P-ISSN: 2618-0723
E-ISSN: 2618-0731

NAAS Rating (2025): 5.04
www.extensionjournal.com

International Journal of Agriculture Extension and Social Development

Volume 8; SP-Issue 8; August 2025; Page No. 10-13

Received: 09-05-2025
Accepted: 11-06-2025

Indexed Journal
Peer Reviewed Journal

Profile and information sources of trawl net operators in the Greater Mumbai region of Maharashtra state on the provisions of Maharashtra marine fishing regulation act, 1981

[1]MB Rane, [1]BT Sawant, [2]KJ Chaudhari, [1]SM Wasave, [3]BM Yadav, [1]SV Patil and [1]BV Naik

[1] College of Fisheries, Ratnagiri, Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli, Maharashtra, India

[2]Diploma in Fisheries Engineering, Shirgaon, Ratnagiri, Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli, Maharashtra, India

[3]Taraporewala Marine Biological Research Station, Bandra (E), Mumbai, Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Maharashtra, India

DOI: https://doi.org/10.33545/26180723.2025.v8.i8Sa.2234

Corresponding Author: BT Sawant

Abstract

The trawl net fishing industry plays an important role in the coastal economy of the Greater Mumbai region in Maharashtra, supporting livelihoods and contributing to regional fish production. This investigation deals with sources of information accessed by trawler operators in Greater Mumbai regarding the provisions of the Maharashtra Marine Fishing Regulation Act (MMFRA), 1981. Information was collected with help of structured interviews from 120 randomly selected trawler operators of the Greater Mumbai region. The study revealed that, department of fisheries is the most effective and frequently accessed formal channel, with 82% of respondents reporting frequent interaction. Local sources such as local leaders and family members play a moderate role, with a considerable portion of respondents (46%) seldom relying on local leaders for information. Modern mass communication tools like newspapers, radio, and television are occasionally used for accessing legal information. Among digital platforms, WhatsApp emerges as a relatively significant informal channel, with 24% using it frequently and 65% seldom. The study highlights gaps in formal communication mechanisms and recommends strengthening outreach strategies to enhance compliance and sustainable fishing practices in the region.

Keywords: Profile, sources of information, trawl net operators, Mumbai

Introduction

The trawling sector contributes for more than 50% of India's marine fish production. It is considered a human-induced activity that disrupts the physical and ecological balance of the ocean (Dineshbabu *et al.*, 2022) [1]. Intensive shrimp trawling with multi-day trawlers lead to overexploitation of marine resources and decreases the commercial fish catch. Excessive fishing pressure due to trawling has reduced the catch per hour from 198 kg h-1 to 33.7 kg h-1 over the years along the west coast of India (Singh *et al.*, 2023) [2]. The tropical trawl operations face a major problem of bycatch in multi-species fisheries (Wanjari and Ramteke, 2024) [5].

India's marine fishing fleet currently comprises around 72,500 mechanized vessels, of which approximately 35,228 are trawlers (Kaliyamoorthy *et al.* 2023) [4]. India's total fish production in the fiscal year 2023-24 reached 184 lakh tonnes, with 139.1 lakh tonnes from inland fisheries and 44.9 lakh tonnes from marine fisheries (DoF, GoI, 2025) [6]. During the year 2021-22, the total marine fish production of Maharashtra was 4.32 lakh tonnes, from which the contribution of trawlers was 1.69 lakh tonnes (39.08%) (DoF, GoM, 2022) [7]. In 2023, multi-day trawler fish production was 0.54 lakh tonnes in Maharashtra, with the maximum contribution (33.91%) from Mumbai city district (CMFRI, 2024) [3]. There exist 5,613 trawlers in Maharashtra (Singh *et al.*, 2023) [2] and 2,849 trawlers in the Greater Mumbai region (Wanjari and Ramteke, 2024) [5].

Shuva (2017) [8] identified the factors that restrict fishers' access to information sources (Fisheries Department, online source, etc.), as illiteracy, poverty, and lack of access to ICT tools. Artisanal fishermen require high-quality information to make decisions to work more efficiently and effectively (Ifejika, 2016) [9]. Assessment of information-seeking behaviour and needs of fishermen is important due to the significant social and economic impact it has on their lives (Ramadas and Saravanan, 2016) [10]. Access to information helps in acquiring opportunities to poor people and being up-to-date on modern technologies that boost productivity (Uzezi, 2015) [11]. Various researches indicate that knowledge acts as a social resource; as fishers, despite competing, engage in social relationships to share information. These relationships improve operational efficiency and time in locating other sources (Turner *et al.*

2014) [12]. Insufficient access to related information sources and limited time act as a major barrier in fulfilling the information needs of fishermen (Rachman *et al.*, 2019) [13].

Materials and Methods

Locale of the study

The present study was carried out in the districts (Mumbai Suburban and Mumbai City) of the Greater Mumbai region, Maharashtra state. The three major landing centres of these districts were selected, which account for around 60% of the fish landings of Maharashtra.

Selection of respondents

A total of 120 trawler-operating fishermen were randomly selected, 40 each from the New Ferry Wharf, Sassoon dock, and Versova landing centre.

Measurement of sources of information about MMFRA, 1981

Considering the objectives of the study, variables were selected based on past research. The variables studied and the measurements employed in this study are given below:

Sr. No.	Variables	Measurement
1	Sources of information	The information sources of respondents regarding fishing laws and practices were measured as frequent, seldom or least sources on a three-point continuum, i.e. 1, 2, or 3.

Results and Discussion

Sources of information for trawler operators regarding the Maharashtra Marine Fishing Regulation Act, 1981 is given in Table 1.

Table 1: Sources of information for trawl net operators regarding the Maharashtra Marine Fishing Regulation Act, 1981

Sr. No.	Source of information	Particulars	Level	Frequency	Percentage
1	Localite	Local leader	Frequent	43	36
			Seldom	55	46
			Never	22	18
		Neighbours	Frequent	4	3
			Seldom	30	25
			Never	86	72
		Other family members	Frequent	7	6
			Seldom	31	26
			Never	82	68
2	Cosmopolite	Bank Officers	Frequent	0	0
			Seldom	0	0
			Never	120	100
		NGOs	Frequent	0	0
			Seldom	6	5
			Never	114	95
		Fisheries College	Frequent	2	2
			Seldom	21	18
			Never	97	81
		Marine Biology Research Station.	Frequent	0	0
			Seldom	0	0
			Never	120	100
		Fisheries Department	Frequent	98	82
			Seldom	22	18
			Never	0	0
		Mangrove Foundation	Frequent	0	0
			Seldom	0	0
			Never	120	100
		Group Discussion	Frequent	22	18
			Seldom	66	55
			Never	32	27
		Study tour	Frequent	0	0
			Seldom	0	0
			Never	120	100
		Rally	Frequent	0	0
			Seldom	0	0
			Never	120	100
		Exhibition	Frequent	0	0
			Seldom	20	17
			Never	100	83
		Demonstration	Frequent	0	0
			Seldom	0	0
			Never	120	100

3	Mass	Fisheries Books	Frequent	0	0
			Seldom	3	3
			Never	117	98
		Newspaper	Frequent	0	0
			Seldom	2	2
			Never	103	86
	Other	Radio	Frequent	0	0
			Seldom	0	0
			Never	120	100
		Television	Frequent	0	0
			Seldom	7	6
			Never	113	94
		WhatsApp	Frequent	29	24
			Seldom	78	65
			Never	13	11
		Instagram	Frequent	0	0
			Seldom	0	0
			Never	120	100
		Facebook	Frequent	0	0
			Seldom	1	1
			Never	119	99
		Telegram	Frequent	0	0
			Seldom	0	0
			Never	120	100

1. Localite sources

Among the sources of information, local leaders (36%) were the most frequently mentioned, followed by other family members (6%) and neighbours (3%). Relatives and family members acted as occasional sources of information. Relatives and family members (2.29%) frequently provided information to trawler owners in Mirkarwada, Ratnagiri (Suryawanshi, 2007) [14]. Adesoji and Kerere (2013) [15] examined the sources of information for fishers in Nigeria related to their artisanal activities, which were identified as colleagues (46.7%), relatives/friends (38.3%), and only 3.4% sourced information from the internet. Ifejika (2016) [9] reported that 64.2% of fishermen sought information from fellow fisherfolk, and 64.8% of them acquired data from family members. Shuva (2017) [8] observed that 41.2% and 32.4% of fishermen acquired information from family/friends and political leaders, respectively. Information from fellow fisherfolk was identified as the primary source of data by small-scale fishermen on the Aegean coast of Turkey (Durgun *et al*., 2020) [19].

2. Cosmopolite sources

The most frequent, cosmopolite sources of data include the Department of Fisheries (82%), followed by group discussion (18%) and the Fisheries College (2%). Other sources that occasionally provided information included NGOs (5%), the Fisheries College and Department (18%), group discussions (55%), and exhibitions (17%). The information about regulations was mainly disseminated by the Department of Fisheries (77%) in Nkhatabay district of Malawi (Ghambi and Mzengereza, 2016) [16]. Extension Officers and the Fisheries Department acted as information sources to only 1.9% and 1.3% of the 160 migrant fishermen of Delta state, Nigeria that were studied by Uzezi (2015) [11].The Fisheries Department and Extension Officers provided data to 16 and 22 fishermen of Ghogha, Gujarat (India), respectively on weather (Joshi and Mandalia, 2020) [18]. Small-scale fishermen of Jakarta felt a lack of counselling by the government, specifically on fisheries policies (Rachman *et al.*, 2019) [13] which was also observed in the present study.

3. Mass sources

The WhatsApp application on mobile phones was the most frequent source of mass information for 24% of operators, seldom used (65%), and for 11% it never acted as a source of information. Vasanthakumar and Sundaravaradarajan (1990) [17] found radio to be the main mass media source, with newspapers and television following it. It can be perceived that previously, radios were major sources of information for fishermen, but nowadays radios are rarely seen on vessels in the Mumbai region as they have switched to more efficient devices. Mass sources like television and radio provided information to 29.4% and 1.9% migrant fishermen of Nigeria (Uzezi 2015) [11]. Joshi and Mandalia (2020) [18] reported that television, radio, and newspaper provided information on climate conditions to 12, 6, and 11 respondents (fishermen) of Ghogha, Gujarat (India).

Conclusion

The study highlights the social status of fishermen in Mumbai, who face challenges impacting their livelihood and the sustainability of fishery resources. Low literacy and a lack of practical extension services related to regulations, safe navigation, and the use of modern equipment on fishing vessels were noted. Small-scale fishermen experienced significant income loss during seasonal fishing ban periods, it is expected by them that the government provide alternative income sources during this period along with the timely distribution of insurance facilities and accident relief funds among beneficiaries. Other problems faced by them include high input costs, high fuel costs, uncertain income, especially during the ban period, maintenance of the fishing gear, and uncontrolled purse-seine gear. It is suggested that the government agencies include and acquire the inputs of fishermen in policy formulation and management strategies.

References

1. Dineshbabu AP, Radhakrishnan EV, Thomas S, Maheswarudu G, Manojkumar PP, Kizhakudan SJ, et al. An appraisal of trawl fisheries of India with special reference on the changing trends in bycatch utilization. Journal of the Marine Biological Association of India. 2022;55(2):69-78.
2. Singh J, Sarma K, Jaiswar AK, Mohite AS, Ahirwal SK, Samanta R, Shenoy L. Comparative footprint studies of single- and multiday trawl fishing along Ratnagiri coast, Maharashtra, India. Indian Journal of Fisheries. 2023;70(2):19-27.
3. CMFRI. Marine Fish Landings in India 2023. Technical Report, CMFRI Booklet Series No. 33/2024. ICAR-Central Marine Fisheries Research Institute; 2024. p 13.
4. Kaliyamoorthy M, Roy SD, Sahu VK. Analysis of trawl-net operation and major fish landings at Andaman and Nicobar Islands, India. Flora and Fauna. 2023;29(1):151-164.
5. Wanjari RN, Ramteke KK. Exploring the diversity of trawl catch composition in Mumbai coastal waters through experimental trawling. Indian Journal of Fisheries. 2024;71(4):6-19.
6. DoF, GoI. Annual Report 2024-25. Department of Fisheries, Ministry of Fisheries, Animal Husbandry and Dairying, Government of India; 2025. p 13.
7. DoF, GoM. Fish Production Report 2021-22. Department of Fisheries, Government of Maharashtra, India; 2022. p 30.
8. Shuva NZ. The information practices of the fishermen in the Bay of Bengal, Bangladesh. Open Information Science. 2017;1(1):21-40.
9. Ifejika PI. Assessment of fisherfolk information-seeking behaviour with mobile phone for improved extension and advisory services. Journal of Agricultural Science. 2016;8(11):170-178.
10. Ramadas G, Saravanan P. Use of electronic gadgets for information-seeking process by fishermen in Tamil Nadu - a study. Journal of Chemical and Pharmaceutical Sciences. 2016;9(1):363-368.
11. Uzezi OP. Information needs and seeking behaviour of migrant fishermen: a case of Isoko riverine communities, Delta State, Nigeria. International Journal of Scientific & Technology Research. 2015;4(08):284-288.
12. Turner RA, Polunin NVC, Stead SM. Social networks and fishers' behavior: exploring the links between information flow and fishing success in the Northumberland lobster fishery. Ecology and Society. 2014;19(2):38.
13. Rachman YB, Mutiarani H, Imaman KB, Rachman MA, Salim TA. Information needs and sources of small-scale traditional fishermen in Kaliadem Village, North Jakarta, Indonesia. Library Philosophy and Practice (e-journal). 2019;2291:1-12.
14. Suryawanshi. Adoption of improved practices by trawl net operators of Ratnagiri coast of Maharashtra state. MFSc thesis. Dr Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli, India; 2007. p 87.
15. Adesoji SA, Kerere FO. Assessment of the knowledge level of fishers and fish farmers in Lagos State, Nigeria. International Journal of Knowledge, Innovation and Entrepreneurship. 2013;1(1-2):41-56.
16. Ghambi C, Mzengereza K. Compliance and enforcement of the fisheries regulations on Lake Malawi in Nkhatabay District. Oceanography & Fisheries. 2016;1(2):1-6.
17. Vasanthakumar J, Sundaravaradarajan KR. Adoption of scientific technology by trawler operators of Tamil Nadu. In: Mohan Joseph M, editor. The Second Indian Fisheries Forum, Proceedings. Asian Fisheries Society, Indian Branch; 1990. p 459-461.
18. Joshi K, Mandalia S. Current trends of information-seeking behaviour of fishermen of Indian coastal area. Library Philosophy and Practice (e-journal). 2020;4264.
19. Durgun D, Günden C, Ünal V. Information source preferences of small-scale fishers in the Aegean Sea coast of Turkey. Acta Ichthyologica et Piscatoria. 2021;51(1):47-52.