identified potential for high grading*".

Robert replied the saw that reference to high gradin but he wondered if it would still be the case today when quota have been substantially increased since 2011. Moreover, high grading shouldn't be allowed in targeted fisheries under the landing obligation.

Jose Beltran took the floor and expressed his concern regarding a standardisation to 100mm as the stock is following a downward trend. He mentioned that clear changes have been observed in the pattern of exploitation of this stock, with displacement of the bottom set gillnets because of VMEs. He asked Garcia what her opinion would be regarding standardising the mesh size.

Garcia replied that AZTI nor ICES have done this analysis yet and she was also unsure the detailed information needed was available to understand in advance what the implications would be in terms of exploitation patterns for the stock.

5. Discussion

Murphy took the floor and asked whether DG MARE is liaising with the national control agencies on how they apply the technical measures and interpret them, to ensure there is a level playing field across the different areas and fleets. The implementation of technical measures is quite confusing and with all amendments in place is difficult to understand which regulation supersedes the other. "*Is it supposed to be applied on inspection when the vessel is out fishing or on landing? Fishers are doing their best to make sure that they are in compliance with the different derogations. However, this is not always easy especially in mixed fisheries. If on each haul a fisher doesn't meet the criteria, would it be a requirement to keep changing the gear?"*

The Chair asked participants if they would agree to revise the hake plan. A first proposal would be to consider the impact of standardisation of 100mm for bottom set gillnets. Selectivity results are very good regardless the use of 100 or 120mm mesh.

Robert replied that according to him it would be important to take a position on the mesh size for targeted fisheries for all depths.

Beltran expressed again his concerns regarding this decision.

Since participants could not agree on this proposal, the Chair proposed that the topic is further discussed and gave the floor to Brouckaert for the conclusions of the meeting.

6. Conclusions by Emiel Brouckaert, Chair of the NWWAC

Brouckaert started by thanking the Chair, who he believes started the meeting with the right question. The recovery plan under regulation 494 from 2002 and it is important to consider whether a review is needed.

He then mentioned Moset's presentation around the regulatory framework, pointing out that it is more complex than anticipated. She referred to the possibility of applying regionalisation, working on joint recommendations to put forward proposals on how aspects of the technical measures can be regulated. Brouckaert also recalled the specific DG MARE email address open for all relevant questions about this topic. He felt that the questions that came from the floor after Moset's presentation are reflecting some of the points that need to be addressed following the conclusion of this workshop. Among these is a very important and complex issue – the definition directed fishing, specifically for hake.

Brouckaert then move forward mentioning Garcia's presentation, which gave a very interesting overview of the issues with hake from an assessment perspective. He recalled the changes that she listed from the 2022 benchmark, including the aspect that led to some discussion regarding male and female distinction and the use of female biomass to determine the biomass reference points.

He then recalled Robert's presentation, which put forward some interesting aspects especially for targeted fishing. According to French data, juveniles are caught more with the 120mm mesh size, which is also characterised by an unbalance between males and females in the catch. The 100m mesh allows for higher percentage of hake in the catch over the 120mm.

Before coming to his conclusion, he highlighted the need to liaise with control authorities to ensure there is level playing field specifically in the interpretation and implementation of the technical measure regulation. This is specifically relevant in relation to catch composition rules.

Addressing the Chair of Working Group 2, Brouckaert concluded that further discussions are expected at next NWWAC plenary meetings in July and September 2023. Based on the discussions held today, it will be up to Working Group 2 to start preparing advice on how to progress with a possible review of Regulation 494 from 2002. The discussion on the use of 120mm or 100mm should also continue.

The Chair thanked Brouckaert for his summary and closed the meeting.

7. Participants

Name	Organisation
Dale Rodmell	Eastern England Fish Producers Organsiation
Daragh Browne	BIM - Irish seafood development agency

Maria Hermida	Hooktone
Chloé Pocheau	SWWAC
Jesus Lourido	puerto de celeiro sa opp77
Mikel Ortiz	OPPAO
Manu Kelberine	CRPMEM de Bretagne
Emiel Brouckaert	Rederscentrale
Irene Prieto	ANASOL-ARVI
Anaïs Mourtada	CNPMEM
Edward Farrell	Killybegs Fishermen's Organisation
Julio Valeiras	Instituto Español de Oceanografía
Kylie Kronal	Department Agriculture and fisheries
Dirk Van Guyze	Department Agriculture and fisheries Belgium
Juan Carlos Corras Arias	FREMSS
Pauline Joyeux	French Secretariat for the Sea
Patrick Murphy	Irish South & West Fish Producers Organisation
Héctor Villa	SECRETARIA GENERAL DE PESCA SPAIN
John Lynch	Irish South & East Fish Producers Organisation Ltd
Marta del Avellanal	Ministerio de Agricultura Pesca y Alimentación
Jean-Marie Robert	Pêcheurs de Bretagne
Jose Beltran	OPP-BURELA
Maria Moset	DG MARE
Dorleta Garcia	AZTI
Sonia Sanchez	AZTI
Erik Lindebo	DG MARE
Daragh Browne	BIM