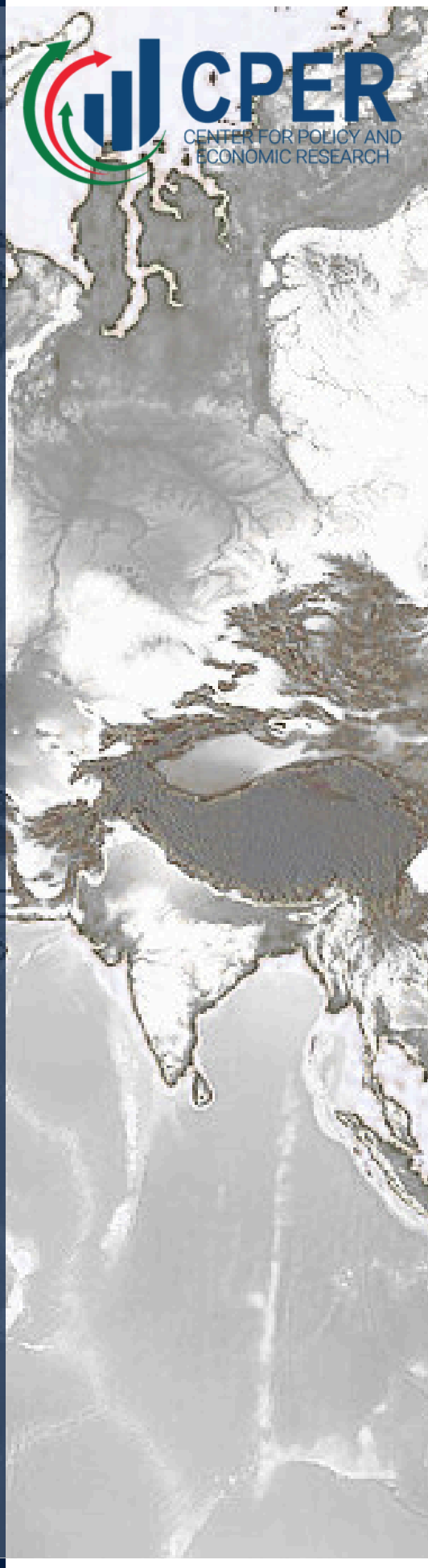
CPER POLICY BRIEF

An Assessment of Global Marine Fisheries Production and Stock Status: Policy Implications for Sustainable Fisheries Management



Highlights

- **Declining Production in Key Atlantic Regions:** Marine capture fisheries in the Northwest and Northeast Atlantic (FAO Areas 21 and 27) peaked in the 1970s at over 3.6 million and 11.1 million tonnes, respectively, but have since fallen significantly to around 1.6 million and 8 million tonnes by 2021, underscoring the urgent need for enhanced conservation measures to protect vital species like Atlantic herring and European pilchard while supporting dependent coastal communities.
- **Growth in Aquaculture as a Complementary Source:** Across multiple FAO areas, including the Northeast Atlantic and Mediterranean, aquaculture has expanded markedly, reaching up to 2.6 million tonnes in some regions by 2021, offering a sustainable pathway to meet global protein demands and alleviate pressure on wild stocks, though it must be managed to minimize environmental impacts.
- **Mixed Exploitation Statuses Globally:** While many stocks, such as skipjack tuna (comprising 57% of tuna catches) and certain pelagic species, are maximally sustainably fished, overfished populations persist in areas like the Mediterranean and for species including shortfin mako sharks, highlighting the critical role of science-based management in preventing biodiversity loss and ensuring long-term food security for billions.
- **Stabilization in Tuna and Decline in Shark Landings:** Global tuna catches have plateaued at approximately 5 million tonnes annually since 2014, with 70% of assessed stocks sustainably managed, yet shark and ray landings have dropped from a peak of 868,000 tonnes in 2000 to 605,000 tonnes in 2021, signaling both progress in regulation and ongoing threats from overexploitation in migratory species.
- **Policy Imperative for Precautionary Approaches:** As climate change and population growth intensify pressures on marine ecosystems, transitioning from unknown to managed stock statuses through international cooperation and precautionary governance is essential to foster resilient oceans, safeguard livelihoods in the blue economy, and secure equitable access to nutritious seafood for future generations.

The Center for Policy and Economic Research (CPER)

Issue 2, December 2025

An Assessment of Global Marine Fisheries Production and Stock Status:

Policy Implications for Sustainable Fisheries Management

1. Overview

An assessment of global fisheries production and stock status is vital because it provides evidence-based insights into the sustainability of marine resources, helping identify overfishing trends and management gaps. This information guides policy decisions to balance conservation with food security, economic development, and livelihoods. The policy brief provides a comprehensive analysis of global capture fisheries production of aquatic animals across various FAO areas, spanning from the 1950s to 2022. It highlights trends in production, stock exploitation status, and the contribution of aquaculture to total production. The analysis is based on FAO estimates, FishStat data, and regional fisheries management organization (RFMO) assessments.

2. Findings

2.1 Production Trends Across FAO Areas

- **Area 21 (Northwest Atlantic):** Marine capture production peaked in the 1970s at 3,689 thousand tonnes but declined to 1,616 thousand tonnes by 2021. Aquaculture production reached 121 thousand tonnes in 2021. Key species include Atlantic herring and Atlantic menhaden.
- **Area 27 (Northeast Atlantic):** Marine capture production peaked in the 1970s at 11,171 thousand tonnes but decreased to 8,033 thousand tonnes in 2021. Aquaculture production grew significantly to 2,633 thousand tonnes in 2021. Key species include European pilchard and European anchovy.
- **Area 31 (Western Central Atlantic):** Marine capture production peaked in the 1980s at 2,056 thousand tonnes but declined to 1,312 thousand tonnes in 2021. Aquaculture production reached 199 thousand tonnes in 2021. Gulf menhaden and Atlantic thread herring are key contributors.
- **Area 34 (Eastern Central Atlantic):** Marine capture production grew consistently, reaching 4,838 thousand tonnes in 2021. Aquaculture production remains minimal at 6 thousand tonnes in 2021. European pilchard and Bonga shad are major contributors.
- **Area 37 (Mediterranean and Black Sea):** Marine capture production peaked in the 1980s at 1,823 thousand tonnes but declined to 1,109 thousand tonnes in 2021. Aquaculture production grew to 861 thousand tonnes in 2021. European anchovy and European pilchard are key species.
- **Area 41 (Southwest Atlantic):** Marine capture production peaked in the 1990s at 2,198 thousand tonnes but declined to 1,972 thousand tonnes in 2021. Aquaculture production reached 90 thousand tonnes in 2021. Argentine shortfin squid and Argentine red shrimp are significant contributors.

2.2 Exploitation Status

- Stocks are categorized into three tiers: Underfished (U), Maximally Sustainably Fished (M), and Overfished (O).
- **Area 21:** Most species are maximally sustainably fished or overfished, with few underfished stocks.
- **Area 27:** A significant proportion of species are overfished, including European pilchard and European anchovy.
- **Area 31:** Gulf menhaden and Atlantic thread herring are maximally sustainably fished, while other species show mixed exploitation statuses.
- **Area 34:** European pilchard and Bonga shad are maximally sustainably fished, while some species, like sharks and rays, are underfished.
- **Area 37:** European anchovy and European pilchard are maximally sustainably fished, while miscellaneous pelagic fishes show mixed exploitation statuses.
- **Area 41:** Argentine shortfin squid and Argentine red shrimp are maximally sustainably fished, while other species show mixed statuses.

2.3 Global Fisheries Trends

- **Tuna Fisheries:** Tuna species dominate global fisheries, with skipjack tuna accounting for 57% of total tuna catches. The global tuna catch has stabilized at around 5 million tonnes annually since 2014. Of the 23 assessed tuna stocks, 16 are sustainably fished, while 7 are overfished or rebuilding.
- **Deep-Sea Fisheries in ABNJ:** Target demersal species using bottom trawls, longlines, pots, and traps at depths of 200–2,000 m. Total landings of demersal species in ABNJ were approximately 277,765 tonnes in 2021. 20% of stocks are overfished, while 36% have an unknown status.
- **Highly Migratory Sharks:** Shark and ray landings peaked at over 868,000 tonnes in 2000 but declined to approximately 605,000 tonnes in 2021. Blue shark landings are stable, while species like shortfin mako and silky shark are overfished in certain regions.

Table 1. Capture fisheries production of aquatic animals by FAO major fishing area during 1950–2022 (Source: FAO, 2025)

Analysis group	Assessed landings			Weighted percentage by landings		
	U (Mt)	M (Mt)	O (Mt)	U (%)	M (%)	O (%)
Area 21	0.21	1.01	0.22	14.8	69.9	15.4
Area 27	0.26	6.08	0.98	3.6	83.0	13.4
Area 31	0.53	0.084	0.17	67.4	10.6	22.0
Area 34	1.20	1.01	1.16	35.6	29.9	34.4
Area 37	0.042	0.42	0.35	5.2	51.7	43.1
Area 41	0.039	1.11	0.53	2.3	66.1	31.6
Area 47	0.078	0.50	0.74	5.9	37.9	56.2
Area 51	0.89	1.56	1.02	25.7	44.9	29.4
Area 57	0.34	2.68	0.62	9.3	73.6	17.1
Area 61	3.67	5.20	3.17	30.5	43.2	26.3
Area 67	0.68	1.73	0.024	27.9	71.1	1.0
Area 71	1.01	1.04	2.50	22.2	22.8	55.0
Area 77	0.57	0.49	0.25	43.4	37.8	18.8
Area 81	0.0081	0.28	0.013	2.7	93.0	4.3
Area 87	1.62	5.81	1.74	17.7	63.4	18.9
Area 48,58,88	0.38	0.0047	0	98.8	1.2	0.0
Highly migratory sharks	0.048	0.052	0.022	39.6	42.4	18.0
Highly migratory tunas	4.12	0.84	0.036	82.5	16.8	0.7
Total	**15.77**	**30.18**	**13.58**	**26.5**	**50.7**	**22.8**

Note: U = Underfished, M = Maximally sustainably fished, O = Overfished, Mt = million tonnes

2.4 Regional Analysis

- **Area 67 (Northeast Pacific):** Total marine capture production increased from 402 thousand tonnes in the 1950s to 2,533 thousand tonnes in 2021. Pacific herring and Pacific sardine are key species, with mixed exploitation statuses.
- **Area 87 (Southeast Pacific):** Anchoveta dominates production, peaking at 8,427 thousand tonnes in the 2000s but declining to 5,876 thousand tonnes in 2021. Jumbo flying squid production surged to 996 thousand tonnes in 2021.
- **Area 34 (Eastern Central Atlantic):** Coastal pelagic species dominate landings, constituting over 50% of total catches in 2021. Stocks such as sardine and sardinella are overfished, while others, such as octopus and cuttlefish, are sustainably fished.
- **Area 77 (Eastern Central Pacific):** Fisheries are diverse, targeting tunas, small pelagics, shrimp, snappers, and groupers. 69.2% of stocks are sustainably fished, while 30.8% are unsustainably fished.

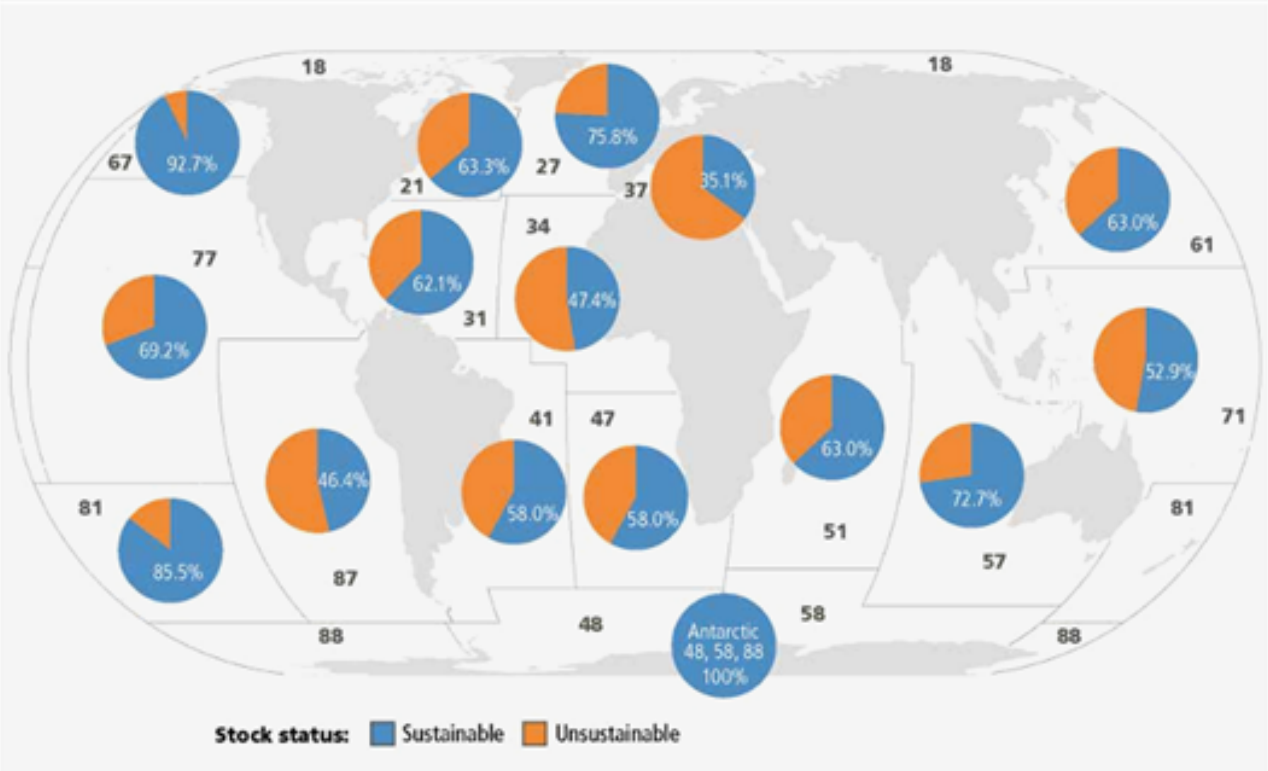


Figure 1. Percentages of biologically sustainable and unsustainable fishery stocks in 2021, by FAO major fishing area (Source: FAO, 2025)

3. Conclusion

Sustainable fisheries management is a critical global priority because it ensures the long-term viability of marine ecosystems while safeguarding a primary source of protein for over three billion people. In a world facing rapid population growth and the escalating impacts of climate change, the ocean's role as a renewable food source is indispensable; however, this renewability depends entirely on science-based governance that prevents overfishing and habitat destruction. Effective management maintains the delicate balance of aquatic food webs, protecting biodiversity that is essential for planetary health and climate regulation. Furthermore, it supports the "blue economy," providing stable livelihoods for hundreds of millions of people in coastal communities.

The transition from "unknown" to "managed" status for fisheries stocks is not merely a technical challenge but a global imperative for food security. By bridging the gap between historical and emerging fishing regions, institutionalizing the precautionary approach, and fostering inter-regional cooperation, the international community can mitigate the risks posed by uncertainty. This shift will transform deep-sea ecosystems from vulnerable resources into resilient pillars of global nutrition. By prioritizing sustainability today, we transition from an era of resource exploitation to one of stewardship, ensuring that the ocean remains a resilient pillar of nutrition and economic security for future generations.

Citation:

Center for Policy and Economic Research. (2025). *An Assessment of Global Marine Fisheries Production and Stock Status: Policy Implications for Sustainable Fisheries Management* (CPER Policy Brief Series, Issue 2).
https://cperbd.org/policy-briefs/6

Center for Policy and Economic Research (CPER)
House 09, Flat 4/B, Road 12, Block D,
Chandrima Model Town, Mohammadpur, Dhaka 1207, Bangladesh.
E-mail: info@cperbd.org
Website: www.cperbd.org