MarinTrust Standard V2

By-product Fishery Assessment

Cod (Gadus morhua) in Subdivisions 22-24

MarinTrust Programme
Unit C, Printworks
22 Amelia Street
London
SE17 3BZ
E: standards@marin-trust.com
T: +44 2039 780 819

Table 1 Application details and summary of the assessment outcome

Fishery Under Assessment	Species:	Cod (*Gadus morhua*)
	Geographical area:	FAO 27 northeast Atlantic Ocean
	Country of origin of the product:	Denmark (flag state(s): Denmark, Germany, Poland, Sweden)
	Stock:	Cod in subdivisions 22-24
Date	2 May 2023	
Report Code	DNK26	
Assessor	Matthew Jew	
Country of origin of the product - PASS	Denmark (flag state(s): Denmark, Germany, Poland, Sweden)	
Country of origin of the product - FAIL	NA	

Application details and summary of the assessment outcome			
Company Name(s): FFSkagen: TripleNine			
Country: Denmark			
Email address:		Applicant Code:	
Certification Body Details			
Name of Certification Body:		Global Trust Certification	
Assessor	Peer Reviewer	Assessment Days	Initial/Surveillance/ Re-approval
Matthew Jew	Léa Lebechnech	0.5	Initial
Assessment Period	Up to May 2023		

Scope Details	
Main Species	Cod (*Gadus morhua*)
Stock	Cod in subdivisions 22-24
Fishery Location	FAO 27 northeast Atlantic Ocean
Management Authority (Country/ State)	EU CFP and Danish Fishery Agency (Fiskeristyrelsen)
Gear Type(s)	Trawl, Gillnet, and Danish seine (to a small degree)
Outcome of Assessment	
Peer Review Evaluation	Agree with the assessor's determination
Recommendation	**APPROVED**

Table 2. Assessment Determination

Assessment Determination
If any species is categorised as Endangered or Critically Endangered on IUCN's Red List, or if it appears in the CITES appendices, it cannot be approved for use as Marin trust raw material. Cod (*Gadus morhua*) does not appear as Endangered or Critically Endangered on IUCN's Red List, and does not appear in CITES appendices; therefore, *Gadus morhua* is eligible for approval for use as Marin trust by-product raw material. Cod in subdivisions 22-24 is managed an EU multiannual plan (MAP) that is in place for stocks in the Baltic Sea. ICES has assessed this plan and considers it precautionary. ICES evaluates the health of the stock and provides advice in relation on benchmarked reference points. As this stock is managed by an EU MAP and reference points are defined, cod in subdivision 22-24 was assessed under Category C. Fishery removals are included in the stock assessment and it PASSES Clause C1.1. The stock is considered, in its most recent stock assessment, to have biomass below the limit reference point, it FAILS Clause C1.2. As the stock fails category C, it was assessed under category D. Table D1 (PSA) shows that the stock as an average productivity score of 1.71 and an average susceptibility score of 2.25. The PSA risk rating results (Table D3) determined that the species passes. Therefore, cod in Subdivisions 22-24 is **APPROVED** for the production of fishmeal and fish oil under the current MarinTrust v2.0 by-products.
Fishery Assessment Peer Review Comments
The internal peer reviewer agrees with the assessor's determination, who correctly classified and approved the stock of cod in subdivisions 22-24 under Category D, after having failed category C. The stock passed the PSA risk-rating with an average productivity score of 1.71 and an average susceptibility score of 2.25. Therefore, cod in subdivisions 22-24 is **APPROVED** for the production of fishmeal and fish oil under the current MarinTrust v 2.0 by-products standards.
Notes for On-site Auditor
N/A

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 an 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]
Cod	*Gadus morhua*	Cod in subdivisions 22-24	EU CFP and Danish Fishery Agency (Fiskeristyrelsen)	Fails C and passes D	VU	No

[1] https://www.iucnredlist.org/species/8784/12931575
[2] https://cites.org/eng/app/appendices.php

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	**Cod (*Gadus morhua*)**	
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.	Yes
	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.	No
	Clause outcome:	**FAIL**

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.
ICES advises that when the MSY approach is applied, catches should be no more than 943 tonnes in 2023. This applies to the sum of commercial and recreational catches.

This stock is assessed using an age-based analytical assessment (SAM) that uses catches (landings, discards, and recreational catch) in the model and the forecast. The data used for this model are as follows: Commercial catches (landings, age distributions from catch sampling) and recreational catch (Germany, Sweden, and Denmark). Annual stock separation key (from commercial catches) to split catches in Subdivision 24 into eastern and western Baltic cod, derived from otolith shape analyses combined with genetics (this key is available for 20 of the 35 years in the present time-series). The allocation of catches to stock for the remaining years was performed by interpolation. Three survey indices: FEJUCS, ([N2828], age 0), BITS-Q1 ([G2916] ages 1–4+), and BITS-Q4 ([G8863]; ages 0–4+); constant maturity data as an average from BITS-Q1 surveys for the whole time period. Natural mortalities estimated from life history parameters, constant for the whole time period. Discards have been included in the assessment process since 1994.

Long term catches for the stock can be found in Figure 1.

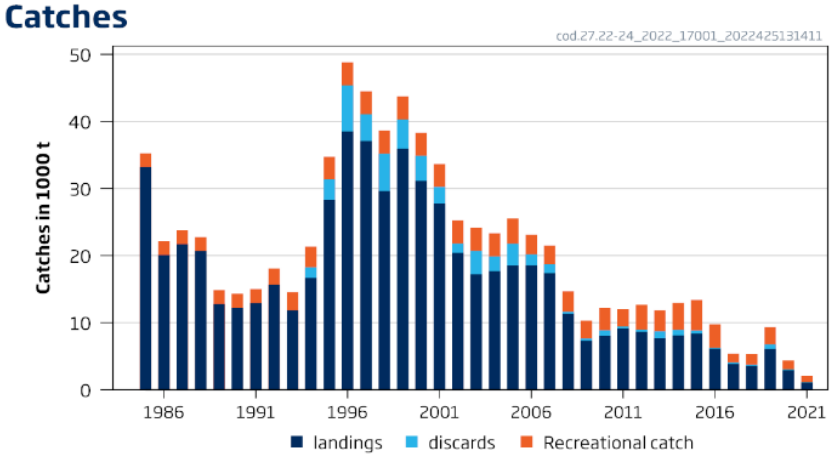


Figure 1. Long-term catches for cod in ICES subdivisions 22-24 from 1985 to 2021.
Source: ICES 2022.

Therefore, fishery removals of the species in the fishery under assessment are included in the stock assessment process and therefore the stock PASSES clause C1.1.

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.
This stock has two sets of reference points that align with the MSY and precautionary approaches.

MSY approach		Precautionary approach	
MSY $B_{trigger}$	23,492 t	B_{lim}	15,067 t
F_{MSY}	0.26	B_{pa}	MSY $B_{trigger}$
		F_{lim}	1.23
		F_{pa}	0.689

Fishing pressure on the stock is above FMSY and Fpa but below Flim; spawning-stock size is below MSY Btrigger, Bpa, and Blim.

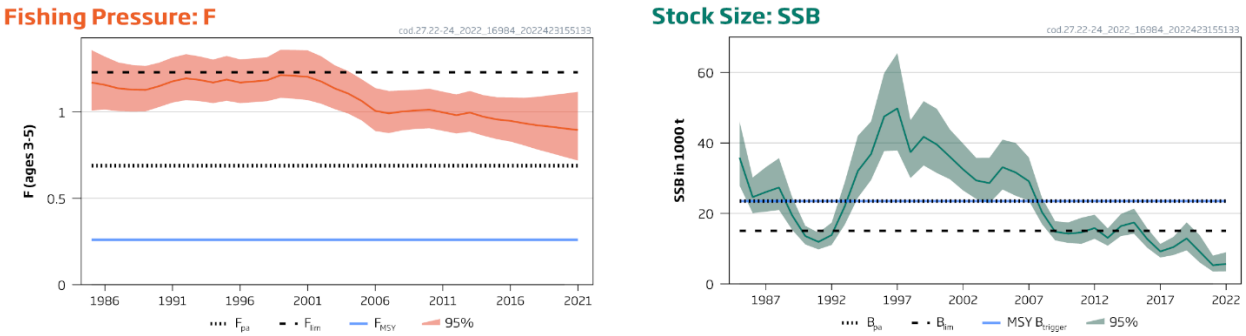


Figure 2. Cod in ICES subdivisions 22-24 summary of the stock assessment. The left panel shows the historical fishing pressure from 1985 to 2022 and the right panel show historical biomass over the same time period.
Source: ICES 2022.

Therefore, the species is considered, in its most recent stock assessment, to have a biomass below the limit reference point, so it FAILS clause C1.2.

References

CES. 2022. Cod (*Gadus morhua*) in subdivisions 22–24, western Baltic stock (western Baltic Sea). In Report of the ICES Advisory Committee, 2022. ICES Advice 2022, cod.27.22–24, https://doi.org/10.17895/ices.advice.19447868

Links	
MarinTrust Standard clause	1.3.2.2
FAO CCRF	7.5.3
GSSI	D.3.04, D5.01

CATEGORY D SPECIES

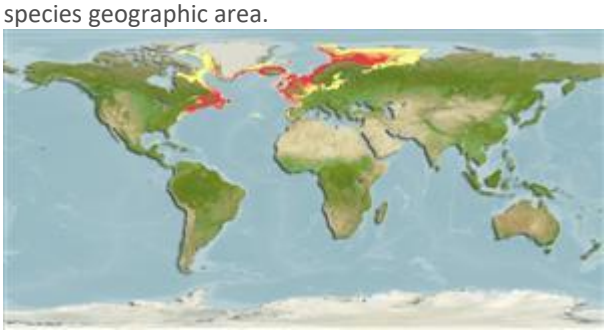
Category D species are those which are not subject to a species-specific management regime. In the case of mixed trawl fisheries, Category D species may make up the majority of landings. The comparative lack of scientific information on the status of the population of the species means that a risk-assessment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

D1 Species Name — **Cod (*Gadus morhua*)**

Productivity Attribute	Value	Score
Average age at maturity (years)	3.6 years	1
Average maximum age (years)	16.9 years	2
Fecundity (eggs/spawning)	1,610,435 eggs	1
Average maximum size (cm)	106 cm	2
Average size at maturity (cm)	55 cm	2
Reproductive strategy	Broadcast spawners	1
Mean trophic level	4.1	3
	Average Productivity Score	**1.71**
Susceptibility Attribute	**Value**	**Score**
Availability (area overlap)	<10%	1
Encounterability (the position of the stock/species within the water column relative to the fishing gear)	High overlap with fishing gear	3
Selectivity of gear type	High susceptibility	3
Post-capture mortality	Retained	3
	Average Susceptibility Score	**2.25**
	PSA Risk Rating (From Table D3)	**PASS**
	Compliance rating	**PASS**

Further justification for susceptibility scoring (where relevant)

1. Availability: The submitted stock is ICES Subdivisions 22-24. This area is less than 10% of the overall species geographic area.



2. Encounterability: This stock is fished using trawl, gill net, and Danish seine. Cod are benthic species being fish by benthic gear types.
3. Selectivity of gear type: The mesh size on the gear is unknown. Traditional trawl and gillnet mesh sizes retain both immature individuals and individuals half the size at maturity. High susceptibility was awarded in line with traditional methods and out of precaution.
4. Post-capture mortality: Retained species is scored as a 3.

References

Fishbase. 2023. Atlantic Cod, *Gadus morhua*. https://fishbase.mnhn.fr/summary/Gadus-morhua.html

Standard clauses 1.3.2.2

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