



MarinTrust Standard V2

By-product Fishery Assessment European Pilchard (*Sardina pilchardus*), FAO 37, GFCM GSA 22 (Aegean Sea)

MarinTrust Programme

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Table 1 Application details and summary of the assessment outcome

Fishery Under Assessment	Species:	European pilchard (<i>Sardina pilchardus</i>)
	Geographical area:	FAO 37 – Mediterranean and Black Sea
	Country of origin of the product:	Spain, Portugal
	Stock:	GFCM GSA 22 (Aegean Sea)
Date	May 2024	
Report Code	ESP10	
Assessor	Blanca Gonzalez	
Country of origin of the product - PASS	Spain	
Country of origin of the product - FAIL	None	

Application details and summary of the assessment outcome			
Company Name(s): Arteixo			
Country: Spain			
Email address:		Applicant Code:	
Certification Body Details			
Name of Certification Body:		LRQA	
Assessor	Peer Reviewer	Assessment Days	Initial/Surveillance/ Re-approval
Blanca Gonzalez	Sam Peacock	0.5	Surveillance 2
Assessment Period	May 2024 – May 2025		

Scope Details	
Main Species	European pilchard (<i>Sardina pilchardus</i>)
Stock	GFCM GSA 22 (Aegean Sea)
Fishery Location	FAO 37 – Mediterranean and Black Sea
Management Authority (Country/ State)	General Fisheries Commission for the Mediterranean (GFCM)
Gear Type(s)	Pelagic trawl and purse seine
Outcome of Assessment	
Peer Review Evaluation	Agree with assessment outcome
Recommendation	PASS

Table 2. Assessment Determination

Assessment Determination
<p>European pilchard (<i>Sardina pilchardus</i>) in the Aegean Sea (GFCM GSA 22) was assessed as a category D species considering that it is a Near Threatened species by the IUCN, it is not included in any CITES Appendixes, and the stock is not managed relative to biomass-based reference point. Also, the stock assessment conducted by the GFCM only considers the Greek part and the lack of continuous surveys in the recent period and the gap in landings largely influences the assessment and cause uncertainties in the estimated parameters. (GFCM 2023).</p> <p>In the Productivity-Susceptibility Analysis (PSA) European pilchard awarded an average productivity score of 1.14 and an average susceptibility score of 2.5 passing against Table D3, indicating that the stock is not vulnerable to the fisheries in the Aegean Sea.</p> <p>The European pilchard by-product meets the Marin Trust requirements and should remain approved for use as a raw material.</p> <p>GFCM (2023). General Fisheries Commission for the Mediterranean. Report of the Working Group on Stock Assessment of Small Pelagic Species (WGSASP). December 2023. https://www.fao.org/gfcm/technical-meetings/detail/en/c/1680535/</p>
Fishery Assessment Peer Review Comments
<p>The peer reviewer agrees that this species is eligible for assessment under the MarinTrust byproduct assessment methodology, and that the stock falls into Category D. The PSA has been conducted correctly and the peer reviewer agrees with the Pass outcome for this byproduct.</p>
Notes for On-site Auditor
<p>None</p>

Species Categorisation

NB: If any species is categorised as Endangered or Critically Endangered on the IUCN Red List, or if it appears in CITES Appendix 1, it **cannot** be approved for use as a MarinTrust raw material.

IUCN Red list Category

By-product material from a species listed by IUCN (the International Union for Conservation of Nature) under the Red List for the following categories shall immediately fail the assessment;

- EXTINCT (E) AND EXTINCT IN THE WILD (EW)
- CRITICALLY ENDANGERED (CR) facing an extremely high risk of extinction in the wild.
- ENDANGERED (EN) facing a very high risk of extinction in the wild.

By-product material may be used from the following categories provided that all clauses in the MarinTrust standard are passed.

- VULNERABLE (VU) facing a high risk of extinction in the wild.
- NEAR THREATENED (NT) does not qualify for above now, but is close or is likely to qualify for, a threatened category in the near future.
- LEAST CONCERN (LC) Widespread and abundant.
- DATA DEFICIENT (DD) and NOT EVALUATED (NE)

Table 3 Species Categorisation Table

Common name	Latin name	Stock	Management	Category	IUCN Red List Category ¹	CITES Appendix 1 ²
European pilchard	<i>Sardina pilchardus</i>	GFCM GSA 22 (Aegean Sea)	No	D	Near Threatened ³	No

¹ <https://www.iucnredlist.org/>

² <https://cites.org/eng/app/appendices.php>

³ <https://www.iucnredlist.org/species/198580/45075369>

CATEGORY C SPECIES

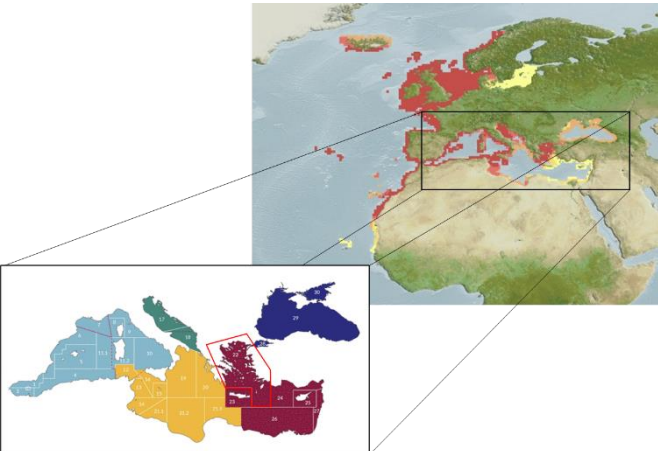
In a by-product assessment, Category C species are those which are subject to a species-specific management regime and are usually targeted species in fisheries for human consumption.

Clause C1 should be completed for each Category C species. If there are no Category C species in the fishery under assessment, this section can be deleted. Where a species fails this Clause, it should be assessed as a Category D species instead.

Species Name		NA	
C1	Category C Stock Status - Minimum Requirements		
	C1.1	Fishery removals of the species in the fishery under assessment are included in the stock assessment process, OR are considered by scientific authorities to be negligible.	
	C1.2	The species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy), OR removals by the fishery under assessment are considered by scientific authorities to be negligible.	
			Clause outcome:
<p>C1.1 Fishery removals of the species in the fishery under assessment are included in the stock assessment process, OR are considered by scientific authorities to be negligible.</p> <p>C1.2 The species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy), OR removals by the fishery under assessment are considered by scientific authorities to be negligible.</p>			
References			
Links			
MarinTrust Standard clause		1.3.2.2	
FAO CCRF		7.5.3	
GSSI		D.3.04, D5.01	

CATEGORY D SPECIES

Category D species are those which are not subject to a species-specific management regime. In the case of mixed trawl fisheries, Category D species may make up the majority of landings. The comparative lack of scientific information on the status of the population of the species means that a risk-assessment style approach must be taken.

D1	Species Name		European pilchard (<i>Sardina pilchardus</i>)		
	Productivity Attribute		Value	Score	
	Average age at maturity (years)		2 ¹	1	
	Average maximum age (years)		71	1	
	Fecundity (eggs/spawning)		156,525 ¹	1	
	Average maximum size (cm)		27.5 ¹	1	
	Average size at maturity (cm)		11.8 ¹	1	
	Reproductive strategy		Broadcast spawner ¹	1	
	Mean trophic level		3.1 ¹	2	
	Average Productivity Score			1.14	
	Susceptibility Attribute		Value	Score	
	Availability (area overlap)		<10% overlap ^{2,3}	1	
	Encounterability (the position of the stock/species within the water column relative to the fishing gear)		High overlap ^{4,5}	3	
	Selectivity of gear type		NA	3	
	Post-capture mortality		Retained ^{4,5}	3	
	Average Susceptibility Score			2.5	
	PSA Risk Rating (From Table D3)			PASS	
	Compliance rating			PASS	
	Further justification for susceptibility scoring (where relevant)				
	<i>For susceptibility attributes, please provide a brief rationale for scoring of parameters where there may be uncertainty affecting your decision</i>				
	<p>Availability: European pilchard distributes in the Northeast Atlantic: Iceland (rare) and North Sea, southward to Bay de Gorée, Senegal. Mediterranean (common in the western part and in Adriatic Sea, rare in the eastern part), Sea of Marmara and Black Sea¹. And the GFCM GSA 22 (Aegean Sea) only overlaps with less than 10% of the species distribution (figure 1).</p>				
					
<p>Figure 1: Distribution of European pilchard², and location of the GFCM GSA 22 (Aegean Sea)³.</p>					

	<p>Encounterability: European pilchard can be found in a deep range of 10 - 100 m, but is usually found at 25 - 100 m. ¹Purse seines and pelagic trawls target are aggregated pelagic species (schools) of all sizes from small sardines to the large tunas^{4,5}.</p> <p>Selectivity of gear type: No available information about the selectivity of gear type was found for this stock. However, as a precautionary approach a high-risk score was used in the assessment.</p>
<p>References</p> <ol style="list-style-type: none"> 1 https://www.fishbase.se/summary/Sardina-pilchardus.html 2 AquaMaps (2019, October). Computer generated distribution maps for <i>Sardina pilchardus</i> (European pilchard), with modelled year 2050 native range map based on IPCC RCP8.5 emissions scenario. Retrieved from https://www.aquamaps.org. https://www.aquamaps.org/receive.php?type_of_map=regular&map=cached 3 https://www.fao.org/gfcm/data/maps/gsas/en/ 4 https://www.fao.org/fishery/en/geartype/249/en 5 https://www.fao.org/fishery/en/geartype/103/en <p><i>Standard clauses 1.3.2.2</i></p>	

Table D2 - Productivity / Susceptibility attributes and scores.

Productivity attributes	High productivity (Low risk, score = 1)	Medium productivity (medium risk, score = 2)	Low productivity (high risk, score = 3)
Average age at maturity	<5 years	5-15 years	>15 years
Average maximum age	<10 years	10-25 years	>25 years
Fecundity	>20,000 eggs per year	100-20,000 eggs per year	<100 eggs per year
Average maximum size	<100 cm	100-300 cm	>300 cm
Average size at maturity	<40 cm	40-200 cm	>200 cm
Reproductive strategy	Broadcast spawner	Demersal egg layer	Live bearer
Mean Trophic Level	<2.75	2.75-3.25	>3.25

Susceptibility attributes	Low susceptibility (Low risk, score = 1)	Medium susceptibility (medium risk, score = 2)	High susceptibility (high risk, score = 3)
Areal overlap (availability) Overlap of the fishing effort with the species range	<10% overlap	10-30% overlap	>30% overlap
Encounterability The position of the stock/species within the water column relative to the fishing gear, and the position of the stock/species within the habitat relative to the position of the gear	Low overlap with fishing gear (low encounterability).	Medium overlap with fishing gear.	High overlap with fishing gear (high encounterability). Default score for target species
Selectivity of gear type Potential of the gear to retain species	a Individuals < size at maturity are rarely caught	a Individuals < size at maturity are regularly caught.	a Individuals < size at maturity are frequently caught
	b Individuals < size at maturity can escape or avoid gear.	b Individuals < half the size at maturity can escape or avoid gear.	b Individuals < half the size at maturity are retained by gear.
Post-capture mortality (PCM) The chance that, if captured, a species would be released and that it would be in a condition permitting subsequent survival	Evidence of majority released post-capture and survival.	Evidence of some released post-capture and survival.	Retained species or majority dead when released.

D3		Average Susceptibility Score		
		1 - 1.75	1.76 - 2.24	2.25 - 3
Average Productivity Score	1 - 1.75	PASS	PASS	PASS
	1.76 - 2.24	PASS	PASS	TABLE D4
	2.25 - 3	PASS	TABLE D4	TABLE D4

D4 Species Name	
Impacts On Species Categorised as Vulnerable by D1-D3 - Minimum Requirements	
D4.1	The potential impacts of the fishery on this species are considered during the management process, and reasonable measures are taken to minimise these impacts.
D4.2	There is no substantial evidence that the fishery has a significant negative impact on the species.
Outcome:	
Evidence D4.1: The potential impacts of the fishery on this species are considered during the management process, and reasonable measures are taken to minimise these impacts. D4.2 There is no substantial evidence that the fishery has a significant negative impact on the species.	
References	
Links	
MarinTrust Standard clause	1.3.2.2, 4.1.4
FAO CCRF	7.5.1
GSSI	D.5.01