



# REDEFINING THE SMALL-SCALE FISHING SECTOR IN THE LIGHT OF ETHICAL, SOCIAL AND ECOLOGICAL CONSIDERATIONS IN INDIA

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**Abstract--** Globally the small-scale fishing sector is characterized in terms of its socio-economic features, the scale of activities involved, and the technique used in fishing. Although many adjectives such as subsistence, traditional, artisanal, and inshore are used to denote the small-scale fishing sector, none of these adjectives justify the sector fully. In some countries the small-scale fishers are defined in terms of the traditional gears used in fishing while in some it involves fishing boats fitted with inboard and outboard motors for propulsion while in some, they emphasize on the sustainable fishing practices of the industry and still others argue the backwardness and poverty of the industry as major features distinguishing the small scale fishers. Of particular interest is the issue of size i.e., How small is or should small-scale fishing vessel need to be?

**Keywords:** *Traditional fishers, Small-Scale fishers, Fishing Vessels, Indian Fisheries Sector.*

## INTRODUCTION

Fishing industry is generally classified on the basis of the purpose of fishing namely the commercial fishing industry, subsistence fishing, and recreational fishing. The commercial fishing industry works in all types of waters whether inshore, mid-water, or deep sea and using small traditional fishing boats to large mechanized vessels. The commercial fishing industry is divided broadly into two categories viz. capture fisheries and culture fisheries. Capture fishery is further classified on the basis of the area, target species, gear, and the size of fishing vessels used tailoring to the economic, regional, and cultural considerations. Further the primary form of capture fisheries can be divided into three broad categories viz industrial fisheries using large commercial fishing vessels, small-scale labor-intensive fishers employed in commercial or subsistence fisheries, and traditional or artisanal fisheries which are often equated with the small-sale fishing industry. Culture fisheries refer to the rearing of selected breeds of fish resources in confined areas to get maximum yield.

The fishermen or fishers play a key role in small-scale subsistence fishing whereas the role is replaced by labor-saving machinery in large-scale industrial fishing sector. Here the marine living resources are utilized and exploited at different levels. Another categorization of the fishing industry is founded on the type of marine environment, the method of harvest, and the catch of specific marine species or organisms.

The term fishery not only refers to the raw marine resources but includes the entire activities ancillary thereto. These activities include the men, capital, and technology involved in the primary, secondary, and territory phases of catch, processing, and trade. Drawing from Flaaten's findings, 'the primary fishing industry varies greatly from place to place depending upon the historical evolution, developments and on current economic and socio-political factors. Thus it may be noted that the primary fishing industry consists of people directly engaged in the harvesting of fishery resources - the fishermen. The processing of fish in all advanced forms such as filleting, freezing, curing, and canning falls under the ambit of second phase of the fishing industry. Finally, the marketing and transportation of fish resources are linked to the tertiary sector. Therefore, it may be inferred that the commercial fishing industry has an important linkage between the sources of demand, supply of labor, and capital. The exploiters at the production, exchange, and distribution of fishery resources can thus be termed an



industrial unit in itself. The fishing industry stimulates the growth of many subsidiary industries like ice plants, cold storage, vessel building and repair garages, fishing gear manufacturing units, and transportation services.

#### GENERAL CLASSIFICATION OF FISHING VESSELS

The overall number of fishing vessels in the world is around 4.56 million consisting of vessels ranging from small undecked and motorized boats to large-scale industrial vessels. The majority of these are small vessels. Asia has the largest percentage of the fishing fleet with a global total of 18 percent in 2018 followed by Africa and the Americas. Worldwide over 67,800 fishing vessels of 24 meters in Length overall is estimated by the FAO world fisheries statics of 2020. Fishing vessels can be classified according to their structural characteristics and based on the fishing gear used. The size of a vessel is commonly expressed in terms of length as 'large', 'medium sized', and 'small-scale' directly corresponding to the area of operation of the vessel. Principally, large vessels operate beyond the EEZ and in the High Seas; the medium-sized vessels within the EEZ whereas the small vessels often operate within the freshwaters or close to the coast. The FAO International Standard Statistical Classification of Fishing Vessels classifies fishing vessels into two broad categories, namely fishing vessels engaged in fishing activities and non-fishing vessels used for research and survey, patrol, fishery training, and other fishing-related activities.

The FAO of the United Nations in its technical paper on the Definition and classification of Fishery vessel types has closely defined the term 'Fishery vessels', 'Fishing Vessel', and a 'Non- Fishing Vessel' based on the generally accepted practice of the gear used and employed the vessels for the catch. Fishery vessels means any mobile floating object of any size and kind used for catching, transporting, landing, preserving, and processing fish, shellfish, and other aquatic animals, in freshwater, brackish water, and marine areas. It also includes the vessels that perform other functions such as protecting, rendering assistance, supplying, and conducting research or training. Fishing vessels include those engaged in catch operations as distinguished from fishery vessels and other non-fishing vessels.

Based on the technology used for propulsion, the general arrangement of deck layout, and the category of gear used for catching fish and other aquatic organisms, the vessels can be classified into mechanized, motorized, and non-motorized fishing vessels. The major category of fishery vessels around the world has been classified by the FAO technical paper on the definition and classification of fishery vessels as Trawlers with an overall length of 51mm and above, Seiners ranging from open boats and canoes up to large ocean-going vessels used for the catch of pelagic fish, Dredgers that collect mollusk from the bottom, lift netters, Trap Netters, Liners and other non-fishing vessels used in research and training.

#### **Small-Scale Fisheries Sector– A Misleading Metaphor**

Contextually traditional fishers are often referred to as small-scale or artisanal fishers and the terms are used interchangeably in different countries. It is important to note, however, that there is no all-encompassing definition for SSF and the existing definitions are quite variable. The possible way to start the discussion on the small-scale fishery sector is through the explanation of Thomson's table, published in 'The Worlds Two Marine Fishing Industries' 1980, which distinguishes the small-scale fishing sector from the large industrial fishing sector.

According to Thomson, there are two distinct sectors within the marine fisheries of the world. One is composed of mainly company-owned large-investment fishing units and the other of chiefly privately owned or privately managed small-scale units. The common terms for these two important sectors are "deep-sea" and "inshore" or "commercial" and "artisanal". Thomson uses the following criteria to distinguish the small-scale fishing industry. This includes the number of fishers employed, the marine



fish caught for human consumption, the capital cost of each job on fishing vessels, the marine fish caught for industrial reduction to meal and oil, fuel oil consumption, fish caught per ton of fuel consumed and the fishermen employed for each \$1 million invested in fishing vessels. He further states that distinguishing a small-scale fishing vessel from the area of operation alone would not suffice as many large boats fish within the territorial waters and certain small-scale fishing vessels venture out into the deep sea. To classify a fisher according to the commercial success of his venture also wouldn't help in distinguishing the SSF sector. It is, however, possible to distinguish the SSF sector as being exclusively engaged in inshore fishing, harvesting the coastal resources, and using limited technology.

Globally the definition of what amount to artisanal, traditional, and small-scale has both economic and social overtones. The majority of the SSFs are considered to be found in developing nations, a considerable number of SSFs exist in developed nations as well except for the use of sophisticated fishing gear. In Malaysia, small-scale fishers refer to the traditional fishers who employ traditional gears of fishing such as hook and line, bag nets and traps, seine nets, and other specific fishing tools. The Department of Fisheries in Thailand defines SSF based on boat gross tonnage which includes inboard-powered boats of 10 GT or below. The Vietnamese SSF refers to both capture fisheries and aquaculture operating near the shore. In Latin America and the Caribbean SSF is defined based on the general characteristics such as the size of the boats, mobility of the fleet, method of production, the levels of organization, and the distribution of products. Thus the definition has a broad brush that ranges from the 3-meter dugout canoe employing one crew in Madagascar to the 16-meter plywood or Fiber – reinforced plastic boats employing 40 crew members onboard with outboard fitted engines in India.

The United Nations FAO in its second session on the working party on SSF in Bangkok, 2004, formulated a definition describing the sector based on its dynamic characteristic features. The definition considers all the possibilities that describe the small-scale fishery sector but it fails to address the technological dimension, the fishing gear they use, and their area of operation. An equally interesting definition of small-scale fishers is, being subject to external control of those who hold power in the coastal community such as moneylenders, brokers, religious figures, political leaders, and other economically strong persons. Even to this day, family firms are very common among the traditional and SSF where the fishing boat is owned by the head of the family and is handed down from generation to generation.

The Voluntary Guidelines for Securing Sustainable Small-scale Fisheries in the Context of Food Security and Poverty Eradication of 2015, which is the exclusive international instrument that seeks to guide, protect and inspire legislative and regulatory provisions for the small-scale fisheries sector, acknowledges the diversity in the small-scale fishing sector and recognizes that there cannot be an all-encompassing standard definition for the SSF sector. Therefore, the guideline proposes to identify the class of people who fall under the category of Small scale fishers.

Nevertheless, the definition and the term used for SSF differ by the technique used and the size of the vessel, e.g. one-manned canoes and catamarans in poor developing countries to 20 m seiners, trawlers, and longliners in developed countries. Of central concern, therefore, is to look into how most of the SFF work, the technique used, and the scale of activity as opposed to industrial fishing. Several studies defining SSF conclude with similar characteristic features which range from subsistence to other small-scale vessels of <24m or below, decked or undecked. The SSF exploit the same pelagic and demersal fish stocks as that of the large-scale commercial fisheries with the exception that they are mostly employed within the coastal and territorial waters.

Even though characterized as low in terms of technology and mechanization, the SSF harvests more than the total catch of the large commercial marine fisheries. According to the FAO 2018 review, there



are about 67800 fishing vessels of 24 m LOA globally in 2018, and about 82 percent of motorized fishing vessels of 12 m and less LOA. The majority of the small vessels are undecked and roughly 3 percent of them were motorized. Asia accounts for the largest fishing fleet of small undecked and motorized vessels followed by America, Oceania, Europe, and North America. SSF employs more than 90 percent of the capture fisheries and fish workers of the world undertaken by men and women alike.

SSF comprises all the activities in the value chain of pre-harvest, harvest, and post-harvest and plays a significant role in providing food security for the local, national, and international markets. They are characterized as dynamic and diverse and are often linked to the local communities. They perform fishing-related activities such as processing and marketing which taken as a whole, support the local economy and thereby boost the overall national economies by income generation. Traditionally fishing represents a way of life for the local SSF and therefore the health of the aquatic ecosystems and the adjacent fishery resources of the land are critical for their livelihood support. To this end, Traditional, artisanal, and subsistence fisheries can be considered as subsectors of small-scale fisheries.

### ***Characteristic Features of Small - Scale Fishery Sector***

It is generally accepted that there is no definite or static definition of the small-scale fishery sector; it can be understood with the help of the attributes culled out from the existing vast literature available on SSF. Based on the analysis it may be summed up that the SSF may likely include diverse characteristic features. They are often characterized as using relatively small crafts powered with low technology, gear, and low capital intensity. They cover all aspects of the value chain which includes the pre-harvest, harvest, and post-harvest fishing activities.

The fishermen have an instinctive knowledge and understanding of the coastal aquatic setting and the fishery resources. SSF is strongly anchored in coastal local communities and reflects the historic links to adjacent fishery resources, traditions, and values supporting the social structure. Although they are integrally connected to the local hinterland market, and fish in the near shore zone they also cater to the export demands. The fishers work as share workers or owner-operators of their fishing units and have considerable dependence on middlemen for marketing and loans. In contrast with other sections of society, SSF is relatively socially, economically, and socially disadvantaged with low mobility out of fishing.

These characteristics however are not absolute as the SSF sector is in a process of dynamic evolution which is influenced by the changes in patterns of fisheries adopted across the world.

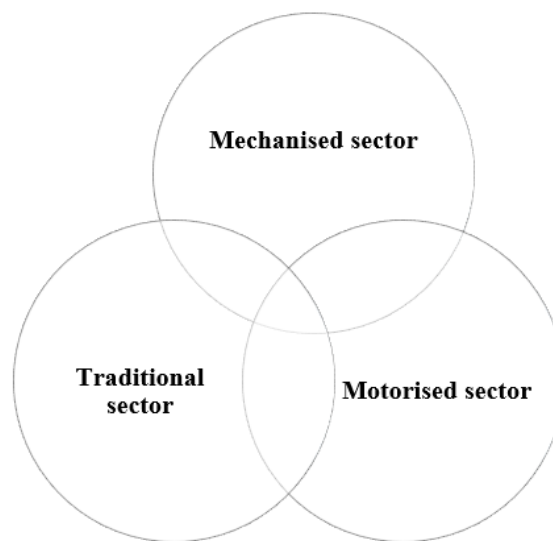
### ***Small-Scale Fisheries – A Legal Vacuum***

The FAO has developed practical solutions to define and distinguish the small-scale fishery sector over a while. As inferred earlier, none of these definitions are conclusive as the sector is diverse and has manifold features and operating spheres across the world. To bring the sector under the regulatory framework it is necessary to have an understanding of what, how and for whom the industry works. In this research study, the SSF may be understood as involved in both the traditional or artisanal and motorized sectors of fishing.

Further small-scale fishers are those who belong to the community by birth and conduct subsistence fishing activities. The SSF sector involves those fishers who fish and cruise manually and those who fish manually and cruise using fixed motors. They are employed within the operation limits of the coastal waters and the volume of catch and the scale of activity is comparatively less than in the mechanized fishing sector. Finally, they employ sustainable fishing activity and have less destructive effects on the coastal ecosystems.



Figure 1 depicts the operational area and catch of the three basic sectors of fishing- the mechanized sector, the motorized sector, and the traditional sector. It may be inferred that the three fishery sectors find themselves in conflicting interests over the fishery resources within the EEZ of the coastal state. Several issues arise following this trend of fishing activity. These include overfishing, loss of fishing days, poverty and low income, and conflicts on fishing grounds to name a few that affect the small-scale fishers and the millions they represent. A straight-jacket demarcation of the fishing grounds may not be possible to secure the SSF sector, but the regulatory framework should include mechanisms that can help in mending the loss that the large-scale industries knowingly and unknowingly inflict on the SSF.



**Figure: 1**

### ***Contemporary Developments in the Small-Scale Fisheries Sector***

Certainly, the most significant development in the modernization of SSF is the introduction of motorized engines. There is a drastic increase in the motorized SSF sector under 50 kw where powered vessels represent the vast portion of the global motorized fleet. The outboard engines for boats increased the fishing power and lessened the fishing days. This has led to the rapid expansion of the fishing capacity under the open access regimes and the risk of overfishing of the coastal fisheries resources. The FAO 2020 expresses greater importance to the governance and safety of both marine and inland SSF. Concomitant with the increase in innovative technologies in the fisheries sector, scientific advancement over the past years has led to an improved understanding of marine ecosystems and their functions. This understanding has expanded the limits of fishing and increased global awareness of the sustainable management of resources. The growing sense of environmental, social, and economic transformation of the SSF sector is reflected in the Sustainable Development Goals of the United Nations which implies the need for sustainable balance between the oceans and the growing socio-economic environmental changes. The Sustainable Development Goal -14 stresses the conservation and sustainable use of the ocean and its resources for human well-being and global food security. SDG-14 hinges on promoting governance and participatory regulatory process in the fisheries sector to ensure harmony between the living resources of the ocean and the livelihoods interlinked therein. It is of prime importance that the SSF sector has extended into international seafood production and developments in the form of sustainable resource utilization, poverty eradication, food and nutrition security plays a key role in the upliftment of the SSF.



## CONCLUSION

Small-scale fishing is a way of life. The term is devoid of a precise definition. It is a mosaic of activities and culture, intermingling with life, norms, knowledge, and systems of governance handed down from generation to generation. The world's fishery is said to be contained in the small-scale fishery sector. They have deep knowledge of local ecological changes and harvest a wide variety of fish resources. They rely primarily on verbal communication for sharing knowledge and information. This local knowledge on the changes such as the shifting of baseline, distribution of species, and the local environmental changes is often adapted and incorporated into the local management of the SSF sector. In essence, the activities of the community are interlinked which sustains and provide stability in diversity for the community.

The small-scale fishing sector dominates the near shore waters and claims authority over its resources. This can be attributed to the inclusive and exclusive claim of the coastal state. The inclusive claim over the adjacent waters thus accrues to the interest of the coastal state over its fish resources and the overarching economic gain over these resources. While the small-scale fishery may not be as advanced as the large-scale industrial fisheries sector, they have a complex system of close interactions and community support. Over time, the small-scale fishers have adapted themselves to the changes in the industry. However, it is found that this class of fishers needs to be respected for the role they play in securing food and nutrition, sustainable resource utilization, and income generation in support of the local and national economies. The industry often suffers from dearth of regulations and inappropriate policy measures that affect the dynamics of the small-scale fishery network.

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