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Socio-economic profile of members of a fish farmer producer organization in Saoner Taluka, Nagpur District, Maharashtra

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Abstract

This study presents a comprehensive socio-economic baseline survey of 100 members of the Kalpataru Matsya Shetkari Utpadak Sahakari Sanstha, a Fish Farmer Producer Organization (FFPO) in Saoner taluka, Nagpur district, Maharashtra. The research employs a structured interview schedule to collect primary data on a range of demographic, economic, and operational variables. The findings reveal that the FFPO predominantly serves marginalized communities, with 100% of members belonging to Scheduled Caste (SC), Scheduled Tribe (ST), or Other Backward Classes (OBC) categories. The membership is characterized by a young and middle-aged demographic (91% under 50 years) but exhibits a significant gender disparity, with 91% male members. Economically, the members are vulnerable, with 92% reporting an annual household income below ₹3,00,000, and 60% of families relying on a single earning member. Educational attainment is modest, and a majority of members (65%) are new entrants to the fisheries sector with less than two years of experience. A critical structural challenge identified is the members' high dependency on leased (90%) and seasonal (92%) water bodies, which severely constrains productivity, discourages long-term investment, and limits income stability. The study concludes that while the FFPO is successful in promoting social inclusion, its effectiveness as an engine for economic empowerment is hampered by these fundamental resource insecurities. Targeted interventions focusing on securing long-term access to perennial water bodies, gender mainstreaming, and foundational skill development are essential for enhancing the livelihoods of its members and realizing the full potential of the FFPO model.

Keywords: Fish Farmer Producer Organization (FFPO), socio-economic baseline survey

1. Introduction

The fisheries sector is a cornerstone of India's rural economy, making significant contributions to national food security, employment generation, and agricultural Gross Value Added (GVA), in fact due to its structural significance, the fisheries sector accounts for nearly 7.43 percent of Agricultural Gross Value Added (GVA), the highest share among the agriculture and allied sectors (Press Information Bureau, 2026) ^[12]. The small-scale fisheries sub-sector, in particular, supports the livelihoods of millions, yet it is often characterized by high potential constrained by significant vulnerabilities. Small-scale fish farmers frequently face challenges such as fragmented land and water resource holdings, weak market linkages, inadequate access to credit and technology, and low collective bargaining power, all of which collectively hinder their economic growth and resilience.

To address these systemic challenges, the Government of India has championed the promotion of Farmer-Producer Organisations (FPOs), and specifically Fish Farmer-Producer Organisations (FFPOs), as a key policy instrument

for empowering primary producers. The fundamental principle of an FFPO is to aggregate small producers, enabling them to achieve economies of scale in input procurement and marketing, enhance their bargaining power with market intermediaries, and gain access to technical and financial support that would be unattainable for individuals. This model of collective action is central to the government's flagship Pradhan Mantri Matsya Sampada Yojana (PMMSY), a scheme launched to usher in a "Blue Revolution" through sustainable and responsible development of the fisheries sector (Deb Roy *et al.*, 2026). With ambitious goals of doubling fishers' incomes and modernizing the value chain, the PMMSY provides substantial financial and institutional support for the formation and promotion of FFPOs, positioning them as a primary vehicle for achieving its objectives.

Within this national framework, the state of Maharashtra has actively participated in the FFPO initiative, with several organizations being established to support its large population of inland and marine fishers. The Vidarbha region, and Nagpur district in particular, represents an area

with significant potential for inland aquaculture, supported by a network of water bodies and key academic and research institutions such as the College of Fishery Science, Nagpur, College of Fishery Science, Morshi and College of Fishery Science, Udgir under the Maharashtra Animal & Fishery Sciences University (MAFSU).

However, the success of policy-driven institutions like FFPOs is contingent on a nuanced understanding of the specific socio-economic realities of their members. A top-down approach that overlooks the ground-level constraints and opportunities is unlikely to yield sustainable outcomes. This baseline study of the Kalpataru Matsya Shetkari Utpadak Sahakari Sanstha, an FFPO in Saoner taluka, is therefore critical. It aims to provide a granular, evidence-based profile of the FFPO's members, establishing a benchmark against which the organization's future impact can be measured and informing the design of targeted, effective interventions. The specific objectives of this study are:

1. To document the detailed socio-economic and demographic profile of the FFPO members.
2. To analyze their livelihood strategies, asset ownership, and access to productive resources.
3. To identify the primary constraints and opportunities faced by the members.
4. To provide strategic recommendations for the FFPO and supporting agencies to enhance member livelihoods.

The conceptual foundation of this study is rooted in the theory of collective action (Ostrom, 2010) ^[10], which posits that producer organizations can help smallholders overcome market failures and structural disadvantages. In the Indian fisheries context, several studies have validated this premise. The literature suggests that fishing communities are not socio-economically homogenous, and the impacts of such interventions can be uneven. A study by Bhendarkar *et al.* (2017) ^[2] of fishers in Kabirdham, Chhattisgarh, revealed significant disparities in income and livelihood strategies between land-owning and landless fishers, alongside widespread illiteracy and poor housing conditions.

Gurung, Choubey and Rai (2023) ^[8] conducted a comprehensive review emphasizing the potential of FPOs and evaluated the impacts of collective action using cross-sectional household data from 560 organic farming households (280 members and 280 non-members) across all four districts of Sikkim, India. Employing a Propensity Score Matching (PSM) econometric framework to eliminate institutional selection biases, the authors measured three primary financial indicators: net returns, return on investment (ROI), and profit margins. The probit model regression indicated that structural participation was significantly driven by higher formal schooling, distance to nearest output markets, and access to extension services. The matching algorithms showed that FPO membership generated an average increase of ₹7,254 to ₹8,133 in annual net returns per acre, a 4.6% to 4.8% increase in ROI, and an 8% to 8.4% improvement in profit margins. Sasikanth and Ravichandran (2023) ^[14] assessed Women Farmers' Perceptions of Farmer Producer Organizations: A Special Reference to Namakkal District, Tamil Nadu, India where 120 women farmers from four FPOs were sampled using a

purposive multi-stage random sampling method and opined that FPOs can provide significant benefits to women farmers and enhance their livelihoods. Chandegara *et al.* (2023) ^[5] highlighted the emerging challenges existing in the Indian agriculture and fisheries sector like market instability, limited access to modern technologies, and inadequate infrastructure which affect the farmers' socio-economic and agricultural development. In this context, Producer Organizations have emerged as a solution. This study aims to comprehensively analyze the current status and role of Farmer Producer Organizations (FPOs) in uplifting the agriculture and fish farming community. In the study by Anand *et al.* (2025) ^[1] portrayed Farmer Producer Organizations as transformative, decentralized institutions capable of successfully driving inclusive rural development and social inclusion. The research highlights the excellent promise of government-backed aggregation initiatives—such as the Jeevika programme and the Mahila Lakhpati scheme—in successfully transitioning women from subsistence labour into commercial agribusiness enterprises. Bhunia and Singh (2025) ^[3] in their study - Producer organizations in the last 25 years: a bibliometric analysis and meta-review of the literature highlight the extensive potential of producer organizations to catalyze wealth creation and achieve global sustainability targets. The analysis demonstrates that modern producer companies represent an optimal institutional hybrid, carrying the supportive features of traditional cooperatives (training, credit access, and bargaining power) alongside the market efficiency and financial vibrancy of private companies. These studies collectively underscore the importance of conducting baseline surveys to understand the specific context in which an FFPO operates. While the potential benefits of FFPOs are well-established in theory, a research gap remains in the form of detailed, location-specific empirical studies that can guide tailored interventions. This study addresses this gap by providing a comprehensive socio-economic profile of a nascent FFPO in the Vidarbha region of Maharashtra, an area with considerable inland fisheries potential but limited documentation in the academic literature. By examining the interplay of social identity, resource access, and economic outcomes, this research aims to provide actionable insights for strengthening the Kalpataru Matsya Shetkari Utpadak Sahakari Sanstha, Saoner, Nagpur, FFPOs and similar organizations across India.

2. Methodology

Profile of the Study Area

The study was conducted in Saoner taluka, the tehsil headquarters of Nagpur district, Maharashtra, India. The taluka is geographically situated at approximately 21.38° N latitude and 78.92° E longitude. It is part of the larger Nagpur district, which lies between the north latitudes of 20°35' and 21°44' and east longitudes of 78°15' and 79°40'. The region is predominantly rural, with livelihoods heavily dependent on agriculture and allied activities, including fisheries. The presence of the Kolar River and numerous other water bodies provides a conducive environment for inland aquaculture development (Watkar and Barbate, 2013) ^[15].

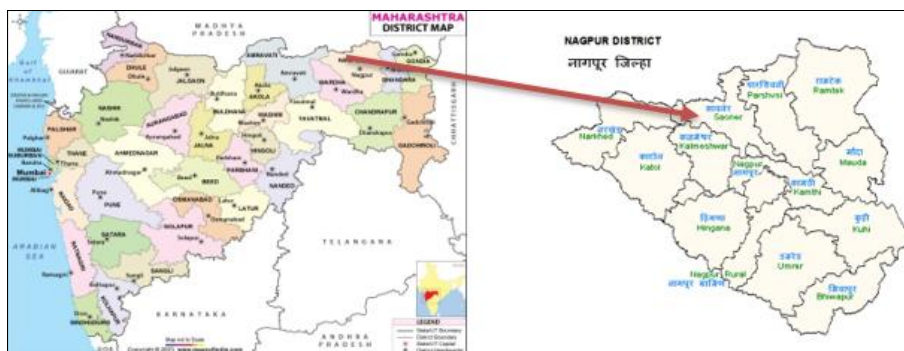


Fig 1: Location of Saoner Taluka in Nagpur District, Maharashtra

Kalpataru Matsya Shetkari Utpadak Sahakari Sanstha

The Kalpataru Matsya Shetkari Utpadak Sahakari Sanstha, a registered Fish Farmer Producer Organization. This FFPO was established to organize small-scale fish farmers in the Saoner region, with the objectives of improving their access to inputs, technology, and markets, thereby enhancing their economic opportunities.

Sampling and Data Collection

A purposive sampling method was employed to select the Kalpataru FFPO for this study, given its role in collectivizing local fish farmers. All 100 members of the FFPO were selected for the survey. Primary data was collected through personal interviews using a pre-tested, structured interview schedule. The variables included in the schedule were identified based on a thorough review of relevant literature and standardized classifications, such as those used by the National Sample Survey Organisation (NSSO). To ensure community acceptance and the

relevance of the research instrument, Participatory Rural Appraisal (PRA) tools were utilized for initial rapport building. This participatory process also helped in refining the variables for the final survey, a methodological strength that enhances the validity of the data. Secondary data was collected from government reports and existing academic studies to contextualize the findings.

Operationalisation of Variables and Analysis

The collected data on 18 key socio-economic variables were coded and analyzed using descriptive statistics, including frequency, percentage, mean, and standard deviation. The analysis was performed using Microsoft Excel. Percentage analysis was used to generate contingency tables from frequency distributions, facilitating clear categorization and comparison of the data. The operational definitions and measurement scales for the variables are presented in Table 1.

Table 1: Operationalisation and Measurement of Variables

Sl. No.	Variable	Operationalisation	Measurement
1	Age	Chronological age of the member at the time of investigation.	Young (≤ 35 yrs) / Middle (36-50 yrs) / Old (> 50 yrs)
2	Gender	Gender of the members in the study.	Men / Women
3	Marital status	A person's relationship with a significant other.	Married / Unmarried / Widowed
4	Religion	Members' systematic beliefs and practices.	Hindu / Muslim / Buddhism / Others
5	Social strata	Members' social stratification group.	Schedule Caste (SC) / Schedule Tribe (ST) / Other Backward Classes (OBC) / General
6	Education	Number of years of formal schooling completed.	Illiterate / Primary / Secondary / Higher secondary / Graduate and above
7	Primary Occupation	Activity from which a person derives $> 50\%$ of their income.	Fisheries / Agriculture / Livestock / Labour
8	Experience as FFPO member	Completed years of membership in FFPO.	≤ 2 yrs / $> 2-5$ yrs / > 5 yrs
9	Family size	Number of members in a family.	Small (< 4 members) / Large (≥ 4 members)
10	Family type	Structural composition and living arrangement of the family.	Joint / Nuclear
11	Land/water body ownership	Legal possession or control over the resource.	Own / Lease
12	Nature of water body	Type and characteristics of water resources used.	Seasonal / Perennial
13	House type	Structural characteristics and construction quality of the house.	Kutcha / Semi-pucca / Pucca
14	House ownership	Legal possession or control over the house.	Own / Rented
15	Transportation Facility	Access to or ownership of different transport modes.	Public / Private / Bicycle / Bike / Four-wheeler
16	Earning member in Household	Number of members who earn in the family.	Absolute number
17	Annual Family Income	Yearly household income in Rupees.	$< ₹1,00,000$ / $₹1,00,001-3,00,000$ / $₹3,00,001-5,00,000$ / $> ₹5,00,000$
18	Fisheries assets	Fisheries assets used by the member.	Nets / Traps / Ponds

3. Results and Discussion

The analysis of the survey data provides a detailed socio-economic profile of the FFPO members, highlighting their

demographic composition, economic status, and the nature of their engagement in fisheries.

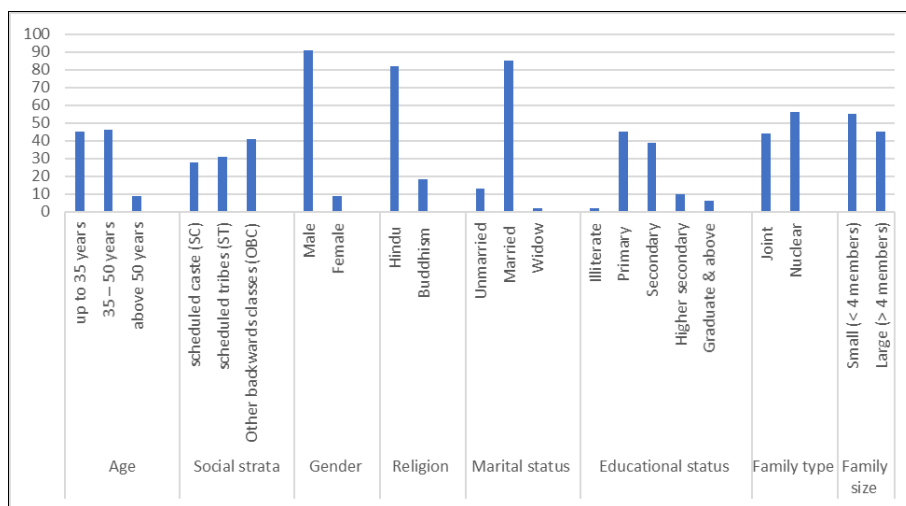


Fig 2: Demographic Characteristics

Demographic Characteristics

The demographic and social characteristics of the members are represented in Figure 2 and summarised in Table 2.

Age

The age distribution of FFPO members revealed a balanced representation of young and middle-aged individuals. This distribution indicates a mix of youthful energy and experience within the FFPO. The study found that 46% of members belonged to the middle age group (35-50 years), closely followed by 45% in the young age group (up to 35 years). Only 9% of members were categorized as old age (above 50 years). The calculated mean age of the respondents is approximately 36.2 years, suggesting a good mix of experience and youthful energy within the FFPO, which can be beneficial for adopting new technologies and practices in fisheries. This indicates an economically active and dynamic workforce with significant potential for long-term engagement, innovation, and adoption of new technologies. The technology adoption in central India is heavily concentrated among younger, active age brackets who possess the physical capacity to manage pond systems (Camble *et al.* 2016) ^[4].

Gender

The gender composition of the FFPO members showed a significant imbalance, with 91% of members being men and only 9% women. This stark gender disparity underscores the need for targeted interventions to promote women's participation in FFPOs and the broader fisheries sector. The underrepresentation of women in the FFPO aligns with findings from other studies, such as Sariga, Sekharan and Kasi, (2023) ^[13], who noted similar gender imbalances in the fisheries sector. This suggests a broader trend of gender inequality in the fisheries sector that requires addressing through policy interventions and awareness programs.

Social Strata

One of the most significant findings is the social

composition of the FFPO. The membership is drawn exclusively from historically marginalised communities, with 41% belonging to the Other Backward Classes (OBC), 31% to Scheduled Tribes (ST), and 28% to Scheduled Castes (SC). Notably, there are no members from the General category. This distribution reflects the social composition of the area, suggesting that the FFPO has been successful in reaching out to historically marginalised communities. This indicates that this FFPO primarily caters to marginalised communities. This demonstrates that the FFPO is successfully fulfilling a key policy mandate of social inclusion by reaching the most vulnerable sections of rural society. Consequently, the FFPO's role extends beyond being a mere business enterprise; it functions as a critical development intervention for these communities, and its success must be evaluated through a lens that accounts for this foundational context (Kujur, 2019) ^[9].

Religion

The religious composition reflects regional demographics, with a majority of members identifying as Hindu (82%) and a significant minority identifying as Buddhist (18%). This religious distribution aligns with the general demographic patterns of the region, indicating that the FFPO is inclusive of the major religious groups in the area. This balanced distribution indicates that the initial mobilization phase of the FFPO successfully avoided regional socio-cultural fragmentation. Anand *et al.* (2025) ^[1] emphasize that navigating local social dynamics and ensuring multi-communal representation within an FPO's foundational registry is a vital prerequisite for building institutional trust and sustaining long-term member commitment.

Marital Status

The survey revealed that 85% of FFPO members were married, 13% were unmarried, and 2% were widowed. The high percentage of married members suggests that many individuals have family responsibilities, which could influence their decision-making processes and risk-taking behaviour in fisheries activities.

Table 2: Summary of Socio-Demographic Characteristics of Respondents (N=100)

Variable	Category	Frequency (n)	Percentage (%)
Age	Young (≤ 35 yrs)	45	45.0
	Middle (36-50 yrs)	46	46.0
	Old (> 50 yrs)	9	9.0
	Mean Age (approx.)	-	36.2 years
Gender	Men	91	91.0
	Women	9	9.0
Social Strata	Scheduled Caste (SC)	28	28.0
	Scheduled Tribe (ST)	31	31.0
	Other Backward Classes (OBC)	41	41.0
	General	0	0.0
Religion	Hindu	82	82.0
	Buddhism	18	18.0
Marital Status	Married	85	85.0
	Unmarried	13	13.0
	Widowed	2	2.0
	Education		
Education	Illiterate	2	2.0
	Primary	45	45.0
	Secondary	39	39.0
	Higher Secondary	10	10.0
	Graduate & Above	6	6.0
	Mean Years of Schooling (approx.)	-	8.25 years
Family Type	Nuclear	56	56.0
	Joint	44	44.0
Family Size	Small (< 4 members)	55	55.0
	Large (≥ 4 members)	45	45.0
	Mean Family Size (approx.)	-	4.35 members

Human Capital and Household Dynamics

The educational profile of the members is modest. The majority have completed only primary (45%) or secondary (39%) education. A small fraction has attained higher secondary education (10%) or a graduate-level education (6%). While the illiteracy rate is very low (2%), this is a positive sign; however, efforts to promote higher education among members could lead to better adoption of advanced fisheries techniques and management practices. The overall educational attainment, with an estimated mean of 8.25 years of schooling, suggests that capacity-building initiatives should focus on practical, skill-based training rather than complex theoretical knowledge. This relates with the study by Gurung and Choubey, (2023) ^[8] who mathematically prove that formal years of schooling directly increase the probability of a primary producer joining an FPO by 1.9% per year of education, because literate heads can process technical records and extension information much faster.

Family Type and Size

Household structures show a slight preference for nuclear families (56%) over joint families (44%), with a similarly balanced distribution between small families with fewer than four members (55%) and large families with four or more members (45%). This contrasts with the findings of Bhendarkar *et al.* (2017) ^[2] in Chhattisgarh, where joint families were more dominant (64%). The trend towards nuclear families in the Saoner region may influence household decision-making and resource allocation for fisheries activities.

Land and Water Body Ownership

The study found that only 10% of members owned their land or water bodies for fisheries activities, while 90% operated on leased land or water bodies. This high percentage of leased operations could potentially limit long-term investments in infrastructure and sustainable practices (Narayanan, 2016) ^[11]. The FFPO should play a crucial role in negotiating better lease terms or facilitating land ownership for its members.

Nature of Water Bodies

The study found that 92% of the water bodies used by FFPO members were seasonal, while only 8% were perennial. This high proportion of seasonal water bodies presents challenges in terms of year-round fish production and maintaining stable income. The FFPO could explore strategies to maximize production during the available season or investigate methods to convert seasonal water bodies into perennial ones. This natural resource insecurity directly limits the group's economic baseline. Chandegara *et al.* (2023) ^[5] point out that operating within seasonal water systems creates a structural barrier to technology adoption, as short-term water availability prevents smallholders from executing advanced operations like multi-stage stocking or species diversification, trapping them in highly volatile income cycles.

Economic Standing and Asset Ownership

The economic and livelihood characteristics, summarized in Figure 3 and 4 and Table 3, paint a picture of economic vulnerability.



Fig 3: Summary of Economic and Livelihood Characteristics of Respondents (N=100) – Part 1

Annual Income

The vast majority of members fall into low-income brackets, with 54% earning less than ₹1,00,000 annually and another 38% earning between ₹1,00,001 and ₹3,00,000. Only 8% of households earn more than ₹3,00,000 per year. The estimated mean annual family income is approximately ₹1,41,000. This low-income profile is compounded by the fact that 60% of households have only a single earning member, making them highly susceptible to income shocks. This single-earner profile (60%) underscores the need for institutional income support. Bhunia and Singh (2025) [3], showed that membership in structured producer organizations significantly improves smallholder wealth and resource access compared to non-members. Gurung, Choubey, and Rai (2023) [8] further demonstrated—through matching algorithms—that FPO aggregation raises annual net returns per acre by ₹7,254–₹8,133, largely by bypassing exploitative market intermediaries.

Housing

In terms of housing, all 100% of the members own their houses. However, the quality of housing is a concern, with 52% living in semi-pucca structures and 33% in kutchha houses. Only 15% reside in pucca houses. While this indicates a need for housing improvement, the situation is comparatively better than that of the fishers in Chhattisgarh, where 67% lived in kutchha houses (Bhendarkar *et al.* 2017)

[2].

Primary Occupation

People engaged in fisheries were 39 per cent, 35 per cent were in agriculture, and 26 per cent in other occupations as their primary occupation. This distribution shows that while fisheries is the most common primary occupation, a significant portion of members are engaged in agriculture or other activities. This diversification could provide some income stability, but may also indicate that fisheries alone are not sufficient to support livelihoods. This occupational distribution relates with the study by Gurung, Choubey and Rai (2023) [8], which revealed that primary occupational dependency is a highly significant driver for collective participation. Producers whose livelihoods rely entirely on farm sectors are statistically more motivated to join FPOs or FFPOs because they face the highest direct vulnerability to market instabilities and input cost inflation.

Secondary Occupation

98 per cent of members were engaged in other activities, and 2 per cent were involved in fisheries as their Secondary Occupation. The high percentage of members with secondary occupations in "other" categories suggests a need for diversification of income sources. This could be due to the seasonal nature of fisheries or insufficient income from primary occupations.

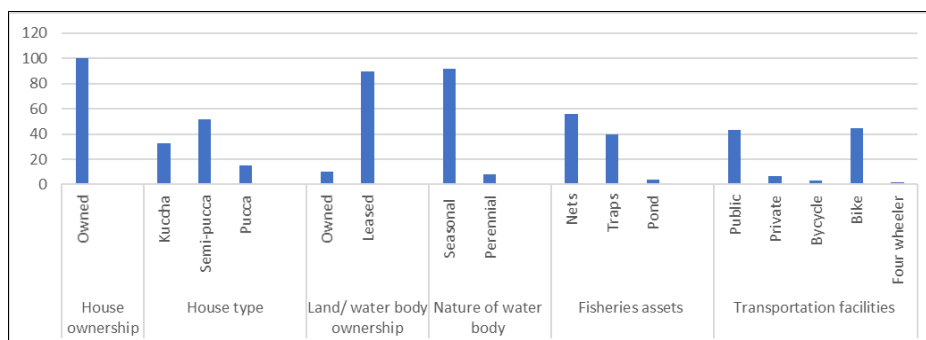


Fig 4: Summary of Economic and Livelihood Characteristics of Respondents (N=100) – Part 2

Experience in Fisheries

The study revealed that 65% had less than 2 years of experience, 28% had 2-5 years of experience, and 7% had more than 5 years of experience. The high percentage of members with less than 2 years of experience (65%)

suggests that many individuals are relatively new to fisheries activities. This highlights the importance of training and capacity-building programs to enhance their skills and knowledge in fish farming practices (Sasikanth and Ravichandran, 2023) [14].

Fisheries Assets

Ownership of productive fisheries assets is critically low. While a majority of members own nets (56%) and traps (40%), only a negligible 4% own their own ponds. indicates that most members rely on captured fisheries or leased water bodies. This lack of ownership of the primary means of production is a major structural constraint on their ability to scale up operations and improve productivity. The FFPO could consider initiatives to help members acquire or develop their own ponds, thereby increasing production and income stability. Anand *et al.* (2025) ^[1] note that moving producers up the value chain requires institutions to actively facilitate shared control over fixed capital infrastructure. By pooling equity and utilizing collective credit channels under the PMMSY framework, the FFPO can transform this individual asset deficit into shared community infrastructure.

Transportation Facilities

The survey revealed that 45 per cent used their own motorcycles, 43 per cent relied on public transport, 7 per cent used private transport, 3 per cent used bicycles, and 2 per cent owned four-wheelers. The high percentage of

members using their own motorcycles (45%) indicates a certain level of mobility and asset ownership. However, the significant reliance on public transport (43%) suggests that improving transportation infrastructure could benefit many members. This heavy reliance on public transport links directly to transaction cost economics. Logistical studies by Negi *et al.* (2018) demonstrate that inadequate transport infrastructure complicates the efficient handling of highly perishable food items, forcing isolated smallholders to dispose of their catches in low-price village markets. Bhunia and Singh (2025) ^[3] emphasize that producer organizations achieve maximum market efficiency when they successfully manage integrated short supply chains, which drastically minimizes post-harvest handling delays and transportation-related losses for their members.

Earning Members

The predominance of single-earner households (60%) suggests that many families may be heavily dependent on fisheries or agriculture as their primary source of income. This highlights the significance of the FFPO in supporting and improving the livelihoods of its members.

Table 3: Summary of Economic and Livelihood Characteristics of Respondents (N=100)

Variable	Category	Frequency (n)	Percentage (%)
Annual Family Income	< ₹1,00,000	54	54.0
	₹1,00,001 - ₹3,00,000	38	38.0
	₹3,00,001 - ₹5,00,000	5	5.0
	> ₹5,00,000	3	3.0
	Mean Annual Income (approx.)	-	₹1,41,000
Earning Members	One	60	60.0
	Two	36	36.0
	Three or more	4	4.0
House Type	Kutcha	33	33.0
	Semi-pucca	52	52.0
	Pucca	15	15.0
House Ownership	Own	100	100.0
	Rented	0	0.0
Primary Occupation	Fisheries	39	39.0
	Agriculture	35	35.0
	Other	26	26.0
Experience in Fisheries	≤2 years	65	65.0
	>2-5 years	28	28.0
	>5 years	7	7.0
Land/Water Body Ownership	Own	10	10.0
	Lease	90	90.0
Nature of Water Body	Seasonal	92	92.0
	Perennial	8	8.0
Fisheries Assets Owned	Nets	56	56.0
	Traps	40	40.0
	Ponds	4	4.0

4. Livelihood Structure and Resource Access

Livelihood strategies among the members are diversified, though not necessarily secure. Fisheries is the primary occupation for the largest group (39%), followed closely by agriculture (35%). A significant 26% rely on other activities, likely daily wage labour, as their main source of income. For 98% of the members, "other" activities constitute their secondary occupation, indicating that income from their primary occupation is insufficient to meet household needs.

A striking finding is that 65% of the members have less than two years of experience in fisheries. This suggests that the FFPO is not primarily organizing a traditional fishing community but is instead attracting new entrants to the sector, possibly individuals seeking to diversify away from less profitable agriculture or other precarious employment. This "experience paradox" has profound implications for the FFPO's role. Its primary function must be foundational capacity building and skill development—teaching the basics of aquaculture—rather than simply providing market

linkages for established farmers. The organization is, in effect, creating a new generation of fish farmers.

The most critical challenge confronting the members lies in their access to productive resources. An overwhelming 90% of members operate on leased water bodies, and 92% of these water bodies are seasonal in nature. This dual constraint creates a " " that forms the central structural barrier to their livelihood improvement. The lack of secure, long-term tenure on leased ponds disincentivizes members from making crucial capital investments, such as deepening

the ponds or installing aeration systems. Simultaneously, the seasonal nature of the water bodies means that fish culture is only possible for a few months of the year, leading to income instability and forcing members to rely on low-paying, often unreliable, secondary occupations during the off-season. Any effort by the FFPO to improve market prices or reduce input costs will have only a marginal impact if this fundamental issue of resource access and security is not addressed.

Table 4: Comparative Analysis of Socio-Economic Indicators: Saoner FFPO vs. Chhattisgarh Fishers

Socio-Economic Indicator	Present Study (Saoner, Maharashtra)	Bhendarkar <i>et al.</i> , 2017 (Kabirdham, Chhattisgarh)
Dominant Age Group	Middle (36-50 years) - 46%	Middle (31-40 years) - 38.6%
Literacy Rate	98% (2% Illiterate)	53.4% (46.6% Illiterate)
Dominant Family Type	Nuclear (56%)	Joint (64%)
% in Kutcha Housing	33%	67%
Land/Water Body Ownership	90% rely on leased resources	Categorized as Land Owner (LO) and Land Less (LL), with 62% of LOs having negligible land.
Primary Occupation Focus	Diversified (Fisheries 39%, Agriculture 35%)	Agriculture for LOs; Full-time fishing for LLs

The comparative analysis in Table 4 reveals both similarities and differences. While both groups are economically vulnerable, the members of the Saoner FFPO have significantly higher literacy rates and better housing conditions than the fishers surveyed in Chhattisgarh. However, their extreme dependence on leased and seasonal water bodies presents a unique and severe challenge.

5. Strategic Implications and Recommendations for Empowerment

The findings of this baseline survey lead to several strategic implications and actionable recommendations for the Kalpataru FFPO, supporting government agencies, and other stakeholders.

Gender Mainstreaming and Inclusion

The stark gender imbalance (91% male) necessitates proactive interventions. The FFPO should implement a targeted strategy to encourage women's membership. This could involve creating women-only self-help groups (SHGs) within the FFPO framework, providing specialized training in post-harvest management, processing, and value addition (e.g., pickle making, drying), which are activities traditionally involving women, and ensuring representation for women in the FFPO's leadership and decision-making bodies.

Securing Access to Productive Resources

Addressing the "lease-seasonality trap" is the most critical priority. The FFPO leadership, with technical support from the Department of Fisheries and institutions like the College of Fishery Science, Nagpur, should:

- **Negotiate Collective Leases:** Leverage the collective strength of its members to negotiate long-term, multi-year lease agreements for water bodies. This would provide tenure security and incentivize members to invest in improving their ponds.
- **Advocate for Access to Perennial Water Bodies:** Lobby with local governance bodies (Gram Panchayats)

and the state government to secure access to community-owned or government-owned perennial tanks and reservoirs for FFPO members.

- **Promote Water Conservation:** Investigate and promote techniques for rainwater harvesting and water conservation to extend the culture period in seasonal ponds.

Targeted Capacity Building and Skill Development

Given that 65% of members are new to fisheries, a foundational, hands-on training program is essential. The FFPO should collaborate with the College of Fishery Science, Nagpur, to design and deliver a modular training curriculum focusing on:

- Scientific pond preparation and management.
- Water quality monitoring and management.
- Best practices in fish feeding and health management.
- Basic financial literacy and record-keeping.

Economic Diversification and Asset Building

To address low incomes and asset ownership, the FFPO should act as a facilitator for economic empowerment by:

- **Facilitating Credit Access:** Connect members with financial institutions and government schemes like the Fisheries and Aquaculture Infrastructure Development Fund (FIDF) to access credit for pond development, input purchase, and asset acquisition.
- **Promoting Integrated Farming:** Encourage the adoption of integrated fish farming systems (e.g., fish-cum-poultry, fish-cum-horticulture) to provide diversified and year-round income streams.
- **Developing Community Assets:** Explore the possibility of acquiring community-owned assets, such as a shared vehicle for transport or a small ice plant, which can be managed by the FFPO to reduce individual costs and improve market access.

6. Conclusion

This baseline survey provides a comprehensive and nuanced

understanding of the socio-economic conditions of the members of the Kalpataru Matsya Shetkari Utpadak Sahakari Sanstha in Saoner taluka. The study reveals that the FFPO is effectively serving as an institution for social inclusion, primarily catering to marginalized, economically vulnerable communities. The membership is young, dynamic, and literate, representing significant human potential.

However, the findings also illuminate critical structural barriers that constrain the livelihoods of these members and limit the FFPO's potential for economic impact. The central challenge is a profound resource insecurity, defined by an overwhelming dependence on leased and seasonal water bodies. This "lease-seasonality trap," combined with low asset ownership and limited experience in the sector, creates a cycle of low investment, low productivity, and income instability.

The primary contribution of this paper is the provision of detailed, empirical evidence of the ground-level realities confronting an FFPO in Central India. It moves the discourse beyond the general benefits of collectivization to highlight the specific, context-dependent challenges that must be addressed for such organizations to succeed. For the Kalpataru FFPO, the path to enhancing member livelihoods must prioritize securing long-term access to perennial water resources. Without addressing this fundamental constraint, other interventions in market linkage or input supply will yield only limited results.

Future research should focus on a longitudinal assessment of this cohort of FFPO members. Tracking their socio-economic trajectory over the next several years will enable a rigorous impact evaluation of the FFPO's interventions and provide invaluable insights for policymakers seeking to strengthen the FFPO movement under the Pradhan Mantri Matsya Sampada Yojana and other national initiatives.

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