



ISSN (E): 2277-7695
ISSN (P): 2349-8242
NAAS Rating: 5.23
TPI 2023; SP-12(8): 601-607
© 2023 TPI

www.thepharmajournal.com

Received: 22-05-2023

Accepted: 26-07-2023

Sunil K Shekh

Post Graduate, Institute of Fisheries Education and Research, Kamdhenu, University, Rajpur (Nava), Himmatnagar, Gujarat, India

Smit R Lende

Centre of Excellence in Aquaculture, Kamdhenu University, Ukai, Gujarat, India

Chirag M Bhadesiya

Post Graduate, Institute of Veterinary Education and Research, Kamdhenu University, Rajpur (Nava), Himmatnagar, Gujarat, India

Hardik R Patel

Post Graduate, Institute of Fisheries Education and Research, Kamdhenu, University, Rajpur (Nava), Himmatnagar, Gujarat, India

Dignati C Tandel

Post Graduate, Institute of Fisheries Education and Research, Kamdhenu, University, Rajpur (Nava), Himmatnagar, Gujarat, India

Mehul N Patel

Central Institute of Fisheries Education, Mumbai, Maharashtra, India

Corresponding Author:

Sunil K Shekh

Post Graduate, Institute of Fisheries Education and Research, Kamdhenu, University, Rajpur (Nava), Himmatnagar, Gujarat, India

Study on women participation in aquaculture and fisheries activities in Tapi district

Sunil K Shekh, Smit R Lende, Chirag M Bhadesiya, Hardik R Patel, Dignati C Tandel and Mehul N Patel

Abstract

Women played a critical role in the fisheries and aquaculture sector, particularly in subsistence and small-scale production systems. In India especially in the coastal villages and dam around the key role in the domestic marketing of fish. Aquaculture and fisheries are important economic activities for coastal and riverine communities in many parts of the world. Women have an important role in the fish value chain, supplying labor and functioning as small-scale entrepreneurs in both commercial and artisanal fisheries. The present study is conducted to study the women's participation in fisheries and aquaculture in the Tapi district and study the socio-economic aspect of women involved in aquaculture and fisheries in the Tapi district. The standard questionnaire was prepared and related to the collected data in various aspects including income categories, household size, education, marital status, membership details, training attendance, contact with relevant institutions and age groups. A total of 122 respondents were surveyed in the present investigation. During this survey, most respondents were in the age group of 25-35 years married and illiterate. They belonged to joint-family households and lived in kutcha houses. Despite limited resources and support, all respondents were actively involved in fishing-related activities. However, the majority had never attended any training programs related to fisheries and aquaculture. Empowering women in aquaculture and fisheries activities can contribute to sustainable development and economic growth in the Tapi District. This cooperative initiative can provide a platform for women to share resources, knowledge and experiences, leading to improved outcomes for their businesses.

Keywords: Aquaculture, fisheries activities, Tapi district, women participation

Introduction

Aquaculture and fisheries are important economic activities for coastal and riverine communities in many parts of the world. In India, fishing and aquaculture provide livelihoods for millions of people, particularly in the coastal and riverine regions. Fisheries and aquaculture estimate employment 58.5 million people were engaged in the primary production sector as part-time or full-time employees in 2020. Some 35% were employed in aquaculture. Overall, women estimate for 21% of those engaged in the primary sector (18% in fisheries and 28% in aquaculture), but they tend to have further unstable employment in aquaculture and fisheries, considering only 15% of full-time workers in 2020 (FAO, 2022) [8].

Women have historically played a critical role in the aquaculture sector, particularly in subsistence and small-scale production systems. Their roles and contributions have often been overlooked or undervalued. In recent years, there has been a growing recognition of the importance of promoting gender equality and women's empowerment in the aquaculture sector. Studies have shown that involving women in aquaculture can improve both their socioeconomic status and the productivity and sustainability of the industry.

Women have an important role in the fish value chain, supplying labor and functioning as small-scale entrepreneurs in both commercial and artisanal fisheries. Rural women are more likely to engage in fish farming as a result of family economic pressures. Rural women's involvement in fish farming thus extends to all aspects of the industry, including making fish feed, feeding the fish, cleaning nets/cages and general pond or cage maintenance and upkeep (FAO, 2022) [8].

In India, women are involved in various activities related to aquaculture, such as pond preparation, stocking, feed preparation and harvesting (Handbook on fisheries statistics, 2020). Women play a crucial role in the aquaculture industry, particularly in coastal areas where aquaculture is a primary source of livelihood. Studies have shown that women contribute significantly to the production, processing and marketing of fish.

They also have extensive knowledge of local aquatic resources and ecosystem management practices, which is crucial for the industry's sustainable development.

Despite their significant contributions, women in India face several challenges that hinder their participation in the aquaculture sector. These challenges include limited access to finance, training and technology, as well as social and cultural barriers that prevent them from taking up leadership positions and decision-making roles. Indian women have a critical role to play in the sustainable development of the aquaculture sector. By addressing the challenges they face and promoting their participation in the industry, India can harness the full potential of women's contribution to the growth and development of the aquaculture sector.

Tapi district includes talukas namely Vyara, Songadh, Nizar, Valod, Uchhal, Dolvan and Kukarmunda. The district

headquarters are in Vyara town. According to the 2011 Census, the population of Tapi district in Gujarat is 8,07,022. Males make up 4,02,188 while females make up 4,04,834. In 2011, the Tapi district had a total of 1,77,091 families. The present study is conducted to study the women's participation in fisheries and aquaculture in the Tapi district and study the socio-economic aspect of women involved in aquaculture and fisheries in the Tapi district.

Materials and Methods

The study was carried out in the South Gujarat region. South Gujarat region consists of seven districts namely Surat, Navsai, Valsad, Dang, Tapi, Bharuch and Narmada. Out of these districts, the Tapi district was purposively selected for the present investigation in this area.

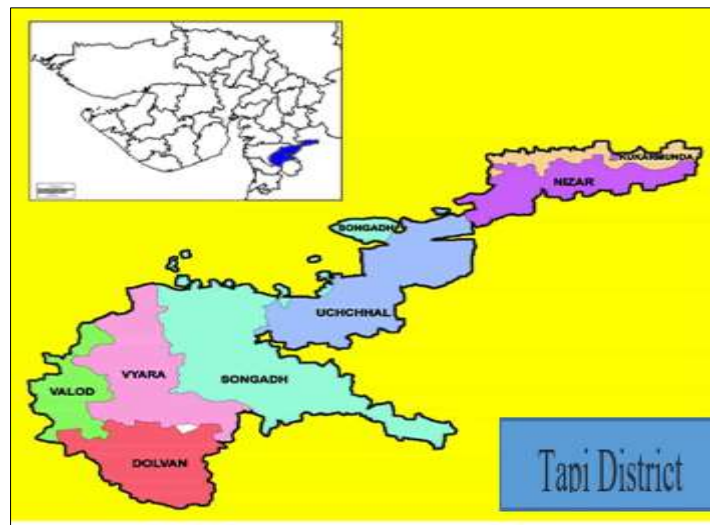


Plate 1: Map of Gujarat state showing the location of Tapi districts

The study was carried out from September 2022 to March 2023. The standard questionnaire was prepared which was related to the collected data in various aspects including income categories, household size, education, marital status, membership details, training attendance, contact with relevant institutions and age groups. Data was collected from

Fisherwomen via personal interviews. The data were collected by using the personal interview method. To achieve the defined objective, the field survey method was adopted. The contacting 122 numbers of fisherwomen socioeconomic survey (Plate 2).



Plate 2: Collection of Information from Fisherwomen

Tapi district consist seven talukas viz., Vyara, Songadh, Nizar, Uchhal, Dolvan and Kukarmunda. Out of 7 talukas in the Tapi district, 4 talukas was selected purposively based on women's participation. From each taluka, fisherwomen was

selected randomly selected. Out of the 178 fisherwomen surveyed from various talukas. 122 participated in the response, while 56 did not respond. The sample size was 122 respondents for the present study (Plate 3).

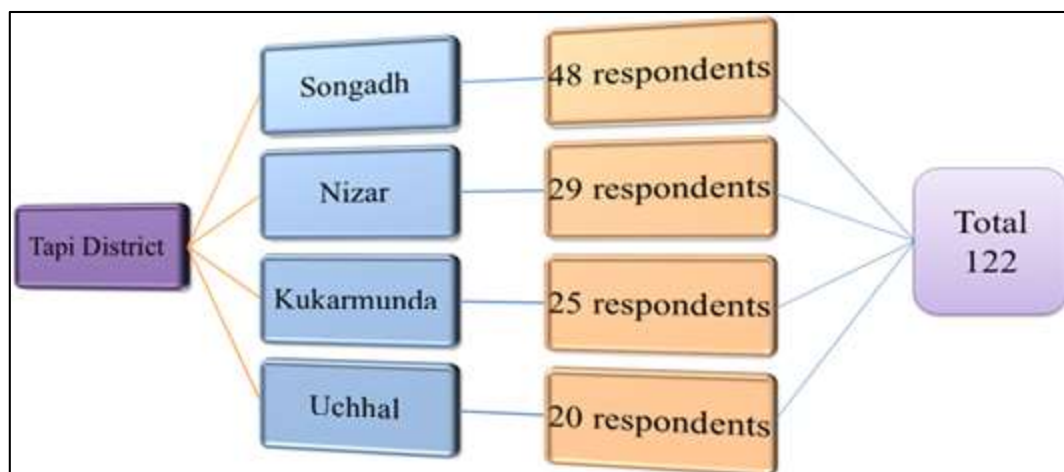


Plate 3: The operational structure of the selection of respondents

Analysis of the data

Collected data were analyzed by Microsoft Excel 2013. Collected data were analysed by Statistical Package for Social Science (SPSS) 25.00. Simple statistical measures like arithmetic mean, mode (frequency) and percentage (%).

Results and Discussion

The survey conducted in the Tapi district of Gujarat aimed to study the participation and socio-economic aspects of women involved in fisheries and aquaculture. The survey collected data through personal interviews with women involved in the fishing industry. The survey encompassed 122 respondents.

Age was classified into four groups. The majority of the respondents (36.9%) fell in the age group of 25-35 years, followed by 35-45 years (35.2%), above 45 years (20.5%), and below 25 years (7.4%) (Figure 1). Bhargavi *et al.* (2020) [1] reported that most of the fishermen surveyed belonged to the middle-aged group, accounting for 62% of the total respondents. This was followed by the old age group 20% and young age group 18% of the respondents.

Marital status was classified into four categories: unmarried, married, widowed, and divorced. Most of the women interviewed were married (91.8%), while a small percentage were widowed (7.4%) and single (0.8%) (Figure 2). Olagunju *et al.* (2021) [4] majority (81.7%) of the respondents were married, widowed 11.7%, divorced (4.2%) and single (2.5%).

The education level was classified into four categories: illiterate, primary education, secondary education and tertiary education. The survey revealed that a significant number of women had no formal education, with 59.8% being illiterate. 36.1% had primary education, 2.5% had secondary education, and 1.6% had tertiary education (Figure 3). In a study conducted by Bhargavi *et al.* (2020) [1], it was found that the majority of the surveyed fishers (88.1%) were reported as illiterates, while 11.9% of fisherwomen had completed some formal education. Additionally, it was observed that 40.9% of all respondents possessed the ability to read and write.

Family types are classified into two categories: nuclear and joint. The majority of the respondents (54.1%) belonged to joint-family households, while 45.9% were from nuclear-family households (Figure 4). Bhargavi *et al.* (2020) [1]

reported that most of the fishermen's families were nuclear (64.9%) followed by joint families (35.1%).

House types are classified into two categories: kutchha and pucca. 95.1% of the women lived in kutchha houses (less permanent structures), while only 4.9% lived in pucca houses (permanent structures) (Figure 5). Roy *et al.* (2017) [6], research findings indicate that approximately 89% of the houses surveyed were categorized as kachha houses, while only 11% were classified as pucca houses.

Household size are classified into three categories: 1-2 members, 3-5 members and greater than 5 members. The majority of the households (59%) had 3-5 members, followed by households with more than 5 members (35.2%) and 1-2 members (5.7%) (Figure 6). Bhargavi *et al.* (2020) [1] found that 48.7% of the families consisted of <5 members and 51.3% of families with >5 members.

The year of initiating fishing activity was classified into five categories. The women were primarily engaged in fish catching (100%), fish drying (54.1%), and net mending (50%) (Figure 7).

The Fishing experience was classified into three categories: 1-3 years, 4-6 years and greater than 6 years. Out of the respondents, 16 individuals had an experience of 1-3 years, while another 16 respondents fell into the 4-6 years category. The majority, comprising 90 respondents, had an experience of more than 6 years. Therefore, the survey indicated that individuals with over 6 years of experience in Fishing were the dominant group. Most of the women (51%) had eleven to twenty years of experience, 29% of women had below 10 years of experience and only 4% had above forty years (Figure 8). Pushp *et al.* (2017) [5] most of the women (51%) had eleven to twenty-year of experience, 29% of women had below 10-year experience and only 4% had above forty years.

Income was classified into three categories. The majority of respondents, 81.1%, reported an income of fewer than 5000 rupees per month. Additionally, 11.5% of respondents had an income ranging from 5001 to 7500 rupees per month, while only 7.4% reported an income exceeding 7500 rupees per month (Figure 10). Ibarra (2021) monthly income 500-1000 pesos (46.67%), 1001-3000 pesos (26.67%), 3001-5000 pesos (20.0%) and above 5001 pesos (6.66%) (Figure 9). Ibarra

(2021) monthly income 500-1000 pesos (46.67%), 1001-3000 pesos (26.67%), 3001-5000 pesos (20.0%) and above 5001 pesos (6.66%).

Income resources were classified into two categories: fisheries only and fisheries and other sources. Out of the respondents, 31 individuals relied solely on fisheries as their income resource, representing 25.4% of the total. The majority, comprising 91 respondents, had income resources that involved Fisheries along with other sources, accounting for 74.6% of the total respondents (Figure 10).

Other activity was classified into 5 categories: other activity, agriculture and livestock, agriculture, livestock and horticulture. Instead, two categories were observed in the survey. The majority, comprising 91 respondents, reported engagement in agriculture and livestock activities. The remaining 31 respondents indicated that they were not involved in any other specific activity and were categorized as "housewives" or having no other activity (Figure 11). Olagunju *et al.* (2021) [4] other income generating in trading (76.3%), tailoring (18.3%), weaving (10.8%) and crop farming (7.5%).

Women engage in fisheries activity in three main categories: fish catching, with 122 respondents; fish drying, with 66 respondents and net mending, with 61 respondents (Figure 12). According to Ibarra's (2021) study, the sorting of fish received the highest ranking at 10, followed by fish vending at 9, net mending at 7, processing and preservation at 3 and finally trading and market retailing at 1.

Activity duration was classified into two categories: full-time and part-time. Only 2 respondents reported engaging in their activities on a full-time basis, which accounts for 1.6% of the total. The majority, comprising 120 respondents, indicated that their activity duration was part-time, representing 98.4% of the total (Figure 13). Uduji (2018) [7] farming status is full-time (88%) and part-time (12%).

Training attended was classified into two categories: Training participated and not attended. Out of the respondents, only 3 women reported participating in training sessions, which accounts for 2.5% of the total. The majority, comprising 119 women, indicated that they had not attended any training, representing 97.5% of the total (Figure 14).

The fisheries department/KVK/university/expert was classified into five categories: fortnightly, monthly, occasional, rare and never. It was found that the majority of respondents fell into two categories: rare and never. Out of the respondents, only 3 individuals reported rare contact with the fisheries department/KVK/university/expert, accounting for 2.5% of the total. On the other hand, a significant majority of respondents, 119 individuals representing 97.5%, reported never having contacted the fisheries department/KVK/university/expert (Figure 15). Bhargavi *et al.* (2020) [1] the phenomenon of contact with extension agencies was reported to be categorized into three levels: low, medium and high. The findings indicated that among the surveyed composite fish farmers, 14.1% reported a low level of contact with extension agencies, while 45.4% reported a medium level of contact. The remaining 40.6% of respondents reported a high level of contact with extension agencies.

Medical facilities at the fisher villages were classified into 2 categories. Medical facilities at the fisher villages were available in 40 and medical facilities at the fisher villages in absent are 82. The %age of medical facilities at the fisher villages was available at 32.8% and medical facilities at the fisher villages absent is 67.2% (Figure 16).

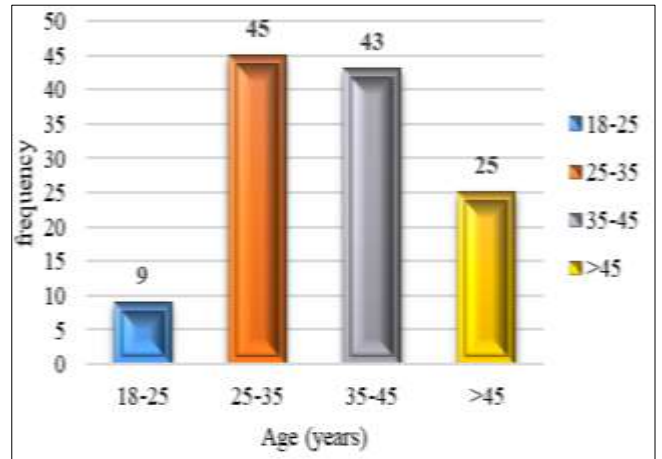


Fig 1: Age group frequency

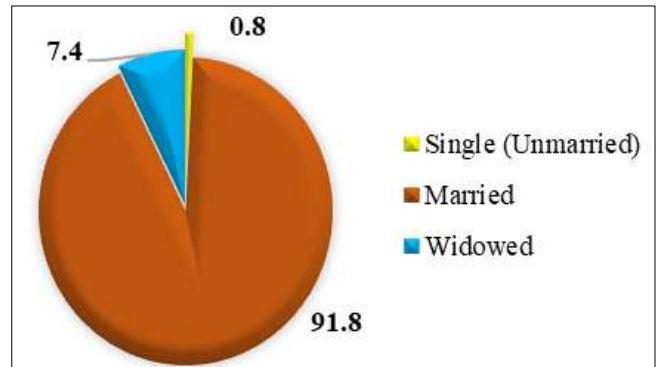


Fig 2: Marital status (%)

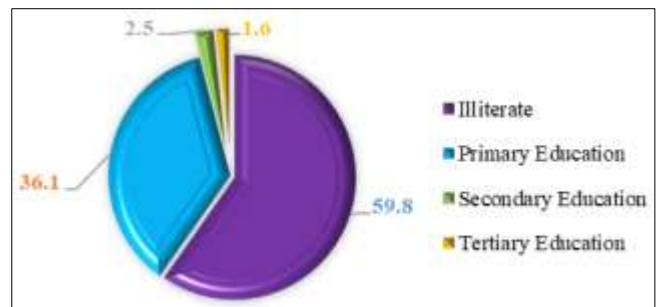


Fig 3: Education (%)

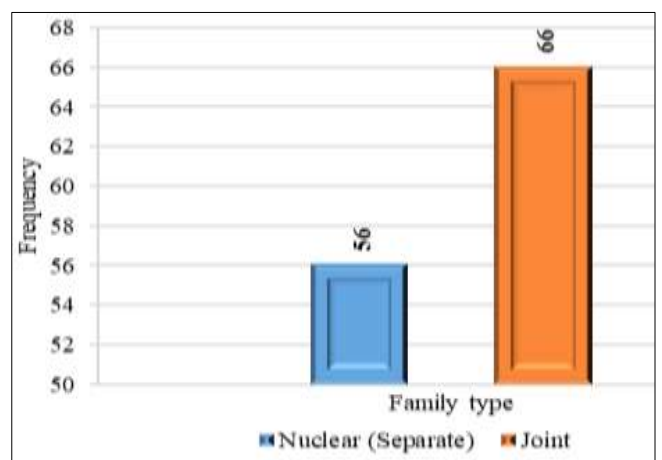


Fig 4: Family type frequency

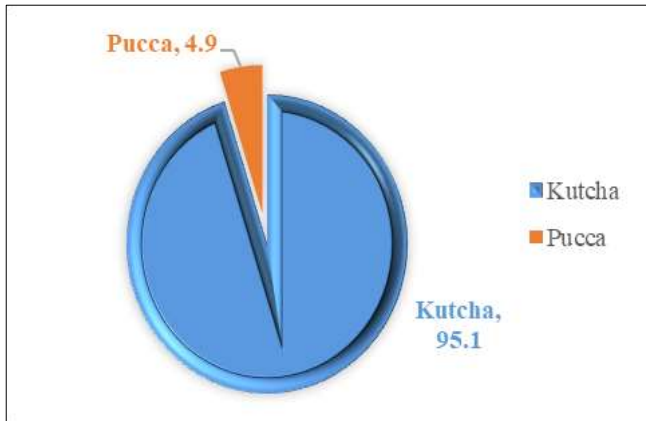


Fig 5: House type (%)

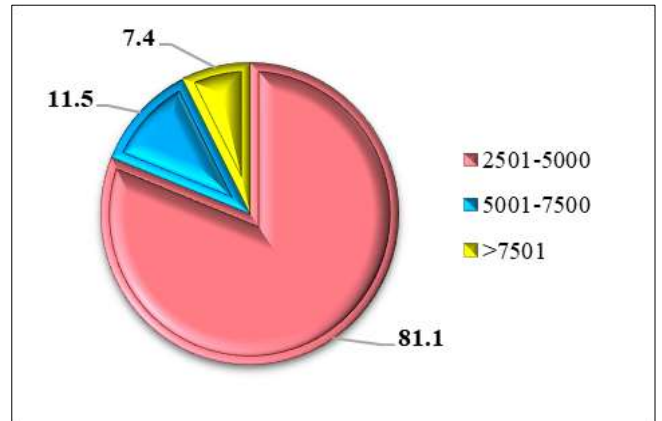


Fig 9: Approx. income (Rs/Month) (%)

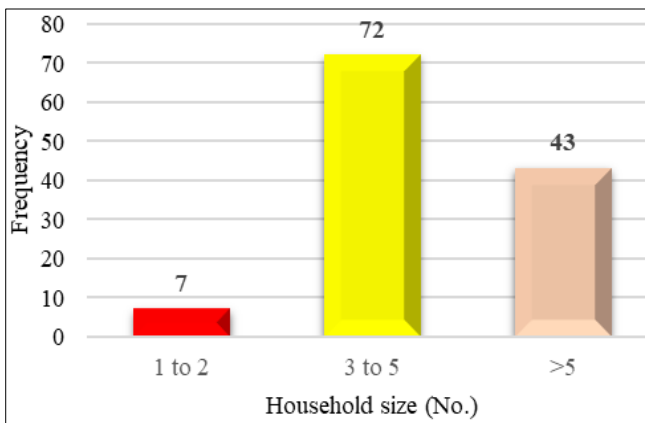


Fig 6: Household size (No.)

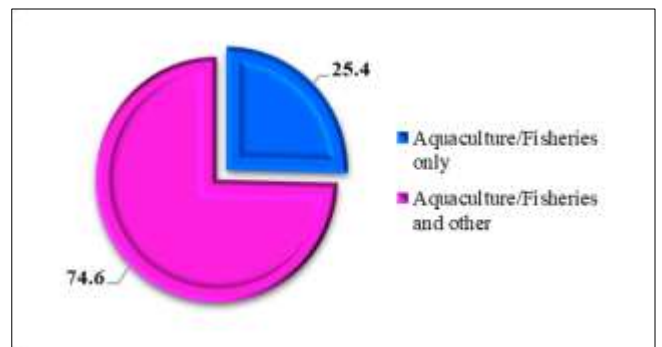


Fig 10: Income resources (%)

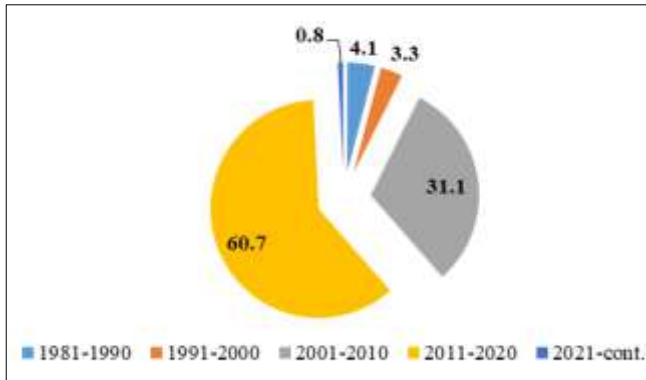


Fig 7: Year of initiating fishing activity (%)

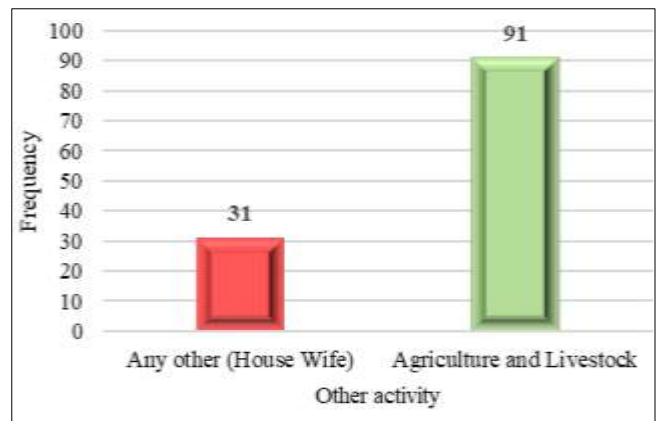


Fig 11: Other activity (%)

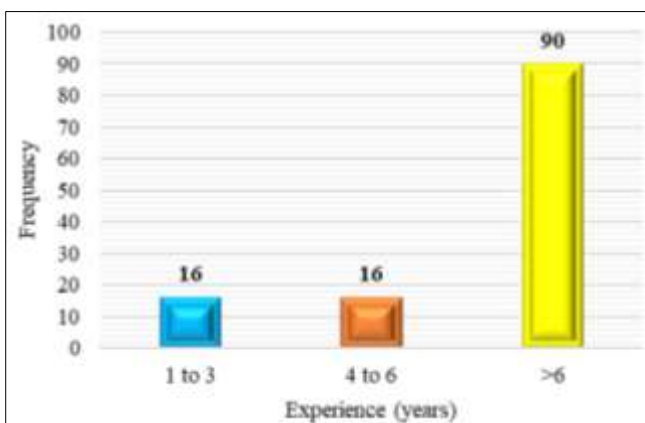


Fig 8: Fishing experience

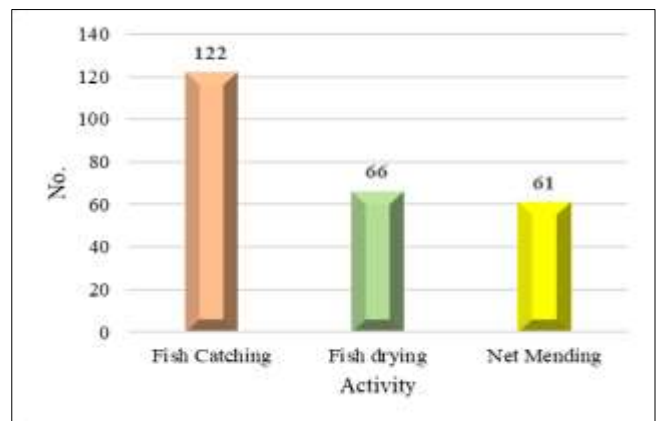


Fig 12: Women engage in fisheries activity

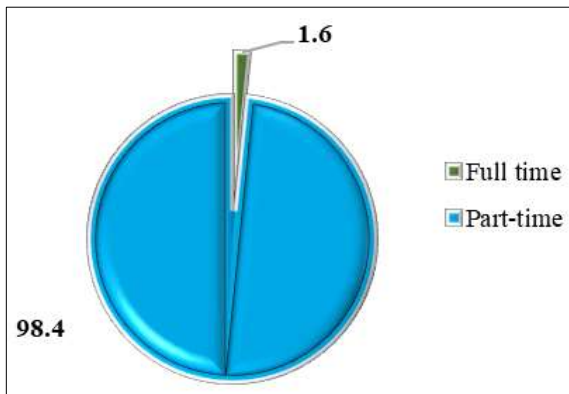


Figure 13: Activity duration

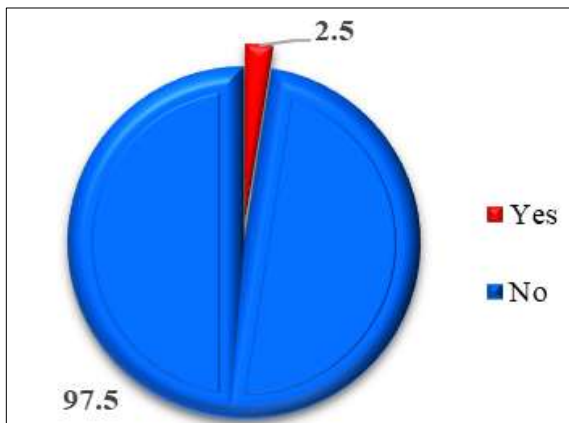


Figure 14: Training attended (%)

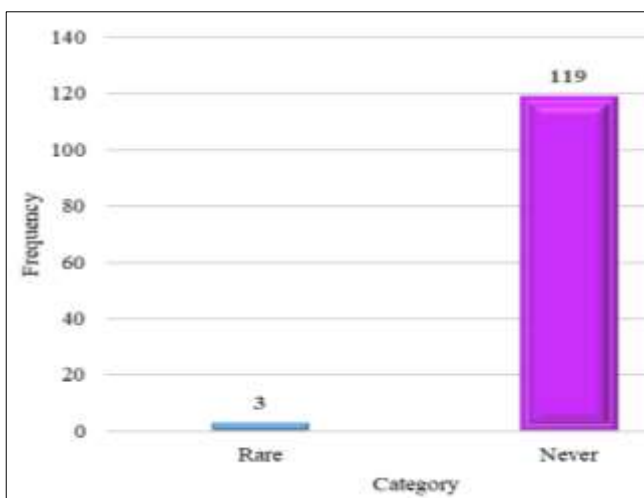


Figure 15: Contacted with fisheries department/KVK/university/expert

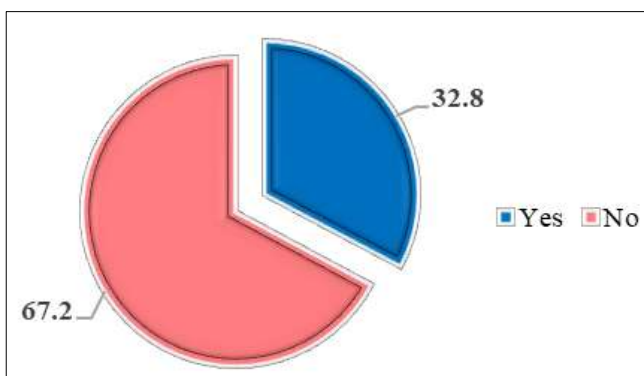


Figure 16: Medical facilities at the fisher villages (%)

Conclusions

The survey conducted in the Tapi District of Gujarat aimed to investigate women's participation in aquaculture and fisheries activities, focusing on their level of involvement and the challenges they face. Most of the respondents were in the age group of 25-35 years, married and illiterate. They belonged to joint-family households and lived in kutcha houses. The findings of the study indicated that a significant number of women were actively engaged in various aspects of aquaculture and fisheries. They encountered several barriers, including limited access to resources and gender-related constraints.

Empowering women in aquaculture and fisheries activities can contribute to sustainable development and economic growth in the Tapi District. The formation of cooperative societies or Fish Farmer Producer Organizations (FFPOs) among women can help alleviate some of the challenges they face in their enterprises. These cooperative initiatives can provide a platform for women to share resources, knowledge and experiences, leading to improved outcomes for their businesses.

The study several measures of women's participation in these sectors. Providing training programs specifically designed for women involved in fisheries and aquaculture would equip them with the necessary skills and knowledge. Improving access to government schemes and technological advancements can help overcome the resource limitations faced by women. Additionally, promoting gender equality and addressing societal norms and biases would create a more inclusive environment for women in the sector.

The study highlights the socio-economic characteristics of women involved in fisheries and aquaculture in the Tapi District and emphasizes the need for targeted interventions to support and empower them. By providing training, improving access to resources and support and promoting gender equality, the participation of women in these sectors can be enhanced, leading to improved livelihoods and overall development in the region.

References

- Bhargavi K, Chirwatkar BB, Das A, Behera S, Bhakta D. Socio-economic status of fisherwomen community in coastal Vizianagaram district of Andhra Pradesh, India. *Journal of Fisheries*. 2020;8(1):741-745. <https://doi.org/10.17017/j.fish.10>
- Census. Tapi District: Population 2011-2022 data; c2011. <https://www.census2011.co.in/census/district/207-tapi.html>
- Fedelyn S Ibarra. Extent of participation of rural women in fishing community: approaches toward sustainable livelihood. *EPRA International Journal of Economic and Business Review*; c2021. p. 54-59. <https://doi.org/10.36713/epra7406>
- Olagunju O, Ariyo O, Olagunju O, Fadele O, Alabi O, Ganiyu L, et al. Assessment of participation level of rural women in fish farming in kaduna state, nigeria. *Russian Journal of Agricultural and Socio-Economic Sciences*. 2021;111(3):141-149. <https://doi.org/10.18551/rjoas.2021-03.16>
- Pushp A, Vala RB, Verma AK. Role of Women in Fisheries Sector In veraval, Gujarat. *Trends in Biosciences*; c2017, 10(40)
- Roy Aparna, Pandit Arun, Sharma AP, Bhaumik Utpal, Majunder S, Biswas DK. Socioeconomic status and

- livelihood of fisher women of hooghly estuary. *Inland Fish. Soc. India*. 2015;47:49-56.
7. Uduji Joseph I, Okolo-Obasi, Elda N. Impact on development of women in small-scale fisheries of sub-Saharan Africa Evidence from coastal communities of Niger Delta in Nigeria, African Governance and Development Institute; c2018. <http://hdl.handle.net/10419/204981>
 8. World Food and Agriculture - Statistical Yearbook. Food and Agriculture Organization of the United Nations; c2022. <https://doi.org/10.4060/cc0639en>