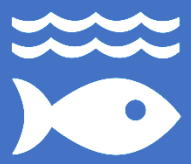


2023

MANAGEMENT AND STOCK STATUS SUSTAINABILITY OVERVIEW



14 LIFE BELOW WATER



REDUCTION

FISHERIES

PART 2

REDUCTION FISHERIES

2023 Management and stock status sustainability overview – PART 2

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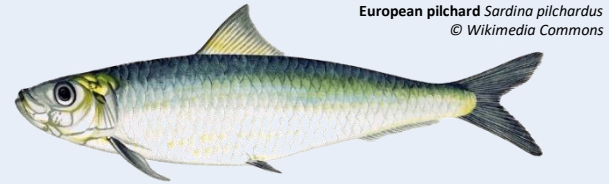
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DISCLAIMER

The current overview was mostly prepared with information available from FishSource.org™, a program of Sustainable Fisheries Partnership (SFP). The findings summarized in the report are based on information that the authors accessed from FishSource in February 2024. SFP updates FishSource regularly, and the report may not capture the most recent data for all the stocks. Always check FishSource.org for the most updated information SFP has for any given stock and fishery. Given the large number of existing fisheries for a given sector, this report evaluates the strategically most important stocks worldwide at the time (based on criteria such as the volume of catch or interest for SFP partners, for example). Note that the current scoring and ranking categories provided in the report do not consider the environmental impacts of the fisheries (i.e., they are based solely on the quality of management/degree of fishers' compliance and the status of the stock). However, the main environmental issues are considered at a high resolution, based on information already captured in the respective narrative "Environment and Biodiversity" sections of FishSource.org, and in other sources of information.

SUMMARY



- This report represents the **14th edition** of SFP’s global sustainability overview of the main Pacific and Atlantic fish stocks used for reduction purposes.
- The list of evaluated fisheries remains largely consistent with previous editions. Similar to 2022, the 2023 sustainability overview was divided into two assessment phases: (1) mid-2023 and (2) early 2024. This approach enables evaluations to be more responsive to the most recent status of each fishery.
- The current report encompasses the fisheries included in the second phase, which focuses on eight stocks (11 fisheries), primarily from Europe and South America, and reflects information as of February 2024.
- Most of the evaluated fisheries have maintained their overall performance in terms of management and stock status and continue to be relatively well-managed ([Table 3](#)).
- Simultaneously, sustainability performance in certain particular fisheries remains challenging. Despite the relatively good current stock health, several of these fisheries (e.g., [NE Atlantic blue whiting](#)) continue to face persistent management issues, with two fisheries in worse condition than in 2022, due to ineffective or deficient management systems:
 - Chilean jack mackerel - SE Pacific (Peru) (B1 to C)
 - Blue whiting - NE Atlantic (B1 to C)
- Despite ongoing improvement efforts, the aforementioned challenges require expanded industry engagement with managers to address these issues. This includes emphasizing the importance of:
 1. Developing, agreeing on, and implementing effective joint management strategies for transboundary stocks (e.g., [European pilchard - NW Africa southern](#))
 2. Defining appropriate ecosystem-based long-term management objectives for these fisheries to safeguard the respective stocks and associated trophic chains
 3. Ensuring the effective implementation and enforcement of the agreed regulations and management measures (e.g., catch limits).
- The current overview also sheds light on the potential environmental impacts of some of these reduction fisheries, providing a specific focus on the fisheries in Latin America.
- The full list of stocks/fisheries considered in parts one and two of the 2023 reduction fisheries overview, as well as the respective sustainability categories, are available in [Appendix I](#) of the current report.

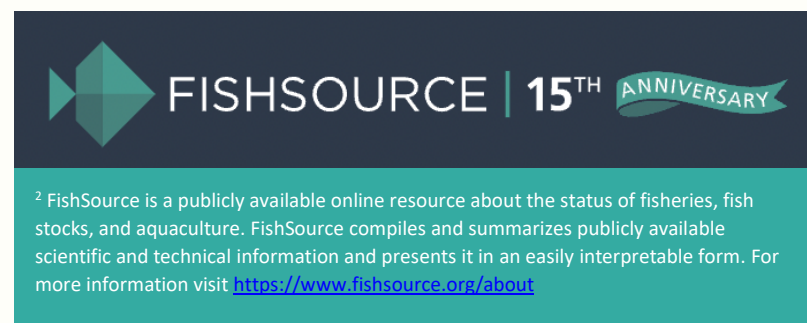
INTRODUCTION

Sustainable Fisheries Partnership (SFP) applies a sectoral approach to its mission of making actionable information available to the supply chain to leverage market forces to achieve improvements in fisheries. Seafood sectors may be defined in terms of the shared biological characteristics of harvested species, as well as their role in defined markets (for instance, blue whiting and anchovy share few biological characteristics, but they are both important in the same fishmeal and fish oil markets). In 2017, SFP announced a new sector-based initiative, called Target 75 (SFP, 2017), which aims to get 75 percent of the world's seafood produced sustainably, or demonstrating improvement toward sustainability. Reduction fisheries is one of the strategic seafood sectors covered by this initiative.

Since 2008, analyses of FishSource² data (in the form of sector reports) have been performed for the most strategic seafood sectors. These overviews assess the management sustainability performance of individual stocks and aggregate data to reflect the sustainability status of the overall sector. This information can provide useful guidance to those parts of the fishing and seafood industries that need to incorporate sustainability criteria into procurement policies. This report focuses on the reduction fisheries sector, with emphasis on fisheries from the Atlantic and eastern Pacific oceans.

The 2023 SFP Reduction Fisheries Sustainability Overview analyzes fisheries from 19 different fisheries (most targeting forage species) and assesses the sustainability of the existing management regimes. The current report encompasses the fisheries included in the second phase, which focuses on eight stocks, primarily from Europe, South America, and northwest Africa, and reflects information as of February 2024.

In line with past editions, this analysis focuses solely on a subset of the global catch used for reduction; species used solely for fish trimmings are not included in this sustainability assessment. Fisheries in Southeast Asia spanning the Indian and western Pacific oceans, which harvest a diverse array of species for various purposes, significantly contribute to the global supply of marine ingredients. However, similar to previous reports, Asian fisheries are not extensively covered in this report.



ASSESSMENT CRITERIA AND FISHERIES INCLUDED

1.1 SOURCES OF INFORMATION AND ASSESSMENT CRITERIA

Our overview is based on information from [FishSource.org](https://www.fishsource.org), SFP’s online information resource about the status of fish stocks and fisheries (SFP 2024b). FishSource scores consist of a suite of criteria to assess key aspects of management and

stock status of fisheries and fish stocks (Cannon 2006). **Table 1**, below, provides a brief explanation of the five FishSource scoring criteria (full details of the FishSource scoring methodology can be found at: <https://www.fishsource.org/how/scores>).

Table 1 | Current rationale for each of the five FishSource management quality and stock health scoring criteria.

	Score/Criterion	Rationale	Rationale (description)
Management quality	Management strategy (1): Is management precautionary?	$F_{at\ low\ biomass} / F_{target}$ OR $F_{current} / F_{target}$	How does the adopted limit and/or target reference point for fishing mortality rate compare to the stock’s fishing mortality rate at low biomass, as an index of whether the management strategy is precautionary? The higher the ratio, the lower the score.
	Managers’ compliance (2): Do fishery managers follow scientific advice?	Set TAC / Advised TAC	How does the adopted total allowable catch (TAC) level compare to the scientific advice on measures needed to meet stock management objectives, as an index of whether fishery managers follow scientific advice? The higher the ratio, the lower the score.
	Fishers’ compliance (3): Do fishers comply?	Catches / Set TAC	How did the catch level in the most current year for which data are available compare to the adopted TAC level, as an index of whether harvest control rules were met? The higher the ratio, the lower the score.
Stock health	Current health (4): Is the stock biomass healthy?	$B_{current} / B_{target}$	How does stock biomass in the most current year for which data are available compare to the biomass level that is predicted to support maximum sustainable yields, or similar biological reference point, as an index of whether the stock biomass is healthy? The higher the ratio, the higher the score.
	Future health (5): Will the stock be healthy in the future?	$F_{current} / F_{target}$	How does the fishing mortality rate in the most current year for which data are available compare to the rate that is predicted to support maximum sustainable yields, or similar biological reference point, as an index of whether the stock will be healthy in the future? The higher the ratio, the lower the score.

For profiles assessed using the FishSource quantitative criteria, FishSource scores each criterion on a scale of 0 to 10, with 0 being the lowest and 10 being the highest possible score. Preserving comparability with quantitative scores, qualitative scores are obtained by using the cut-off points as used in applications of the Marine Stewardship Council (MSC) fishery assessment method, where “< 6” indicates a high risk and a negative assessment finding, “≥ 6” indicates a medium risk and that improvements are required, and “≥ 8” indicates a low risk and that the fishery meets the criterion conditions. In addition, a data-deficient (DD) score also indicates a potentially higher risk, given insufficient and/or out-of-date information on either the management, stock condition, or fishing pressure of the fishery in analysis.

The scores are based on the most recently available public data as of February 2024, and generally represent a snapshot of the position in 2023 concerning management quality and stock status indicators, and in 2022³ for catch statistics.

To create simple and accessible assessments of the stocks, FishSource scores are used to place fisheries into one of five ranked sustainability categories (A, B1, B2, DD, and C) (Table 2). The categorization is based on the quality of management (“Management strategy”, “Managers’ compliance” and “Fishers’ compliance” scores) and the status of the target stock (“Current health” and “Future health” scores). Neither the scores nor the categories represent a complete evaluation of sustainability issues (e.g., ecosystem and biodiversity issues) or an endorsement of the overall sustainability of these fisheries.

Table 2 | Criteria for the five SFP management and stock status sustainability categories used in this 2023 fisheries overview

Categories	Criteria
Category A: Very well-managed fisheries	Score 8 or above across all FishSource scores
Category B1: Reasonably managed fisheries with stock in good condition	Score 6 or above across all FishSource scores, and score 8 or above in terms of biomass (i.e., current health of the stock)
Category B2: Reasonably managed fisheries	Score 6 or above across all FishSource scores
Category DD: Fisheries with high uncertainty in terms of their stock status or management	Score 6 or above across all FishSource scores, except that at least one FishSource score is data-deficient (DD) ⁴
Category C: Poorly managed fisheries	At least one FishSource score below 6

³ Although catch data for 2023 is already available for some fisheries, for most fisheries it is only available up to 2022; thus, we have used the 2022 catch across all fisheries.

⁴ A data-deficient (DD) score is determined when there is high uncertainty or lack of information, which prevents a given score to be determined for that specific criterion. For more information, please consult <https://www.fishsource.org/faq>. The definition of the category DD was slightly amended in 2020 to better differentiate fisheries with high uncertainty in stock condition or management from those with moderate uncertainty.

1.2 FISHERIES INCLUDED IN THE CURRENT OVERVIEW

As in previous editions, this 2023 overview focuses solely on stocks that are used mainly for fishmeal and fish oil, regardless of the taxonomic group. The proportion of any given species/stock being utilized for fishmeal and fish oil will be a function of market demand and can change with time.

The current overview does not include smaller stocks of the NE Atlantic and SE Pacific (e.g., Sandeels nei - Northern and Central North Sea, Sandeels nei - Viking and Bergen Banks, Falkland sprat - Aysén Region), as available in the previous report. These are minor stocks and only represent a small fraction (< 2% in volume) of the global production that is used for reduction purposes.

Similar to last year, the 2023 sustainability overview is divided into two evaluation phases: (1) end-2023 and (2) early 2024. This approach allows evaluations to be more sensitive to the most recent status of each fishery. The first phase focused on 11 fisheries, mostly from Europe and South America, and reflected information as of August 2023. The current evaluation encompasses the fisheries included in the second phase, which focuses on eight stocks (11 fisheries), primarily from Europe, South America, and Northwest Africa, and reflects information as of February 2024 ([Figure 1, Appendix I](#)).





Figure 1 | Fisheries included in the first (gray) and second (blue) parts of the 2023 reduction fisheries overview. Note: The size of the bubble is based on the latest reported catch for each fishery.

MANAGEMENT QUALITY AND STOCK HEALTH – Part two of evaluations

Table 3 | Current FishSource scores (Management Quality and Stock Health), SFP management and stock status sustainability category (A, B1, B2, DD, C), and 2022 catch ('000 t) data for the 8 main stocks (11 fisheries) used for reduction purposes and assessed in this second part of the 2023 overview

Stock / nested jurisdiction ^(1,2)	Management			Stock Status		Sust. category	Latest Catch ⁽³⁾	% of total	Changes from last year
	Management strategy	Managers' compliance	Fishers' compliance	Current health	Future health				
Capelin - Barents Sea	≥ 8	10.0	10.0	≥ 8	≥ 8	A	65.3	2%	-
Chilean jack mackerel - SE Pacific (high seas) ⁽⁴⁾	≥ 6	9.3	8.9	10.0	10.0	B1	73.9	2%	-
Chilean jack mackerel - SE Pacific (Chile) ⁽⁴⁾	≥ 6	9.3	≥ 8	10.0	10.0	B1	728.0	19%	-
Anchoveta - Chile Atacama (III) -Coquimbo (IV)	≥ 6	10.0	≥ 8	10.0	8.0	B1	68.5	2%	-
Atlantic menhaden - NW Atlantic	≥ 8	≥ 6	9.7	9.1	8.6	B1	198.0	5%	-
Norway pout - North Sea, Skagerrak and Kattegat	≥ 6	10.0	10.0	8.5	≥ 8	B1	35.7	1%	-
European pilchard - NW Africa southern (Morocco) ⁽⁴⁾	≥ 6	≥ 6	≥ 8	≥ 8	≥ 6	B1	588.7	15%	-
European pilchard - NW Africa central	≥ 6	≥ 6	≥ 6	≥ 8	≥ 6	B1	611.0	16%	-
Chilean jack mackerel - SE Pacific (Peru) ⁽⁴⁾	< 6	10.0	≥ 8	10.0	9.5	C	161.9	4%	B1 to C
Blue whiting - NE Atlantic	≥ 6	< 6	10.0	10.0	5.6	C	1,038.7	27%	B1 to C
European pilchard - NW Africa southern (Mauritania) ⁽⁴⁾	≥ 6	≥ 6	< 6	≥ 8	≥ 6	C	320.0	8%	-

NOTES: (1) Shading in stock name: light gray means no change from 2022; light green means rise in sustainability category; light orange means a drop in the sustainability category. (2) Stocks and respective fisheries are ordered according to the SFP stock status and management performance category, from A (the highest) to C (the lowest). The criteria for the five stock status and management performance categories used in this 2023 reduction fisheries overview are presented in [Table 2](#). The full list of stocks considered in parts one and two of the 2023 Reduction fisheries overview is available in [Appendix I](#). (3) With the exception of European pilchard - NW Africa southern (for which species catches by country are only available until 2019), catches mentioned here are for the year 2022 and are measured in thousand tonnes. (4) Chilean jack mackerel in the Southeast Pacific (CJM-SEP) and European pilchard in Northwest Africa (PIL-NWAfr) are transboundary stocks managed by different jurisdictions, each with varying levels of management performance. The scores provided herein reflect the management performance within each jurisdiction or management unit. Further details regarding the specific management quality scores for each unit can be accessed on the respective FishSource pages for [Chilean jack mackerel - SE Pacific](#) and [European pilchard - NW Africa southern](#). Notably, scores for Ecuadorian waters are omitted for CJM-SEP, as Ecuador primarily has residual catches of this species and transfers its quotas to Chile within the SPRFMO (SPRFMO n.d.) framework. Similarly, scores for Senegalese waters are not included for PIL-NWAfr, as catches from Senegal, although increasing in recent years, remain residual according to the FAO (FAO 2024).

Table 4 | Changes in SFP management and stock status sustainability categories across the stocks evaluated in the second phase of the 2023 overview.

Stock	Change in category	Notes
Chilean jack mackerel - SE Pacific (Peruvian waters)	B1 to C	Consistent with previous years, all members of the South Pacific Regional Fisheries Management Organization (SPRFMO) reached an agreement on a total allowable catch (TAC) covering the entire range of the Chilean jack mackerel stock for 2023, aligning with scientific advice. However, Peru, whose waters are not yet part of the convention area (and conducts its own stock assessment), did not adhere to the remaining 98,667-tonne limit designated for non-convention waters in 2023. Instead, based on its own assessment, Peru defined a total allowable catch (TAC) of 168,682 tonnes for the same year.
Blue whiting - NE Atlantic	B1 to C	<p>Despite recent efforts to enhance the management of this stock, such as establishing a multilateral agreement on the total allowable catch (TAC), coastal states continue setting unilateral quotas that disregard the overall TAC. Consequently, combined TACs and catches for blue whiting exceed the advice provided by ICES (International Council for the Exploration of the Sea) and anticipated levels outlined in the long-term management plan (MP). In 2022, overall catches exceeded the recommendation by the North East Atlantic Fisheries Commission (NEAFC) under the agreed management plan by 38%. This overage is likely due to the managers' inability to effectively limit catches.</p> <p>Since 2014, fishing mortality has consistently surpassed the target reference point and is currently estimated to be at a historical high, specifically 61% above the fishing mortality that achieves maximum sustainable yield (F_{MSY}). Scientists from ICES have cautioned that continued failure to adhere to advised catches could increase the risk of the stock falling below the biomass limit reference, potentially resulting in long-term loss of catch.</p>

Notes: (1) Chilean jack mackerel in the Southeast Pacific (CJM-SEP) is a transboundary stock, managed by different jurisdictions, each demonstrating varying levels of management performance. This table exclusively lists the jurisdictions or management units in which there was a change in sustainability category.

Table 5 | SFP management and stock status sustainability category C or DD stocks in the second phase of the 2023 overview, and the reasons for FishSource scores below 6, data-deficient, or not scored.

Stock	Management strategy	Managers' compliance	Fishers' compliance	Current health	Future health	Comments
Blue whiting - NE Atlantic	≥ 6	< 6	10.0	10.0	5.6	<p>Despite recent efforts to enhance the management of this stock, such as establishing a multilateral agreement on the total allowable catch (TAC), coastal states continue setting unilateral quotas that disregard the overall TAC. Consequently, combined TACs and catches for blue whiting exceed the advice provided by ICES (International Council for the Exploration of the Sea) and anticipated levels outlined in the long-term management plan (MP). In 2022, overall catches exceeded the recommendation by the North East Atlantic Fisheries Commission (NEAFC) under the agreed management plan by 38%. This overage is likely due to the managers' inability to effectively limit catches.</p> <p>Since 2014, fishing mortality has consistently surpassed the target reference point and is currently estimated to be at a historical high, specifically 61% above the fishing mortality that achieves maximum sustainable yield (F_{MSY}). Scientists from ICES have cautioned that continued failure to adhere to advised catches could increase the risk of the stock falling below the biomass limit reference, potentially resulting in long-term loss of catch.</p>
Chilean jack mackerel - SE Pacific (Peru)⁽¹⁾	< 6	10.0	≥ 8	10.0	9.5	<p>Consistent with previous years, all members of the South Pacific Regional Fisheries Management Organization (SPRFMO) reached an agreement on a total allowable catch (TAC) covering the entire range of the Chilean jack mackerel stock for 2023, aligning with scientific advice. However, Peru, whose waters are not yet part of the convention area (and conducts its own stock assessment), did not adhere to the remaining 98,667-tonne limit designated for non-convention waters in 2023. Instead, based on its own assessment, Peru defined a total allowable catch (TAC) of 168,682 tonnes for the same year.</p>
European pilchard - NW Africa southern (Mauritania)⁽¹⁾	≥ 6	≥ 6	< 6	≥ 8	≥ 6	<p>There is still no national TAC for sardine or small pelagics in Mauritania. There has been some improvement in monitoring, control, and surveillance (MCS) capabilities to reduce illegal, unreported, and unregulated (IUU) fishing in Mauritania. However, a body of evidence suggests that IUU activity in Mauritania still warrants concern.</p>

Notes: (1) Chilean jack mackerel in the Southeast Pacific (CJM-SEP) and European pilchard in Northwest Africa (PIL-NWAfr) are transboundary stocks managed by different jurisdictions, each exhibiting varying levels of management performance. The scores and notes provided herein regard only the management performance of the jurisdictions or management units that are performing inadequately.

BEYOND THE CATCH: UNDERSTANDING THE POTENTIAL ENVIRONMENTAL IMPACTS OF REDUCTION FISHERIES IN LATIN AMERICA

The impact of any fishery, and consequently its sustainability, extends beyond the target stock to encompass the environment and ecosystem in which the fishery takes place. Until recently, fisheries targeting small pelagic species (including those used for marine ingredients) were generally perceived as having a relatively low impact on their habitats and the broader ecosystem ([Fulton Fish Market 2023](#)). However, research in certain regions has revealed the importance of considering the impacts of these fisheries, particularly in light of the role played by many of the targeted small pelagic species (e.g., Peruvian anchoveta) in their respective trophic chains ([Pikitch et al., 2012](#)).

A FishSource [Environmental and Biodiversity scoring system](#) was developed to better capture the full range of impacts a fishery may have and support the increased attention that is being brought to these issues. Environmental and Biodiversity impacts are evaluated by looking at bycatch of other species, impacts on endangered, threatened, and protected (ETP) species, and impacts on seabed habitats and the overall ecosystem. Each of these is measured by examining the monitoring and data collection of the fishery, the outcomes of that monitoring concerning impacts, and the management actions taken to mitigate those impacts. The scores are each calculated on a scale from zero to ten with information obtained from stock assessment reports, management

measures, data from the fishery, and available studies on environmental impacts. By identifying strengths and challenges in the fishery, they can help to prioritize and implement improvements needed in the fishery. Cut-off points of “6” and “8” on the scores’ scale intend to approximate “Moderate: acceptable performance but with improvements required” and “Good: strong performance,” respectively. See [Environmental and Biodiversity Method for FishSource](#).

For this report, the Environmental and Biodiversity scores for reduction fisheries in South America were the focus, where FishSource has conducted such scoring ([Table 6](#)). Good-to-moderate scores were seen for Bycatch across all the fisheries, except Anchoveta Chile Valparaíso (V) - Los Lagos (X), and Araucanian herring - Central-South Chile (V-X). For both fisheries, it was found that, while a monitoring program was in place, only non-mandatory recommendations were made and that, overall, the implementation was poor to date. This isn’t very surprising, as often purse seine fisheries on small schooling pelagics tend to have low or minimal bycatch.

Likewise, scores for ETP were also Moderate, apart from Anchoveta - Peruvian northern-central stock (Artisanal) and Anchoveta - Southern Peru/Northern Chile (Peru). Both fisheries had reduced scores due to a lack of regular monitoring and deficiencies in the management of ETP issues.

Scores for Habitat were Good for almost all fisheries examined. In general, the gear used to harvest schooling pelagic species tends to have little if no bottom contact and thus little impact. However, there are some reports that the Anchoveta - Peruvian northern-central stock (Artisanal) fishery does contact the bottom in 43% of its hauls, with the overall impact being unknown. This resulted in lower scores than the other reduction fisheries in South America.

Across the fisheries, Ecosystem scores were Moderate. Data and monitoring programs are generally lacking, leading to reduced scores. In general, Ecosystem monitoring requires trophic studies, ecosystem modeling, and dedicated surveys to monitor the effect of forage fisheries adequately. Such monitoring and research are often resource-intensive. Further, there appears to also be limited management action regarding the ecosystem impacts, with most actions not explicitly targeting the issues.

In summary, this short analysis reveals that fisheries with consistent monitoring programs and dedicated research efforts generally performed better across environmental and biodiversity indicators. Specifically, those fisheries that demonstrated robust monitoring practices and evidence-based management strategies consistently achieved higher scores across various assessment categories. This emphasizes the importance of proactive monitoring and adaptive management in safeguarding marine ecosystems and

promoting sustainable fishing practices. Moreover, our findings highlight the need for increased investment in research and monitoring initiatives to address existing data gaps and enhance our understanding of the complex interactions within marine environments. By prioritizing these efforts, fisheries can effectively mitigate potential impacts and strive toward long-term sustainability. Furthermore, it is crucial to investigate potential environmental impacts in reduction fisheries in other regions of the globe, such as Africa, Asia, and Europe. Such additional information would help increase understanding of potential impacts and improvement recommendations for respective mitigation measures.



Small-scale fishing vessels in Pisco, Perú. © Walter Navarro (Pixabay)

Table 6 | FishSource Environmental and Biodiversity (E&B) scores by issue for South American reduction fisheries.

Stock / Fishery	Bycatch	ETP	Habitat	Ecosystem	Overall EB category	Overall notes on scoring
Araucanian herring - Central-South Chile	4.0	7.0	9.3	6.0	C	Ancoveta (V-X) and Araucanian herring are both caught in the same fishery. However, data regarding bycatch and its effects on ETP (endangered, threatened, or protected) species is limited due to inadequate observer coverage, particularly within the artisanal fleet. Consequently, the impact of the fishery on bycatch species remains unknown. The fishery is not expected to interact with the seabed habitat.
Anchoveta - Chile Valparaíso (V) - Los Lagos (X)	4.0	7.0	9.3	6.0	C	
Anchoveta - Chile Atacama (III) -Coquimbo (IV)	7.0	7.0	9.3	6.0	B	While a discard and bycatch monitoring program exists, its coverage extends to only a fraction (4.5%) of fishing trips presently. Consequently, there is insufficient data concerning bycatch, hindering the ability to assess the fishery's impact on ETP and other non-target species. There is also a lack of routine monitoring of the effects the fishery could have on the ecosystem. The fishery is not expected to interact with the seabed habitat.
Anchoveta - Southern Peru/Northern Chile (Chile industrial)	6.7	6.0	9.3	6.0	B	The estimated bycatch of non-target species remains relatively low (<5%) across both the artisanal and industrial fleets. Nonetheless, the available data is insufficient to comprehensively ascertain whether the fishery is significantly impacting any ETP or other non-target species. Moreover, the fishery is not projected to have interactions with seabed habitats.
Anchoveta - Southern Peru/Northern Chile (Chile artisanal)	7.0	6.0	9.3	6.0	B	There are some concerns over the interaction of the industrial fleet with the South American sea lion (>75% of total interactions).
Anchoveta - Southern Peru/Northern Chile (Peru)	9.3	4.0	9.3	6.0	C	Data concerning primary bycatch and interactions with protected species are scarce, as is information regarding compliance with bycatch limits. Several protected species feed extensively on anchoveta, rendering them susceptible to the fishing pressure on the anchoveta population. Whether bycatch limits are established in consideration of sustainability levels remains unknown. The fishery is not expected to interact with the seabed habitat.
Anchoveta - Peruvian Northern-Central (industrial)	10.0	6.0	9.3	6.0	B	While the industrial fleet benefits from two observer programs, which enable comprehensive data collection on bycatch species, observer coverage for the artisanal fleet is limited to just about 3% of fishing trips. Although rates of interaction with ETP (endangered, threatened, or protected) species are relatively high, post-release mortality rates are believed to be low. Evidence suggests that the artisanal fleet frequently impacts bottom habitats due to operations conducted in shallow waters. This issue is far less relevant in the industrial fishery .
Anchoveta - Peruvian Northern-Central (artisanal)	10.0	4.0	4.0	6.0	C	Several protected species feed extensively on anchoveta, rendering them susceptible to the fishing pressure on the anchoveta populations. However, there is no explicit harvest strategy or reference points that consider the key role of anchoveta in the ecosystem.

Notes: (1) The overall EB score is calculated as follows: A – All scores above 8, B - All scores equal to or above 6, C – at least one score below 6. The EB scores for these fisheries were last updated in September or October 2023.

THE GLOBAL ROUNDTABLE ON MARINE INGREDIENTS: AN UPDATE ON RECENT ACTIVITIES

Launched in 2021, the [Global Roundtable on Marine Ingredients](#) is a sector-wide, multi-stakeholder initiative to drive environmental and social improvements in key fisheries globally. The Roundtable currently has 14 members, including leading feed manufacturers, certification standards, and other major users of marine ingredients.

In 2023, much of the activity of the Global Roundtable was focused on West Africa. In October 2023, the Roundtable published a human rights impact assessment (HRIA) focused on small pelagic fisheries in Senegal and Mauritania. Overall, the HRIA identified a number of actual and potential human rights impacts associated with small pelagic fisheries in Mauritania and Senegal, including the rights to a healthy environment and adequate standard of living and labor rights. In Mauritania and Senegal, the report found that small-scale fishers and supply chains have been displaced and food security undermined by the growth of the fishmeal and fish oil (FMFO) sector. The HRIA also highlighted that a responsible small pelagics industry has much potential to positively impact human rights of the local population; bringing stability to the fisheries in this region can support economic growth and provide stable employment for local populations in a place where it is sorely needed.



Global
Roundtable
on marine
ingredients

In December 2023, several Roundtable members participated in an FAO workshop in Ghana focused on Sub-Saharan Africa's small pelagic fisheries. The workshop was organized in collaboration with the Global Roundtable and the Iceland Ocean Cluster. It brought together 50 representatives of local communities, governments, private sector actors, research institutions, and relevant professional and interest organizations, including artisanal fishers and women fish processors. The participants reached a consensus based on nine points, which include the recognition that the socio-cultural context in Western Africa is very important and that the level of reliance on aquatic food consumption varies across countries.

A responsible fishmeal and fish oil industry can play a role in Western Africa by valorizing fish that is not suitable for direct human consumption. At the same time, states should put in place policies that encourage direct human consumption of small pelagics. A report of the workshop, with summaries of all the presentations, will be published in 2024.

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APPENDIX I | List of fisheries included the 2023 overview; region, stock status, and management quality sustainability category; date FishSource profile last updated; and 2023 evaluation phase

	Stock / nested jurisdiction	Region / FAO major fishing area	Sustainability category	Date FishSource profile last updated ¹
First evaluation (October 2023)	Anchoveta – Chile Valparaíso (V) – Los Lagos (X)	South America (Southeast Pacific)	C	Oct 2023
	Anchoveta - Peruvian Northern-Central	South America (Southeast Pacific)	B2	Sep-2023
	Anchoveta - Southern Peru/Northern Chile (Chile)	South America (Southeast Pacific)	C	Oct 2023
	Anchoveta - Southern Peru/Northern Chile (Peru)	South America (Southeast Pacific)	C	Oct 2023
	Araucanian herring - Central-South Chile	South America (Southeast Pacific)	C	Oct 2023
	Capelin - Icelandic	Europe (Northeast Atlantic)	B2	Sep 2023
	European sprat - Baltic Sea	Europe (Northeast Atlantic)	B1	Aug-2023
	European sprat - North Sea, Skagerrak and Kattegat	Europe (Northeast Atlantic)	B1	Aug-2023
	Gulf menhaden - Gulf of Mexico	North America (Western Central Atlantic)	B1	Aug 2023
	Sandeels nei - Central Eastern North Sea	Europe (Northeast Atlantic)	B1	Jun 2023
Sandeels nei - Dogger Bank area	Europe (Northeast Atlantic)	B2	Jun 2023	
Current evaluation (May 2024)	Anchoveta - Chile Atacama (III) -Coquimbo (IV)	South America (Southeast Pacific)	B1	Oct 2023
	Atlantic menhaden - NW Atlantic	North America (Northwest Atlantic)	B1	Feb 2024
	Blue whiting - NE Atlantic	Europe (Northeast Atlantic)	C	Mar 2024
	Capelin - Barents Sea	Europe (Northeast Atlantic)	A	Mar 2024
	Chilean jack mackerel - SE Pacific	South America (Southeast Pacific)	B1 to C	Mar 2024
	European pilchard - NW Africa central	West Africa (Eastern Central Atlantic)	B1	Mar 2024
	European pilchard - NW Africa southern (Mauritania)	West Africa (Eastern Central Atlantic)	C	Mar 2024
	European pilchard - NW Africa southern (Morocco)	West Africa (Eastern Central Atlantic)	B1	Mar 2024
	Norway pout - North Sea, Skagerrak and Kattegat	Europe (Northeast Atlantic)	B1	Mar 2024

Notes: (1) Evaluation phase 1 (light gray) reflects the fisheries already updated in the current overview, with information as of August 2023. Evaluation phase 2 (light blue) relates to fisheries evaluated in the current (early 2024) overview, with information as of February 2024.

APPENDIX II | Information about existing improvement (Active FIPs) and certification programs, for all of the key fisheries assumed to be mainly used for reduction purposes (See table notes for more details on fisheries and attributes included.)

Status as of March 2024

Stock	Active FIPs ⁽³⁾				Certifications			
	FIP name	FIP start (year)	FIP type	FIP progress rating	MarinTrust ⁽⁴⁾	MSC ⁽⁵⁾	Date 1st MSC certification	# of MSC fisheries ⁽⁶⁾
Anchoveta Chile Valparaíso (V) - Los Lagos (X)	-	-	-	-	Yes	-	-	-
Anchoveta - Peruvian Northern-Central	Peruvian anchovy - industrial purse-seine	2017	Cp	A	Yes	-	-	-
Anchoveta - Peruvian Northern-Central	Peruvian anchovy - small scale purse-seine	2017	Cp	A	- ⁽⁷⁾	-	-	-
Anchoveta - Southern Peru/Northern Chile	-	-	-	-	Yes	-	-	-
Araucanian herring - Central-South Chile	-	-	-	-	Yes	-	-	-
Capelin - Icelandic	-	-	-	-	Yes	Cert	Apr-17	2
European sprat - Baltic Sea	-	-	-	-	Yes	Sus, Wdrn ⁽⁹⁾	May-17	6
European sprat - North Sea, Skagerrak and Kattegat	-	-	-	-	Yes	Cert, FA	Feb-18	2
Gulf menhaden - Gulf of Mexico	-	-	-	-	Yes	Cert	Oct-19	1
Sandeels nei - Central Eastern North Sea	-	-	-	-	-	Cert, Wdrn	Mar-17	2
Sandeels nei - Dogger Bank area	-	-	-	-	-	Wdrn	Mar-17	1

Fisheries in first evaluation phase (Sep 2023)

Status as of March 2024

	Stock	Active FIPs ⁽³⁾				Certifications			
		FIP name	FIP start (year)	FIP type	FIP progress rating	MarinTrust ⁽⁴⁾	MSC ⁽⁵⁾	Date 1st MSC certification	# of MSC fisheries ⁽⁶⁾
Fisheries in second evaluation phase (May 2024)	Anchoveta - Chile Atacama (III) -Coquimbo (IV)	-	-	-	-	Yes	-	-	-
	Atlantic menhaden - NW Atlantic	-	-	-	-	Yes	Cert	Sep-19	1
	Blue whiting - NE Atlantic	NE Atlantic Blue Whiting FIP	2021	Bs	C	IP	Sus, Wdrn ⁽¹⁰⁾	Jun-16	5
	Capelin - Barents Sea	-	-	-	-	Yes	-	-	-
	Chilean jack mackerel - SE Pacific	-	-	-	-	Yes	Cert	Apr-19	2
	European pilchard - NW Africa central	Morocco sardine - pelagic trawl and seine	2014	Cp	Inactive ⁽¹¹⁾	Yes ⁽⁸⁾	- ⁽¹⁰⁾	-	-
	European pilchard - NW Africa southern (Morocco)	Morocco sardine - pelagic trawl and seine	2014	Cp	Inactive ⁽¹¹⁾	Yes ⁽⁸⁾	- ⁽¹⁰⁾	-	-
	European pilchard - NW Africa southern (Mauritania)	Mauritania small pelagics - purse seine	2017	Cp	A	IP	-	-	-
	Norway pout - North Sea, Skagerrak and Kattegat	-	-	-	-	Yes	Cert, FA	Mar-17	2
Other fisheries	Antarctic krill - Atlantic Southern Ocean	-	-	-	-	-	Cert, Wdrn	Jun-10	4
	Bonga shad - NW Africa	Mauritania small pelagics - purse seine	2017	Cp	A	IP	-	-	-
	European anchovy - South Africa/SE Atlantic	-	-	-	-	Yes	-	-	-
	European anchovy - NW Africa	Morocco anchovy - purse seine	2019	Cp	D	Yes ⁽⁸⁾	-	-	-
	Madeiran Sardinella - NW Africa	Mauritania small pelagics - purse seine	2017	Cp	A	IP	-	-	-
	Round sardinella - NW Africa	Mauritania small pelagics - purse seine	2017	Cp	A	IP	-	-	-

Status as of March 2024

Stock	Active FIPs ⁽³⁾				Certifications			
	FIP name	FIP start (year)	FIP type	FIP progress rating	MarinTrust ⁽⁴⁾	MSC ⁽⁵⁾	Date 1st MSC certification	# of MSC fisheries ⁽⁶⁾
South Africa redeye herring - South Africa/SE Atlantic	-	-		-	Yes	-	-	-
Sandeels nei - Central and Southern North Sea	-	-		-	-	FA	Mar-17	1
Boarfish - NE Atlantic	-	-	-	-	Yes	-	-	-
Falkland sprat - Los Lagos Region	-	-		-	-	-	-	-
Falkland sprat - Aysén Region	-	-		-	-	-	-	-
Frigate and bullet tunas Ecuador	Ecuador small pelagics	2018	Bs	B	IP	-	-	-
Middling thread herring - Sinaloa and Nayarit	-	-		-	Yes	Cert	Oct-16	1
Pacific anchoveta - Ecuador	Ecuador small pelagics	2018	Bs	B	IP	-	-	-
Pacific anchoveta - Pacific Panama	Panama small pelagics	2011	Cp	Completed	IP	-	-	-
Pacific chub mackerel - Ecuador	Ecuador small pelagics	2018	Bs	B	IP	-	-	-
Pacific thread herring - Sonora	-	-		-	Yes	Cert, Wdrn	Jul-11	3
Thread herrings nei - Panama	Panama small pelagics	2011	Cp	Completed	IP	-	-	-
Pacific anchoveta - Ecuador	Ecuador small pelagics	2018	Bs	B	IP	-	-	-
Slender thread herring - Sinaloa and Nayarit	-	-		-	Yes	Cert	Oct-16	1
South American pilchard - Gulf of California	-	-		-	Yes	Cert	Jul-11	1
South American pilchard - Pacific Baja California	-	-		-	Yes	-	-	-
Australian pilchard - Great Australian Bight	-	-	-	-	Yes	Cert	Nov-18	1

Other fisheries

Status as of March 2024

Stock	Active FIPs ⁽³⁾				Certifications			
	FIP name	FIP start (year)	FIP type	FIP progress rating	MarinTrust ⁽⁴⁾	MSC ⁽⁵⁾	Date 1st MSC certification	# of MSC fisheries ⁽⁶⁾
Other fisheries	Bali sardinella - Southern Java to Western of Timor Sea	-	-	-	-	-	-	-
	Indian oil sardine - Andhra Pradesh	-	-	-	-	-	-	-
	Indian oil sardine - Goa	Indian Oil Sardine	2018	Bs	C	-	-	-
	Indian oil sardine - Karnataka	-	-	-	-	-	-	-
	Indian oil sardine - Kerala	-	-	-	-	-	-	-
	Indian oil sardine - Maharashtra	Indian Oil Sardine	2018	Bs	C	-	-	-
	Indian oil sardine - Tamil Nadu	-	-	-	-	-	-	-
	Pacific sardine - Japanese Pacific	Japan Hokkaido Japanese sardine - purse seine	2022	Bs	Unrated ⁽¹²⁾	-	-	-
	Miscellaneous marine species – Gulf of Thailand ⁽¹³⁾	Gulf of Thailand Mixed-Trawl Fishery	2020	Bs	Unrated	IP	-	-
	Miscellaneous marine species – Vietnam ⁽¹³⁾	Vietnam mixed species - trawl	2021	Bs	B	-	-	-

Notes: (1) This list includes all key stocks and fisheries known to be mainly used for reduction purposes (whole fish) that are associated to one or more active fishery improvement projects (FIPs), or the certification programs considered, and not just the stocks considered in the current overview. (2) The first section of the table (light gray) includes the 11 stocks included in part one of the overview, the second section (light blue) includes the eight stocks evaluated in the current (part two) overview, and the third section (light yellow) includes other fisheries not covered in the current overview but known to be used mainly for reduction purposes. (3) For more information on the currently active FIPs, please visit the Improvement Projects section in FishSource (SFP 2024a), or the respective FIP public reports in Fishery Progress (FishChoice, 2024) or MarinTrust Improver Program (MarinTrust, 2024b). FIP type: Bs = Basic and Cp = Comprehensive (4) Yes = Approved Whole Fish (main species); IP = Accepted FIPs under the MarinTrust Improver Programme (MarinTrust, 2024b). (5) MSC Status: Cert = Certified; FA = Full Assessment; Sus = Suspended; Wdrn = Withdrawn (MSC, 2024). (6) Refers to the number of fisheries that are in the MSC program and that overlap with the stock (source: SFP, 2024b; MSC, 2024). (7) In Peru, the artisanal fishery for anchoveta must be used for human direct consumption only; thus it is outside of the scope of MarinTrust and the current overview. (8) Certified by MarinTrust as “by-product” fishery (for more information visit the MarinTrust website) (MarinTrust, 2024a). (9) In late 2020, all the Baltic fisheries were either suspended or withdrawn due to the uncertainty of the stock health with regard to the MSC’s “key Low Trophic Level” criteria. (10) In late 2020, all the NE Atlantic blue whiting fisheries in the MSC program were suspended due to coastal states failing to set quotas in line with the advised levels. A FIP was launched in October 2021 (MarinTrust, 2024b). (11) The [Morocco sardine - pelagic trawl and seine](#) FIP is now considered Inactive due to failing to meet reporting requirements (SFP, 2024a). (12) The [Japan Hokkaido Japanese sardine - purse seine](#) FIP is currently considered as Completed on the respective FisheryProgress page, given it has met all its original objectives (FishChoice, 2024). (13) These are mixed species fisheries that cover multiple stocks of fish and invertebrates and are assessed and managed as a whole.



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