

# Mauritania Small Pelagics – Purse Seine Three-Year Audit Report

Version 1.2, September 2021

## FIP Information

Target species scientific name(s) and common name(s) [state target stock(s), if relevant]	European Sardine ( <i>Sardina pilchardus</i> ), Flat Sardinella ( <i>Sardinella maderensis</i> ), Round Sardinella ( <i>Sardinella aurita</i> )
Fishery location	Mauritania EEZ, FAO 34 (Eastern Central Atlantic)
Gear type(s)	Purse Seine
Estimated FIP Landings (weight in tons)	301,864 metric tons (2022)
Vessel type(s) and size(s)	Large Scale (>30m) – Catching and Carrier Vessels
Number of vessels	53
Management authority	Ministry of Fisheries and the Maritime Economy (MPEM)
Auditor name(s)	Alexander Ford
Auditor Organization/Affiliation	NSF
Date of report completion	1 <sup>st</sup> August 2024

## FIP Background

### Stakeholder Consultation & Meetings

Name	Affiliation	Date and Subjects Discussed
<b>Cheikh-baye Braham</b>	IMROP	<ul style="list-style-type: none"><li>• The overall history of the FIP from pre-FIP times to the development and early implementation of the PAP-PP in 2021</li><li>• The minimal impact the FIP is having on the ecosystem and ETP species</li><li>• The FIP has yet to realize its primary objective of restoring the stocks and making the fishery sustainable, but it is on track and has made great progress or organizing the fishery, including through contribution to research</li></ul>
<b>Lamine CAMARA</b>	DARE / MPEM	<ul style="list-style-type: none"><li>• The application of the Codes des Peches to resolve conflicts</li><li>• Evidence of the daily management and implementation of the PAP-PP</li><li>• Compliance issues</li><li>• The forthcoming review of the PAP-PP funded by GIZ</li></ul>
<b>Ahmed Khoubah</b>	Fédération Nationale de Pêche	<ul style="list-style-type: none"><li>• The impact the fishery has on ETP species</li><li>• The role the FIP has played in bringing good management to the fishery</li></ul>
<b>Dave Martin</b>	Sustainable Fisheries Partnership	<ul style="list-style-type: none"><li>• SFP's reasoning for awarding the FIP an 'A'. The fishery has made progress under 'Stage 4' by instigating changes in management and governance, thereby meeting its workplan objectives. In accordance with the FIP's 2024 workplan and SFP rating logic, the next evolution will be to start seeing 'Changes on the Water' or improvements to the target stocks, although this will greatly depend on management measures implemented across the region due to the species' migratory nature.</li></ul>
<b>Christophe Godard</b>	Olvea	<ul style="list-style-type: none"><li>• The role of a private enterprise in ensuring the FIPs health and longevity. Olvea is satisfied with the progress the FIP is making and were happy with SFP's recent progress evaluation. Over the next few years they are sincerely hoping there will be changes to the stock health, but are aware that the pelagic species is vulnerable to the management of other fisheries, especially Chinese fleets that remain indifferent to the health of the stock or any sustainability efforts.</li></ul>

## Summary of Findings and Recommendations

The most significant evolution in the management of the FIP has been the publication of the 'The Improvement Plan for Small-Pelagics in Mauritania's EEZ' (PAP-PP) ([MPEM, 2022](#)) which introduces an extensive and comprehensive fishery-specific management plan. This was validated in November 2022 and has been in implementation since; as reflected in SFP's assessment of the FIP, governance and management changes are being observed with an increased output of literature and information on the fishery. Not only are there indications of increased managerial attention (for example, observer reports, meetings reports and mission reports), but also peer-reviewed research papers being published. Furthermore, the German development agency, GIZ, have agreed to fund a review of the FIP management in 2024. As such it can be concluded that the PAP-PP is being implemented, but changes on the water it will likely incite are yet to be observed in a concrete and consistent manner.

Where the FIP appears to need more work is around compliance. Although there was no evidence to suggest that there was systematic indifference to the fishery's regulations, neither was there any evidence to suggest that non-compliances were being reported. As such a key recommendation from this assessment is that Mauritanian fisheries enforcement powers (for example, the Coast Guard) begin to record and publish data around non-compliances and make these available to the FIP.

## Summary of MSC Performance Indicator Scores

Principle	Component	Performance Indicator	Previous Score 2021	Current Score 2024	Rationale or Key Points	
1	Outcome	1.1.1	Stock status	<60	<60	<p>CECAF consider that the European Sardine is in good condition and not fully exploited with fishing mortality at 0.71 (<a href="#">CECAF, 2023</a>)</p> <p>The most recent stock assessment (<a href="#">Braham et al. 2024</a>) concludes that both flat and round sardinella show increasing fishing mortality and declining biomass for both stocks over the time series. CECAF (2023) concur with this assessment finding fishing mortality for round sardinella at 1.92, hence the 2024 score.</p> <p><i>See FIP Assessment for all Stock Status scores</i></p>
		1.1.2	Stock rebuilding	<60	<60	<p>CECAF noted that the average size of the European sardine has decreased (but remains above the minimum landing size) and that the stock as a whole is experiencing a decrease in biomass with exploitation well above CECAF's recommendation.</p> <p>Both CECAF and Braham et al. (2024) strongly urges fisheries management to allow both sardinella species to rebuild, with CECAF calling for a 60% reduction in fishing effort. The score awarded reflects the trend in stock rebuilding.</p>
	Management	1.2.1	Harvest Strategy	<60	60 - 79	<p>The PAP-PP was validated in 2022 and is being implemented, providing a clear strategy for management of the small pelagic fishery. Although the full impact of this strategy is yet to be realized, it should be considered likely to yield an improvement on the target stocks.</p>
		1.2.2	Harvest control rules and tools	<60	<60	<p>The PAP-PP does include HCRs such as TAC, fishing authorization by fleet. Moreover, the PAP-PP does call on the government to introduce fleet effort controls. The European sardine remains above PRI, but the same cannot be said for the sardinella. There</p>

						is no evidence yet that the PAP-PP is going to be effective at controlling the stock's exploitation.
		1.2.3	Information and monitoring	60 - 79	60 - 79	Braham et al. (2024) and CECAF (2023) provide information on the stock structure, productivity, and abundance, but information is lacking on the various other fleets (industrial and artisanal) exploiting the stock.
		1.2.4	Assessment of stock status	>80	>80	CECAF (2023) and Braham et al. (2024) provide concise and complete analysis of the state of all three UoA species.
2	Primary species	2.1.1	Outcome	60 - 79	<60	Main primary species: sardine (80), round sardinella (<60), flat sardinella (<60).  <i>Scored according to P1 analysis.</i>
		2.1.2	Management strategy	<60	60 - 79	The PAP-PP provides a strategy that is expected to rebuild the main primary species. The PAP-PP contains provisions for evaluating the management strategy, but there is no evidence yet to indicate that this plan is having changes on the water.
		2.1.3	Information	60 - 79	>80	Braham et al. (2024) and CECAF (2023) provide an extensive analysis based on recent data to adequately assess the impact of the UoA on the main primary species. The information is quantitative with clear and concise recommendations.
	Secondary species	2.2.1	Outcome	60 - 79	>80	Main secondary species: Atlantic Bonito ( <i>Spada spada</i> )  ICCAT Stocks Assessments for Small Tunas indicate that Atlantic Bonito are not in a degraded state and are actually improving ( <a href="#">ICCAT, 2023</a> ).  All other species identified in the catch composition make up <5% (most <1%) of the catch and most are not consistently caught on all trips therefore meaning that UoA is unlikely to hinder the stocks' health. The only exception to this is the Common Pandora ( <i>Pagellus erythrinus</i> ) caught consistently across several campaigns, but which scored >80 is the PSA analysis.
		2.2.2	Management strategy	<60	60 - 90	The gear and zoning applicable to the UoA can be considered measures designed to reduce the fleets impact on the bycatch and the ecosystem. However, at this point there is not strategy to protect secondary main and minor species.

		2.2.3	Information	<60	60 - 90	Observer reports from 2023 provide catch composition by % and by kg. No other observer reports exist, and more information is required to deduce trends or conclusions																		
ETP species		2.3.1	Outcome	<60	<60	<table border="1"> <thead> <tr> <th>ETP Species</th> <th>Score</th> <th>Source</th> </tr> </thead> <tbody> <tr> <td>Humpback dolphin</td> <td>&lt;60</td> <td>PSA</td> </tr> <tr> <td>Green turtle</td> <td>60 – 79</td> <td>PSA</td> </tr> <tr> <td>Leatherback turtle</td> <td>60 – 79</td> <td>PSA</td> </tr> <tr> <td>Gannet</td> <td>60 – 79</td> <td>PSA</td> </tr> <tr> <td>Monk Seal</td> <td>60 – 79</td> <td>PSA</td> </tr> </tbody> </table>	ETP Species	Score	Source	Humpback dolphin	<60	PSA	Green turtle	60 – 79	PSA	Leatherback turtle	60 – 79	PSA	Gannet	60 – 79	PSA	Monk Seal	60 – 79	PSA
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2.3.2	Management strategy	<60	60 - 79	<p>The provisions of the Codes des Peches prohibits at all times and in all places the transport, peddling, sale or purchase, killing, maiming, capturing, removal or hunting of protected and threatened marine species. The PAP-PP too indicates specific zones where spawning occurs and must remain off limits to fishing activities.</p> <p>The IUCN’s ‘State of West African MPAs 2022’ (<a href="#">IUCN, 2022</a>) found that there are significantly higher abundance values with the MPA. This may reflect positive consequences of the zoning policies. Moreover, at the UoA level, observer reports indicate very few ETP interactions with the seines. In the reports reviewed, one leatherback turtle was caught, but released alive.</p> <p>However, the PAP-PP does not include specific management measures for ETP species that facing a risk from the UoA. Additionally, a comprehensive review of the PAP-PP is yet to be undertaken (although a GIZ-funded review is pending for 2024).</p>																				
2.3.3	Information	<60	60 - 79	<p>Observer reports indicate that ETP species interactions are reported along with their fate. However, observer reports from only 2023 were provided which is not enough cumulative information to deduce trends or conclusion.</p> <p>Also, the PAP-PP and national policies do not provide enough information around the species that are at particular risk from</p>																				

						seining. The PAP-PP does mention several shark, turtle, and bird species, but in the context of the mid-water trawl fishery.
Habitats	2.4.1	Outcome	60 - 79	60 - 79		Due the pelagic nature of the fishery it is unlikely the seine would impact the seabed. The fishing also takes place away from coastal region and beyond the perimeter of the MPAs. In fact the fishing occurs in specific zones controlled specified in the PAP-PP and enforced by the Coast Guard. However, due to no VMS or AIS tracks being available this cannot be verified.
	2.4.2	Management strategy	60 - 79	60 - 79		Measures are in place to protect habitats from the UoA – in particular the zoning. There are also permanent closed areas such as the PNBA MPA. This can be considered a partial strategy. It is likely that this works because the UoA footprint is likely small, but data are lacking to quantify interactions.
	2.4.3	Information	60 - 79	60 - 79		It is possible to determine information on the impact of UoA on the habitat using the catch composition data, but more accurate data would include AIS or VMS vessel tracking data which is unavailable.
Ecosystem	2.5.1	Outcome	60 - 79	60 - 79		As in 2021 the main concern in relation to the ecosystem is that the UoA removes a significant and increasing portion of small pelagics and the ecosystem effect of these removals are difficult to estimate without information. There are also questions around Habitat and ETP information.
	2.5.2	Management strategy	<60	60 - 79		Given that the main concern in relation to the ecosystem is the overexploitation of the target species, the measures required are the same as for a robust harvest strategy under Principle 1. As signalled under P1, the PAP-PP is introducing measures that are likely to curtail the overexploitation of the resource. Moreover, the PAP-PP specifies zoning restrictions as part of the fisheries' governance
	2.5.3	Information	60 - 79	60 - 79		Information on the Mauritanian marine ecosystem is provided by a mixture of national and international institutions, notably the IUCN, FAO/CECAF, and IMROP. At the UoA level the FIP has facilitated the systematic publication of information which makes assessing the fishery easier than in previous years. However, more information over longer time periods is required

						on habitats and ETP species to be able to be considered comprehensive, notably vessel AIS/VMS tracks.
3	Governance and Policy	3.1.1	Legal and customary framework	60 - 79	60 - 79	<p>The fisheries legal framework in Mauritania is based on Law <a href="#">2015-17 (Code des Pêches)</a> and the associated <a href="#">implementing decree (2015-159)</a>. This legislation specifies requirements for national fisheries like fishery objectives, setting TAC, fishing authorisations, and size restrictions.</p> <p>The legislation clearly invites governance input from other parties demonstrated by the various roles in the Conseil consultative pour l'aménagement et la development des pecherie (CCNADP). There is also a requisite to cooperate with other authorities like neighbouring countries and international bodies.</p> <p>Articles 82 - 98 of 2015-17 outline the juridical procedures in place to ensure the proper application of sanctions and resolution of disputes. However, there is no evidence of these regulations being applied, nor were any recordings of non-compliances.</p> <p>The tenure rights of the small-scale/coastal fishers are protected by the zoning regulations that give exclusivity to the different fleets.</p>
		3.1.2	Consultation, roles and responsibilities	>80	>80	<p>The roles and responsibilities of the divisions of the Ministry of Fisheries and Ocean Economy (MPEM) and executive bodies like the Institute Mauritanian De Recherches Océanographiques Et De Pêches (IMROP) and the Coast Guard, as well as consultative and professional bodies like the Comité Scientifique Conjoint (CSC) and CCNAOP are clearly defined. Consultation of stakeholders is a requirement under Article 20 of the Code des Pêches. Further consultative bodies can be put in place according to need (Article 22). The management system takes into account this information in most cases. For example, the input of the CSC is reflect in Annex 3 of the PAP-PP.</p>
		3.1.3	Long term objectives	>80	>80	<p>The Code des Pêches specifies in Article 3 that the objective is to protect resources and allow their sustainable exploitation, such</p>



						that the balance of ecosystems and aquatic habitats are preserved for present and future generations. Section 7 of the Code sets out the standard internationally-recognised principles of fisheries management – i.e. the precautionary principle, the principle of adaptive management, the principle of monitoring and evaluation. Enshrined into legislation it can be interpreted that they are explicit and required by law.
Fishery specific management system	3.2.1	Fishery specific objectives	60 - 79	>80	Article 14 of the Codes de Pechs sets out the ambition to realise fishery specific management and the implementing decree sets TAC for each of the UoA species in addition to others as well as minimum landing sizes.  In 2022 the Ministry published the management plan for small pelagics (PAP-PP, <a href="#">2022</a> ). This comprehensive document clearly defines short-, medium- and long-term objectives for the fishery, which are accompanied by indicators for measuring progress, as indicated in Annex 1 of the PAP-PP.	
	3.2.2	Decision making processes	<60	60 - 79	Article 7 of the Codes des Peche explicitly calls for the respect of the Precautionary Principle and this is iterated in the PAP-PP several times. Moreover, the PAP-PP comprehensively attends to the degraded ecological state of the UoA. Meeting reports are available that demonstrate the quotidian management and implementation of the PAP-PP. A review of the management has not taken place yet, but GIZ are funding a review due to take place in 2024.	
	3.2.3	Compliance and enforcement	<60	<60	The law and implementing decree provide the legislative foundation for a comprehensive MCS system, provisioning for vessel identification, the powers of enforcing authorities, logbooks, fisheries observers, and authorised ports of landings. The Coast Guard are responsible for fisheries enforcement  Largely due to the evolution of the FIP, these legal ambitions seem to be translating into reality with observer reports and logbooks no available for inspection, although there is only one year of information available  Regarding sanctions and enforcement, the Codes de Peche and the Implementation Decree stipulates monetary sanctions for	

						specific violations, but there is no evidence to suggest that these are applied. Indeed, there is not a compliance report available that would normally show, type and frequency of infraction, along with a summary of enforcement activities.
		3.2.4	Management evaluation	performance >80	60 - 79	Article 11 of the Code des Pêches states that management policies and strategies should be regularly evaluated and reviewed. However, this is general and there is no evidence to suggest a review has taken place since the legislation publication in 2015 either externally or internally. Nevertheless, the German development agency, GIZ, are funding a review of the management plan in 2024.

## Environmental Workplan Results

Result	Related Action on Fishery Progress	Related MSC Performance Indicator	Explanation
<p><b>Data collected, analyzed and published in peer-reviewed study</b></p>	<p>Stock status; Stock rebuilding; Harvest Strategy; Harvest control rules and tools; Information and monitoring; Assessment of stock status; Primary main species outcome, management and Information.</p>	<p>1.1.1 Stock status 1.1.2 Stock rebuilding 1.2.1 Harvest Strategy 1.2.2 Harvest control rules and tools 1.2.3 Information and monitoring 1.2.4 Assessment of stock status 2.1.1 Outcome 2.1.2 Management strategy 2.1.3 Information</p>	<p>Firstly there is CECAF's report on Central Eastern Atlantic Small-Pelagics which was delayed from 2022. Then there has also been the publication of the peer-reviewed article led by IMROP (<a href="#">Braham et al. 2024</a>). The 2024 Workplan aims to complete a nationwide survey to determine the amount of fish landed for fishmeal/oil by fleet. This process will also include sensitizing the fishmeal/oil factories to the importance of collecting data. On Track.</p>
<p><b>Fully funded PhD analyzing impact of small pelagics management plan (PAP-PP)</b></p>	<p>Harvest Strategy; Harvest control rules and tools; Primary main species management and Information; Habitat and ecosystem management; Fishery specific objectives</p>	<p>1.2.1 Harvest Strategy 1.2.2 Harvest control rules and tools 2.1.2 Management strategy 2.2.2 Management strategy 2.3.2 Management strategy 2.4.2 Management strategy</p>	<p>Since the implementation of the PAP-PP in 2022 a fully funded PhD student has been following its success. There are a number of objectives that have been met and will be continued to be improved in 2024/5 such as continuing to train fisheries observers, training engineers in the analysis of stock data, and understanding the UoA link with the ecosystem. On Track.</p>

		2.5.2 Management strategy 3.2.1 Fishery specific objectives	
<b>Year-on-year observer campaigns implemented</b>	Stock status; Stock rebuilding; Ecosystem outcome, management and information.	1.1.1 Stock status 1.1.2 Stock rebuilding 2.5.1 Outcome 2.5.2 Management strategy 2.5.3 Information	As set out in the PAP-PP the FIP has facilitated the deployment of observers with the first observer reports from 2023/4 available. It is acknowledged that in order to make refined conclusions about the impact of the UoA on the rest of the ecosystem more data will be required over a broader stretch of time. Indeed this is the focus on the 2024 Workplan which intends to deploy more observers. On Track.
<b>International scientific cooperation yielding results. Political cooperation to catch up</b>	Harvest Strategy; Harvest control rules and tools; Legal and customary framework; Decision making	1.2.1 Harvest Strategy 1.2.2 Harvest control rules and tools 3.1.1 Legal and customary framework 3.2.2 Decision making	Scientifically there is strong cooperation between regional and international research institutes, which programs like Nansen and CCLME being a catalyst for research into the regional small-pelagics fisheries. These research collaborations also help foster political relations, although decision-making is perhaps slower than desired on certain areas. The 2024 Workplan does detail plans for a review of the PAP-PP which may help nudge collaboration in the right direction. On Track.
<b>Lack of progress towards consistent and transparent enforcement</b>	Compliance and enforcement	3.2.3 Compliance and enforcement	Apparently there has been more compliance and enforcement activities in the region, but it is unclear whether these are actually having an effect on the offenders with anecdotal evidence suggesting that some fishers are indifferent to the potential sanctions. There are no actions planned for 2024 that aim to counter this trend. As such it is considered that not much progress has been made to collecting data on compliance or following through with sanctions.
<b>Observers collecting data on ETP species</b>	Secondary and ETP species, habitat and ecosystem outcome, management and information	2.2.1 Outcome 2.2.2 Management strategy 2.2.3 Information 2.3.1 Outcome	As set out in the PAP-PP the FIP has facilitated the deployment of observers with the first observer reports from 2023/4 available. These observer reports include data on ETP species interacting with fishing operations. It is acknowledged that in order to make refined conclusions about the impact of the UoA on the rest of the ecosystem more data will be required over a broader stretch of time. Indeed this is the focus on the 2024 Workplan which intends to deploy more observers. On Track.

		2.3.2 Management strategy 2.3.3 Information 2.4.1 Outcome 2.4.2 Management strategy 2.4.3 Information 2.5.1 Outcome 2.5.2 Management strategy 2.5.3 Information	
<b>Stock assessment of small-pelagics completed</b>	Assessment of stock status	1.2.4 Assessment of stock status	Over the past year great emphasis has been placed on the analysis and publication of key research documents based on data collect from the UoA. Firstly there is CECAF's report on Central Eastern Atlantic Small-Pelagics which was delayed from 2022. Then there has also been the publication of the peer-reviewed article led by IMROP ( <a href="#">Braham et al. 2024</a> ). These research papers provide a detailed analysis of the stocks' health and suggested management for their recovery. On Track.

## Supporting References

### *Legislation and Governance*

- [The Improvement Plan for Small-Pelagics in Mauritania's EEZ](#) (MFME, 2021)
- [Mauritanie - Loi n°2015-17 du 29 juillet 2015 Code des peches](#) (MFME, 2015)
- [dcret 2015-159 application loi 017-2015 portant code des pches](#) (MFME, 2015)

### *Other*

- [State of West African marine protected areas 2022](#) (IUCN, 2023)
- [Fishery Transparency Initiative: Mauritania](#) (FiTI, 2021)
- [Overexploitation of round sardinella may lead to the collapse of flat sardinella: What lessons can be drawn for shared stocks](#) (Braham et al., 2024)
- [FAO WORKING GROUP ON THE ASSESSMENT OF SMALL PELAGIC FISH OFF NORTHWEST AFRICA 2023](#) (CECAF, 2023)
- [Report for Biennial Period 2022 – 2023 \(Small Tunas\)](#) (ICCAT, 2023)