



Ref.209/2021



2 November 2021

**Report of the joint MEDAC and SWWAC meeting on 19<sup>th</sup> July 2021  
Workshop on a harvest strategy for Bluefin tuna**

**1 Introduction**

Benoit Guérin – the former SWWAC Secretary, fisherman, consultant (currently for Pew) and coordinator of this workshop – introduced the meeting by thanking the Advisory Councils for their responsiveness, together with all the participants and speakers.

He noted that the adoption of harvest strategies was a complex, new procedure, but one that when explained properly was within anyone's reach.

The adoption of a Harvest Control Rule (HCR) for Bluefin tuna in 2022 is an ICCAT commitment (for the entire Atlantic zone, not just the eastern part), the initial catch limit (TAC) is expected to be set as early as 2023. He recalled that, although the timetable was provisional, the work of the scientists had already begun and the preliminary elements would be presented at this meeting. He informed the participants that a concept note summarising these general points was available on the MEDAC and SWWAC websites, along with all the presentations made.

**2 Defining a Harvest Strategy: concepts and aims  
Harritz Arrizabalaga (AZTI – Member of the ICCAT Working Group on Bluefin Tuna)**

Haritz Arrizabalaga reminded the meeting of the role played by all parties (scientists, managers and stakeholders) in the definition of a harvest strategy:

The stakeholders need to convey what they consider to be the important elements, so that the managers can define the management goals, the acceptable risk levels and decide in which ways to regulate fisheries activities (TACs, minimum sizes, spatial/temporal closures, interannual variability, etc.). Lastly, the scientists evaluate different ways of achieving the goals, taking the constraints identified by the stakeholders into due account. To accomplish this, the scientists simulate the workings of the real system: the stock, the fisheries, the management systems, while also allowing for natural variables. In the event that the uncertainties regarding one or more parameters are excessive, several models/scenarios are created and the harvest strategies are tested on all the scenarios. The scientists then identify the strategies which work in the different scenarios, so that the final strategy is robust to uncertainties.

The strategies selected are then compared in order to choose the one which best achieves the management objectives that have been identified; balances and trade-offs



need to be evaluated during this process, hence the importance of dialogue with stakeholders and managers.

The exchange of ideas with stakeholders also helps to limit the uncertainties faced by the scientists - the more data are provided, the more informed the models become, leading to more precise and consistent harvest strategies. This method has already been used for Albacore tuna, and Harritz Arrizabalaga retraced the timeline of the discussions and decisions regarding this species.

### **3 Feedback from the fisheries sector – harvest strategies for Atlantic Albacore tuna – Miren Garmendia (OPEGUI – member of the SWWAC)**

Miren Garmendia began by introducing the organisation of fisheries producers of which she is director, OPEGUI, which represents 80 vessels from the Basque Country, 40 of which target Albacore tuna using live bait and 15 using other methods. Fishing for Albacore is, therefore, one of the organisation's main activities and it accounts for most of the income of the vessels involved. Consequently, the professional fishers are acutely interested in the state of this stock and they have a close relationship with the scientific community; they make their vessels available to carry out campaigns at sea and are willing to submit the data needed for studies. The combination of scientific and empirical knowledge is essential according to Miren Garmendia, and active collaboration between POs, scientists and the governing authorities is crucial in ensuring that the TACs and quotas set make sense.

Exploitation of the Albacore tuna stock reached its limit some years ago, and the stock transitioned to the orange quadrant of the Kobe plot. Work was therefore carried out in collaboration with scientists to define harvest strategies so that the stock could return to the green quadrant. She underlined that a permanent strategy was now necessary, following the use of a provisional strategy since 2017. Miren Garmendia further emphasised the importance of the sector's participation in scientific studies, as scientists were not in a position to develop realistic rules without input from fisheries professionals: a bottom-up approach was crucial. Miren Garmendia also drew the meeting's attention to the quality of relations between France and Spain in this regard, and she invited the other Member States to communicate in the same way where Bluefin tuna was concerned.

Rosa Caggiano (MEDAC) agreed that a bottom-up approach was indeed a prerequisite for the development of a HCR.

Lastly, Miren Garmendia focused on the importance of language. Scientific language should be adapted to make it accessible to the representatives of the sector, efforts



need to be made in terms of scientific outreach; in turn, scientists need to comprehend the language of fisheries professionals. The two parties need to build a relationship based on trust, which takes time and involves organising numerous meetings and creating opportunities for dialogue.

Alessandro Buzzi (WWF - MEDAC Vice-Chair) underlined that the bottom-up approach to creating a harvest strategy was of key importance, not only to ensure stock sustainability but also to safeguard harvest stability, which is what every producer hoped to achieve. It represents a modern and highly effective management method.

Emanuele Sciacovelli (Federpesca) commented that the bottom-up approach was not used enough in the Mediterranean, although it was highly desirable to create opportunities for fishers to engage in dialogue with scientists. In his opinion, the problem was that real attention was not paid and the EC services acted dogmatically.

Jacinto Insunza Dahlander (FNCP) considers it essential to ensure contact between the fishing and scientific sectors, as per tradition. He communicates that they trust their scientists and rely on them to avoid having to follow the dogmatic lines that have been indicated. He then asks which segment the scientist collaborated with for the application of this new rule in the model he is defining for bluefin tuna: the artisanal one from the Canary Islands, the Mediterranean one, the one from the South Atlantic region, or the one that catches it. in an accessory way?

Franco BIAGI (DG MARE) replied that, in his view, there was constant attention and it was the very need to listen to stakeholders and facilitate dialogue which led to the institution of the advisory councils. This made it possible for the sector to boost its knowledge and benefit from bringing together and cross-checking information, particularly important for a sector that includes highly diverse activities, where visions diverge at local level. He stressed that this kind of dialogue was constant. He added that the work of researchers was equally important, which is why the EU invested in this sector.

#### **4 Bluefin tuna harvest strategy development – progress to date** **Ana Gordoa Ezquerro (CEAD-CSIC)**

Data regarding this stock remain highly uncertain, especially those concerning biomass and recruitment (estimates of which vary widely between 2017 and 2020).

This is due to the complexity of this stock and its migratory behaviour: the stock is made up of two populations which have different breeding grounds but a common feeding ground. Moreover, the heterogeneous nature of the fleets exploiting this stock contributes to complicating the study, as the kind of vessel can vary widely.



To cover all the uncertainties and therefore all the different possible scenarios, the scientists propose several operating models, with each one representing a potential situation for the stock.

In response to Jacinto Insunza Dahlander (FNCP), Ana Gordoia added that dialogue between scientists and fisheries professionals was important in order to identify target values for the different parameters while taking into account the differences between the various countries or regions.

Jacinto Insunza Dahlander (FNCP) insisted that all the information needed for such dialogue should have already been transmitted to the sector.

Benoit Guérin pointed out that formal decisions were taken by ICCAT for this stock, and this was confirmed by the ICCAT representative, Enrique Rodriguez-Marin; the meeting was also reminded that the sector had its own place in ICCAT discussions using well-established communication channels.

## **5 Status of the Bluefin tuna Management Strategy Evaluation (MSE) Eider Andonegi (AZTI)**

Eider Andonegi began her presentation with a video which clarified what Management Strategy Evaluation is. The video is available from this link:

<https://harveststrategies.org/management-strategy-evaluation-2/>

following which, Eider Andonegi recalled the various steps that are involved in the process of developing a management strategy:

1. Identification of management objectives;
2. Identification of indicators;
3. Development of models reflecting possible stock conditions: definition of hypotheses on uncertain parameters based on available real data;
4. Weighting of hypotheses depending on plausibility;
5. Identifying candidate management procedures/harvest strategies;
6. The strategies are then applied to the models to obtain estimates and long-term projections on the different scenarios;
7. Identifying the strategies that best meet the established management objectives.

The situation surrounding the Bluefin tuna stock, as outlined above, is extremely complex. There are a great many uncertainties, which is the reason experts have developed 48 models, which therefore correspond to 48 potential scenarios for the stock. As things currently stand, 41 harvest strategies are envisaged in order to achieve the management objectives, whatever the model.



\*\*\*\*\*BREAK\*\*\*\*\*

Benoit Guerin reopened the session and passed the floor to Eider Andonegi (ATZI) so she could continue the presentation from the morning on the status of the Bluefin tuna Management Strategy Evaluation. The scientific expert stressed that it was crucial to understand the steps leading to the final approval of the management strategy, which were not necessarily sequential but which had to be carried out. Management Strategy Evaluation (MSE) is a tool which makes it possible to comprehend the state of a stock even in the presence of uncertainties; the management objectives which are set need to be clear and agreed with stakeholders; furthermore, it is necessary to understand whether the strategies put in place are working or not. A series of operating models are therefore formulated to simulate all relevant aspects of the existing fisheries system on the basis of information from a variety of sources, including electronic tagging, data from fishers, as well as independent information such as aerial surveys etc. Operating models are conditioned by the available information, and the different hypotheses that are developed are then examined by the managers and stakeholders. The operating model simulates the effects on fleets and stocks, considering all the various plausible scenarios, culminating in management advice. The aim of developing and conditioning the operating models is to obtain CPUE (Catch per unit Effort). Data from different sources may be conflicting, attention is focused on the uncertainties in order to find a solution. Following this stage, when agreement is reached on the state of the stock on the basis of the best available information, the potential management advice is considered. This is why dialogue with stakeholders is important, as these are simulation exercises.

Eider Andonegi explained the process which uses different indicators to describe the state of the stock and the ensuing appraisal in view of the established management objectives. From this basis, the TAC is calculated, taking into account how distant the target is and the TAC set the previous year. The management objectives are presented and discussed with the stakeholders, although the objective is always to achieve MSY and a management procedure is therefore tested. She informed the meeting that catch limits were decided on the basis of the results of the performance statistics. It is necessary to achieve a trade-off between keeping the stock healthy and ensuring reasonable catch levels. Some of the assumptions made in developing the first two models and in the formulation of the graphs should be discussed with the stakeholders. When interpreting the columns in the slides, it is important to bear in mind that the wider the columns in the operating model graphs, the greater the uncertainty: therefore, the associated management procedure could result in either complete obliteration of the stock or in the optimal situation for MSY. She pointed out that between this meeting and September it would be necessary to work on the harvest strategies in order to refine and improve them so as to reduce variability; in any event, a new projection and a new TAC would be prepared each year, in this way the data would be progressively updated. The most critical situations are those that lead to a sharp decline in a short period of time: in such cases the management procedure would need to be capable of intervening and reacting so as to avoid this. It is necessary to invest



in science to improve results and reduce uncertainty. The best that can be done is to try to reduce the degree of uncertainty.

Franco Biagi (DG MARE) said that it was clear that this was still the development phase, but a key aspect of this management procedure is its reactivity. The planning stage must pay particular attention to all elements to ensure that, when faced with uncertainties, all the variables are considered. To counteract this kind of collapse in catches, an upper limit for the TAC could be defined. The notion of including upper limits could be very useful, not least because this is already being implemented in much simpler stocks, such as Albacore. Achieving MSY is a fundamental aim in the CFP. It is equally important to involve stakeholders during these discussions. He concluded by noting that caution was required in exploiting resources and that the precautionary approach should be followed.

Eider Andonegi pointed out that population behaviour varied according to recruitment and this affected the performance of biomass. She added that one of the management objectives was to achieve MSY for both the eastern and western stocks. She also replied to Franco Biagi, saying that setting an upper limit would cause a great deal of problems and much work still needed to be done in this respect. The scientific expert invited the participants to visit the website [www.harveststrategies.org](http://www.harveststrategies.org), where information was provided on many of the issues presented and discussed during the meeting.

Alessandro Buzzi (WWF) asked about the timing of the MSE process from a scientific perspective and the estimated adoption of the harvest strategy within ICCAT. He also asked for further information regarding stakeholder consultation at national or EU level. Eider Andonegi replied to Alessandro Buzzi by saying that the next speaker would be able to give more information on environmental changes as well; however, the hypotheses developed so far do not include the question of exotic species.

Ana Gordo (CSIC) intervened to underline that the difficulty was to build models on the basis of completely unknown elements and trends.

Benoit Guerin introduced the following speaker, Enrique Rodriguez-Marin, IEO and Chair of the ICCAT Bluefin Tuna Species Group, and he expressed the hope that it would be possible to find out the level at which stakeholder contributions could be conveyed.

Enrique Rodriguez-Marin presented the attached slides which summarise the concepts of MSE and operating models. He recalled how harvest strategies are selected, illustrating the management procedure and the harvest strategy. The overview he provided described the pursuit of the best performance over the robustness trials, considering growth curves, catch increases, etc. The results of simulations applying the operating models were then demonstrated in graphs in order to identify the strategy which performs best. The work plan is that the Bluefin Tuna Working Group will focus on selecting the best available results. He informed the meeting that the ICCAT Intersessional Meeting of the Panel 2 would be held from 13<sup>th</sup> to 15<sup>th</sup> September, the SCRS Species Group Meetings from 20<sup>th</sup> to 25<sup>th</sup> September, the ICCAT Standing Committee on Research and Statistics (SCRS) would meet from 27<sup>th</sup> September to 2<sup>nd</sup> October and informal webinars involving the SCRS, the Commission, stakeholders and others would be held in October leading up to meeting of Panel 2 on BFT-MSE on 12<sup>th</sup> November. The MSE requires input from scientists and managers, in concert with



stakeholders; informal webinars and national meetings between scientists, managers and stakeholders are therefore organised. The involvement of the Advisory Councils, the ICCAT Standing Working Group to Enhance Dialogue between Fisheries Scientists and Managers and the ICCAT Panel 2 was envisaged. The adoption of a harvest strategy would make it possible for managers to avoid complicated annual negotiations on quotas thanks to previously agreed rules which focus on long-term sustainability and economic profit. He concluded by saying that harvest strategies have proven to be more efficient than traditional management methods and that ICCAT should adopt a harvest strategy for bluefin tuna by 2022.

Jean-Marie Robert (OP Pêcheurs de Bretagne) asked what was the expected outcome of stakeholder involvement in the process. He said that the right time would be now, but the type of contribution required clarification.

Enrique Rodriguez-Marin replied that stakeholders would be able to participate at the beginning of September, when the plan was due to be presented for the first time and the alternatives would be assessed. More official meetings would be held in November and the various producers' organisations would be present.

Benoit Guerin pointed out that interaction would inevitably depend on how well the stakeholders had understood the whole process and mechanism.

Enrique Rodriguez-Marin answered that this process was much more open than traditional fisheries management methods and the information transmitted was afforded much greater consideration.

Jan Kappel (EAA) asked how they would decide the best time for recreational fishermen to be involved in the process as stakeholders. It appeared that professional fishers would see an improvement in the quotas, however this was not the case for recreational fishers.

Enrique Rodriguez-Marin replied that all gears were represented in the models, including those employed by recreational fishers; everyone needed to be able to have a say. The specific catch limits for each fishery, including recreational fisheries, would be defined at a later date.

Franco Biagi (DG MARE) reiterated that numerous opportunities were organised by the EC for interaction with stakeholders, Member States, and especially with the Advisory Councils which led to more meaningful, improved understanding and discussion. He stressed the importance of these management procedures and the need to negotiate, especially in an international context. He added that it was essential to shift from a method based on reaction to one based on planning; a precautionary approach was necessary in order to avoid future crises due to incorrect exploitation, taking into due account the risk that the distribution of stocks in certain areas could alter, climate change etc. He pointed out that any management strategy included elements that were based on variations in the indicators: the strategy changes on the basis of variations in the indicators. He emphasised the importance of keeping the objectives at the forefront: keeping the biomass of stocks above that necessary to maintain MSY. He concluded by saying that the safety objective must be set high enough and on the basis of the available scientific data.



Jacinto Insunza Dahlander (FNCP) said the projections seen so far were very serious and it was essential for the professional fisheries sector to participate adequately in the debate. He asked when they could give their opinion on the operating model to be chosen.

Enrique Rodriguez-Marin emphasised that the process would be based on scientific results and stakeholder involvement. The key was to reach a compromise. Once the MSE has begun, it would still be possible to implement changes in the future. He reiterated that stakeholders would be listened to and that the process was absolutely reliable. He added that it was not average figures which were assessed, the process centred on the distribution of all the parameters so that the management strategies were able to ensure that stocks did not collapse. This meant that excessively restrictive measures could be avoided in the future, however the precautionary principle would still apply.

Benoit Guerin acknowledged the considerable scientific effort that preceded the whole process.

Miren Garmendia (OPEGUI) also acknowledged the importance of the work carried out so far. Now all the elements needed to be assimilated and the stakeholders would need to work on the matter in order to present their proposals and concerns. With these formulas, for example, in the current situation what quotas were envisaged? She stressed that this question was necessary so as to understand how the sector would be affected by these changes. She agreed on the importance of the role of the Advisory Councils in clarifying these analyses, explaining them and structuring the ensuing points of view in order to be in a position to provide an opinion on the issue. Further meetings would be required to reach a consensus. She urged the two Advisory Councils present to hold further meetings on this subject.

Enrique Rodriguez-Marin said that informal webinars should be organised in order to prepare adequately for the Panel 2 session in November.

Jean-Marie Robert (OP Pêcheurs de Bretagne) stressed that all future events should be taken advantage of: past experience in the case of North Atlantic Albacore had demonstrated that participation in all the stages beforehand did not really allow the sector to have a say in each phase. He added that it would be difficult for the sector to express an opinion by October on the basis of the most up-to-date scientific results, because there was very little time.

Eider Andonegi (AZTI) admitted that stakeholders should have been involved earlier. In the case of Albacore, there had been more time available. She said it was necessary to organise meetings like this one more often and also to give continuity to today's session, bearing the ICCAT calendar in mind, which already included a great deal of commitments for the scientific experts.

Benoit Guerin thanked all the experts who had spoken and summarised the main points raised during the meeting:

- the harvest strategy requires a robust scientific basis to be inserted into the simulations;
- a bottom-up approach and collaboration of fishers in the definition of the future HCR are prerequisites for the process so as to take their experience into due account;
- it is important to understand the mechanism underlying how the HCR works;





- those responsible for the trade-offs will need to continue the scientific studies and stakeholders will need to be fully engaged by means of consultation with the Advisory Councils and informal webinars.

The moderator said that the Advisory Councils had every interest in continuing to foster opportunities for exchanges of views. During the month of October, *ad hoc* working groups would be held by both the MEDAC and CCSUD: respectively on 5-6 October and the following week. The two Advisory Councils would prepare draft advice in the near future on the importance of stakeholder involvement and the bottom-up approach.

Rosa Caggiano of the MEDAC thanked CCSUD for the joint organisation of the session, she expressed her support for and echoed the idea that the members of the two Advisory Councils should participate in all the meetings scheduled in October by both the Advisory Councils, considering that the schedule was rather tight, in order to achieve a joint document providing advice by means of a participatory process. She closed the meeting and thanked the interpreters for the excellent job.