



Workshop on the future of Atlantic bluefin tuna: fisheries, management and the market

On 03-04 February 2021, 313 participants attended an online symposium on the future of the Atlantic bluefin tuna. Discussions were organised around four different sessions: (1) science, (2) markets, (3) illegal, unreported and unregulated (IUU) tuna fishing, and (4) harvest strategies as the framework for future management. Each session included a moderator and several expert panellists (EU industry representatives, scientists, managers, and NGOs) who identified key priorities to be addressed in the coming years.

DAY 1: WEDNESDAY, 03 FEBRUARY 2021

Moderator: Steven Adolf, journalist and author of the book “Tuna Wars”

Introductory Remarks from WWF

WWF’s Global Tuna Lead, Marcel Kroese, welcomed participants and shared some thoughts on WWF’s vision for international fisheries management around the world. He highlighted the need to move tuna management from “business as usual” to more ambitious management objectives that ensure tuna fisheries are sustainable and continue to be profitable, while protecting tuna populations from the threat of overfishing or illegal fishing. This occasionally will require reference points that are more precautionary than the maximum sustainable yield. Mr. Kroese also highlighted other threats to marine fisheries, including climate change and ocean acidification. He concluded by calling on panelists and audience members alike to tackle the remaining challenges of bluefin tuna management in Europe.

1. SCIENCE SESSION

Panelists:

- Dr. Jean-Marc Fromentin. Senior Researcher, Ifremer. France
- Dr. Tristan Rouyer. Senior Researcher, Ifremer. France

Objective of the session: to better understand how the scientific advice around bluefin tuna is established, how the advice contributes to the overall management of the species, and what statistical uncertainties continue to be present in the East Atlantic and Mediterranean bluefin stock assessment.

The starting point: a look back at the history of bluefin tuna exploitation and the forces that led the stock to the edge of collapse. The science session provided this history for all Symposium participants.

Atlantic bluefin has been fished for almost 3000 years in Europe. In the 1980s, demand for bluefin led to high commercial value for European fishers. As a result, from 1980 to 2000, fishing effort increased substantially, and managers at the International Commission for the Conservation of Atlantic Tunas (ICCAT) were not often following the best available science when setting quotas or other management measures for bluefin fisheries. High prices encouraged illegal fishing and trade. ICCAT repeatedly set quotas above the scientific advice.

A success story: In 2006, the situation could no longer be ignored, with overfishing and illegal fishing leading to a serious risk of collapse of the stock. NGOs reacted strongly, raising public awareness and pressuring ICCAT managers to take action. In 2006, ICCAT adopted the first recovery plan, established closed fishing seasons, and, in 2009, aligned the total allowable catch with the scientific advice, which required a substantial reduction from 30.000 t to 13.500 t. Simultaneously, strict enforcement reduced the prevalence of illegal fishing, and ICCAT adopted a plan to reduce fishing capacity.

These steps worked. Since 2009, there has been a significant increase in the size of the population, and quotas are higher than they have ever been. This is an encouraging story, where strong management measures have reversed a concerning trend. Yet, some uncertainties still remain regarding the scientists' knowledge of stock size and in determining a sustainable catch level.

Stock assessment science: Drs. Fromentin and Rouyer discussed the outstanding uncertainties about bluefin biology (e.g., migration and population structure), data, and modelling, each of which requires a precautionary approach to setting catch limits. Estimates of stock productivity and recruitment – the number of juvenile fish – continue to be a key source of uncertainty that drives the scientists' estimate of stock size. Scientists are still not able to determine with precision exactly what is the maximum sustainable amount that can be fished each year. It is therefore important to adopt precautionary, science-based management, and in some cases, will require a renewed commitment to funding basic bluefin science.

Perception of fishers and recovery of the stock: Local observations are insufficient in ascertaining a complete picture of the population size. Some areas may seem to have an abundance of bluefin, while others may show declines. Stock assessments consider the full geographic range and therefore give a better picture of the ups and downs in bluefin population size. In part because managers have not yet agreed to a recovery target for the population, scientists have not been able to determine whether the population is fully recovered.

Take home messages from the panel

Stock recovery

There have been recent biomass increases, but there is no reference point to measure "recovery." Therefore, determination of recovery depends on the natural productivity: if high, then the stock may not be recovered, if low, then it may be.

Keeping success going	We still need to improve monitoring through new and improved fisheries independent abundance indices but also catch, effort, and demographic structure (fisheries dependent data). New research needs to be developed on population structure and spatial dynamics, but also the effect of the environment on productivity. Some promising initiatives are emerging such as Close Kin Mark Recapture and management strategy evaluation (MSE).
1% quota for science	Funding science via a scientific quota has been on the table for 10 years, but managers have not approved it yet. A 1% research quota would yield approximately 400 t and a value up to 6 million euros. This funding could support the science that is needed to support the industry.
Avoiding overcapacity	Increasing catch limits often induces an increase to fishing capacity. Overcapacity and illegal fishing both contributed substantially to the near collapse of bluefin in the early part of this century. Therefore, it is important that ICCAT carefully control the number and size of vessels that are authorized to participate in this fishery to avoid this threat.

2. MARKET SESSION

Panellists:

- Íñigo Asís. Marketing Manager at JC Mackintosh.
- Bertrand Swiderski. Head of sustainability at Carrefour Group.
- Bertrand Wendling. Sathoan Producers' Organization CEO.

Objective of the session: to discuss how new market channels and market diversification could help minimize the risks for producers and drive sustainability of the fisheries.

The starting point: understanding the role of the markets in past overexploitation of the bluefin stock when huge investment from Japanese markets promoted overcapacity.

Markets can, however, contribute to the conservation of the stock. Conservation also leads to sustainable use and offers stability, both of which are important to markets. Bluefin tuna is considered as a niche market when compared to other tuna species, as the price is high and therefore has economic importance. Over time, we have seen change in the trade: there is now more interest from the EU domestic markets.

Each panelist provided brief opening remarks.

Mackintosh is a fishing organization established in 2016 and specializing in premium quality of bluefin tuna, owning three small-scale fishing vessels fishing within 20 nautical miles of the shore. The founder started in recreational fishing but saw there was a niche to do things differently. Mackintosh started with a catch of 30t and now has an allocation to catch 72t. The product is sold and delivered directly to restaurants and consumers. Future TAC decreases are concerning to the firm and they would prefer maintaining their quota at current levels. Each fish that is caught is individually tagged, and all details on the date of catch, total weight, etc. can be found on the internet from the tag. Mackintosh believes this system should be extended to all bluefin tuna fisheries.

Sathoan is a French cooperative representing MSC-certified artisanal longline fleets and purse seine tuna fleets, based in Sete (France) and representing about 100 vessels. With 15 of the 22 French purse seiners in the Mediterranean Sea and 46 of the 140 artisanal vessels, Sathoan holds more than 60% of the French quota for bluefin. Purse seine catches go to farms and the Japanese market, whereas artisanal vessels fish for the fresh, domestic market that mainly exists in France. The company has committed to 2 certification schemes: the French ecolabel “pêche durable” and the MSC certification for its artisanal fleet. These commitments represent about 10 years of work with fishers. Through these labels, Sathoan is committed to the success of ICCAT management and recognizes the bluefin tuna fishery as a success story due to the joint effort of the industry, scientists, and NGOs. Three main areas are key to maintain this success: continue research (as there are still many uncertainties), maintain important enforcement and control requirements (as it is important to avoid returning to past mistakes of IUU fishing and overcapacity), and set the quota following the scientific advice.

Carrefour, a major French retailer, follows a slogan: “food for all”. It considers its role is to guarantee to its consumers that they can be positive that they are purchasing fish from sustainable sources. This retailer works not only with labels but also with producers. To choose a label or a certification, companies need the view of stakeholders and NGOs. For bluefin tuna in 2007, the suboptimal state of the resource was apparent, and so Carrefour made the difficult decision to stop selling bluefin, only restarting sales in 2016. Resales started only in the south of France, but then the suppliers requested Carrefour to inform consumers that “it is possible though exceptional to consume bluefin tuna.” Currently, Carrefour is working on its own sustainability policy regarding seafood but considers that the TESCO example (commitment to ban yellowfin tuna from its supply if management does not improve in the Indian Ocean) should be followed, but in coordination with all retailers so as to ensure consistent policy.

Take home messages from the panel	
Consumers’ concern for sustainability	Consumers appreciate knowing that their fish is coming from a sustainably harvested resource. This is a strong trend from consumers who want a guarantee of sustainability of the product.
EU market for fresh bluefin tuna	There is an increasing demand from the EU market because of the growing trend of consuming raw fish.
How retailers choose their suppliers	Retailers should be in regular contact with NGOs to help make informed decisions and should support their suppliers however they can.

DAY 2: THURSDAY, 04 FEBRUARY 2021

Moderator: Mercedes Salas, journalist at EFE Agro

3. ILLEGAL, UNREPORTED AND UNREGULATED (IUU) TUNA FISHING

Panellists:

- Esther Boy Carmona. Chief Fisheries Inspector, Fisheries Ministry, Spain.
- Dr. Antonio Di Natale. Director of Aquastudio Research Institute.
- Marcos García Rey. Investigative journalist member of ICIJ.

Objective of the session: to understand the relationship that exists between IUU fishing and the remaining loopholes in the bluefin tuna management framework, as well as highlighting possible long-term solutions to address these loopholes.

The starting point: there has been considerable improvement in bluefin tuna management. Since the 1990s, when huge control problems existed and the black market was rampant, ICCAT contracting parties have taken important steps and adopted rules to address IUU fishing.

In 2010, the International Consortium of Investigative Journalists (ICIJ) did extensive research about the bluefin tuna illegal market. ICIJ estimated that there was a black market of at least €400 million (conservative estimate) in the Mediterranean alone. In 2007, Japan's customs authorities confiscated 3.5 million kilograms of bluefin coming from Maltese farms. Files have also been shared by EU countries reporting illegal practices identified in several countries, including Malta, Tunisia, Algeria, Spain, and Croatia. The situation has now improved considerably, and fisheries targeting the eastern bluefin tuna are among the most controlled fisheries in the world. Still, there is a profitable black market and hundreds of infractions are being reported every year by inspectors. Some of the problems that persist are historical, but others are new gaps in the management framework.

Enforcement and control problems do not only occur in the fishery but rather across the supply chain, from the point the bluefin is caught to the final point of sale. Authorities need to address concerns at each point in the chain, including during transport, storage, and commercialisation. There are several countries and public administrations engaged that could act across this supply chain, and all should apply the same standards. In Spain, for instance, fisheries enforcement and control is shared between the national and regional governments, and the market control (including transport) is in the competence of regional governments. Coordinating all the different countries, administrations, and other actors can be complex.

Panelists went on to address the Tarantelo investigation, the most important operation of the last decade against black market bluefin operations and an example of the need to act throughout the supply chain. Prior to authorities shutting down this activity, illegal bluefin was entering the EU market and sold in Spain. The people and businesses engaged in this operation are currently labelled as a criminal organisation. In 2018, almost 80 people were arrested in Spain alone, but the people involved also came from 12 different countries, including Panama and Japan.

It's difficult to estimate the size of the IUU market as it is precisely a black market, and it likely varies from year to year. Some authors estimate illegal bluefin fishing in the Mediterranean to take 2000-7000 tons per year. This estimation could be low, however, when compared to what was discovered in the Tarantelo investigation: 2500 t of illegal bluefin in the EU market, per year, in that operation alone.

Panelists also noted a problem associated with vessels that are not registered to an ICCAT member. These vessels don't have any ICCAT quota and are not required to declare catch to ICCAT authorities or scientists.

Some IUU problems mentioned by panellists	
Small catches	Bluefin tuna is a historic fishery with thousands of small-scale fishers fishing for local markets or subsistence across the Atlantic. Some unreported juvenile catches are happening between the end of August and December. From an economic perspective, the impact is very local, and in terms of weight is not considered a big problem (1-2 kg each specimen). It can however be a problem in the understanding we have of tuna recruitment. There are some controls but, so far, these do not address the problem.
Longline bycatch	Atlantic longliners targeting swordfish and other tuna species also have an impact on bluefin. Many vessels have a very low quota which gets exhausted in a few days. All catch beyond this small quota are either discarded at sea or illegally sold to restaurants at a very low price. Enforcement and controls exist, but in the high seas it's very difficult to stop this activity.
Catch in the South Atlantic	The South Atlantic is an area for which there are not enough data. Catch of Atlantic bluefin in this region is generally unreported, and it can be difficult to differentiate between Atlantic and Southern bluefin migrating in from the Indian Ocean. The South Atlantic was the location of important fisheries in the 1950s-70s, and there is some evidence in recent years that thousands of tons have been taken in the region without proper reporting and are destined for the black market.
Purse seiners and fattening farms	Purse seining is the most important fishing strategy targeting bluefin tuna. Catch is distributed among several vessels that are formally registered and have an ICCAT observer onboard. Some vessels, however, capture more than the quota they have been allocated. Much of this overharvest "disappears" or gets lost when transported to fattening farms, mainly in the central Mediterranean. Similarly, farms have reported several cases of unrealistic growth rate for the fish in their facilities (up to 300% in a few months in some cases). Enforcement and control in tuna fattening farms should be sufficient to curb illegal activity.

4. FRAMEWORK FOR FUTURE MANAGEMENT: ADOPTION OF A HARVEST STRATEGY

Panelists:

- Shana Miller. Senior Officer for International Fisheries Conservation at The Ocean Foundation
- Antonio Lizcano. Deputy Director for Agreements and RFMOs in the Spanish Fisheries Ministry
- Rocío Béjar Ochoa. Under Secretary-General of CEPESCA
- Dr. Doug Butterworth. Emeritus Professor at the University of Cape Town.

Objective of the session: to create a better understanding of the harvest strategy approach to bluefin tuna management and explore what will be required to adopt a well-designed harvest strategy that ensures a long-term, sustainable, and profitable Atlantic bluefin tuna fishery.

The starting point: traditional fisheries management (with scientists conducting a stock assessment, and then managers negotiating measures, such as catch quotas) has too often proved ineffective in its implementation. Stock assessment can never be perfect; it will never be possible to know exactly how many fish there are in the sea.

Harvest strategies are emerging as the next innovation in fisheries management, as they take into account scientific uncertainties and set pre-agreed rules for management actions, shifting the perspective from short-term decision-making to longer-term objectives. A harvest strategy is a way to modernise fisheries

management which intends to (1) set a long-term vision for securing (and maintaining) population health and industry profitability, and (2) establish a science-based, pre-agreed framework to achieve that vision. The operational component of a harvest strategy that sets fishing opportunities is called a “Harvest Control Rule”, or HCR.

A harvest strategy is akin to setting the rules before playing a game, so everyone understands how management will proceed, even when there are unforeseen circumstances. That was the case in 2020, when ICCAT was unable to meet because of the Covid-19 crisis. However, because North Atlantic albacore already had an HCR in place, it was possible to automatically increase the quota, despite having no formal meeting. While a harvest strategy is a relatively new approach to tuna management, Southern bluefin tuna have been successfully managed for a decade using a harvest strategy.

Spanish authorities are playing a role in developing the harvest strategy for Mediterranean bluefin tuna. Generally speaking, national administrations apply ICCAT rules within their jurisdictions. Spain has national legislation from 2019 which divides the bluefin quota by fleet segment (purse seiners, almadrabas, artisanal fishing, etc.). Since 2008, under the recovery plan, these fleet segments took huge sacrifices to reduce their catches. Many vessels had to withdraw and were excluded from the quota allocation. It's only now, with the recent increase of quota, that they are slowly returning to the fishery. A long-term strategy would make the fishery more predictable, helping promote the health of the stock and sustainable use by all fleet segments, giving all stakeholders a better idea of likely future quota allocations and stock status. The Eastern bluefin TAC is currently frozen at 36.000 tons, but with a long-term harvest strategy, there is perhaps room for this quota to grow under favourable environmental and societal conditions.

Industry can adapt to a harvest strategy framework for bluefin tuna. To adopt any harvest strategy, the current stock status must first be considered. In the case of bluefin tuna, management successes led to a substantial increase in biomass. A harvest strategy framework would provide stability in management decisions and guarantee that the stock will not approach the danger zone again. EU industry supports the adoption of a harvest control rule, but the process is being unnecessarily delayed. The fishing sector does not understand how it has not yet been possible to see the results of harvest strategy development, especially considering all the money allocated to the bluefin tuna program,

The biggest concern of the fishing industry is the adoption of a single harvest strategy for both stocks in the Atlantic (Eastern and Western stocks). The lack of recovery of the Western stock, which spawns primarily in the Gulf of Mexico, could limit fishing opportunities of vessels operating in the East. The harvest strategy process, however, needs to take into account that the two biological stocks mix at their feeding grounds in the Atlantic. A large fraction of the catch in the West Atlantic is on fish of Mediterranean origin. This means that management measures adopted in the East have consequences in the West, and vice versa.

Some sectors of the fishing industry consider it possible to increase the quota. They also recognise, however, that we need to follow the harvest strategy process, as other countries might also be affected by this potential increase of quota. Any increase would additionally have an impact in the global market and on the price of bluefin worldwide. As market price is generally the same for all bluefin species and stocks (Western Atlantic, Eastern Atlantic, Pacific, etc.), catch increases could raise both global and economic concerns.

ICCAT has made significant progress towards adopting a harvest strategy for bluefin tuna. The process started in 2014, and ICCAT is now on track to meet the deadline of adopting the harvest strategy by 2022. ICCAT is in the process of testing different strategies that take into account remaining uncertainties about bluefin biology and fishery dynamics. By September 2021, the ICCAT scientists should be able to narrow down the range of strategies and present a small set of options to the ICCAT Commission for initial feedback. A key issue will be the trade-off between the amount of catch and the status of the stock.

Adopting a harvest strategy does not mean that political decisions will be eliminated. On the contrary, a strong harvest control rule is based on good political decisions and clear political objectives. Public administrations should strive to educate relevant stakeholders about their role in developing the harvest strategy, and the importance of the harvest strategy itself. These officials are directly engaging with the fishing industry and will be the ones to advocate for the approach as they implement quotas and other policies set by the harvest strategy. Stakeholder involvement continues to be a key element, and industry, conservation groups, and other stakeholders are welcome to ask questions of their national administrations and scientists, or to share ideas and concerns about the most acceptable trade-offs in management objectives.

Take home messages from the panel	
Setting the rules before playing the game	A harvest strategy sets a framework for making policy decisions, including quotas. This allows managers to easily make management decisions based on pre-established rules, helping avoid deadlock in times of crisis, as was the case for ICCAT-managed albacore during the COVID-19 pandemic.
National administrations' role in harvest strategy development	The key elements of a harvest strategy are chosen by managers, giving all administrations a voice to advocate for their top priorities for the stock and evaluate trade-offs. Developing a harvest strategy requires active involvement from stakeholders.
Benefits to industry	EU industry members support a transition to harvest strategy-based management for Atlantic bluefin tuna since the approach increases market stability and improves industry's ability to plan because management decisions are predictable.
Significant progress has been made	The bluefin harvest strategy has been under development since 2014. It is on track for adoption in 2022, but this effort will require commitment from managers, scientists, industry, and other stakeholders.