FIP BLUES
Blue Shark Swordfish
EU Surface Longliners

ANNUAL REPORT 2022
(November 2022)

(Sub) Report Narratives for ´Change of FIP Stage and Rating´

Action 1
Harvest and Management strategy-FIP tasks and Interaction with ICCAT

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| **Action 1** |
| Harvest and Management strategy-FIP tasks and Interaction with ICCAT (and other fisheries related institutions) |

Main Narratives for progress of FIP Stage and Rating.

In this sub-report for Action 1, named as "Narratives" we lay out the rationale supporting the good progress of the stage/rating based on a series of achievements and the evolution of some Performance Indicators.

Of course, relevant achievements/deliverables reported in May 2022 (6-Month progress report) are also added here for the global assessment.

These narratives claim the achievements as the result of the work performed by FIPBLUES and the consequence of recent regulatory changes both in ICCAT and EU/Spanish framework.

This section contains two parts:

A) The narratives for **specific achievements** that constitute the **reason for change in this evaluation phase**. These argue the tasks developed and the subsequent results that justify the good progress of the project.

B) In addition, as Narratives we are also including the rationale for **change of score of Performance Indicators** for

We argue to increase the score for:

Maintenance of the score of the Performance Indicators:

1.1.2 Stock rebuilding Swordfish South
1.2.1 Harvest Strategy for South Swordfish

Change in score of the Performance Indicator :

1.2.2 Harvest control rules and tools (HCR) for North Swordfish

A) Narratives for specific achievements 2022.

In this section, we refer the evaluators <u>to assess the development of the ordinary activities for the normal implementation of the FIP</u>, reported both in the 6-month Progress Report (SIX-MONTH PROGRESS REPORT, for Action 1) and in this Annual Report 2022 ("Sub Report of activities developed during the Second semester for Action 1).

In order to avoid repetition of documents and explanations, please review those "partial reports" for Action 1 where those activities are exposed and argued in detail, showing the development and results-achievement of the activities.

Subject

Among those activities, we would like just to highlight some of the relevant ones as a proof of the dynamism of the FIP (as said above, all explained in the correspondent report):

> New event of "**Sustainhook: Longliner´s Sustainability**" (the FIPBLUES communication strategy): "Webinar with administrations and the distribution and marketing sector". December 2021.
> Presentation of the **campaign and logo of "Tintorera y Pez espada Sostenible de Pesca Gallega"** (Sustainable Blue shark and Swordfish from Galician fishing). December 2021.
> Attendance to numerous **meetings/work sessions** of ICCAT, all of them of great relevance for the FIP technical development. For instance:

-Meeting of the Electronic Monitoring Systems (EMS) Working Group.
-"2022 ATLANTIC SWORDFISH DATA PREPARATORY MEETING (Including North Atlantic Swordfish MSE).
- "Intersessions meeting of the Panel 4 and the WG Shark Species Group.
- Working group on a catch document scheme.
-Attendance-participation to ICCAT Meetings (June-November 2022): SCRS, WG and ICCAT Commission.

> **Meeting with the responsible of the Spanish MITERD** (Ministry for Environment) to deal with the situation of short fin mako commercialization and CITES certificate.
> **Meeting with SGP to discuss the CITES Resolution for short fin mako commerce**.
> 8th Fisheries International Conference on big migratory fishes (VIII Jornadas Internacionales de Pesca sobre grandes migradores).
> Issue: "**Shark Proposal For CITES CoP Panama 2022 to include the blue shark in CITES App. II**.". Various items.
> **Participation of FIPBLUES fleet captains and ship-owners in a video of FAO** about the "Shark Proposal for CITES CoP Panama 2022".
> **Active role in the "Working Group 1**: Highly Migratory Stocks and RFMO of the EU Long Distance Fleet Advisory Council.
> **Participation in the Meeting of the MAC** (EU Market Advisory Council).
> Not to mention the <u>numerous seminars and conferences</u> closely related to the aims and principles of the program FIP itself that FIPBLUES members attend/participate regularly.

> **Resolution of the Episode on "Absence of updated data of shortfin mako (SMA) 2021 from CPC EU-Spain during the meeting of the WG-Sharks of the SCRS of ICCAT"**. This is an excellent example of the integrated work develop by FIPBLUES members in the interests of the involvement, transparency and sustainability of the fishery. Please, for explanations see the partial report in "(Sub) Report of activities developed during the Second semester" of this Annual Report .

Results/Outcome/Achievements

All these activities had/have an effect on or are related to advances in political-administrative aspects of fisheries management (political in the sense of the RFMO and public bodies' regulations and management of fisheries) increase the presence and message of sustainability of FIPBLUES in the national and international scenes, as part of the will to collaborate with all the key players of the fisheries management. The communication strategy shows also that dynamism.

Therefore, FIPBLUEs is acknowledged as an active, transparent and reliable player in the fisheries scenario.

Evidences are included in those "partial reports" for Action 1 referred to above.

B) Narratives for Performance Indicators change of score

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NARRATIVE

Maintenance of score of the Performance Indicator:
1.1.2 Stock rebuilding Swordfish South

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Currently scored a **SG 60-79**, FIPBLUES argues to keeping that score, contrarily to the auditor´s interpretation of SG <60.

In 2021 FIPBLUES the PI 1.1.1. stock status was re-scored to SG 60-79, and thus has been ratified by the auditor in the audit.
The Scoping document established a SG 60-79 in 2019 in a context similar to this one of 2022 in terms of uncertainty of the recovery of the stock, but with a SG<60 in that time (the estimate had been was conservative).

2019.
The HS consists of a limit referent point (B_{MSY}), annual monitoring (of catch and CPUE) and assessment (either full or update by the SCRS) of biomass and fishing mortality and setting of TACs, catch limits, and other measures to achieve the objective.
Moreover, Rec. 11-13 provides a framework to guide the development of management measures for stocks in the ICCAT mandate.
Management measures are designed to result in a high probability of maintaining the stock within the green quadrant of kobe plot (B>B_{MSY} and F<F_{MSY}), and to not exceed the limit reference points .
There is a HS in place aimed at reaching a Biomass at a given year > B_{MSY} by setting management measures based on Catch limits and Size limits and space and time closures, although Limit Reference Points (LRP) are not explicit mentioned.
Annual TACs are set according to the stock status.
Data from the last assessment in 2017 (Relative Biomass (B_{2015}/ B_{MSY}: 0.72 (0.53 -1.01) shows that the stock is being Overfished although Overfishing is not occurring. So, apparently, it is feasible that the harvest strategy is not working or is being missimplemented.
In addition, insufficient scientific data are available to assess the HS in effect. Harvest strategy monitoring (Catch and CPUE) and review are yearly performed and therefore the proposal of alternative measures also. Stocks assessment is performed every 3-4 years

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The 2022 context
-There have been two Recommendations adopted since 2019 then:
-Rec 21-03 (extending the terms already adopted in Rec 16-04, amended by Rec 17-03).
-New management measures were agreed for South swordfish stock in November 2022: PA4_807B/2022. Recommendation by ICCAT replacing supplemental Recommendation 21-03 extending and amending Recommendation 17-03 for the conservation of South Atlantic swordfish.
-Stock Assessment in 2022: full scientific stock assessment for Atlantic swordfish (*Xiphias gladius*) was carried out, it indicates that the south stock is overfished and overfishing is occurring.
-The TAC has been reduced to 10.000 t.

RATIONALE

The 2022 stock assessment shows decrease of the catches and those being maintained below the estimated MSY. However, the biomass has not increased as expected in the 2017 stock assessment.

The audit for this PI says that *"(at the time of preparing this report), the TAC applicable to the SWO-S is 14 kt. As explained above, at light of the projections performed in the 2022 assessment (see Figure 76), <u>this TAC cannot ensure the rebuilding of this stock and this stock would fail to meet SG60</u>. However, it is expected that a new TAC will be adopted in the Annual Meeting of the Commission this year, and this PI shall be re-scored in accordance. 2022 assessment makes clear that constant <u>catches at the current TAC (14kt) would diminish the biomass, reducing the chances that B/BMSY to only 6%</u>. In the case, catches maintain at the current level (9,8 kt) are 55% chances that stock makes it to the green zone of the Kobe plot at 2033. It is expected that constant catch levels below 9.500 t avoid overfishing (F>Fmsy) and an overfished status (B<Bmsy) with 60% chances from now until 2033. (…)*

The auditor concludes that *"As explained above, at light of the projections performed in the 2022 assessment (see Figure 76), this TAC (14.000 t) cannot ensure the rebuilding of this stock and this stock would fail to meet SG60. However, it is expected that a <u>**new TAC will be adopted in the Annual Meeting of the Commission this year, and this PI shall be re-scored in accordance**</u>"*.

In effect, the PA4_807B/2022 (Recommendation by ICCAT for the conservation of South Atlantic swordfish) has reduced the TAC to 10.000 t, in accordance to the results of the 2022 Stock Assessment in 2022 and the projections performed by the SCRS. In the light of those projections, **a TAC of 10 kt will increase the biomass and increase the probability that B/B$_{MSY}$>1 to 52% in 2033. This is a scenario completely different of that pointed in the audit.**

Probability B>=B$_{MSY}$

TAC (t)	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
0	21%	48%	74%	90%	96%	99%	99%	100%	100%	100%	100%
6000	21%	33%	46%	59%	70%	77%	83%	88%	92%	94%	95%
6500	21%	32%	44%	56%	66%	74%	80%	85%	88%	91%	93%
7000	21%	31%	41%	52%	62%	70%	75%	80%	85%	88%	90%
7500	21%	30%	39%	48%	57%	65%	70%	76%	80%	83%	86%
8000	21%	29%	37%	45%	53%	60%	65%	70%	74%	78%	81%
8500	21%	28%	34%	41%	48%	54%	59%	64%	68%	72%	75%
9000	21%	27%	32%	38%	44%	49%	53%	58%	61%	65%	68%
9500	21%	26%	31%	35%	39%	44%	48%	51%	55%	58%	60%
9826	21%	25%	29%	33%	36%	40%	43%	47%	50%	52%	55%
10000	21%	25%	29%	32%	35%	39%	41%	45%	47%	49%	52%
10500	21%	24%	27%	29%	31%	34%	36%	38%	40%	41%	43%
11000	21%	23%	25%	26%	28%	29%	30%	32%	33%	34%	35%
11500	21%	22%	23%	24%	24%	25%	25%	26%	26%	27%	27%
12000	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%
12500	21%	20%	19%	19%	18%	18%	17%	17%	16%	16%	16%
13000	21%	19%	18%	17%	16%	15%	14%	13%	13%	12%	12%
13500	21%	18%	17%	15%	14%	12%	11%	10%	10%	9%	9%
14000	21%	18%	15%	13%	12%	10%	9%	8%	7%	7%	6%
14500	21%	17%	14%	12%	10%	8%	7%	6%	6%	5%	4%
15000	21%	16%	13%	10%	8%	7%	6%	5%	4%	3%	3%

There is a plan in place to recover the stock to safe limits after the results of the 2017 stock assessment indicated overfishing and overfished. Since then the TAC has been decreasing to reach adequate levels of probability to rebuild the stock within MSY reference levels. This means that the recovery plan must be understood as a medium term strategy with inter annual changes that demand re-adjustment of the rules and measures.

GSA2.3 Stock Rebuilding PI (PI 1.1.2) in the MSC standard guide tells that *even very slow growing stocks should have rebuilding plans that aim for a maximum of 20 years. On this basis, it may be impossible for some stocks to achieve recovery targets in a five year timeframe because of the life history parameters of the species under assessment: growth rate; size or age at maturity or recruitment to the fishery; stock size or age composition; longevity; and, natural mortality, among other things.*

And that is what happens with swordfish stock rebuilding. It is only 5 years since the plan was started and there fluctuations of the Biomass levels that the harvest strategy must undertake. The projections look at scenarios of at least 10 years to recover.

In the light of the said above, the stock assessment projections and management recommendations, the Recommendation 2022, and also the Narratives for PI 1.2.1 and PI 1.2.2 for swordfish South:
-There is a rebuilding timeframe specified for the stock that is the shorter of 20 years or 2 times its generation time.

In conclusion, FIPBLUES considers that PI 1.1.2 Stock Rebuilding meets the requirements and there are enough reasons to keep the current SG 60-79.

NARRATIVE

Maintenance in score of the Performance Indicator:
1.2.1 Harvest Strategy for South Swordfish

Currently scored a **SG 60-79**, FIPBLUES argues keeping it in that score, contrarily to the auditor´s interpretation of SG <60.

The Scoping document established a SG 60-79 in 2019, arguing that:

> *The HS consists of a limit referent point (B$_{MSY}$), annual monitoring (of catch and CPUE) and assessment (either full or update by the SCRS) of biomass and fishing mortality and setting of TACs, catch limits, and other measures to achieve the objective.*
> *Moreover, Rec. 11-13 provides a framework to guide the development of management measures for stocks in the ICCAT mandate.*
> *Management measures are designed to result in a high probability of maintaining the stock within the green quadrant of kobe plot (B>B$_{MSY}$ and F<F$_{MSY}$), and to not exceed the limit reference points.*
> *There is a HS in place aimed at reaching a Biomass at a given year > B$_{MSY}$ by setting management measures based on Catch limits and Size limits and space and time closures, although Limit Reference Points (LRP) are not explicit mentioned.*
> *Annual TACs are set according to the stock status.*
> Data from the last assessment in 2017 (Relative Biomass (B$_{2015}$/ B$_{MSY}$: 0.72 (0.53 -1.01) shows that the stock is being Overfished although Overfishing is not occurring. So, apparently, it is feasible that the harvest strategy is not working or is being missimplemented.
> In addition, insufficient scientific data are available to assess the HS in effect. Harvest strategy monitoring (Catch and CPUE) and review are yearly performed and therefore the proposal of alternative measures also. Stocks assessment is performed every 3-4 years

The 2022 context
There has been adopted two Recommendations since then:
-Rec 21-03 (extending the terms already adopted in Rec 16-04, amended by Rec 17-03).
-New management measures were agreed for South swordfish stock in November 2022: PA4_807B/2022. Recommendation by ICCAT replacing supplemental Recommendation 21-03 extending and amending Recommendation 17-03 for the conservation of South Atlantic swordfish.
-A sustained catch limit around 9.400-10.000 t.
-Stock Assessment in 2022: full scientific stock assessment for Atlantic swordfish (*Xiphias gladius*) was carried out, it indicates that the south stock is overfished and overfishing is occurring.

RATIONALE
Those items -rules and management actions- indicated in 2019 function collectively as a well-defined harvest strategy in order to stabilize the exploitation patterns, avoiding large fluctuations of catches in the future.
They have shown the ability to response to changes of indicators of the stock status with respect to reference points (B and F) by which the fishery expects to achieve the stock status outcomes expressed in PI 1.1.1. (<60).

Still, the fishery uses an explicit B$_{MSY}$ reference point as a target for the fishery biomass and have trigger reference points for adjusting F at values of biomass either at B$_{MSY}$ above or below B$_{MSY}$ through the projections set in the Stocks Assessment 2022. Those reference points allow the fishery to trigger

changes in management actions, and how they work in combination to achieve the outcomes required in PI 1.1.1.

Therefore, there is a Harvest strategy design that is expected to achieve stock management objectives reflected in PI 1.1.1, despite the current state of the stock set by the Stock assessment in 2022.

The harvest strategy works based on prior experience, prior data, monitoring etc, as it is demonstrated by the fact that the 2022 recommendation itself is the response to a negative index of Relative Biomass (B_{2020}/B_{MSY}): as a result, the TAC is reduced from 14.000 t to 10.000 t, in response to having exceeded the reference points and analysing the projections with different TACs .
So, there are management measures in effect, like the TAC, country-specific quota and minimum size.

Therefore, there are **TAC and catch limits** for 2023 (continuation of past Recommendations 21-03 and 17-03, defining annual TACs for 2107 for 2018, 2019, 2020, 2021, 2022) and a mechanism to readjust quota/catch limits in case of unused portion or excess by a CPC.

The recommendation 2022 indicates the SCRS will monitor the catch levels do not exceed the limit of 10.000 t in 2023, 2024, 2025 and 2026 and report to the Commission annually: monitoring is in place that is expected to determine whether the harvest strategy is working; and so, it is reviewed annually.

Those rules are established based on the <u>2022 Stock Assessment</u> (page 59. 9.2 SWO-ATLANTIC SWORDFISH) and are agreed by all CPCs.

The Stock Assessment determines the target reference point to manage the fishery and so the limits for annual TAC, in order to maintain the reference points (Biomass and Fishing Mortality) consistent with the B_{MSY} and F_{MSY} calculated by the models themselves. As it has established by the PA4_807B/2022 Recommendation for the conservation of South Atlantic swordfish.

We do not share the interpretation of the auditor for reducing the score base only in a TAC that lastly was not adopted. While he recognises that there has been a decrease of catches and even maintained below the estimated MSY since 2011 he concludes it is not sufficient to score SG60-79 because the biomass is has not increased as expected.

The Recommendation 2022 has adopted a **TAC of 10.000 t** (*not 14.000 t mentioned in the time of the audit*). The projections performed in the 2022 shows that catches at the new TAC of 10 kt will increase the biomass and increase the probability that B/B_{MSY}>1 to 52% in 2033. So, this TAC is a scenario completely different of that pointed in the audit.

Probability B>=B_{MSY}

TAC (t)	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
0	21%	48%	74%	90%	96%	99%	99%	100%	100%	100%	100%
6000	21%	33%	46%	59%	70%	77%	83%	88%	92%	94%	95%
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7000	21%	31%	41%	52%	62%	70%	75%	80%	85%	88%	90%
7500	21%	30%	39%	48%	57%	65%	70%	76%	80%	83%	86%
8000	21%	29%	37%	45%	53%	60%	65%	70%	74%	78%	81%
8500	21%	28%	34%	41%	48%	54%	59%	64%	68%	72%	75%
9000	21%	27%	32%	38%	44%	49%	53%	58%	61%	65%	68%
9500	21%	26%	31%	35%	39%	44%	48%	51%	55%	58%	60%
9826	21%	25%	29%	33%	36%	40%	43%	47%	50%	52%	55%
10000	21%	25%	29%	32%	35%	39%	41%	45%	47%	49%	52%
10500	21%	24%	27%	29%	31%	34%	36%	38%	40%	41%	43%
11000	21%	23%	25%	26%	28%	29%	30%	32%	33%	34%	35%
11500	21%	22%	23%	24%	24%	25%	25%	26%	26%	27%	27%
12000	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%
12500	21%	20%	19%	19%	18%	18%	17%	17%	16%	16%	16%
13000	21%	19%	18%	17%	16%	15%	14%	13%	13%	12%	12%
13500	21%	18%	17%	15%	14%	12%	11%	10%	10%	9%	9%
14000	21%	18%	15%	13%	12%	10%	9%	8%	7%	7%	6%
14500	21%	17%	14%	12%	10%	8%	7%	6%	6%	5%	4%
15000	21%	16%	13%	10%	8%	7%	6%	5%	4%	3%	3%

In addition, if we compare the yield in the assessment between 2017 and 2022, it can be noted that:
-The yield in the assessment 2017 was 19,83 % (that is: 0,19 of the B_{MSY} ; a LRP much lower than the recommended by the Rec 17-03 of "0,4* BMSY or a more robust one").
-The yield in assessment 2022 is 12,66 % (that is: 0,12 of the BMSY ; a LRP much lower than the recommended by the Rec 17-03 of "0,4 or a more robust one"; it is lower than the previous one too.

In conclusion, the Harvest Strategy in place for swordfish south amply meets the requirements to keep the current SG 60-79.

NARRATIVE:

Change in score of the Performance Indicator 1.2.2 Harvest control rules and tools (HCR) for North Swordfish

SUBJECT

Change in the score of the **PI 1.2.2 HCR** for North Atlantic swordfish.

Currently scored a SG 60-79, we proposed to increase the score to SG ≥ 80.

The context

There is a corpus of recommendations with key rules and stock assessments that work as regulators of the fishery:
- New management measures were greed for North swordfish stock in 2022 (Recommendation by ICCAT replacing supplemental Recommendation 21-02 extending and amending Recommendation 17-02 for the conservation of North Atlantic swordfish).
- Stock Assessment in 2022: full scientific stock assessment for Atlantic swordfish (*Xiphias gladius*) was carried out, it indicates that the north stock is not overfished and overfishing is not occurring.
-Relevant advances in MSE. MSE is being prepared and expected to be adopted by the Commission in 2023.

RATIONALE

Those items -rules and management actions- function collectively as well-defined harvest strategy in order to stabilize the exploitation patterns for this fishery avoiding large fluctuations of catches in the future. They have the ability to response to changes of indicators of the stock status with respect to reference points (F and B) by which the fishery expects to achieve the stock status outcomes expressed in PI 1.1.1.

The fishery uses an explicit B_{MSY} reference point as a target for the fishery biomass and have trigger reference points for adjusting F at values of biomass either at B_{MSY} above or below B_{MSY} through the projections set in the Stocks Assessment 2022. Those reference points allow the fishery to trigger changes in management actions, and how they work in combination to achieve the outcomes required in PI 1.1.1.

Scoring Issue (a) – HCR design and application.

The last *RECOMMENDATION BY ICCAT REPLACING SUPPLEMENTAL RECOMMENDATION 21-02 EXTENDING AND AMENDING RECOMMENDATION 17-02 FOR THE CONSERVATION OF NORTH ATLANTIC SWORDFISH* (see -PA4-808. DRAFT RECOMMENDATION) establishes **TAC and catch limits** for 2023 (continuation of past Recommendations 21-02 and 17-02, defining annual TACs for 2107 for 2018, 2019, 2020, 2021, 2022) and a mechanism to readjust quota/catch limits in case of unused portion or excess by a CPC.

Those rules are established based on the 2022 Stock Assessment (page 59. 9.2 SWO-ATLANTIC SWORDFISH) results and in agreement of all CPCs, where different projections for different scenarios of fishing effort are shown.

The Stock Assessment determines the target reference point to manage the fishery and so the limits for annual TAC, in order to maintain the reference points (Biomass and Fishing Mortality) consistent with the B_{MSY} and F_{MSY} calculated by the stock assessment models themselves.

Besides, in case of a CPC modifies its fishing/management plan, it shall submit the updated version the plan to the Commission, keeping this way the global management integrated for the aim of the conservation of the stock, as stated in Recommendation 17-02.

ICCAT define management recommendations in each stock assessment, establishing a pack of models and statistics that provide possible scenarios to maintaining B>B_{MSY}, maintaining F<F_{MSY}, and maintaining the stock in the green quadrant of the Kobe plot over a range of TAC options over a period of 10 years (probabilities of projections relate catch levels with probability of being in the green quadrant or by the contrary decrease of the biomass).

Scoring Issue (b) – Scoring uncertainty in the HCRs.
The HCR are agreed by all stakeholders for all the CPCs and are mandatory. Risk factors to the population can be detected by the SCRS and the national institutions also because of the constant monitoring of the fishery through electronic logbook data, observers programme and national/international research programs being developed on issues affecting the stock.
In addition, the ICCAT stock assessment Committee noted that the 2022 assessment represents a significant improvement in the characterization of uncertainty of current stock status for North Atlantic swordfish using updated information and integration of JABBA. The SCRS uses two stock assessment platforms to provide estimates of the stock status as a basis for management advice (Bayesian surplus production model (JABBA - Just Another Bayesian Biomass Assessment) and the integrated assessment model Stock Synthesis (SS). There were important developments to the modelling this year. In particular, the SS model provided estimates of the full number of dead discards due to the size limit (i.e., reported and unreported) in the estimation of stock status. This capacity will also be useful in future MSE simulations.

Scoring Issue (c) – Evaluating the effectiveness of HCRs (SA2.5.6 – SA2.5.7)
As said above, the annual TAC and catch limits, together with the results of the stock assessment in 2022 prove that the HCR are effective and working correctly:
IN addition, the stock assessment stated that Based on the combined results from the two stock assessment model platforms (Stock Synthesis and JABBA), the North Atlantic swordfish stock biomass was above B_{MSY} (median B_{2020}/B_{MSY} = 1.08 and 95% CI of 0.71 and 1.33) and fishing mortality was below F_{MSY} (median F2020/FMSY = 0.80 and 95% CI of 0.64 and 1.24) in 2020 (SWO-ATL-Figure 6). The median MSY was estimated as 12,819 t with 95% CI of (10,864 t and 15,289 t).
Therefore, the stock is not overfished and overfishing is not occurring what proves the effectiveness of the HCRs.

Therefore, given the above, it can be confirmed that:
a) Well defined HCRs are in place that ensure that the exploitation rate is reduced as the PRI is approached, are expected to keep the stock fluctuating around a target level consistent with (or above) MSY, or for key LTL species a level consistent with ecosystem needs.
b) The HCRs are likely to be robust to the main uncertainties
c) Available evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the HCRs.