

SOCIO ECONOMIC STATUS OF FISHERMEN: A CASE STUDY OF THE SONBEEL IN SRIBHUMI DISTRICT OF ASSAM

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Abstract:

This study examines the socio-economic conditions of fishermen in the Sonbeel wetland, Sribhumi district, Assam, India. The primary objectives are to assess their economic status, livelihood strategies and challenges, and social-educational conditions. Primary data were collected from 110 respondents using structured interviews and household surveys. Descriptive statistics frequency distributions, arithmetic means, standard deviations, and graphical analysis were applied to interpret the findings. Fishing emerges as the major source of income in Sonbeel. However, income variability, limited institutional credit (only 10% accessed loans), and inadequate government support hinder stability. Most households have electricity and sanitation, but safe drinking water and clean cooking fuel remain deficient. Environmental degradation, resource depletion, and market fluctuations amplify vulnerabilities. Targeted interventions are recommended to promote financial inclusion, sustainable resource management, and socio-economic resilience in this community.

Keywords: Sonbeel fishermen, Socio-economic Status, Fishing income.

INTRODUCTION:

The socioeconomic status of fishermen in the Sonbeel area of Sribhumi district in Assam is an important aspect to understand the livelihoods and challenges faced by this community. The Sonbeel, a freshwater lake nestled in the heart of Assam, serves as a critical fishing ground for these fishermen, who heavily rely on the lake for their sustenance and economic well-being.

In this case study, we aim to delve into the socioeconomic dynamics of the fishermen community in the Sonbeel region, shedding light on their occupation, income, education, standard of living, and overall quality of life. By understanding these factors, we can gain valuable insights into the challenges they face, potential opportunities for development, and the impact of socio-cultural and economic factors on their lives. Fishing serves as the primary occupation for the fishermen in Sonbeel. Generation after generation, these individuals have honed their skills in the art of fishing, passing down traditional knowledge and techniques. With the Sonbeel lake teeming with various species of fish, the fishermen cast their nets or employ traditional methods like bamboo traps and hooks to catch their daily sustenance. The income of fishermen can be variable, depending on factors such as the size of their catch, market demand, and fishing techniques used. Some fishermen may earn a higher income during peak fishing seasons or when they are able to catch prized fish varieties. However, irregularities in the fishing market and the unpredictable nature of their profession can sometimes lead to uncertainties in their income level.

Education plays a pivotal role in determining the socioeconomic status of individuals and communities. In the case of fishermen in the Sonbeel region, access to formal education can be limited due to various reasons, including geographical remoteness and economic constraints. As a result, the literacy rates among fishermen may be comparatively lower, affecting their prospects for alternative livelihood opportunities beyond fishing. The standard of living among fishermen in the Sonbeel area is influenced by a range of factors such as income, access to basic amenities, and infrastructure. Housing conditions can vary, with some fishermen residing in traditional stilt houses near the lake, while others may live in less permanent structures. Access to clean water, sanitation facilities, healthcare, and electricity may also pose challenges, particularly in remote areas.

Fishermen in Sonbeel face numerous challenges that impact their socioeconomic status. These challenges include environmental degradation, overfishing, declining fish populations, market fluctuations, and competition from mechanized fishing practices. Additionally, climate change impacts, like changes in weather patterns, can further disrupt their livelihoods.

The literature reviewed presents a comprehensive picture of the socio-economic and environmental challenges faced by fishing communities across South and Southeast Asia, particularly in regions such as Assam, Bangladesh, Indonesia, and the Philippines. Bordoloi et al. (2023) examine constraints in adopting composite fish culture in Assam, while Tikadar et al. (2022) highlight how access to equipment, education, and credit influences the livelihoods of fishermen in Bangladesh. Several studies, including those by Choudhury et al. (2021) and Das & Bhattacharjee (2015), explore the impacts of climate change on wetlands like Sonbeel and the resulting socio-economic vulnerabilities. Others, such as Fahrur et al. (2021) and Mulyasari et al. (2020), underscore the intersection of poverty, limited access to modern technologies, and declining fish stocks as central issues among traditional fishermen in Indonesia. Similarly, research from the Philippines and West Java—Quiñones et al. (2020) and Rizal & Nurruhwati (2019)—emphasizes the lack of

alternative livelihoods and the importance of integrating traditional knowledge with modern frameworks. In India, Roy and Mazumder (2015–2016) explore technical efficiency and sustainability trade-offs in traditional fishing across Assam. Collectively, these studies reveal that while fishing remains a cornerstone of rural livelihoods, it is increasingly threatened by socio-economic marginalization, technological stagnation, and environmental pressures. The consensus calls for context-specific, inclusive policy interventions aimed at enhancing resilience, promoting sustainable practices, and improving the socio-economic conditions of fishing communities.

SIGNIFICANCE OF THE STUDY:

The case study on the socioeconomic status of fishermen in the Sonbeel area of Karimganj district in Assam holds great significance in understanding and addressing the challenges faced by this vulnerable community. This study provides valuable insights into the livelihoods, economic conditions, social dynamics, and overall well-being of the fishermen, shedding light on the factors that influence their lives and livelihoods.

One of the key reasons why this study is important is its potential to contribute to poverty alleviation efforts. By comprehensively analyzing the socioeconomic conditions of the fishermen community, policymakers, researchers, and development agencies can design targeted interventions and strategies to uplift their lives. Understanding the income fluctuations, limited access to resources, and other challenges faced by the fishermen allows for the formulation of poverty reduction programs that cater to their specific needs and aspirations. This study can serve as a crucial tool for policymakers to make informed decisions regarding poverty reduction and inclusive development in the Sonbeel area.

Additionally, the study holds significance in sustainable resource management. The Sonbeel lake ecosystem faces multiple environmental challenges, such as overfishing, pollution, habitat degradation, and biodiversity loss. By examining the socioeconomic status of fishermen, this study highlights the impact of these environmental challenges on their livelihoods. These insights can be instrumental in formulating and implementing sustainable fishing practices, promoting ecosystem restoration, and enhancing environmental education among the fishing community. The study paves the way for policymakers to strike a balance between the economic needs of the fishermen and the preservation of the Sonbeel ecosystem, ensuring the long-term availability of resources and the sustainability of the fishing industry.

Moreover, the study's findings can inform policy formulation and implementation processes. It provides policymakers with a deeper understanding of the socio-economic needs and aspirations of the fishermen community. Based on this understanding, policies and programs can be designed to improve access to markets, provide financial support, enhance education and skill development opportunities, and promote alternative livelihood options. The study provides crucial insights that can support policymakers in implementing these policies effectively and monitoring their impact over time. Another dimension of significance lies in social welfare and empowerment. The study highlights various social aspects of the fishermen community, including education levels, standard of living, and access to basic amenities. By identifying gaps in social welfare provision, policymakers can design and implement targeted social welfare schemes and programs. These interventions can address the specific needs of the fishermen community, aiming at improving their overall well-being, enhancing their social status, and reducing inequalities.

Furthermore, the study acknowledges the cultural significance associated with traditional fishing practices and the cultural heritage of the fishing community. It emphasizes the importance of cultural preservation and promoting sustainable tourism in the Sonbeel area. The findings of this study can help in identifying ways to preserve cultural traditions, ensure the equitable distribution of tourism benefits, and enhance the participation of the local community in tourism development.

This study holds value for academic research and knowledge enhancement. It contributes to the existing body of knowledge on sustainable livelihoods, resource management, and community development. Researchers and scholars can utilize the study's findings as a reference for exploring further research questions, identifying best practices, and developing innovative solutions for the socioeconomic development of fishing communities not only in the Sonbeel area but also in other regions facing similar challenges.

OBJECTIVES OF THE STUDY:

The main objectives of the study are:

1. To assess the Economic Conditions of Fishermen of Sonbeel
2. To examine the Livelihood Strategies and Challenges Faced by Fishermen; and
3. To analyze the Social and Educational Status of Fishermen.

HYPOTHESES OF THE STUDY:

1. The income levels of fishermen in the Sonbeel area significantly based on factors such as fishing season, market demand, and access to fishing resources.
2. Fishermen in the Sonbeel area face challenges such as limited access to fishing tools, resource depletion, and changes in the Sonbeel ecosystem, which impact their livelihood strategies and sustainability.
3. Fishermen in the Sonbeel area experience varying levels of educational attainment, limited access to healthcare facilities, and social dynamics influenced by factors such as caste, gender, and intergenerational associations.

RESEARCH QUESTIONS:

1. What are the sources of income for fishermen in the Sonbeel area?

2. What are the factors influencing the profitability of fishing activities in the Sonbeel lake?
3. What is the level of financial inclusion and access to credit among the fishermen community?
4. What are the primary livelihood strategies adopted by fishermen in the Sonbeel area?
5. What are the challenges faced by fishermen in terms of accessing fishing resources and tools?
6. How do changes in the Sonbeel ecosystem impact the fishing practices and livelihoods of fishermen?
7. What are the socioeconomic factors that contribute to vulnerability and inequality among the fishermen community?

DATA AND METHODOLOGY:

DATA

The study covers 110 respondents of Sonbeel area of Karimganj district of Southern Assam. The data is collected through personal interviews after physically visiting the chosen households of respondents.

STUDY AREA

The Sonbeel (Shon Beel) is not only an important wetland of Karimganj district of Assam. But it is considered as one of the largest wetlands of Asia. It is located between $92^{\circ}24'50''$ to $92^{\circ}28'25''$ E and $24^{\circ}36'40''$ to $24^{\circ}44'30''$ N in Karimganj district of southern Assam, India. The Sonbeel wetland lies in Ramkrishna Nagar block of Karimganj district as Sonbeel is only 10 Km away from Ramkrishna Nagar. A special interesting feature of Sonbeel lake is said that during the winter season, it becomes an agricultural field where rice cultivation is practised and after the winter season especially from March onward this area generally gets filled up with water and becomes a large wetland due to rainwater. The average depth of this wetland is very less so when there is more rain, the lake overflows and the excess water flow through by Kakra River and finally mix with the Kushira River which eventually goes into Bangladesh (Kar 1990). Sonbeel is famous for its fishery, and it is one of the main producers of fish for all the districts in southern Assam and the region.

Sonbeel is the production point of all types of fish and the speciality of Sonbeel is famous for its small, tiny fishes. There are about 500 families engaging in net making and the fish marketing network from this Sonbeel wetland. It has been estimated by state government reports and records that there are more than 35,000 families directly dependent on the Beel for traditional fishing system. More than 40% of area around Sonbeel is covered with water bodies which have evergreen forest. Sonbeel is the habitat place for some reptiles and other various aquatic species. This wetland is also important because of Siberian Birds rested for around three months of a year. There are nearly about 9 Gaon Panchayats which are surrounded by Sonbeel area. It has estimated that Sonbeel has maximum length and breadth of 13.2kms and 4.2kms, respectively. The nearby shoreline is about 35.4kms. Lake Sonbeel is rich in fish biodiversity and around 69 different fish species are found among which small fishes are most (Kar et al., 2006). Wetlands, due to their unique and distinct significance, are ecosystems worth protection, improvement, and conservation. The loss of wetlands means an imbalance in the ecological balance. They protect the environment from extremes of climate, disasters like cyclones, flash floods, etc. Being the world's highly productive ecosystems, they are rightly called the cradles of biodiversity. The rapidly increasing population, pollution, big industries, deforestation, big unplanned developmental projects are some of the factors responsible for the dwindling of the wetlands in India. Thus, owing to immense significance, the wetlands need immediate attention for their conservation, and Ramsar Convention is one such step in this direction. In the Indian context, the wetland loss acute and chronic acute failure means the filling up of wet areas with soil and the gradual removal of forest cover followed by erosion and sedimentation of the wetlands over many years is the chronic loss.

METHODOLOGY

This study uses standard descriptive statistics such as frequency distribution, arithmetic mean, etc. Simple graphic tools to analyze fishermen's socio-economic condition and perception about fish growing business in future.

1. SOCIO-DEMOGRAPHIC CHARACTERISTICS OF THE RESPONDENTS

This section presents some social and demographic characteristics of the fishermen (respondents) of Sonbeel area. The results are presented in tabular format and figures.

Table 1. Social and Demographic and Economic Features of the Respondents (n=110)	
Variables	Average \pm Standard Deviation
Age (Years)	31.91 ± 12.64
Family Members	6.16 ± 3.39
Average Monthly Income (in Rs)	18272.73 ± 8145.36
Average Monthly Expenditure (in Rs)	6299.25 ± 4486.09
Average Years of Schooling (Years)	6.56 ± 2.78
Average Number of Rooms (Nos)	3.64 ± 1.48

Source: Calculated based on field survey

Above table gives tabular representation of some social economic and demographic features of the respondents. It is clear from the table that the average age of the respondents is 31.91 years that is fishermen are mostly young people. On

average, respondents have 6.16 numbers of family members. Average monthly income of the respondents is Rs. 18272.73 but average monthly expenditure is Rs. 6299.25 indicating surplus income of the fish grower's family.

Table 2. Social and Demographic Features of the Respondents (n=110)

Variables	Percentage
Religion:	
(a) Hindu	70.91 (n=78)
(b) Islam	29.09 (n=32)
Caste:	
(a) SC	49.09 (n=54)
(b) ST	0 (n=0)
(c) OBC	13.64(n=15)
(d) General	36.36 (n=40)
Family Type:	
(a) Joint	20 (n=22)
(b) Unitary	80 (n=88)
Alternative Occupation Other than Fishing:	
(a) Yes	84.55 (n=93)
(b) No	15.45 (n=17)
House Type:	
(a) Kaccha	30.91 (n=34)
(b) Pakka	69.09 (n=76)
Toilet Type:	
(a) Kaccha	30.00 (n=33)
(b) Pakka	70.00 (n=77)
Availability of Electric Connection:	
(a) Yes	74.55 (n=82)
(b) No	25.45(n=28)
Kitchen a separate room detached from main house:	
(a) Yes	69.09 (n=76)
(b) No	30.91(n=34)
House in a waterlogged or low-lying area:	
(a) Waterlogged	41.82 (n=46)
(b) Low lying area	58.18 (n=64)

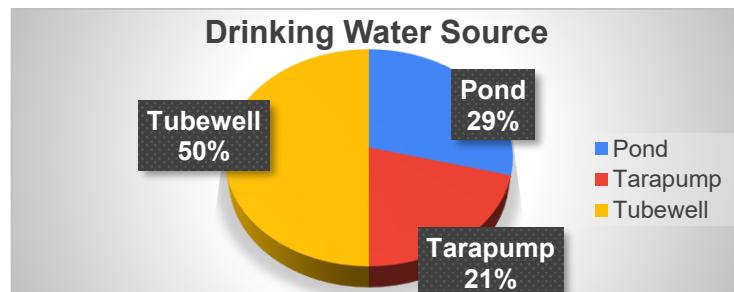
Source: Calculated based on field survey

Table 2 shows some socio-economic characteristics of the respondents. It is clear from the table that among the respondents 70.91 % were Hindu and 29.09 % were found following Islam religion, none of the respondents were found following any other religion. In case of caste, 49.09 % are SC, 13.64% OBC and 36.36 % of the respondents are found to be of General category, none of the respondents were found ST. This indicates that fishermen of Sonbeel area are mostly Hindu people belonging to SC category. Among the sample of fishermen 20% are found to have joint family, whereas majority of them have nuclear family. In case of house type 30.91% are found to live in kaccha house and 69.09% in pakka house. In case of toilet also 30% have kaccha toilet and 70% have pakka toilets. Though this number is good Govt need to intervene to provide appropriate services to avail the remaining fishermen good and hygienic living condition. 74.55% of respondents are found to have electricity connections at home but 25.45% do not have electricity connections even till date in the era of globalisation and improvement of digital technology.

2. SOURCE OF DRINKING WATER OF THE RESPONDENTS

Following figure shows different sources of drinking water of the respondents in the Sonbeel area. Amongst the respondents 50% that is majority drink water of tubewell. 29% drink pond water and remaining 21% drink Tarapump water. That is 29% of the respondents are far away from safe drinking water.

Figure 1: Source of Drinking Water

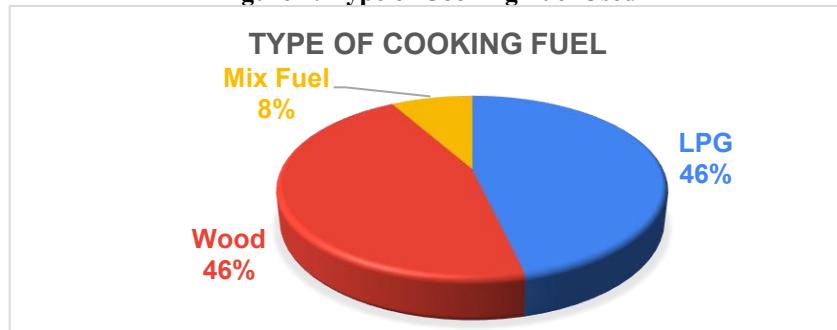


Source: Calculated based on field survey

3: Type of Cooking Fuel Used

Following figure represents fuel use patterns of fishery households in Sonbeel area.

Figure 2: Type of Cooking Fuel Used



Source: Calculated based on field survey

It is evident from the above figure that equally 46% respondent houses use LPG and Wood (Non-LPG) as cooking fuel and only 8% use mixed fuel patterns that is a combination of both LPG and Wood. This is also a matter of concern since almost 50% amongst the respondents use wood as cooking fuel even after 8 years of implementation of PM Ujjwala Yojana. This may cause hazards in the form of indoor air pollution and destruction of forest cover for collecting firewood for cooking.

4.1. Details of Accessories of the Respondents

Following table represents the accessory details of the respondents in tabular format.

Table 3. Availability of Accessories of the Respondents (n=110)	
Variables	Percentage
Availability of television:	
(a) Yes	70.91 (n=78)
(b) No	29.09 (n=32)
Availability of bike:	
(a) Yes	49.09 (n=54)
(b) No	50.91 (n=56)
Availability of car:	
(a) Yes	20 (n=22)
(b) No	80 (n=88)
Availability of smartphones:	
(a) Yes	84.55 (n=93)
(b) No	15.45 (n=17)

Source: Calculated based on field survey

It is evident from the figure that amongst the fishery owner respondents 70.91% possess television, 49.09% have bike, 20% have car and 84.55% have smart phones.

4.2.: Fishery Related Details of the Respondents

Following table represents some fishery related details of the respondents of Sonbeel area.

Table 4. Fishery Related Details of the Respondents (n=110)

Variables	Percentage
Having multiple ponds:	
(a) Yes	37.27 (n=41)
(b) No	62.73 (n=69)
Attended any training programme on fish cultivation:	
(a) Yes	50.91 (n=56)
(b) No	49.09 (n=54)
Taken any loans:	
(a) Yes	10 (n=11)
(b) No	90 (n=99)
Availed any govt support:	
(a) Yes	39.09 (n=43)
(b) No	60.91 (n=67)
Want to remain in this fish growing business forever?	
(a) Yes	73.64 (n=81)
(b) No	26.36 (n=29)
Do you think fishing is a sufficient source of income?	
(a) Yes	76.36 (n=84)
(b) No	23.64 (n=26)
Other family members involve in pond management and fish growing:	
(a) Yes	76.36 (n=84)
(b) No	23.64 (n=26)
Is this being a joint family business?	
(a) Yes	26.36 (n=29)
(b) No	73.64 (n=81)

Source: Calculated based on field survey

Table 4 presents some important fishery related details of the respondents of Sonbeel area. It is clear from the above table that amongst the respondents only 37.27 % (n=41) have multiple ponds for cultivation, remaining 62.73% (n=69) cultivated in single pond. Almost half of the respondents, 50.91% (n=56) received training programme on fish cultivation and remaining 49.09% (n=54) have not received any such programme. Only 10% of the respondents have taken loans for fish growing business, remaining 90% have not received any such loans. Though 39.09% (n=43) responded to avail of any kind of government aided facility in fish growing, majority of the respondents have not received any such facility. These results are clear indication and possibility of lack of financial institution and insufficient government facilities in fish growing business of Sonbeel area. When asked about whether they want to remain in this fish growing business forever, 73.64% (n=81) agreed, and remaining 26.36% (n=29) did not agree, that is majority of the respondents agreed. This must be because fishery is the only self-sufficient allied activity for livelihood in the study area under consideration. And for this reason, when we asked them whether you think fishing is a sufficient source of income, majority of them [76.36% (n=84)] agreed. In case of fishery management related queries, it is found that in case of 76.36% respondents other family members involve in pond management and fish growing, but only for 26.36% respondents this is a joint family business and for majority, that is for 73.64% respondents it is a private or single business.

4.3. Cost and Output Related Details of the Fish Cultivation

Types of fishes grown: In Sonbeel area fishermen grow a combination of fishes namely: Rohu, Catla, Mirgal, Shoul Fish, Goldfish, Tilapia fish, Rupchand fish, Hoisa fish, Maytus fish, Telapia fish, Pabda fish and red snapper fish respectively. Following figure shows average sizes of fish at the time of selling.

Table 5. Average Cost of Fishery Activities (n=110)

Variables	Average ± Standard Deviation
Average Feeding Cost per month (in Rs.)	11468.18±37706.76
Average Cost of Chemicals per month (in Rs.)	605.34±728.04

Average Cost of hormones and other nutrients (in Rs.)	79.17±255.23
Average Wages of hired labour (in Rs.)	107.27±638.05
Average Total Cost of Production (in Rs.)	9197.75±7275.44

Source: Calculated based on field survey

Table 5 represents the cost related details or production cost details of the fishermen. It is found that on an average and fisherman must bear monthly Feeding Cost of Rs. 11468.18/-, Average Cost of Chemicals of Rs. 605.34/-, Average Cost of hormones and other nutrients of Rs. 79.17/-, and Average Wages of hired labour Rs. 107.27/- per month.

4.4. Size of Fish at the time of harvest

Following figure shows detailed plot of average size fish at the time of harvest and selling by the fish growers. It is clear from the figure that out of 110 respondents 5 harvest when the average size of fish is below 10 kg, majority of them that is 78 fishermen harvest when the average size of fishes is between 10 to 20 kg, 16 respondents when size is 21 to 30 kg. Lastly, 11 respondents who are large farmers are found to harvest when average size of fish is quite large, that is above 30 kg.

Figure 3: Average Size of Fish at the time of selling

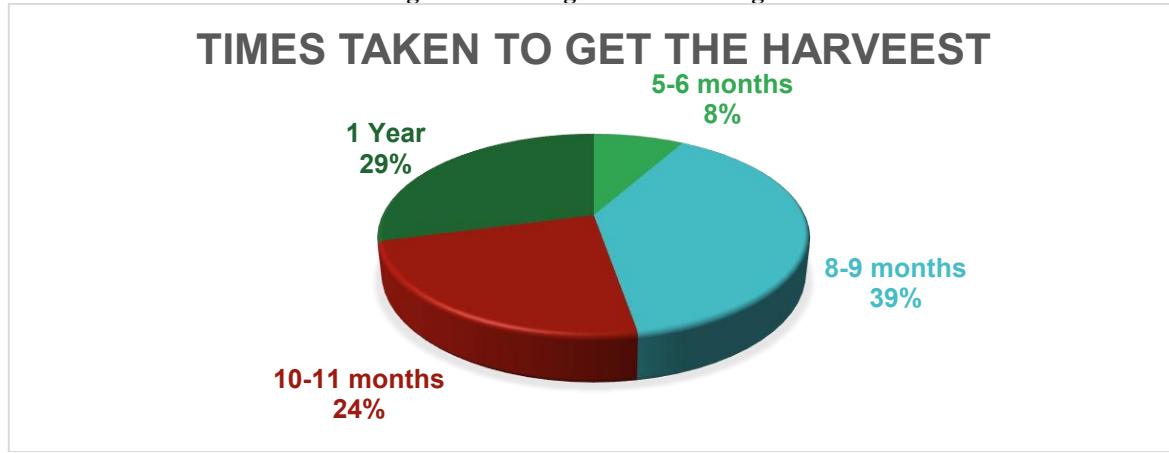


Source: Calculated based on field survey

4.5. Time taken for Harvest.

Following pie chart presents pictorial representation of average time taken for fish harvest by the farmers.

Figure 3: Average time taken to get the harvest.



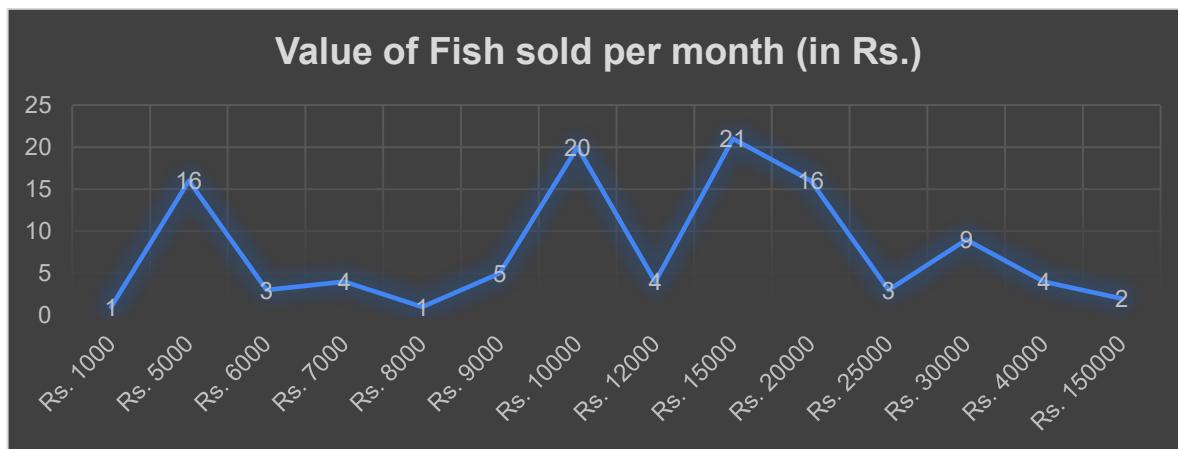
Source: Calculated based on field survey

It is clear from the above figure that most of the respondents (39%) harvest fish in 8-9 months, 29% in 1 year, 24% by 10-11 months and remaining 8% by 5-6 months.

4.2.4: Value of Fish Sold per month

Following figure shows the value of fish sold (in Rs.) per month by the farmers.

Figure 4: Value of fish sold (in Rs.) per month.



Source: Calculated based on field survey

It is clear from the figure that majority of the respondents (21) sell fish for Rs. 15000-Rs. 20,000 per month, followed by 20 respondents who sell fish of Rs. 9000-Rs. 12,000 per month. 16 respondents are found to sell monthly fish of Rs. 1000-Rs.9000 and Rs. 20,000-Rs. 25000 respectively.

Conclusion and Policy Recommendations:

This work is a noble attempt to assess socioeconomic status of fishermen in the Sonbeel area of Karimganj district in Assam. It is an important aspect to understand the livelihoods and challenges faced by this community. Though in earlier literatures socio-economic and ecological aspects of the site are thoroughly analysed but the attempt made in this study to assess socioeconomic status of fishermen in the Sonbeel area along with perception based queries on important aspect to understand the livelihoods and challenges faced by this community is very much unique.

Although we tried our level best to provide a comprehensive analysis of the perception-based assessment of the socioeconomic status of fishermen in the Sonbeel area of Karimganj district in Assam, but due to lack of time and small sample size we could not provide more standardized techniques of data analysis in the form of sophisticated econometric tools. It therefore gives scope for future researchers to undertake similar types of work with large number of samples and with more advanced techniques of data analysis. Key findings of this work clearly show the necessity of authority's interference to provide appropriate services to avail the fishermen good and hygienic living condition and making proper arrangements to financial aid and support for fish growing business. This will help in formulating policies and institutions towards fish farming activities in the rural area, which is greater potential of becoming a self-sufficient source of livelihood for the economy of Sonbeel.

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