



Declining Participation of Women in Kerala's Fisheries Sector: A Case Study from Chellanam Village

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Abstract

The fisheries sector contributes significantly to the livelihood of more than one lakh fisher families in Kerala. A gender-based analysis reveals that a significant number of women are engaged in the secondary sector of marine fisheries for both subsistence and additional income generation. Women actively participate in small-scale and artisanal fisheries particularly through post-harvest activities such as fish processing, peeling, and marketing. However, over the decades, there has been a gradual decline in the participation of women labourers in the sector. The specific objective of the present study is to identify the factors that contribute to this progressive decline of women labour as well as to explore the future opportunities for gender mainstreaming. Data was collected through individual interviews with 33 randomly selected fisher women from the fishing village of Chellanam using semi-structured interview schedule. A SWOT analysis was conducted to identify socio-economic factors affecting women's representation and employment prospects in the sector. The findings suggest that although the resources were limited in earlier periods also, the older age group (now above 50) made maximum use of the available fishery resources which they marketed or traditionally processed and provided financial support to the family, and participation among younger women

has declined. The major socio-economic factors that significantly contributed to the gradual decline of young women workforce in this sector were identified as the educational and economic progress of the fishing community, changes in the perspective of social status, lack of interest, lower wages, drudgery, lack of financial assistance for setting up and running businesses and inadequate technical assistance. In addition to the primary factors, marketing issues, changes in food safety regimes, personal health issues, poor access to landing centres and climate-related changes were identified as secondary factors. The study further highlights the strengths within the communities and explores future opportunities through gender main-streaming.

Keywords: Fishery sector, gender-mainstreaming, socio-economics, women labour

Introduction

Achieving gender equality and women empowerment is integral to the 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals (SDGs) (Esquivel, 2016). To attain this target under the existing scenario, gender mainstreaming and targeted interventions should be practiced as a twin-tracked strategy (FAO, 2020). India is the second largest country globally, accounting for 7.96% of global fish production (Guledagudda, Reddy, & Paled, 2020). With a coastline of 590 km, and an Exclusive Economic Zone (EEZ) of more than 2 lakhs sq km, the Kerala state represents 10% coastline of the Indian subcontinent. It provides a source of income and livelihood options for more than 10 lakh fisherfolk population of the state. Small-scale fish processing has a significant role in

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the food and nutritional security of the country as it provides an affordable source of nutrients to the population living with low income. Traditionally women have been contributing to the secondary activities through sorting, grading, peeling, curing, fish processing and marketing. Despite contributing nearly half of the workers, women are often not recognized and supported in fisheries sector, to have stake in setting sectoral directions (Williams, Gopal, Kusakabe, & Fakoya, 2025). The objective of the present study was to outline the specific factors that contribute to decline of women labour in fisheries as well as to explore the future opportunities of gender mainstreaming.

Materials and Methods

The study area is the Chellanam village (9.8394° N, 76.2740° E) located in the Ernakulam district of Kerala (Fig. 1). Interviews were carried out in 9 selected regions of the village. Primary data was collected through qualitative age-structured gender-sensitive interviews with 33 randomly selected women from the fishing village of Chellanam. The participants were classified into Young, Middle and Old Age groups (Petry, 2002). The qualitative data in the regional Malayalam language was transcribed, translated and coded. Unbiased codes staying close to the data were selected logically to conceptualize and extract the underlying patterns in candidate/participant responses. The codes were filtered and categorized into main and subcodes. The main codes and the work categories are presented in Table 1. Strength Weakness Opportunity Threat (SWOT) analysis was conducted to visualize the strengths and weaknesses and identify the potential threats and opportunities that prevail in the existing socio-economic conditions. Individual interviews were carried out using structured interview schedule to identify major strength, threats/limitations, opportunities and weaknesses. Further, Threat-Opportunity-Weakness-Strength (TOWS) an extension of SWOT analysis was performed to develop potential strategies for improvement. Strength-Opportunity (SO) strategy denotes use of strengths for maximum utilization of opportunities, Strength-Threat (ST) strategy denotes use of strengths to mitigate threats, Weakness-Opportunity (WO) strategy denotes overcoming weaknesses by taking advantage of opportunities, and Weakness- Threat (WT) Strategy denotes minimizing weaknesses and avoiding threats

Table 1. Codes and categories of SWOT analysis

Main Codes	Categories
1 Fish Processing (FP)	I Drying
2 Wellbeing (W)	II Drying & marketing
3 Family (FM)	III Drying, marketing & processing
4 Investment (I)	IV Working in Seafood company/Ornamental fish culture
5 Challenges (C)	V <i>Thozhilurappu</i> (Mahatma Gandhi National Rural Employment Guarantee Scheme - MGNREGA)
	VI Non-fisheries work

Spearman's rank Correlation analysis was carried out to identify relationship between age, education and work category of the interview participants. R software was used for trend detection, percentage and correlation analysis as well as visualization of data. Keyword search on scholarly databases (e.g., Google scholar) was used to collect secondary data from open-source technical reports. District-wise gender-segregated data on employment in fishing allied activities, educational status and work representation were obtained from these reports for the period 2005-2017 as available. The data on women's representation in the sector from earlier periods were compared with the existing data to identify the trend.

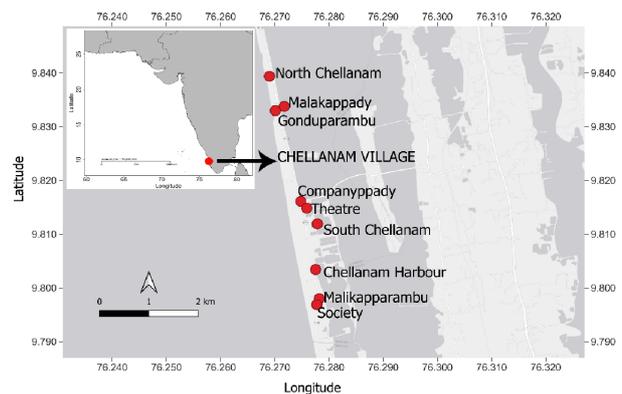


Fig. 1. The study area of Chellanam fishing village from where the surveys were conducted

Results and Discussion

Age-wise distribution of respondents revealed lower participation (24%) of younger women (<35 years) in traditional fish processing activities like

fish drying. Most of the women labour engaged in dried fish production were either middle aged (35-55) or older women (55 and above) constituting 42% and 33% of the total respondents (Fig. 2). A similar trend was observed for women's engagement in fish vending or retailing, with a lesser percentage of women in these occupational areas. However, it was observed in the study that those engaged in retailing are competitive and are trying to maintain quality of their products in competing with their peers. While the middle age group engage in fish processing activities as an additional source of income, for the older women it is a means of economic independence, self-respect and they also seem to have an emotional attachment to the profession which they have been engaged as a traditional occupation (Gopal, Hapke, Kusakabe, Rajaratnam, & Williams, 2020; Rejula, Ashaletha, Suresh, Gopal, & Mohanty, 2023).

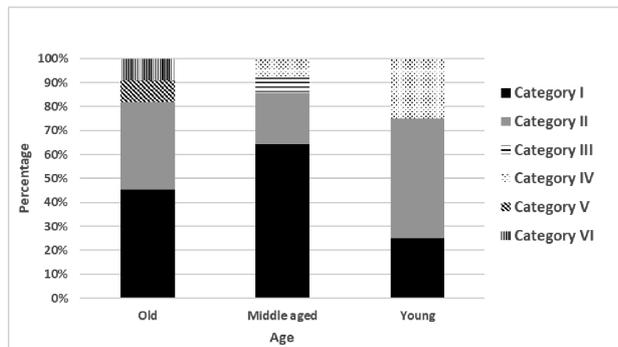


Fig. 2. Age-wise work category of women engaged in secondary fishing activities.

Legend: Category I - Drying, Category II - Drying & marketing, Category III - Drying, marketing & processing, Category IV - Working under Seafood company/Ornamental fish culture, Category V - MGNREGA and Category VI - Non-fisheries work.

The lower representation of younger females indicates the diminishing popularity of fish processing and marketing business among the youth. Small scale fisheries in many contexts are not perceived as a first choice of livelihood by young women and men (Arulingam, Nigussie, Sellamuttu, & Debevec, 2019). Educational status of respondents reveals older and middle-aged women had either primary education (81.82%; 35.71% respectively) or secondary education (18.18%; 64.29% respectively). On the contrary the younger women either were educated to the secondary level (87.5%) or had higher educational qualifications (12.5%; Fig. 3). It is

further observed that the representation of younger women in this sector, particularly those with higher educational status, is comparatively less (Fig. 4).

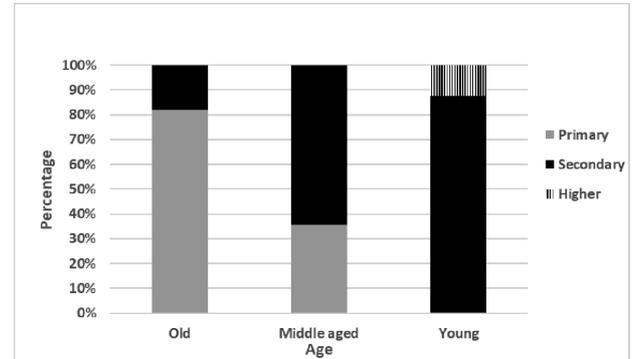


Fig. 3. Age-wise educational status of women labour (survey participants) in the study area

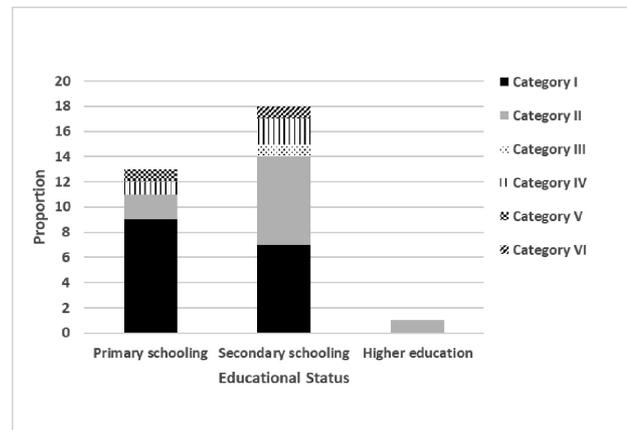


Fig. 4. The education-wise proportion of women labour (survey participants) engaged in work categories in the study area

Legend: Category I - Drying, Category II - Drying & marketing, Category III - Drying, marketing & processing, Category IV - Working in Seafood company/Ornamental fish culture, Category V - MGNREGA Category VI - Non-fisheries work.

The Kerala State Economic Survey (Government of Kerala, 2018) indicates that women are represented equally in higher education, including college education, job-oriented courses, professional degrees, and research (~50.9%). In this scenario, a good proportion of younger women after education go for better jobs in organized sectors (Fig. 5) or prefer higher studies and move out of traditional sectors including fishery-related occupations. Migration of fishing community members abroad, employment in government and other sectors outside fishery that

has been reported as important income accruing channels among the communities from the late 1990s (Nayak, Oliveira, & Berkes, 2014) has also led to this reduction.

Correlation analysis of the age-wise and education-wise data on work categories exhibited a significant correlation of 0.77*** ($p < 0.001$ at a 95 percent confidence interval). This implies a strong relation between age, education and work category of the respondents in the study area.

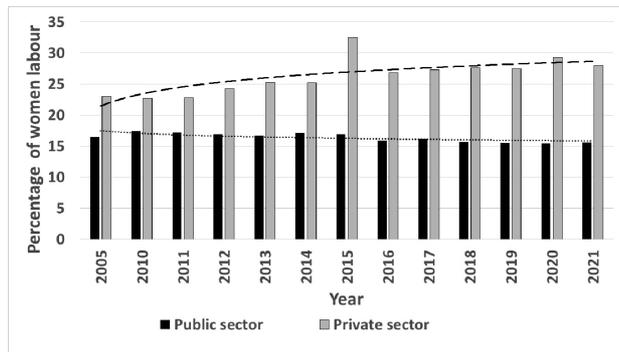


Fig. 5. Trend of women employment in the organized sector of the urban areas of Kerala from 2005 (Data courtesy: Economic Review, Government of Kerala, 2021).

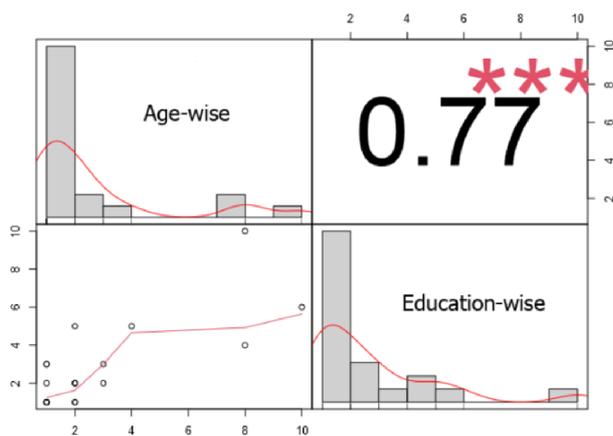


Fig. 6. Correlation between Age and Education-wise work category data of respondents (Spearman's rank correlation; $p < 0.001$, CI = 95%)

SWOT analysis results complement these assumptions. The major threats/limitations and weaknesses identified from the individual interviews were identical to the anticipated reasons for reduced younger women's representation in the traditional sector (Table 2). The educational and economic changes in the fishing community, changes in the

perspective of social status and prestige, cultural and societal expectations, lack of interest, lower wages, drudgery, lack of financial assistance and inadequate technical assistance are identified as the primary socio-economic factors that drive the decline of the young women workforce in this sector.

Other studies have identified challenges like poor access to resources, including spaces, increasing investments and operating costs, poor working conditions, seasonal nature of fish work etc. (Salim, James, Shinu, Athira, & Smitha, 2019; Gopal et al., 2020; Kelkar & Arthur, 2022; Rejula et al 2023).

This study identified marketing, changes in food safety regimes, personal health, poor access to landing centers and climate-related changes as secondary factors impacting participation of women (Fig. 6). The realization that fishing alone cannot support the family due to highly fluctuating earnings in marine fisheries has necessitated women to adopt other enterprises (Jeeva & Gopal, 2021).

The perception analysis of younger women (25%) indicates that they prefer to work on jobs related to value-added fish product development, marketing, startups and to take up other entrepreneurship activities rather than traditional fish processing. Aswathy and Kalpana (2018) found that the role of women in fishery differ depending on their education and household income, which makes it difficult for women from different backgrounds to form a sense of solidarity. Increased access to transportation helped women to explore jobs in the organized sectors of the urban areas. The sectoral composition of workers also shows that a greater proportion of

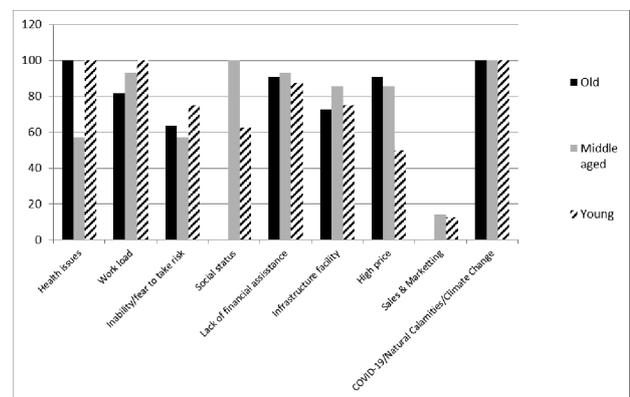


Fig. 7. Major drivers leading to the lower representation of women in the traditional fisheries sector as per the survey (percentage).

Table 2. Results of SWOT analysis

Strengths	Weaknesses
Main livelihood (FP)	Physical health (W)
Work cooperation/patterns (FP)	Mental health (W)
Family bonding (FM)	Marketing (FP)
Children (FM)	Location (FP)
Social support	Capital (I)
Religious practices/beliefs (W)	Change in perspective/ lack of interest (O)
Education (E)	
Opportunities	Threats
Livelihood diversification (FP)	Species diversity and availability (FP-C)
Profit (I)	Climate change (C)
Employment (FM)	COVID pandemic (C)
Heritage (W)	Over exploitation (FP-C)
	Natural calamities
	Price (FP-C)

Table 3. TOWS results - Opportunity Threat matrix revealing potential risks and strategies for mainstreaming female labour to the traditional fish processing sector

	Strengths	Weaknesses
Opportunities	<p>SO Strategy Cooperation among individuals in Self Help Groups (SHGs) can be utilized to explore more livelihood options and employment opportunities as a collective action</p> <p>Work patterns may be modified as per individual / group interests</p>	<p>WO Strategy Monitoring could be taken up for improving work conditions of women fish workers ensuring their physical and mental well being</p>
Threats (Limitations)	<p>ST Strategy Over-exploitation of resources affecting species diversity and availability - Social cooperation and community engagement can help resource management Calamities and shocks- Cooperative societies and religious organizations can assist communities Price fluctuations: Fishermen Welfare Societies/ Government agencies can involve in price fixation to ensure minimum support price for fish</p>	<p>WT Strategy Minimize the physical and mental pressure on women in their work premises</p> <p>Create a positive outlook for fisherwomen in society, that the younger generation can look up to</p> <p>Educate youth on the importance of preserving the heritage of the fishing community</p>

women's labour is in urban areas compared to rural areas and more so to the private sector (Fig. 5).

The TOWS results indicate a few potential strategic measures for retaining women in fish work or making this more gender sensitive, especially as fish

is a source of nutritional security, besides being a means of livelihood and income (Table 3).

In Chellanam fishing village, the existing SHGs and its group dynamics is a strength which can be leveraged to mobilize more women and diversify

group activities for additional employment generation. Social cooperation and community engagement is a strength and collectives like cooperative societies and religious organizations which engage constantly with the community can be the first point of contact and response during natural calamities or other shocks. Threats that the community faces like overexploitation of resources, natural disasters climate change and poor price for fish can be addressed through increasing awareness among fishers on resource conservation and proper regulation with their involvement through their cooperative societies. Climate adaptation and mitigation strategies should also be planned and implemented through community organizations. An issue like price uncertainty which is natural in an unpredictable supply scenario can be mitigated through state intervention for eg., through a base price fixation model. Poor working conditions that women face in fish value chains can be improved to enhance work efficiency and to harness opportunities in fish value addition. Creating improved and accessible markets and marketing facilities can enhance entrepreneurship among women. Emerging business models like use of online platforms, modern fish vending outlets etc. can become opportunities, that can attract young women workers. The acceptance of entrepreneurship as a vital force for development by creating an environment enabling entrepreneurship in rural areas is essential for its development (Jeeva & Gopal, 2021).

Results of the present study revealed several factors that contributed to decline of young women labour in the fisheries sector. Young women were found less involved in traditional fish processing and fish vending indicating lessening of interest among the younger women in the community. Education had a significant correlation with work category and younger women were interested in entrepreneurial activities rather than pursuing traditional fishery related work. Lack of societal recognition and low prestige were perceived as one of the restraining factors, despite the availability of the resources. Transformations in how women are perceived in the sector is essential as a strategy for the attracting younger women to work in the sector.

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