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## The Role Market Based Instruments To Ensure Fisheries Sustainability In India: A Review

Saranya A Sankar<sup>1\*</sup> and Mini Sekharan N.<sup>2</sup>

<sup>1,2</sup>School of Industrial Fisheries, Cochin University of Science and Technology, Foreshore Road, Cochin – 16 Email: saranyaasankar37@gmail.com

**\*Corresponding Author:** – Saranya A Sankar

\*School of Industrial Fisheries, Cochin University of Science and Technology, Foreshore Road, Cochin – 16 Email: saranyaasankar37@gmail.com

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### ABSTRACT

Sustainable fisheries certification is becoming increasingly important in international fisheries and marketing. Ecosystem-based fisheries management and the utilization of market-based mechanisms offer potential strategies for advancing the cause of sustainable fisheries. Fisheries certification is frequently cited as a market-oriented strategy for ensuring the sustainability of resources. This study examines the role and advantages of market-based instruments (MBIs) in fostering sustainability in India's fisheries sector. MBIs include certifications and eco-labelling schemes, employ market mechanisms to promote responsible fishing practices and guarantee the long-term viability of marine resources. Among the several certificates available, the MSC certification is now the dominant certification in India. This article analyses the implementation of sustainable fisheries certification programmes in India, specifically focusing on the successful certification of the Ashtamudi short-neck clam and the ongoing Fishery Improvement Projects (FIPs). The results illustrate that MBIs yield economic and environmental advantages, including expanded market entry, heightened stability, and improved stewardship. This study adds to the discussion on sustainable fisheries management and the worldwide trend towards eco-friendly seafood consumption. It highlights the significance of continuous collaboration among stakeholders to attain long-term sustainability in India's fisheries.

**Keywords** Fisheries, Sustainability, Eco-labelling, Market Based Instruments

### Introduction

Fisheries and seafood are crucial in promoting food security, poverty alleviation, equitable development, and the sustainable use of marine resources (Defoe and Castilla, 2012; Begossi, 2010; Orensanz and Seijo, 2013; FAO, 2014a). The maritime sector encounters various obstacles that complicate the efficient management of resources and the protection of the environment. Conflicts arise due to competing uses, such as fishing, shipping, tourism, and conservation, which result in disagreements over how resources should be allocated. The expansive and intricate marine environment poses challenges in collecting complete data on ecosystems, animals, and human influences. Differences in jurisdiction hamper the enforcement of regulations. Marine resources are being excessively exploited due to unsustainable practices, habitat destruction, pollution, and climate change. This is posing a significant danger to biodiversity and the overall health of marine

ecosystems. Pollution, marine trash, oil spills, and habitat loss have detrimental effects on ecosystems, causing harm to biodiversity, water quality, and coastal populations. Invasive species cause disturbances in ecosystems and modify patterns of biodiversity. Climate change worsens the problems associated with increasing sea temperatures, ocean acidity, and extreme weather events that impact reefs, fisheries, and communities. Monitoring remote places presents difficulties due to resource constraints and the cross-border nature of the challenges. Disjointed governance and sector-specific approaches impede coordinated endeavours. Economic activities place strain on resources, resulting in tensions between the objectives of conservation and development. To tackle these difficulties, a comprehensive and unified approach is needed, which involves engaging stakeholders, conducting scientific research, coordinating policies, and implementing effective regulatory and market-based tools (US Commission on Ocean Policy, 2004). In the contemporary context of environmental consciousness and global uncertainties about the sustainability of marine resources, sustainable fisheries certification has arisen as a crucial market instrument for assuring responsible fishing practices and safeguarding the future of global seafood sectors.

Market-based instruments (MBIs) have been identified as a potentially effective mechanism in wild-caught fisheries to tackle the shortcomings of conventional governance in sectors such as global fisheries and global fishery markets (Allison, 2001; Di Leva, 2002; Ward, 2008). Market-based instruments (MBIs) are designed to promote sustainable behavior by utilizing market signals rather than explicit commands (TEEB, 2009; Pirard, 2012). Market-based instruments (MBIs) are also recognized for their ability to provide a flexible, adaptable, and economically efficient strategy, which has gained support from the commercial sector (EU Commission, 2007; Stavins and Whitehead, 2008; Gómez-Baggethun and Muradian, 2015). The effectiveness of market-based techniques in reaching sustainability results remains largely unknown, as indicated by previous studies conducted by Kaiser and Edwards-Jones (2006), Jacquet and Pauly (2007), and Ward (2008). Wessels et al., 2001 states that the primary objective of product certification is to prevent and eliminate illegal, unreported and unregulated fishing in accordance with the 2001 FAO International Plan of Action. There are around 30 fisheries certification programs available globally (Parkes et al., 2010). The current change in consumer preferences and industry norms has resulted in the emergence of numerous sustainable certifications that are widely recognised worldwide each striving to uphold robust ecological principles and responsible fishing practices. These certifications include renowned organisations like the Marine Stewardship Council (MSC), Friend of Sea (FOS), Sustainable Fisheries Partnership (SFP), and Monetary Bay Seafood Watch, among others (Macfadyen, & Huntington 2007).

The Indian fish business is currently undergoing a significant transformation, with a primary objective of obtaining sustainability certifications in order to get access to high-end clients in international markets. The attainment of these certificates not only facilitates the industry's access to profitable global markets, but also coincides with overarching objectives pertaining to the sustainable management of resources. This study seeks to examine role and benefits of market-based instruments (MBIs) in promoting sustainability in India's fisheries sector. In order to accomplish this goal, the study will undertake a comprehensive review and analysis of existing literature, reports, and data related to market-based instruments (MBIs) and sustainable fisheries certification programs in India. The aim of this study is to get a thorough comprehension of how market-based mechanisms can contribute to the sustainable management of fisheries in India. The study intends to provide insights that can improve policy-making and industry practices, ultimately supporting the sustainable use of marine resources.

**Market Based Tools for Fisheries Sustainability**

Market-based instruments (MBIs) are utilised to effectively manage marine resources. MBIs are gaining popularity among policymakers as effective instruments for fostering the alignment of economic and environmental priorities. Market-based instruments (MBIs) are policy measures that affect outcomes by influencing costs and profits within a market framework. These instruments are specifically created to ensure that economic incentives are aligned with environmental objectives, so encouraging the practice of sustainable resource management. These tools set clear prices for resources or products that have social or environmental consequences, impose limits on resource usage, and may involve permits or rights that may be bought, sold, or exchanged. The objective of this method is to limit the utilisation of resources while still enabling the possibility of trading based on market conditions. In addition, these policy activities encompass measures implemented inside current markets to enhance efficiency and optimise the advantages derived from the utilization of resources (The Allen Consulting Group, 2006).

Wild-caught fisheries are increasingly applying certifications and grading systems as effective market-based tools to provide transparency and guarantee sustainability (Deaton, 2004). Integrating ecosystem services directly into market-based instruments could potentially enhance ecosystem-based fisheries management and promote the sustainability of wild-caught fisheries. Utilizing market-based mechanisms shows potential as an effective strategy to encourage sustainable fisheries (Murphy et al., 2021).

MBIs like certifications and ranking systems promote wild-caught fisheries sustainability. Growing non-government private sector involvement indicates a trend towards cooperative, market-oriented methods. Private companies improve seafood resource viability through sustainable sourcing, eco-friendly production, certification programs, and responsible consumption, affecting market dynamics and supply chains. This collaboration with NGOs and stakeholders emphasizes environmental stewardship and sustainable fisheries management (Leadbitter, 2009). NGOs financially support certification and promote sustainable seafood consumption, persuading businesses and the government to reform fishing techniques and regulate repercussions (Pérez-Ramírez et al., 2012a, 2012c; Espinosa-Romero et al., 2014).

Market-based instruments (MBIs) provide substantial advantages in increasing sustainability in wild-caught fisheries. They offer financial incentives to encourage the adoption of sustainable practices, resulting in improved resource management and decreased environmental impact. Obtaining certification through MBIs increases the ability to enter the market and the demand for seafood that is produced sustainably. This is achieved by providing transparency and assurance that sustainability requirements are met, which in turn builds customer confidence. MBIs, or Market-Based Instruments, contribute to the preservation of marine ecosystem services, the conservation of biodiversity, and the adherence to ecosystem-based fisheries management (EBFM) principles by considering the needs of the entire ecosystem. In addition, they promote collaboration among individuals or groups with an interest or involvement in a particular issue, supporting open communication, the exchange of information, and joint efforts towards the sustainable management of fisheries (Murphy et al., 2021).

**Market-Based Instruments for Sustainable Fisheries in India: Roles and Benefits**

Concern persists on a global scale regarding the condition of the world's fish stocks. According to FAO (2008), 33.1% of fish stocks are harvested at ecologically unsustainable levels and 59.9% are sustainably fished to their full capacity without room for expansion.

India's fisheries are encountering similar challenges to the worldwide decrease in fish populations. The allocation of government funds towards cutting-edge technology and infrastructure has resulted in an increase in seafood production. However, this has also put significant pressure on fishery resources. The contributing reasons to the issue include unrestricted access, excessive capacity (56% across different gears and regions), insufficient legal and policy frameworks, limited ability to monitor and surveillance, and lack of statistics on sustainability (Mohamed et al., 2017). Although several tropical species demonstrate resilience, important commercial stocks such as perches, croakers, and sharks are being overfished or are in a critically reduced state (Korokandy, 2008; Karnad & Karanth, 2013; CMFRI, 2017). Fishing also has ecological impacts on important species and habitats, and competition for resources can result in disputes that threaten the food security of populations that depend on them.

Eco-labelling is an effective approach to strengthen regulation in response to increasing demand for fishery products and the pressure on natural resources (Mohammed et al., 2017). The major driving force to uptake fisheries certification is to maintain current market demand in the exporting countries especially European markets. Political motivation is directed to seek certification and enhancing market share was a major motivation to pursue certification (Ramirez et al, 2016). External drivers and sociological factors, effectiveness of tenure rights, structure of value chain and economic benefits and the social capital fisher's organization willingness to engage in fisheries improvement projects (FIP) has been identified by several studies as key factors to transfer towards sustainability (Gutiérrez et al., 2011; McCay et al., 2014; Defeo et al., 2014; Castrejón and Defeo, 2015).

The advantages of fishery certification vary depending on the commercial and societal circumstances. The certification of Mexican rock lobster in Latin America resulted in increased community empowerment (Pérez-Ramírez et al., 2012a), while Argentinean fisheries were able to continue accessing the European market (Pérez-Ramírez et al., 2012c). The main advantage of certification is the market benefits it brings, which in turn encourages the practice of sustainable fishing (Gudmundsson and Wessells, 2000). The use of MSC certification helped to alleviate the negative effects of the global recession (MSC, 2009). Eco-labelling schemes promote conservation by incentivizing environmentally sustainable actions (Kaiser and Jones, 2006). Wakamatsu & Wakamatsu (2017) emphasised the advantages that small-scale fisheries can gain, such as improved market opportunities, higher pricing, more visibility, enhanced branding, emphasis on scientific initiatives, higher price premiums, and boosted confidence among fishers. Research conducted by the Food and Agriculture Organisation (FAO) observed that developing nations have not fully utilised the advantages of certification in the French and Italian markets (FAO, 2008). Eco-labelling facilitates entry into the expanding market for environmentally-friendly products by promoting direct and reliable supply connections with purchasers from industrialised nations.

The Indian government has implemented several initiatives to preserve coastal and marine resources in India. Jurisdiction over fisheries is jointly exercised by the central and state governments. The Department of Animal Husbandry, Dairying, and Fisheries (DAHD&F) works together with various stakeholders, such as state governments, the Marine Products Export Development Authority (MPEDA), the Export Inspection Agency (EIA), the Fisheries Survey of India (FSI), research organisations like the Central Marine Fisheries Research Institute (CMFRI) and the Central Institute of Fisheries Technology (CIFT), the Worldwide Fund for Nature (WWF), the Seafood Exporters Association of India (SEAI), fishermen organisations, exporters, and NGOs, to implement Fisheries Management Plans that include eco-labelling (NAAS, 2012). The Department of Fisheries is actively advocating for sustainable development through a range of programmes and acknowledges the

significance of safeguarding ecosystems and optimising resource utilisation (PIB, 2021). The Department of Animal Husbandry, Dairying, and Fisheries (DAHD&F) issued the 'National Policy on Marine Fisheries' (NPMF, 2017) with the aim of attaining national, social, and economic objectives, promoting sustainable livelihoods, and enhancing the welfare of the fishing community (PIB, 2023). The inclusion of fisheries certification was implemented as a strategy to achieve SDG 14 in 2020, as stated in the India VNR report of 2020.

The Ashtamudi waters short-necked clam was awarded MSC certification in 2014, making it the first fisheries resource in India to receive this recognition. This accomplishment was the outcome of a cooperative endeavour comprising CMFRI, WWF, the State Fisheries Department, and the indigenous fishing community. An Ashtamudi short-neck clam fishery management council was established to ensure compliance with the MSC requirements in India (Mohammed and Malayilethu, 2015). According to the SSNI (2021), a total of 10 species have been selected for the Fishery Improvement Project (FIP) and are currently undergoing a thorough review. A group of experts in India's marine fisheries industry has chosen ten fisheries that have substantial commercial worth in global markets. The FIP ratings categorise the deep-sea shrimp trawl, shrimp and cephalopod trawl of Kerala, and Palkbay blue swimming crab as A in the comprehensive category, while the India grouper gillnet and trawl are classified as C. India Palk Bay is a marine expanse. The flower prawn and threadfin bream species that are part of the Fishery Improvement Project (FIP) in India are currently not actively participating (FIP,2021). The fisheries improvement project (FIP) focused on strengthening the skipjack tuna fisheries in the Lakshadweep Islands has ultimately concluded. The collaboration between WWF-India and the International Pole and Line Foundation was established exclusively for the Lakshadweep project (The Hindu, 2023). FIP ratings reflect different degrees of achievement, with certain fisheries attaining high ratings while others necessitate government interventions to progress in the certification process. The Seafood Exporters Association of India (SEAI) is currently conducting preliminary evaluations and formulating fishery improvement initiatives and strategic blueprints in order to obtain certification from the Marine Stewardship Council (MSC) for various marine catches along the Indian coastline (The Hindu, 2023).

## **Conclusion**

The Sustainable fisheries certification is enabled to move towards sustainability of capture fisheries and together elements of the market, industry, environmental interests and communities and are intended to reduce ecological impacts and improve the ecological-friendliness of practices used in production, harvesting or growing of products, with a view ultimately increasing the sustainability of all products across the market. The application of market-based instruments (MBIs) in India's fisheries sector shows potential for attaining sustainable fisheries management. These instruments, such as certifications and eco-labelling programmes, utilise market forces to encourage ethical fishing methods and guarantee the sustainable existence of marine resources. A framework for the sustainable growth of the fishing industry has been established via the joint efforts of the government, corporate sector, NGOs, and other stakeholders. This framework seeks to not only improve market access and economic advantages, but also highlights the significance of environmental stewardship and ecosystem preservation.

India's dedication to sustainability is evident via the execution of measures like the National Policy on Marine Fisheries and the incorporation of fisheries certification to fulfil Sustainable Development Goals. The certification of the Ashtamudi short-neck clam and the ongoing Fishery Improvement Projects (FIPs) showcase the capacity of Indian fisheries to attain global acknowledgment for their

sustainable methods. Nevertheless, in order to fully achieve the advantages of MBIs, it is essential to tackle obstacles such as overcapacity, insufficient legal frameworks and gaps in data.

The Latin American fisheries experience highlights the diverse advantages of certification, ranging from community empowerment to market entry. Certification in India offers a means to access lucrative global markets, bolster the economic stability of the fisheries industry, and safeguard the long-term viability of marine resources. The ongoing assistance and cooperation of all parties involved will be essential in overcoming challenges and guaranteeing the effectiveness of MBIs in advancing sustainable fisheries in India. Ultimately, the incorporation of MBIs into India's fisheries management policy presents a substantial opportunity for attaining sustainability. MBIs, or Market-Based Instruments, can help promote the long-term health and productivity of India's marine ecosystems by encouraging responsible fishing practices, improving resource management, and boosting market dynamics. In order to ensure a sustainable future for India's fisheries and the communities that rely on them, it is crucial to prioritise the implementation of sustainable practices and the integration of new market-driven solutions as the fisheries sector continues to develop. Innovative strategies are required to retain and access new market for India as it has a significant role for the countries in region in terms of employment, food security and trade.

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