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Indian Fisheries, Growth and Environmental Sustainability in the Context of WTO Regulations

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ABSTRACT

International forums, such as the WTO, have been locked in intense debates over fisheries subsidies, a critical issue for achieving sustainable development. While discussions often focus on environmental impacts, such as overfishing and declining fish stocks, a true understanding of sustainability must also integrate the economic and social well-being of coastal communities. Many developing countries, including India, rely heavily on small-scale artisanal fisheries for food security and livelihoods. These nations provide minimal subsidies to their fishers, which are vital for survival, yet they are disproportionately affected by the vast, capacity-enhancing subsidies of major fishing powers. The WTO's 2022 Agreement on Fisheries Subsidies (AFS), a step toward curbing illegal, unreported, and unregulated (IUU) fishing, has yet to be fully ratified. Meanwhile, negotiations on subsidies that contribute to overcapacity and overfishing remain stalled due to disagreements on special and differential treatment for developing nations. This paper analyses the challenges facing the global fishing sector and the WTO's response, arguing that any reform must provide enhanced and extended technical assistance to developing countries, such as India. We advocate for a balanced approach that protects small-scale fishers while addressing the environmental damage caused by large-scale industrial fleets, thereby ensuring that the pursuit of sustainability does not compromise the livelihoods of the world's most vulnerable fishers.

Keywords: Fisheries subsidies, WTO negotiations, SDGs, small-scale fishers and livelihoods, trade and environmental sustainability

JEL codes: F18, O13, Q22, Q28, Q56

I

INTRODUCTION

While acknowledging the limited nature of its own fishing subsidies, India recognises the critical need to address the detrimental impacts of certain nations' extensive subsidies and unsustainable fishing practices, which threaten global fish stocks. Sustainable management of fisheries resources and achievement of the Sustainable Development Goal (SDG) 14.6 has been the benchmark for 166 members of the WTO, who account for 98 per cent of the world trade; some developing countries were concerned about its impact on low-income and poorly resourced fishers, who are surviving because of the subsidies under the discipline (IISD, 2025).

Intense debates at international forums, such as the WTO, FAO, and OECD, centre on the sustainability implications of trade and agricultural growth, particularly in relation to climate change and environmental concerns. While environmental aspects often dominate discussions on fisheries sustainability, 'Sustainable Development' emphasises the crucial integration of environmental protection, social equity, and economic prosperity for a more resilient and just future (WTO, 2023). The economic and social dimensions, particularly from the perspective of fishers, are

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equally important, as highlighted by the Sustainable Development Goals (SDGs). For instance, SDG 2 aims to eradicate hunger and poverty by doubling the productivity and income of small-scale farmers. Agriculture and allied sectors that fail to protect and enhance the livelihoods, equity, and social well-being of rural and coastal populations are ultimately unsustainable (Sarah Taylor, 2019). Given the economic and social challenges faced by poor fishers in India and other developing countries, such as limited assets, inadequate infrastructure, and market failures, the reform process targeting fisheries subsidies must adopt a comprehensive understanding of 'sustainability' that encompasses economic, social, and environmental concerns. Furthermore, achieving sustainability should not jeopardise fishers' livelihoods or the viability of fishing (Roger Martini and James Innes,2018).

The WTO provides a multilateral platform for negotiating legally binding commitments to limit agricultural / fisheries subsidies (U.Rashid Sumaila, 2019). At the 12th and 13th Ministerial Conference (MC12, 13), WTO members declared their commitment to promoting sustainable fishing and food systems, as well as resilient fishing practices. The issue of fisheries sustainability is discussed in various WTO committees through both multilateral and plurilateral discussions. The Sanitary and Phytosanitary (SPS) Committee addresses issues related to sustainable food systems. Interested members in the Committee on Trade and Environment (CTE) are engaged in plurilateral discussions under the Trade and Environmental Sustainability Structured Discussions (TESSD), where the environmental impacts of agricultural subsidies are examined to reduce carbon emissions in line with the United Nations Framework Convention on Climate Change (UNFCCC) climate goals (Yannick Rousseau,2019; Daniel J. Skerritt and U. Rashid Sumaila, 2021. A central question is how multilateral and regional agreements can comprehensively facilitate economic, social, and environmental sustainability. Notably, the preamble of the Agreement on Fisheries Subsidies (AFS) requires this reform to be equitable and to address issues related to food security and environmental protection, making Special and Differential Treatment (S&DT) an integral part of the negotiations. Several pertinent questions link the WTO, economic growth, and environmental sustainability, including issues concerning agricultural and fisheries subsidies, food security, sustainable food systems, Sanitary and Phytosanitary measures, climate change, environment-related trade measures, the inclusion of small-scale fishing, domestic and international agricultural policies, and other related policy concerns. Disciplining fisheries subsidies is increasingly influenced by climate negotiations aimed at mitigating environmental concerns, as evident in discussions at the WTO, COPs, and other multilateral organisations, such as the OECD, FAO, UNEP, and G20. Food security concerns also significantly shape the debate on the relationship between the WTO, growth, and sustainability (World Bank and Food and Agriculture Organization, 2009). Ensuring food security for vulnerable populations is a significant challenge for developing countries, including those classified as LDCs. In 2023, over 735 million people faced hunger (FAO, 2024), making achieving SDG 2

by 2030 a significant challenge. Despite extensive and multifaceted discussions across international forums, significant disagreements persist among members due to differing national priorities. Consequently, many nations, including India, currently face the significant challenge of addressing environmental concerns while safeguarding the needs and interests of small-scale fishers and tackling the challenges of food insecurity (David Tickler, 2018).

While acknowledging the limited nature of its own fishing subsidies, India recognises the critical need to address the detrimental impacts of certain nations' extensive subsidies and unsustainable fishing practices, which threaten global fish stocks (Gregory B. Poling, 2021). Here, we look at the challenges facing the Indian fishing sector and the WTO's response, particularly the 13th Ministerial Conference (MC13) and advocate for the provision of enhanced and extended technical assistance to India and other developing countries reliant on small-scale livelihood fishing, the challenges facing the Indian fishing sector and the WTO's response, particularly the 13th Ministerial Conference (MC13) and advocate for the provision of enhanced technical assistance to India and other developing countries reliant on small-scale livelihood fishing. To assess the impact of subsidies in fisheries negotiations, this study examines the global supply and demand for fishery resources from the standpoint of both resource holders and fishing capacity. The analysis incorporates factors such as government budgetary support for fisheries, vessel tonnage, advancements in fishery technologies, and total marine catch processing to reflect the demand for fish resource extraction. On the supply side, it considers major fishing regions and the issuance of fishing licenses. The study assesses the effectiveness of subsidies as a trade policy tool for achieving broader sustainable development goals. We derive recommendations that countries should consider before phasing out fisheries subsidies at the WTO level.

II

DATA AND METHODOLOGY

This study is based on a comprehensive synthesis of existing literature and secondary data, with no new primary data collected. The methodology involved a systematic, multi-step process. First, we conducted an extensive search of academic databases, including WTO reports, Web of Science, and Google Scholar, using predefined keywords to identify relevant peer-reviewed articles. This was supplemented by a review of institutional reports from organisations such as the World Trade Organisation and national trade agencies, as well as publicly available datasets. Second, the identified literature and data were critically appraised to assess their relevance, credibility, and reliability. Finally, we performed a qualitative analysis of the synthesised literature to identify key themes and trends, and a quantitative analysis of the culled data to support our arguments. This rigorous approach ensures our findings are grounded in a robust and credible body of existing knowledge.

In this paper, we (1) look at the challenges that the global fishing sector is facing and the response of the WTO to the same, (2) the issues concerning small-scale fishing, (3) build a case for continued technical assistance, and (4) draw conclusions with a discussion on balancing fisheries subsidies and achievement of SDGs.

2.1 Fishing-sector challenges and WTO response

The decline in global marine fish production is largely attributed to industrial fishing, characterised by declining catches, substantial subsidies that fuel overfishing, and illegal, unreported, and unregulated (IUU) fishing (Food and Agriculture Organisation of the United Nations, 2022). The WTO's MC12 in 2022 yielded the Geneva Package (Agreement), which aims to curb IUU fishing and the unsustainable exploitation of ocean resources (FAO, 2024). However, this agreement presents challenges for small-scale livelihood fisheries in India and similar developing nations.

The 13th Ministerial Conference (MC13) of the World Trade Organisation (WTO), held in Abu Dhabi in February and March 2024, concluded without a comprehensive agreement on fisheries subsidies. While the first phase of the Agreement on Fisheries Subsidies, adopted in June 2022 at MC12, focused on prohibiting subsidies for illegal, unreported, and unregulated (IUU) fishing, as well as fishing on overfished stocks, the second phase aimed to address subsidies contributing to overcapacity and overfishing

2.1.1 Status of Negotiations

Despite intensive negotiations and even an extension of the conference, WTO members were unable to finalise the second phase of the fisheries subsidies agreement. Significant differences remained on key issues, which included 1) Disciplines on subsidies for distant-water fishing, 2) The definition and scope of "artisanal" fisheries and related exemptions, 3) Special and differential treatment for developing countries, including the duration of transition periods and thresholds for subsidy notifications and 4) Subsidy notification requirements, particularly for major subsidisers. Despite the lack of a full agreement, some progress was noted in narrowing the gaps between members' positions. A majority of members expressed commitment to continue working towards a comprehensive agreement.

2.1.2 Status of the 2022 Agreement

The Agreement on Fisheries Subsidies, adopted at the WTO's 12th Ministerial Conference (MC12) in 2022, is progressing slowly in entering into force. Significant momentum was gained at the 13th Ministerial Conference (MC13) in 2024, with several WTO members depositing instruments of acceptance, bringing the agreement closer to its effective implementation. The Agreement on Fisheries Subsidies, adopted in 2022, requires ratification by two-thirds of WTO members (110 members)

to take effect. As of March 1, 2024, 71 members had ratified the agreement. As of March 2025, 94 WTO members have ratified the Agreement on Fisheries Subsidies (AFS) after MC13. The agreement needs to be ratified by 111 members to enter into force, meaning 17 more ratifications are needed (Irschlinger T., 2025). India is one among those that have yet to ratify the 2022 agreement.

2.1.3 Key Takeaways from MC13

The failure to conclude the second phase of the fisheries subsidies negotiations at MC13 was a setback for efforts to curb harmful subsidies that contribute to the depletion of global fish stocks. Despite the disappointment, a large number of WTO members reiterated their commitment to continuing work on this issue. When a subset of members attains a critical mass, it enables them to discuss a specific subject, resulting in pluralistic deals. Its principle of decision-making governs the WTO by consensus, which requires all members to sign off when negotiating high-standard trade rules, whether they have been part of the negotiations or not. India has always objected to all pluralistic deals.

Some members are also exploring plurilateral initiatives on trade and environmental sustainability, including efforts to address plastics pollution and reform fossil fuel subsidies, indicating a willingness among some to advance sustainability agendas within the WTO framework. Table 1 provides an overview of the estimated shares of global fishing catch, fishing effort, and fisheries subsidies, categorising them by members' development status, the types of maritime areas (domestic EEZ, foreign EEZ, and high seas), and the scales of fishing operations (artisanal and industrial). This data helps clarify the scope of certain provisions in the draft text, including Special and Differential Treatment (SDT) exemptions, which essentially define the proportion of global fishing catch, effort, or subsidies that would be exempt from specific prohibitions. It is clear that 18 per cent of global catch effort yields 28 per cent of global catch to the developed countries that operate with 38 per cent subsidy while 75 per cent of global catch effort yields only 62 per cent of the global catch operating on 61 per cent global subsidy which implies that the fleet strength and capacity of the fleets of the developing world pale into insignificance in the face of the fishing capacity of the developed world. The extent of mechanisation and advanced technologies used by the deep-sea fishing vessel factories of the Western world is astounding. It can also be seen that 75 per cent of the global catch is harvested by industrial fishing vessels, while artisanal fishing vessels manage to harvest only 27 per cent.

The industrial fishing fleet is essentially the preserve of developed countries. It is worth noting that the percentages presented in the table for developing country members currently include those with large industrial fishing fleets, such as China, Chinese Taipei, and South Korea; excluding these members would significantly decrease these shares. IISD further indicates that while the temporary exemption for

developing country members' subsidies for activities in their EEZ or under a Regional Fisheries Management Organisation/Arrangement (RFMO/A) would cover a large share of global fishing catch, effort, and likely subsidies, the scale of permanent exemptions is more limited, as highlighted in the table's cells.

TABLE 1: INDICATIVE DATA POINTS ON THE COVERAGE OF PARTICULAR PROVISIONS

		% of global catch	% of global effort	% of WTO-relevant subsidies
Development status	Developed countries	28	18	38
	Developing countries	62	75	61
	<0.8% of the global catch	9	Below 20	5
	LDC members	7	5	17
Maritime Areas	Domestic EEZ	82	76	71
	Developed members	21	14	Not available
	Developing members	53	61	
	LDC members	6		
	Foreign EEZ	15	19	24
	High seas	2.5	5	5
Sector	Industrial	72	57	89
	Artisanal	27	43	11
	Developed members	3.5	8	6
	Developing members	18	34	5
	LDC members	4.4		0.9

Source: International Institute for Sustainable Development (IISD) (2025)

Breaking this down, Least Developed Country (LDC) members account for 7 per cent of global catch and 1.7 per cent of the subsidies that the main prohibition could cover. For non-LDC developing members, these numbers are slightly higher, representing less than 0.8 per cent of the global catch individually; however, collectively, all developing members account for 9 per cent of the global catch and 5 per cent of global subsidies. Lastly, artisanal fleets from non-LDC developing members alone contribute 18 per cent of global catch and 5 per cent of global subsidies (IISD, 2025). According to global rankings, China leads the world in marine catch production, accounting for 14.8 per cent of the global total. It is followed by Indonesia (8.6%), Peru (6.6%), Russia (5.9%), the USA (5.3%), India (4.5%), Vietnam (4.3%), Japan (3.6%), Norway (3.1%), and Chile (2.8%). The remaining is produced by other countries worldwide. This data highlights that the fisheries market is primarily dominated by China, followed by Indonesia, Peru, and the USA. Table 2 indicates that, among the 10 countries listed, if the developed countries — China, the USA, Russia, Japan, and Norway — are combined, their share in global marine fish landings amounts to 32.7 per cent. In comparison, the remaining five developing countries account for only 26.8 per cent of global fish

landings. The primary sector, which encompasses fishing, continues to make a substantial contribution to the GDP of these developing countries. In contrast, the contribution of the same sector to the national wealth-generating process is almost insignificant in developed countries.

TABLE 2. CAPTURE FISHERIES PRODUCTION OF AQUATIC ANIMALS IN MARINE AREAS BY MAJOR PRODUCERS (YEAR 2020)

Country	Production	Share in total %
China	11819	14.8
Indonesia	6841	8.6
Peru (total)	5289	6.6
Russia Federation	4717	5.9
USA	4243	5.3
India	3597	4.5
Vietnam	3443	4.3
Japan	2889	3.6
Norway	2442	3.1
Chile	2226	2.8

Source: SOFIA (2024)

2.1.4 Restoring American Seafood Competitiveness

The latest Trump presidential executive order, Executive Order 13921 "Restoring American Seafood Competitiveness," dated April 17, 2025, has significant implications, especially when viewed in the context of global trade and the ongoing debates at the World Trade Organisation (WTO) regarding fisheries subsidies. The order aims to reduce regulatory burdens on the U.S. fishing industry, with the stated goal of increasing domestic seafood production. This includes reviewing and potentially rescinding regulations deemed to be overly restrictive. A core objective is to combat what the administration considers unfair trade practices by foreign nations. This involves addressing issues like illegal, unreported, and unregulated (IUU) fishing and the use of forced labour in seafood supply chains. The order seeks to strengthen the competitiveness of the U.S. seafood industry in both domestic and international markets. This includes efforts to improve market access for U.S. seafood products. The order also directs a review of marine national monuments, with the potential to open some of these areas to commercial fishing.

2.1.5 Implications in the Context of WTO MC13 and Fisheries Subsidies

The WTO has been working to establish disciplines on fisheries subsidies that contribute to overcapacity and overfishing. Developed countries, including the U.S., have been involved in these negotiations. The core issue is to prohibit harmful subsidies that lead to unsustainable fishing practices (Cassandra D. Young, 2006)

The Trump executive order's emphasis on boosting domestic fishing production and reducing regulations could potentially create tensions with WTO efforts to curb harmful subsidies. If the U.S. provides increased subsidies to its

fishing industry, this could be seen as undermining global efforts to promote sustainable fishing.

The executive order's focus on "levelling the playing field" highlights the U.S. concern about subsidies provided by other countries. However, the U.S. itself faces scrutiny regarding its own subsidy practices. The WTO MC13 discussions aimed to create greater transparency and discipline regarding the subsidy practices of all nations.

The executive order's focus on enforcing trade laws against IUU fishing and forced labour aligns with some of the WTO's goals. However, the use of unilateral trade measures by the U.S. could also create friction with other WTO members. The Trump executive order reflects a "America first" approach to seafood policy, prioritising domestic production and competitiveness. However, this approach has the potential to clash with international efforts to promote sustainable fishing and regulate fisheries subsidies, particularly in the context of ongoing WTO negotiations

2.2 Issues concerning small-scale fishing

Fishing-sector challenges that have led to declining marine fish production in recent decades are primarily attributed to rampant industrial fishing and include declining catches, large fishery subsidies that contribute to overfishing, and illegal, unreported, and unregulated (IUU) fishing. After several attempts to address these issues, in 2022, the WTO adopted an Agreement at the MC12. While the Agreement curbs global IUU fishing and other extravagances involving ocean wealth, it has put small-scale livelihood fisheries in India and other developing countries in a difficult situation (M Krishnan and Badri Narayanan Gopalakrishnan, 2022).

The first challenge is small-scale, livelihood fishing, which has seen a steep decline in catches in recent years. Indian Ocean rim countries have always dominated catch amounts in the Indian Ocean. There has been a 300 per cent growth in small-scale catches from 1.9×10^6 tonnes (or Mg) per year in 1950 to 6.5×10^6 tonnes per year by 2018, while industrial catches that rose steadily in the early 1960s reached a plateau at approximately 8.5×10^6 tonnes per year since the late 1990s. There has also been a significant decline in unreported catches, which have fallen from 45 per cent to 25 per cent of total catches. Total fishing effort (TFE) and catch per unit effort (CPUE), however, have been moving inversely: From 1950 to 2010, TFE, driven by the industrial sector, increased by a factor of 30 from 0.4×10^9 to 11×10^9 kW days, while overall CPUE declined 78 percent, with steeper declines in small-scale catches (more than 80 percent since 1950) than in the industrial sector (65 percent from its 1981 peak). These small-scale artisanal and subsistence fisheries are spearheading poverty alleviation and food and nutritional security programs in the Indian Ocean region, and are also among the poorest communities in the world (Dirk Zeller et al., 2015, 2023).

A primary concern is the declining catches experienced by small-scale fishers. In the Indian Ocean region, while small-scale catches witnessed a significant 300 per cent growth between 1950 and 2018, industrial catches have plateaued since the late 1990s. Simultaneously, unreported catches have decreased (Daniel Pauly and Dirk Zeller, 2016). Notably, total fishing effort (TFE) has increased dramatically, driven by the industrial sector. In contrast, catch per unit effort (CPUE) has declined significantly, with small-scale fisheries experiencing a steeper decline (over 80% since 1950). These artisanal and subsistence fisheries are crucial for poverty alleviation and food security in the Indian Ocean region, often supporting the most vulnerable communities.

The second major challenge is overfishing, exacerbated by fishing subsidies provided by some developed nations (Rudy van der Elst, 2005). The FAO estimates that over 35 per cent of marine fish stocks are exploited beyond sustainable levels, a figure that continues to rise (Irschlinger T., 2025). Significant overcapitalization by developed-world fishing fleets has led to declining global fish productivity, impacting the sustainability of marine resources and causing the collapse of local fisheries, unemployment, and food insecurity in less developed countries (Food and Agriculture Organisation of the United Nations, 2020). Certain subsidy regimes are recognised for contributing to excessive fishing capacity, incentivising unsustainable fishing levels, and depleting fish stocks by reducing operational costs or increasing revenues (Christopher D. Golden, 2016). Global fisheries subsidies were estimated at $35.4 billion in 2018, with $22.2 billion enhancing fishing capacity. The top subsidisers include China, the EU, the United States, South Korea, and Japan (Taylor, I. O, 2020).

The third critical challenge is IUU fishing within India's Exclusive Economic Zone (EEZ). Incidents like the presence of large Chinese trawlers with immense hauling capacity in the Arabian Sea highlight the vulnerability of Indian waters. These activities not only threaten livelihoods and food security but also raise national security concerns. The Chinese distant-water fleet's systematic violation of EEZs is a significant issue. The EU's "carding system," which issues warnings and bans imports from countries that fail to prevent IUU fishing, has not yet been applied to major industrial fishing nations, such as China (Jayashree Nandi, 2023).

Recognising the growing exploitation of marine fish stocks, the WTO initiated discussions on fisheries subsidies in 2001(Gabriel M.S. et al., 2020). While initial efforts yielded no concrete results, the 2022 MC12 adopted the Agreement on Fisheries, part of the Geneva Package. This agreement aims to prohibit subsidies that contribute to IUU fishing and the depletion of global fish stocks, particularly targeting the distant-water fishing fleets of developed countries. Hailed as a landmark achievement towards achieving Sustainable Development Goal 14, the agreement requires ratification by two-thirds of WTO members to come into effect, which has yet to be completed (IISD, 2023). Negotiations continue on issues like overfishing

and overcapacity, with the aim of strengthening the agreement at future ministerial conferences. Indian trade experts and fish-worker organisations have advocated for a comprehensive pact addressing the overcapacity and overfishing of industrial fishing nations and have expressed reservations about the current fisheries subsidies agreement.

2.3 The case for the extension of technical assistance

India possesses a substantial coastline and EEZ, where fisheries play a crucial role in food security, nutrition, and livelihoods, contributing significantly to agricultural export earnings (Shrivatsava Kumar Smabhav, 2012). While state governments manage waters within 12 nautical miles, the central government has jurisdiction over the EEZ (Rajesh K.M., 2013). The marine fisheries sector employs millions, with a significant portion comprising women, and offers diverse employment opportunities. India's annual fisheries subsidies of approximately $300 million are meagre compared to those of major fishing nations, translating to a mere $15 per fisher annually. In contrast, subsidies in some European nations reach tens of thousands of dollars per fisher. Indian subsidies primarily provide essential support for livelihood fishing, and their cessation could lead to widespread poverty among fishing communities (Sohini Bose, 2021).

2.3.1 India has undertaken various domestic measures to promote sustainable fishing and combat IUU fishing

Traditional Value-System Fishing: For centuries, a significant portion of Indian traditional fishers (around 63 per cent) have adhered to sustainable subsistence fishing practices guided by their traditional value systems. The elimination of subsidies necessitates technical assistance to enhance their livelihoods, employment, and income, aligning with government efforts in this direction (James P.S.B.R., 2014).

The Annual Seasonal Fishing Ban in India: Initiated by Kerala state in 1988 and subsequently adopted nationwide, the annual seasonal fishing ban (SFB) on mechanised vessels in territorial waters and the EEZ (since 2015) is a crucial conservation measure. This 61-day ban on both the east and west coasts has demonstrably protected fish stocks and provided a social buffer for traditional fishers. Studies indicate positive impacts on biomass and net social benefits across coastal states. Beyond the SFB, India implements regulations on minimum catch size, mesh size, boat licensing, catch quotas, and no-take zones, adopting an ecosystem-based approach to fisheries management.

A study found that the increase in biomass due to SFB ranged from five to nine per cent (Narayanakumar R., et al., 2017). The net social benefit was also positive in all the coastal states of India and was estimated to range from INR 110 million in Andhra Pradesh to INR 280 million in Tamil Nadu (Tables 3 and 4). Based

on the performance of the annual SFB in terms of net societal benefits, the states were ranked in the following order: Tamil Nadu, Kerala, Gujarat, Karnataka, and Andhra Pradesh. In addition to the annual SFB, other regulations that India has been implementing include minimum/maximum legal sizes at capture, mesh sizes, boat licensing, motorised boat operation, maximum boat numbers, catch quotas, no-take zones, certification, and an ecosystem approach to fisheries management. India has been proactively working towards a sustainable and vibrant blue economy for decades.

TABLE 3. INCREMENTAL ECONOMIC BENEFIT DUE TO ANNUAL SEASONAL FISHING BAN IN INDIA

Parameters	Kerala	Karnataka	Gujarat	Andhra Pradesh	Tamil Nadu
Catch (t[*]) in 45–60 days (no fishing ban)	49,344	35,900	35,523	22,265	67,015
Catch (t) in 45–60 days (with fishing ban)	53,785	39,131	38,720	24,046	72,377
Catch increment during ban period (t)	4,441	3,231	3,197	1,781	5,361
Increment rate (per cent)	9	9	9	8	8
Value of incremental catch estimated at landing-centre price (lakhs[†])	2,729	1,701	2,129	1,266	2,809
Value of incremental catch estimated at retail market price (lakhs)	4,053	3,781	2,897	1,980	4,620

Source: Narayanakumar (2017)

TABLE 4. ESTIMATED NET SOCIAL BENEFIT DUE TO ANNUAL SFB IN INDIA

State	Incremental benefit (lakhs[*])	Transaction cost (lakhs)[†]	Net social benefit (lakhs)
Andhra Pradesh	1,266	168.58	1,097.42
Tamil Nadu	2,809	12.99[‡]	2,796.01
Kerala	2,729	248.14	2,480.86
Karnataka	1,701	10.92[‡]	1,690.08
Gujarat	2,129	17.24[‡]	2,111.76

Source: Narayanakumar (2017)

India's Department of Fisheries Policy Scheme: The Pradhan Mantri Matsya Sampada Yojana (PMMSY), launched in 2020, focuses on the comprehensive development of the fisheries sector (Jaini Mahima, 2020). It includes budget allocations for infrastructure development, vessel modernisation, and improved deep-sea fishing efficiency. The department facilitates access to technology, such as satellite-based fish location, and implements programs for housing, education, and healthcare in fishing communities, aiming for long-term socio-economic stability.

Countering IUU Fishing: India has actively employed legal measures both domestically and internationally to combat unsustainable fishing practices. In 2017, it revoked permits for foreign vessels due to various malpractices. The Marine Fisheries Regulation and Management Bill (introduced in 2019 and revised in 2021) aims to curb IUU fishing by allowing for the impounding and fining of foreign vessels in the EEZ and imposing regulations on their transit. The government has also authorised

the Indian Coast Guard to prevent IUU fishing, implemented vessel registration and licensing regimes (ReALCraft), issued biometric identity cards to fishers, and formulated the National Policy on Marine Fisheries (2017) to address IUU fishing. Domestic legislation, such as the Territorial Waters Act (1976) and the Maritime Zones of India Act (1981), further empowers agencies to combat IUU activities. Internationally, India is a party to UNCLOS and a member of regional organisations focused on IUU fishing. However, ratifying the FAO's Port State Measures Agreement (PSMA) is still pending. Despite these efforts, IUU fishing persists, resulting in losses for Indian fishers and harming the marine ecosystem. The minimal subsidies provided to Indian fishers can be seen as partial compensation for these losses (Associated News India, 2022).

The Chennai High-Level Principles: During its G20 presidency in 2023, India hosted the Environment and Climate Ministers' Meeting in Chennai, resulting in the adoption of the Chennai High-Level Principles for a Sustainable and Blue/Ocean-based Economy. These voluntary principles, adopted by G20 members, prioritise ocean health, biodiversity conservation, social equity, marine spatial planning, leveraging technology, recognising traditional knowledge, establishing monitoring mechanisms, and strengthening international cooperation. They also address unsustainable exploitation and the links between ocean and climate change, promoting mitigation and adaptation through sustainable ocean-based actions.

By-catch Control: Recognising the significant impact of by-catch, India has developed by-catch distribution maps through the ICAR-Central Marine Fisheries Research Institute to facilitate the implementation of spatial management measures, such as no-fishing zones and conservation networks. This complements traditional fisheries management tools to enhance the sustainability of fisheries. By-Catch Reduction Devices (BRDs) with guiding or separator panels are also being popularised among fishers to separate by-catch by differences in their behaviour or size.

The Indian government is taking various measures to address bycatch in fisheries, including financial assistance for the installation of Turtle Excluder Devices (TEDs) and promoting sustainable fishing practices. Specific by-catch reduction measures include using devices that help separate target fish from other species, as well as promoting the use of by-catch for fish meal and oil.

2.3.2 Specific Bycatch Reduction Measures

Turtle Excluder Devices (TEDs): The Department of Fisheries, Government of India (DoF, GoI) provides 100 per cent financial assistance for the installation of TEDs on fishing boats, with the cost shared between the Centre and the State/UTs.

Fish Meal and Fish Oil (FMFO): By-catch and waste fish, when landed, are being increasingly utilised for FMFO production, reducing waste and potentially increasing economic benefits.

International and Community Cooperation: The government is collaborating with international organisations, such as the Bay of Bengal Programme (BoBP), and engaging with fishing communities to promote bycatch reduction efforts (Trade and Agriculture Directorate, Fisheries Committee, 2023).

Government Schemes: The PMMSY, launched in 2020, is a major driver, providing financial assistance for livelihood and nutritional support during fishing bans, as well as insurance coverage. Fisheries Insurance and Finance: India is increasingly focusing on fisheries insurance and finance to mitigate risks for small-scale fishers. The government is collaborating with insurance agencies to design affordable products, including weather-index-based plans. Institutional financial instruments are expanding their reach, leveraging India's advancements in digital banking to improve financial inclusion for fishing communities (Press Trust of India, 2022).

Fisheries insurance and finance for small-scale fishers are gaining traction, primarily through schemes implemented by the Pradhan Mantri Matsya Sampada Yojana (PMMSY). While initiatives aim to provide financial support and insurance coverage, challenges remain in ensuring broad accessibility and effectiveness.

The Group Accident Insurance Scheme (GAIS) under PMMSY offers insurance to fishers, with the National Fisheries Development Board (NFDB) implementing the scheme through Oriental Insurance Company Limited (OICL) (Shinoj Parappurathu, 2023).

Financial Assistance: Financial support, including livelihood and nutritional support, is provided to small-scale fishers during fishing ban periods, benefiting families from both marine and inland fisheries. While insurance coverage is increasing, challenges persist in ensuring adequate and affordable insurance services for all fishers, particularly in addressing specific risks such as climate change impacts and maritime accidents. Innovative approaches, including the use of technology and the development of customised loan products, are being explored to improve access to finance and insurance for small-scale fishers.

The Kisan Credit Card (KCC): The KCC scheme has been extended to include fishers and fish farmers in India, providing them with working capital for their fisheries activities. As of March 25, 2025, a total of 4,63,492 KCCs have been issued to fishers and fish farmers with a loan amount of Rs. 2982.58 crore across all states and union territories (Government of India, 2022).

Fishers, fish farmers, individual or group beneficiaries (including Self Help Groups, Joint Liability Groups, and women groups) who own or lease fisheries-

related assets are eligible. The KCC provides short-term credit to meet the working capital needs of inland and marine fisheries, aquaculture, and other related activities. The credit limit for existing KCC holders is Rs. 3 lakhs, including fisheries activities, with a new card limit of Rs. 2 lakhs. The interest rate for farmers is 7 per cent per annum, with a 1.5 per cent annual interest subvention from the Government of India. Additional incentives are available for prompt repayment. The Reserve Bank of India (RBI) issued guidelines for KCC issuance for fisheries on February 4, 2019, which were subsequently revised on May 18, 2022. The KCC scheme for fisheries is monitored by banks, which also conduct field visits to assess the progress of the units. For loans up to Rs. 2 lakhs, collateral security is not required. KCC holders can also benefit from other programs, such as the Fisheries and Aquaculture Infrastructure Development Fund (FIDF).

India's current position regarding Indian Fisheries in the WTO is centred on advocating for a balanced and equitable approach to fisheries subsidies, keeping in mind the interests of its large fishing community and the principles of sustainable development.

2.3.3 Core Principles of India's Position

Special and Differential Treatment (S&DT): India consistently emphasises the need for S&DT for developing countries and Least Developed Countries (LDCs) in any WTO agreement on fisheries subsidies. This is to protect the livelihoods and food security of their small-scale and traditional fishers. India argues that these nations need subsidies to develop and diversify their fisheries sector.

Common But Differentiated Responsibilities and Respective Capabilities (CBDR-RC): India advocates that countries with a history of providing large-scale subsidies and engaging in industrial fishing, which have significantly contributed to the depletion of global fish stocks, should take greater responsibility in curbing harmful subsidies. They should adhere to the "polluter pays principle."

Focus on Livelihoods: With a substantial portion of its fishing community living below the poverty line, India stresses that subsidies are vital for its sustenance and should not be equated with the harmful subsidies provided by industrialised fishing nations that lead to overfishing (Vivekanandan E, 2018).

Moratorium on Distant Water Fishing Nations (DWFNs): India has proposed a moratorium on subsidies granted by DWFNs for fishing activities beyond their Exclusive Economic Zones (EEZs) for a period of at least 25 years. This initiative aims to mitigate the impact of large-scale industrial fishing on the resources of coastal nations.

Against Overfishing and IUU Fishing: India supports the WTO's efforts to eliminate subsidies that contribute to Illegal, Unreported, and Unregulated (IUU)

fishing and the fishing of overfished stocks. It believes this will help protect the fisheries resources of coastal countries, such as India.

Sovereign Rights over EEZs: India maintains that its sovereign rights for the sustainable management of fisheries within its EEZ, as per the United Nations Convention on the Law of the Sea (UNCLOS), should be duly recognised and protected (Press Trust of India, 2023).

Addressing Overcapacity and Overfishing: While committed to addressing overcapacity and overfishing, India argues that the current approaches often overlook the intensity of subsidies and factors like the size of the EEZ, coastline, and the number of small fishers. It has suggested alternative criteria like 'per capita distribution of subsidies' (Krishnan and Badri Narayanan Gopalakrishnan, 2023).

Low Per Capita Subsidies: Despite its large fishing population, India's fisheries subsidies per fisher are remarkably low compared to many developed nations. India argues that to effectively address overfishing and capacity issues within the WTO framework, a "per capita distribution of subsidies" approach is essential. Highlighting the disparity, India provides a modest USD 35 per fisher annually, whereas some European countries offer as much as USD 76,000. In its submission, "Designing Disciplines For the Overcapacity and Overfishing Pillar: A case for intensity-based subsidies approach," India contends that focusing on the total amount of subsidies is misleading. This aggregate view fails to account for the intensity of support and disproportionately impacts developing countries with large fishing populations and limited capacity, unlike nations with already established industrial fleets heavily subsidised by historical actors. India emphasises that future WTO disciplines should consider per capita subsidisation for equitable reasons, asserting that historical subsidisers have accrued a "subsidy debt" to developing and least developed countries due to their disproportionate historical use of resources. India is committed to protecting its small and artisanal fishermen. It has submitted multiple proposals to the WTO, where discussions are ongoing to regulate subsidies that contribute to overfishing and overcapacity, following a 2022 agreement on illegal, unreported, and unregulated fishing. India points out that countries like Norway, China, Japan, and the US heavily subsidise their distant water fishing fleets.

TABLE 5. WTO MEMBERS' ANNUAL FISHERIES SUBSIDY (USD) (2025)

Country	Amount of Subsidy
India	274 million
China	7.2 billion
European Union	3.8 billion
United States	3.4 billion
Korea	3.1 billion
Japan	2.8 billion

Source: Suneja (2025)

2.3.4 Implications for Indian Fisheries

Protection of Small-Scale Fishers: India's stance aims to safeguard the interests of its millions of small-scale and traditional fishers who depend on fisheries for their livelihoods and food security.

Resource Sustainability: By advocating against harmful subsidies and IUU fishing, India aims to protect its marine resources from depletion due to unsustainable practices, particularly by large industrial fishing fleets.

Leadership Role: India aims to position itself as a leader among developing nations in these negotiations, championing the cause of coastal communities affected by foreign industrial fishing.

The primary objective of Fish 2 is to curb subsidies that lead to overfishing and overcapacity (Suneja, 2025). In this edition, India's focus is on sustainability rather than market access as a proxy for sustainability.

III

CONCLUSIONS

Overfishing and IUU fishing, particularly by large-scale foreign vessels in India's EEZ, pose significant challenges to Indian fishers and coastal communities, leading to declining catch-to-effort ratios, especially for artisanal fishers who are vital for food security and export earnings. India's proactive domestic measures, including seasonal fishing bans, the National Marine Fisheries Policy, anti-overfishing legislation, and the PMMSY program, demonstrate its commitment to marine conservation and sustainable management. The support from research institutions further aids in addressing these challenges. India continues to strive for the financial sustainability of its fishers through innovative approaches and international cooperation, as evidenced by its engagement with FAO's PSMA and the G20's commitment to combating IUU fishing. Despite these efforts, IUU fishing within and near the Indian EEZ remains a critical issue that requires strong condemnation and effective action by the WTO. Equitable solutions within the WTO framework must consider the unique circumstances of developing nations like India, ensuring that regulations do not disproportionately impact small-scale livelihood fishers while effectively addressing the detrimental practices of large industrial fishing fleets. The 14th Ministerial Conference (MC14) of the World Trade Organisation (WTO) will be held in Cameroon from 26 to 29 March 2026.

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