



Fisherwomen's Participation in Fisheries: A Case Study of Bargi Reservoir in Madhya Pradesh, India

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Abstract

A study was conducted in Bargi reservoir in Madhya Pradesh state, India with the objectives of exploring membership and participation of men and women in Fisheries Cooperative Societies (FCS), and constraints perceived by them. The study revealed that only 8.88 % fisherwomen had membership in the FCS even when 80.54 % of them were engaged in fisheries activities. Involvement of fisherwomen was in fish smoking (33.33 %), fish trading (12.22 %), fish harvesting (11.11 %) and net making/repairing (23.88 %). Fisherwomen were engaged for 8 hours/day in productive work and 9 hours/day in reproductive and community work. Poor social status, poor social acceptance and lack of ownership of assets were major social constraints. In addition, less income, lack of working capital and lack of alternative livelihood opportunities during closed fishing season were also reported. Gender bias in getting membership in FCSs, limited access to training and extension services and lack of access to financial saving schemes were the main institutional constraints.

Keywords: Fisherwomen, constraints, Fisheries Cooperative Societies, fisheries activities

Introduction

Reservoir fisheries hold great potential for providing livelihood to traditional fishing communities depending on reservoirs. There are 19,370 reservoirs in India. Madhya Pradesh state has 32 reservoirs, out of which 5 are large reservoirs. The large reservoirs in Madhya Pradesh are Indira Sagar, Gandhi Sagar, Ban Sagar, Bargi, and Tawa. Bargi reservoir is the

fourth largest reservoir in Madhya Pradesh, with a water spread area of 27,296 hectares. It was constructed on the river Narmada in the year 1990. In Madhya Pradesh, during 2018-19, there were a total of 2,376 Fisheries Cooperative Societies (FCS) with 88,509 members (fish farmers and fishers). Out of the 2,376 FCS, 2,326 were of fishermen with 86,852 members. As per the Fisher's Welfare and Fisheries Development Department, Madhya Pradesh (2018-19), only 50 were FCS of fisherwomen with 1,657 fisherwomen members.

Out of the total population of 5.4 million active fishers in India, 3.8 million are fishermen and 1.6 million are fisherwomen (DAHDF, 2019). Their involvement in fisheries value chains is often considered invisible despite being active in a wide range of harvest and post-harvest activities in capture fisheries (Upton, 1991; Dunlop, 1999). Many researchers have documented and highlighted fisherwomen's experience to bring awareness on women's roles in this sector (Ashaletha et al., 2002; Medard et al., 2002; Luna, 2014; Bhat & Sharma, 2021). However, their vital roles remain unarticulated, unrecognized, and undervalued in inland capture fisheries. Capturing fisherwomen's experiences about the roles they play and constraints they face is essential for increasing their participation, sustainable resource management in inland capture fisheries and for improving the quality of gender mainstreaming in the fisheries sector. Fisherwomen perform multidimensional roles that include livelihood generation, reproductive roles, and community work (Upton, 1991; Dunlop, 1999).

In this background, this study was conducted in Bargi reservoir with the objectives of exploring membership pattern and participation of men and women in Fisheries Cooperative Societies (FCS), daily routine profile of fisherwomen, participation of fisherwomen in fishing and related activities, as well as to examine the constraints perceived by them.

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Materials and Methods

The present study was conducted in the Bargi reservoir of the state. Map of the locale of study is presented in Fig. 1.

Bargi reservoir is located in three districts Jabalpur, Mandla and Seoni. Jabalpur and Mandla has 2 and 4 landing centres, respectively. Seoni has no landing centre. Therefore, for the present study, Jabalpur and Mandla districts were selected. The Jabalpur district represent the head stretch of reservoir, whereas the Mandla district represent the middle and tail stretch of reservoir. From each stretch of the reservoir, two fishing villages were randomly selected.

Spouses of fishermen who were members of FCS were considered as fisherwomen. Fisherwomen were either members of FCS and engaged in fishing and related activities; or were not members and were partly engaged in fishing and related activities; or were not members and were not engaged in fishing and related activities. By regulation, each fishing village could have one FCS. In total, 6 FCS were covered.

To explore membership details of FCS, information was collected on total membership, number of fishermen and fisherwomen, and the number of active and inactive members in FCS. Participation of

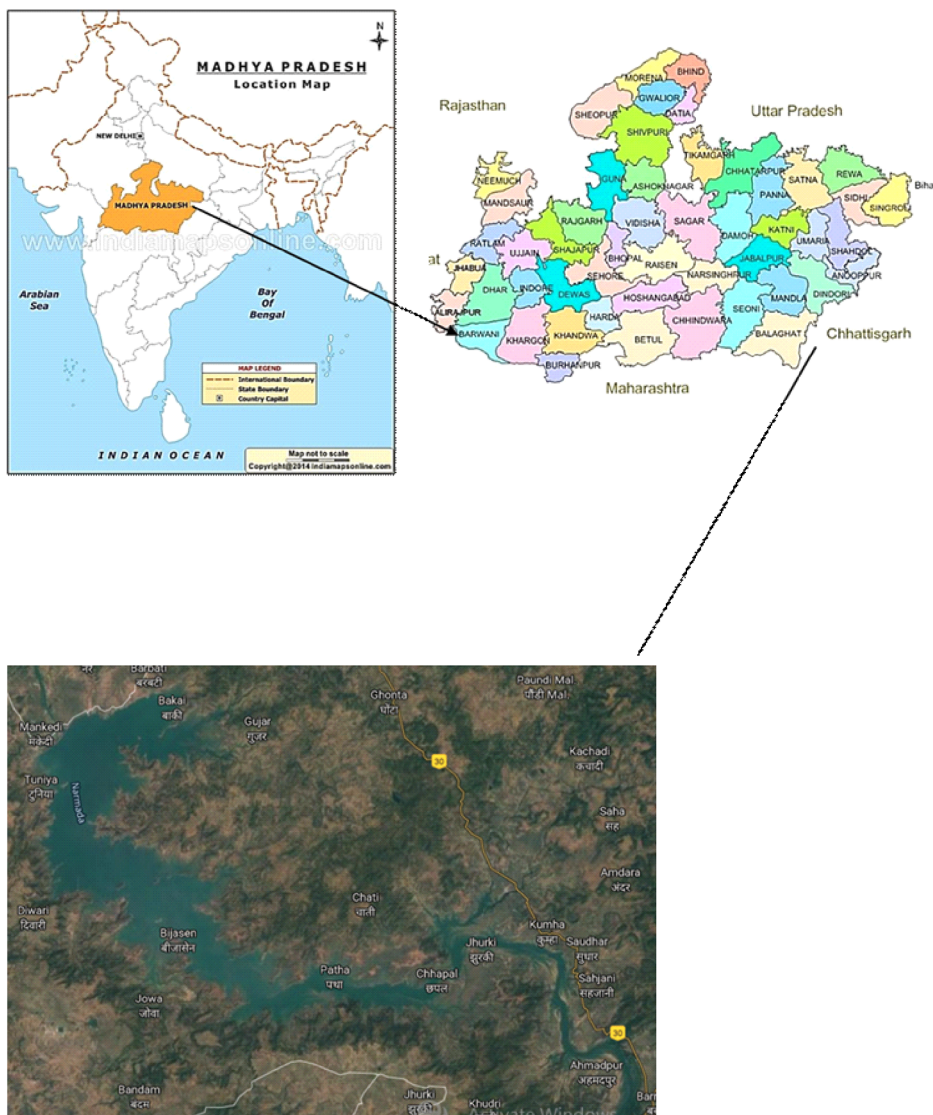


Fig. 1. Geographical location of Bargi Reservoir (Source: www.googlemap.com)

Table 1. Details of the fisherwomen sampled in the districts of Jabalpur and Mandla

| District | Fishing villages | Number of fisherwomen |
|----------|------------------|-----------------------|
| Jabalpur | Magardha | 30 |
| Jabalpur | Durga Nagar | 30 |
| Mandla | Manadei | 30 |
| Mandla | Gaghagwari | 30 |
| Mandla | Patha | 30 |
| Mandla | Narayanganj | 30 |
| Total | | 180 |

women in fisheries was studied as active participation, passive participation, and non-participation as defined in the Madhya Pradesh Fisheries Federation, 2019 bylaws. As per the Madhya Pradesh Fishers' Cooperative Societies Rules, 1972, an active member was defined as those engaged in fishing for 100 days or more in a year and regularly participated in monthly meetings of FCS. Those fishers who do not fall under this criteria are considered as inactive members (Madhya Pradesh Fisheries Federation bylaws, 1969). To prepare the daily routine of fisherwomen, interviews were conducted with 180 fisherwomen following the sampling method. It included three spheres of women's triple role across productive, reproductive, and community work as given by Moser (1993). To analyse the constraints faced by fisherwomen, a list of constraints was prepared based on review of literature. Also, two FGDs with both fisherwomen members and non-members of FCS were conducted. These constraints were then post-classified into social, economic, institutional and production constraints. The fisherwomen were asked to rank the constraints as per their severity.

Rank Based Quotient (RBQ) was employed to rank constraints faced by fisherwomen. The ranking of constraints was done by calculating RBQ as given by Sabarathanam (1988).

$$RBQ = \frac{\sum f_i (n + 1 - i) \times 100}{N \times n} \dots\dots (2)$$

Where f_i = number of fisherwomen reporting a particular problem under i^{th} rank. N = number of fisherwomen. n = number of problems identified.

Results and Discussion

At present, 41 FCSs with 1875 members are operating in the Bargi reservoir. Out of which 1,324 are active members and 551 are non-active members. Table 2 presents gender-wise membership of FCS along with information about active and inactive members.

FCS consists of only 8.88 % of the fisherwomen as members while the remaining members were men (Table 1). Fishermen being head of the family were the registered members of FCS. As per the bylaws, 33 % of the membership in FCS is reserved for women (Madhya Pradesh Cooperative Society Act, 1960). But it was found that this was not followed in the FCS. However, a one percent special reservation for women belonging to scheduled caste, scheduled tribe and widows were followed.

Even though the percentage of women members was less, it was observed that all the fisherwomen were active members and were involved in fishing for more than 100 days/year. About 60 % of men were active members. Mainly the men for whom fishing and related activities were the secondary occupation were the inactive members of FCS. Some of them were also observed to have access to welfare schemes implemented by the Madhya Pradesh Fisheries Federation, without involvement in fisheries related activities. Inactive members were observed to be primarily engaged in occupations such as farm workers, vegetable growers, wage labourers, and construction workers. None of the women were in the leadership position i.e. representative of FCS as chairperson or secretary. Participation of fisherwomen in Fisheries is presented in Fig. 2.

Table 2. Gender-wise membership of Fisheries Cooperative Societies

| FCS | Registered members | | | Active members | | | Inactive members | | |
|-----------|--------------------|-------|-------|----------------|-------|-------|------------------|-------|-------|
| | Men | Women | Total | Men | Women | Total | Men | Women | Total |
| SMSSM | 38 | - | 38 | 27 | - | 27 | 11 | - | 11 |
| PVDMSSD | 40 | 06 | 46 | 35 | 06 | 41 | 05 | 06 | 05 |
| SMSSSM | 60 | 02 | 62 | 10 | 02 | 12 | 50 | 02 | 50 |
| NMSSG | 74 | 04 | 78 | 46 | 04 | 50 | 28 | 04 | 28 |
| DMSSP | 33 | 01 | 34 | 24 | 01 | 25 | 09 | 01 | 09 |
| JBMMSSN | 28 | 03 | 31 | 20 | 03 | 23 | 08 | 03 | 08 |
| Frequency | 273 | 16 | 289 | 162 | 16 | 1 | 111 | 0 | 111 |
| % | 91.1 | 8.88 | | | | | | | |

Table 3. Daily routine chart of fisher women in Bargi reservoir

| Sl. No. | Activities | Time | Duration (hrs) |
|---------|-----------------------------------|-------------|----------------|
| 1. | Drinking water collection | 4 am-5 am | 1 |
| 2. | Cooking | 5 am-7 am | 2 |
| 3. | Fish harvesting at landing centre | 7 am-9 am | 2 |
| 4. | Boating | 9 am-10 am | 1 |
| 5. | Fish smoking | 10 am-11 am | 1 |
| 6. | Community activity | 11 am-1 pm | 2 |
| 7. | Rest | 1 pm-2 pm | 1 |
| 8. | Net making/repairing | 2 pm-4 pm | 2 |
| 9. | Fish trading | 4 pm-6 pm | 2 |
| 10. | Cooking | 6 pm-8 pm | 2 |
| 11. | Household activity | 8 pm-10 pm | 2 |
| 12. | Sleeping | 10 pm-4 am | 6 |

Majority of fisherwomen (71.66 %) were passively participating in fisheries activities i.e., involved in fisheries activities but not a member of FCS (Fig. 2). The daily routine chart of fisherwomen in Bargi reservoir is provided in Table 3.

Fisherwomen were engaged for around 8 hours/day in productive work i.e., fisheries activities such as fish harvesting with their men counterparts, fish smoking, net making/repairing, and fish trading either at home or fish market and reproductive and community work such as drinking water collection, cooking, household activities and community activities for 9 hours/day which is very significant. Sharma et al. (2007) have noted that the work of women in aquaculture is moderately heavy. Reena

et al. (2011) also studied the occupational profile and time utilization pattern of fresh and dry fish retailers and laborers in Dakshina Kannada and found that women spent a considerable time in these

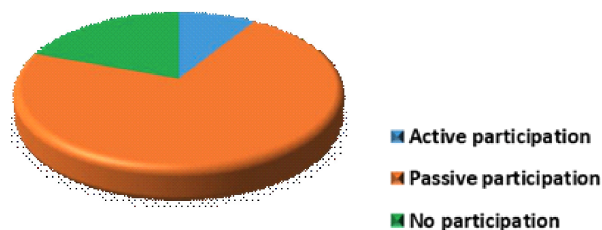


Fig. 2. Participation of fisherwomen, by nature of participation

activities. Participation of fisherwomen in fisheries-related activities is presented in Fig. 3.

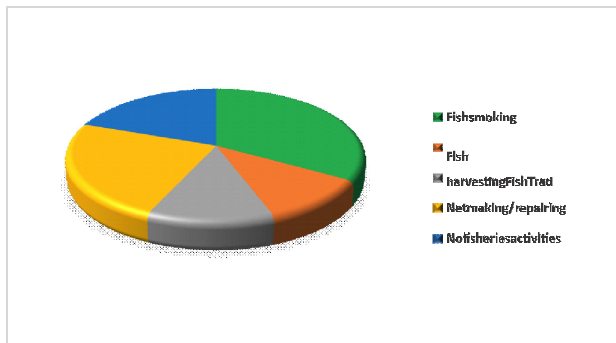


Fig. 3. Participation of fisherwomen in fisheries-related activities

Fish processing especially smoking had maximum participation followed by fish trading, fish harvesting and net making/repairing operations. Meetei et al. (2016) also discussed about the participation of women in fisheries activities from production to marketing in Manipur, India. Participation in fish harvesting and fish trading was less as compared to fish smoking and net making/repairing activities due to extant gender division of labour, followed by the subordinate position of fisherwomen and gender-based power relations within the patriarchal society. Fishermen hold authority and power in fish harvesting and fish trading, the major economic activities. In contrast, fisherwomen were engaged in work items that can be done at home, for instance, fish smoking and net making/repairing (non-economic activities).

Fisherwomen reported a number of constraints which were classified as social constraints, economic

constraints, institutional constraints and production constraints. The social constraints faced by the fisherwomen of the Bargi reservoir are presented in Table 4.

The economic constraints faced by the fisherwomen of the Bargi reservoir are presented in Table 5.

Lack of alternative livelihood opportunities has significantly affected the fisherwomen to borrow money, usually from private money lenders at a very high interest rate which they could hardly pay back due to interest accumulation leading to perpetual indebtedness. Institutional constraints faced by the fisherwomen of the Bargi reservoir are presented in Table 6.

Production constraints faced by the fisherwomen of the Bargi reservoir are presented in Table 7.

Kumari et al. (2017) and Dev et al. (2009) have assessed the performance of fisherwomen Self-Help Groups (SHGs) in Chhattisgarh and in Bihar. Kumari & Sharma (2015) has also reported constraints in the realms of social, economic, institutional and production for fisherwomen of SHGs in Chhattisgarh.

Poor social status, poor social acceptance, and lack of representation of women in FCS were found to be major constraints in earlier studies as well (Ashaletha et al., 2002; Farooqi et al., 2018). Debnath et al. (2015) studied gender perspectives in adoption of technological practices by fishers and fish farmers in Tripura and reported similar findings. Poor social status and low level of literacy were reported in Kashmir too (Bhat & Sharma, 2021). Lack of ownership of assets, lack of access to change

Table 4. Social constraints faced by fisherwomen

| Constraints | RBQ score | Rank |
|-------------------------------------------------------|-----------|------|
| Poor social status | 93.23 | 1 |
| Poor social acceptance | 87.41 | 2 |
| Lack of ownership of assets | 78.65 | 3 |
| Lack of access and control over resources | 71.09 | 4 |
| Lack of access to a leadership position in FCS | 65.33 | 5 |
| Lack of access to change agencies | 54.84 | 6 |
| Lack of social mobility due to household restrictions | 38.19 | 7 |
| Low literacy rate | 31.32 | 8 |
| Gender division of labour and wage discrimination | 28.97 | 9 |

Table 5. Economic constraints faced by fisherwomen

| Constraints | RBQ score | Rank |
|----------------------------------------------------------------------|-----------|------|
| Poor income | 86.71 | 1 |
| Lack of working capital | 73.99 | 2 |
| Lack of alternative livelihood opportunities in fishing close season | 62.33 | 3 |
| Lack of saving | 55.06 | 4 |
| Difficulty in access of credits | 47.11 | 5 |
| High interest on credit by banks | 39.72 | 6 |
| High cost of craft construction | 33.33 | 7 |

agencies, and low literacy rate were also reported by Ashaletha et al. (2002).

Sharma & Chandra (2015) have reported that a change in the credit system is required for strengthening FCS. Katre et al. (2020) have reported constraints such as low income out of fishing and related financial problems in 'Bargi'. The preferences of fishers for potential alternative livelihood activities for future were aquaculture in village ponds, eco-tourism, and ornamental fish culture. Reena et al. (2011) also reported poor income, lack of working capital, and lack of saving as the economic constraints and lack of alternate employment opportunities in the off-season under personal constraints faced by the fisherwomen. Bhat & Sharma (2021) have reported economic constraints such as less income, difficulty in access to credits, high interest for credit by banks, high cost of craft construction faced by the fishermen and fisherwomen of Kashmir.

Table 6. Institutional constraints faced by fisherwomen

| Constraints | RBQ score | Rank |
|-----------------------------------------------------|-----------|------|
| Gender bias in getting membership in FCS | 89.03 | 1 |
| Limited access to training & extension services | 81.42 | 2 |
| Lack of access to saving scheme | 77.84 | 3 |
| Lack of awareness about different fisheries schemes | 68.51 | 4 |
| Inaccessibility to institutional credit | 60.97 | 5 |
| Lack of awareness about cooperative principles | 54.22 | 6 |
| Lack of women-specific fishers' welfare schemes | 46.11 | 7 |
| Inadequate technical advice/information support | 38.30 | 8 |

Bhat & Sharma (2021) have reported lack of awareness about different fisheries schemes as a major institutional constraint faced by both fishermen and fisherwomen in Kashmir. Similar findings have been reported by Katre (2020) as well. Ashaletha et al. (2002) have reported institutional issues faced by fisherwomen of India such as inaccessibility to credit, improper saving schemes, and insufficient information support. Lack of training opportunities was the major technological constraints in some areas, particularly in ornamental fisheries (Yadav & Sharma, 2017). Sharma et al. (2020) have pointed out the need to integrate gender considerations in fisheries ecosystem management. Destructive fishing practices, poaching activities and lack of proper implementation of conservation measures have also been reported by Katre et al. (2020). They contribute towards decline in stocked and native fish species.

Gender issues and women's contribution to fisheries activities have emerged as a subject of global concern. Although women contribute significantly to fisheries, their role is either masked or unrecognized. They mostly perform unpaid work, which hinders their empowerment. In FCS, the proportion of men were higher than that of women. While participating in fish related activities, women also contributed significantly towards reproductive roles in the household. The major constraints faced by women are poor social status, poor income, gender bias in getting membership in FCS and lack of skills on operation of craft and gear under the social, economic, institutional and production dimensions. The study calls for steps to ensure at least a minimum number of membership to fishermen by

Table 7. Production constraints faced by fisherwomen

| Constraints | RBQ score | Rank |
|-----------------------------------------------|-----------|------|
| Lack of skills on operation of craft and Gear | 85.91 | 1 |
| Decline in stocked & native fish species | 73.85 | 2 |
| Destructive fishing practices | 59.60 | 3 |
| Pollution in reservoir | 44.03 | 4 |

the State's Department of Cooperation under the Ministry of Cooperation. Implementing steps to smoothen income stream of the fisherwomen through welfare schemes, particularly during the fishing closure season is recommended. Further, fisherwomen engaged in net making and fish trading also can be organized into Self-Help Groups (SHGs) and co-operatives to leverage the strength of collectives in addressing the constraints.

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