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Livelihood Status and Socio-Economic Condition of Fishermen in Indrapuri Region, Rohtas, Bihar

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Abstract: The current study was an attempt to ascertain the livelihood status and socio-economic condition of fishermen in the Indrapuri region, especially Narari Khurd and Meh villages in Rohtas district and Bihar state. The study was conducted from December 2022 to July 2023. The data were collected through the questionnaire, survey, group discussion and public interview. The finding of this study is that 53.5% of the fishermen belonged to the young age category, from 15 to 30 years, followed by 29.3% in the middle age category and 17.2% in the old age category. Around 69.9% of the fishermen's primary occupation was fishing, 10.1% were farmers and 20% were boatmen, day laborers and traders. The education status is so bad; 45% of fishermen were illiterate, while 25.2% had completed 5 classes, and 29.8% had metric qualifications, with the majority being young. Furthermore, the report revealed that approximately 34.3% of fishermen's income and expenditure went towards food, 9.1% towards education, 20.7% towards health and 35.9% towards other expenses. It was found that 3% of house materials were thatched and bamboo, 40% were mud houses, and 27.7% were brick and mud, while 29.3% were brick and concrete of fishermen's houses. The family size of the fishing community usually consists of small families with less than 5 members (21.5%), medium families with 5 to 8 members (68.5%), and large families with more than 8 members (10%). 60.2% of fishermen use their hand pumps, while 39.8% rely on other sources such as wells and rivers. Daily working hours of fishermen were a maximum of 55.3%; fishermen do work 6 to 7 hours, while the minimum (8.4%) working hour were 4 to 5 hours. The present work has been carried out to find out the current social as well as economic condition of fisher families of two villages, Narari Khurd and Meh village, for the first time here. It concluded that the main obstacles were ignorance, illiteracy, and lack of government support. They were the poorest of the poor in the community, and they have no alternative livelihood options to earn their bread other than fishing in the area.

Keywords- *Fishermen, Indrapuri Dam, Narari Khurd Village, Meh village, Livelihood Status.*

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I. INTRODUCTION

The fish and fisheries sector plays an immensely important role in the socio-economic development of India. Bihar is one of the poorest states of India, where more than 70% of the population have their livelihood from agriculture and allied activities like aquaculture, dairy, poultry, etc. Aquaculture is one of the hopeful, fast-growing food farming areas in Bihar [1]. It positions 12th biggest fishery resources in India and engaged 3rd place in inland fish production and 6th in freshwater seeds production within India [2] [3]. Bihar state is a major inland fish producer, with production increasing from 4.79 lakh metric tonnes in 2014-2015 to 8.73 lakh metric tonnes in 2023-2024. Therefore fishing is an imperative business in outlook of income and employment generation, and in this view the fisherman plays an important role for this.

The present study was documented to update information on socio-economic and livelihood status of the Indrapuri region, especially Narari Khurd and Meh villages. Indrapuri Dam is the 4th longest barrage in the world, with a length of 1,407 meters and a height of 44.94 meters [4], and is situated on the Son River, which is a major tributary of the Ganges River [5]. It is a significant water reservoir that plays a crucial role in irrigation and water management of the region [6]. It is known for its contribution to agricultural activities and the overall socio-economic development of the area. Narari Khurd village is 3.2 kilometers from Indrapuri Dam. This is a small village of fishermen where 85 families belong to here. Meh village is 2.5 kilometers far away from Indrapuri Dam; 30-34 fishermen families belong here. The present work has been carried out to find out the current social as well as economic condition of fisher families of two villages, Narari Khurd and Meh village, for the first time here.

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II. MATERIAL AND METHOD

A. Data Collections

The study was conducted from December 2022 to July 2023 in the Indrapuri Dam region, Rohtas, Bihar. The study was based on the collection of primary and secondary data. The data were collected through the survey, questionnaire (face to face), group discussion and public interview with 120 fishermen of Narari Khurd and Meh villages. The final questionnaire included the question on the age category, education status, family size, house materials, expenditure of income, occupation, fish selling process, fish preservation process, use of water, and daily working hours. Personal interviews were used to obtain primary data, which wsa augmented with a variety of methodological participatory rural assessment procedures, such as focus group discussions and cross-check interviews [7]

All the collected data were analyzed by MS Excel and then presented in graphical and tabular forms to understand the current information of the socio-economic and livelihood status of the fishermen of Narari Khurd and Meh villages.

Fig 1 Represents Narari Khurd village and Indrapuri Dam with group Discussion and public Interview during my survey work.

III. RESULTS AND DISCUSSION

A total of 120 fishermen were interviewed, and it was reported that the livelihood status and socio-economic condition of fishermen using the survey indicators like age distribution, education rate, house materials, income & expenditure, family size, occupation, fish selling process, fish preservation process, source of water, and daily working hours. A detailed analysis is made on these parameters and presented in this section with figures and tables.

➢ *Age Distribution*

Age distribution plays a significant role in estimating the potentiality of the human resources. In this present study, there are three groups of age categories; 15-30 years, 31-45 years, and 46-65 years. The results showed that a maximum of 53.5% of fishermen belong to the young age category from 15 to 30 years. 29.3% belong to the middle age category from 31 to 45 years and 17.2% while the minimum fishermen belong to the old age category from 46 to 65 years involved. Similar results found that the majority of fishermen were in the middle age category [8] [9].

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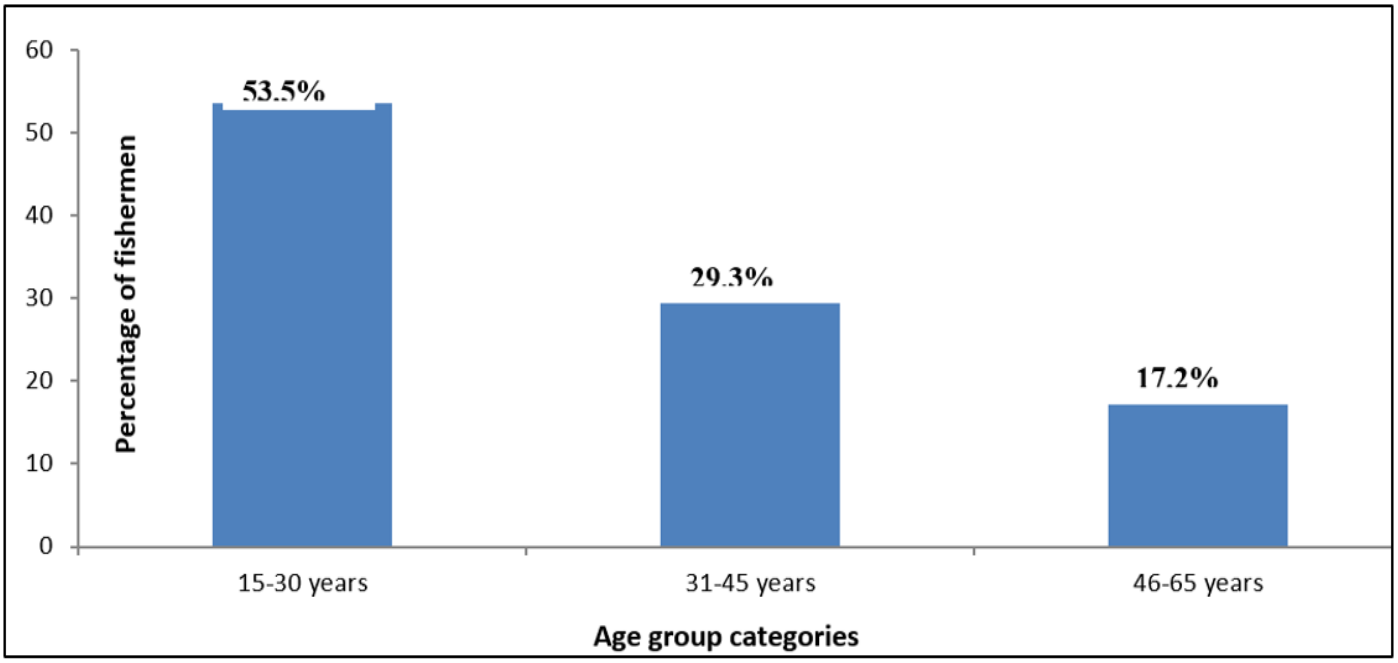

Fig 2 This figure represents three age group categories of fishermen. Maximum fishermen Belong to young age from 15-30 years, and minimum belongs to old age from 46-65 years' age categories.

➢ *Education status*

In the present study total education rate male + female was illiterate 45 %. Some are educated up to 5th class (25.2%), and 29.8 % of fishermen had obtained education up to 10th class. Most fishermen don't know about new technology for fishing due to a lack of education. They have been taught by their parents about fishing, but now the new generation (young and children) want to learn, be educated and want to progress in their lives. This indicates that many fishermen may not have had the opportunity to pursue higher education, which could impact their knowledge and skills in various aspects of their profession. These studies have also reported the low education status of fishermen [10] [11] [12].\

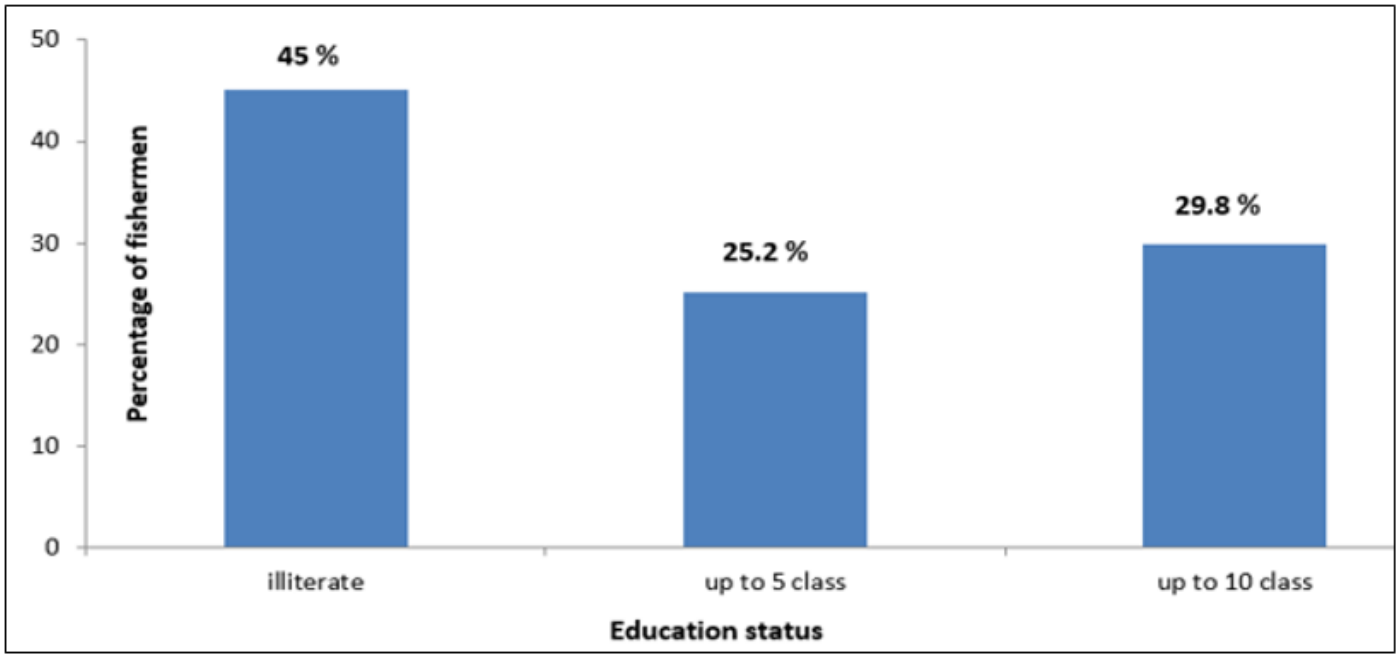

Fig 3 This figure Represents Education status of fishermen. Maximum Fishermen were Illiterate and Minimum were educated up to 5th classes.

➢ Family size

During the study, the family size of fishermen was categorized into three classes, like small, medium and large. It was found that maximum families belong to (68.5%) medium families ranging from 5 to 8 members, followed by (21.5%) small families ranging from less than 5 members, and the minimum belong to (10%) large families ranging from more than 8 family members. Similar findings were revealed in Bihar and Haryana [13] [14].

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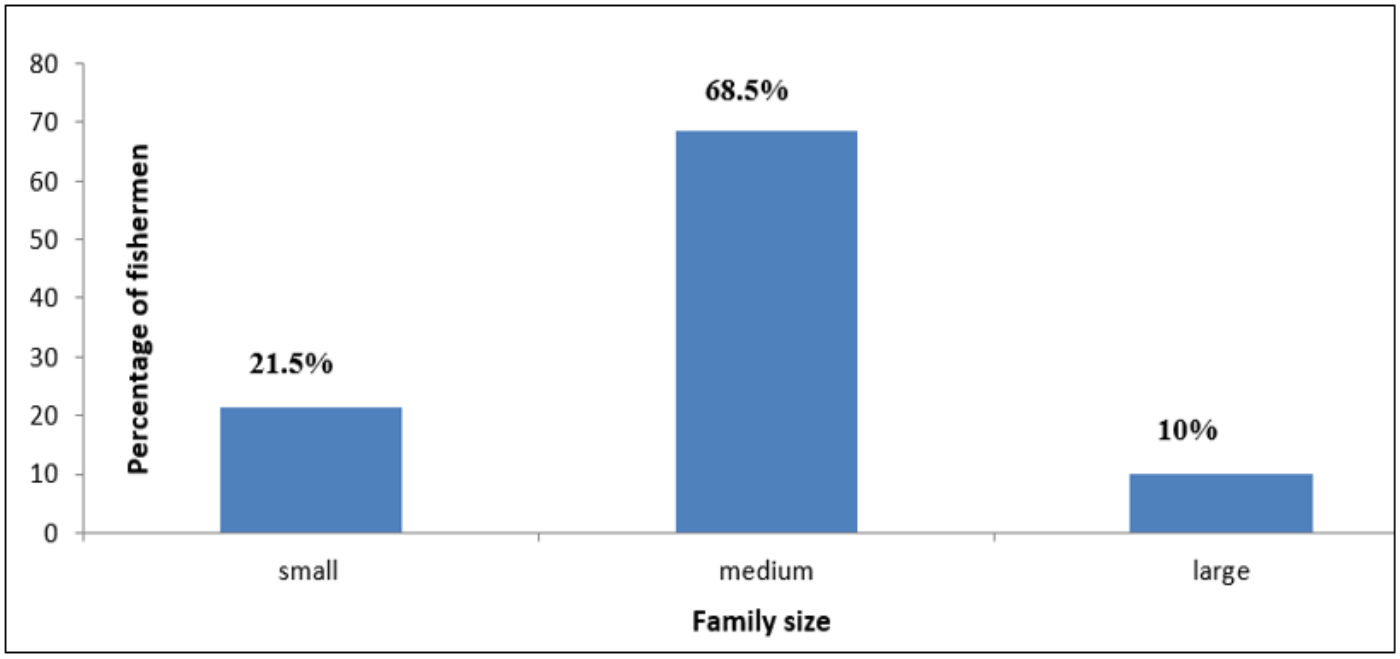

Fig 4 This figure represents three family size categories of fishermen. The maximum numbers of fishermen belong to medium families from 5 to 8 members; the minimum belongs to large families with more than 8 members.

➢ *House Materials*

In this study, we found four different types of houses of fishermen. House materials were made from thatch and bamboo (3%), mud houses (40%), brick and mud houses (27.7%), and brick and concrete houses (cement pakka houses) (29.3%), where fishermen are getting by in this house. In Bihar, fishermen's houses often depend on the local environment, locally available resources and low cost, especially near rivers. Similar findings were revealed in this study [1]. As such, these houses are a testament to their resilience and adaptability in a region shaped by both natural beauty and economic challenges.

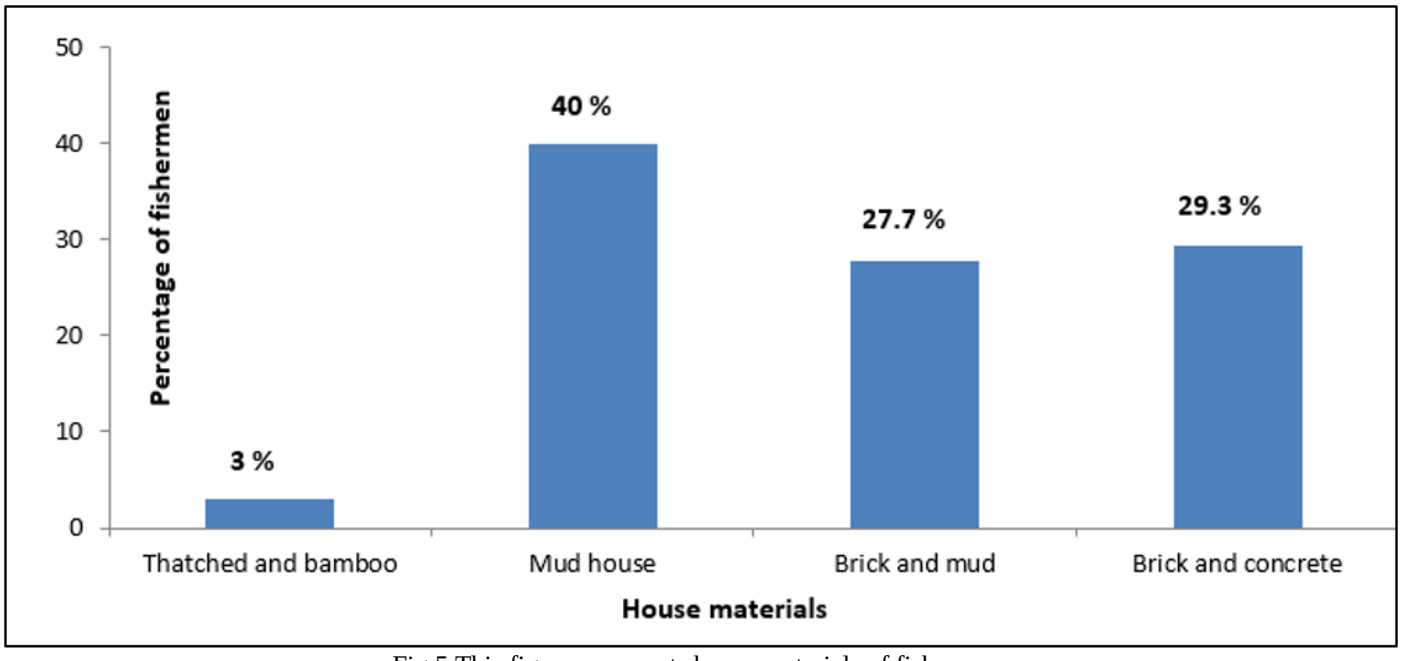

Fig 5 This figure represents house materials of fishermen.

➢ *Expenditure of Income*

Fishermen live their lives in the poorest condition in the society. Due to not getting support and help from the government, their daily income is spent only on essential things. Because of which they are not able to save their money for the future. In this study, we found that their daily expenditure of income maximum of 34.3% on food, followed by 20.7% on health, 35.9% on other things like travelling and business, etc., and a minimum of 9.1% on education. The fishermen here spend very little on education. Similar findings were recorded in Muzaffarpur, Bihar [1]. Consequently, this financial behaviour may perpetuate cycles of poverty and limit socio-economic mobility for these communities.

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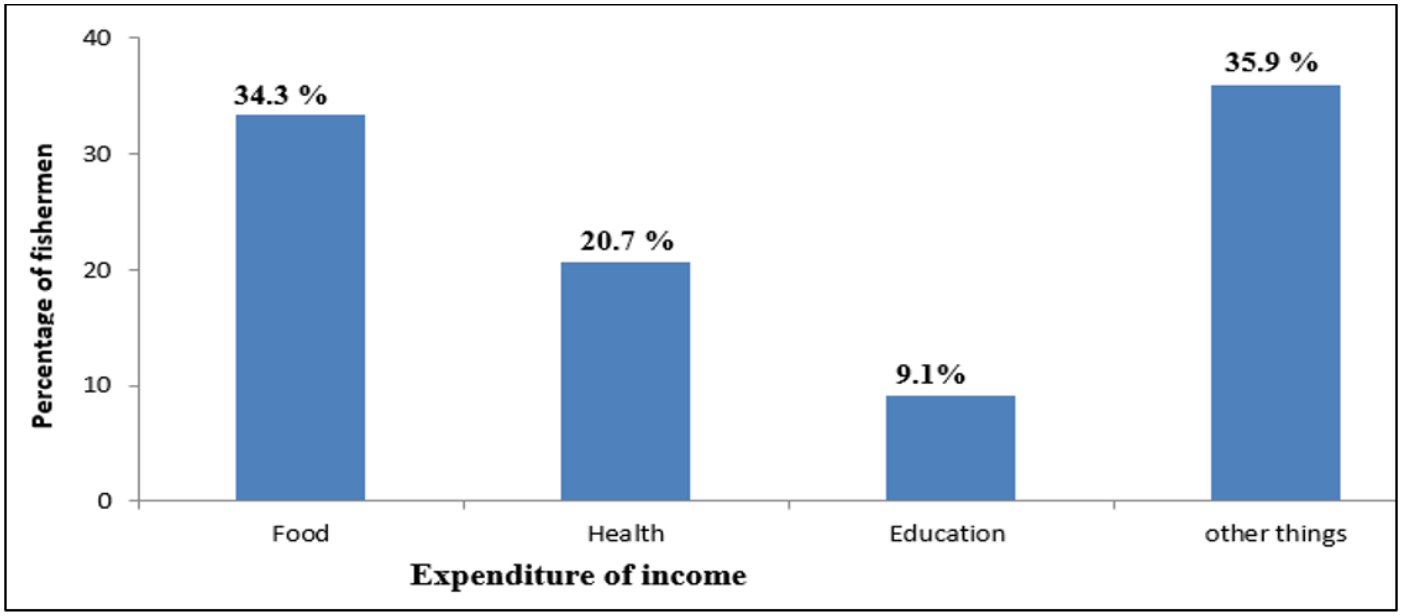

Fig 6 This figure represents daily expenditure of income of fishermen.

➢ *Occupation*

In this study, we found that fishing is one of the most common occupations of local fishermen of Narari Khurd village. Some of them are also engaged with agriculture, such as cereal crops and seasonal vegetables and other work. Results show that 69.9% of the people of this village are only concerned with fishing practices, either captures or culture. 10.1 % of people were working in agricultural practice. 3% of people are traders, 3.7% are boatmen, and 13.3% of the people of this village were fishers as well as working as day labourers (fig 7), which was a similar study to the findings of this study [7] [15].

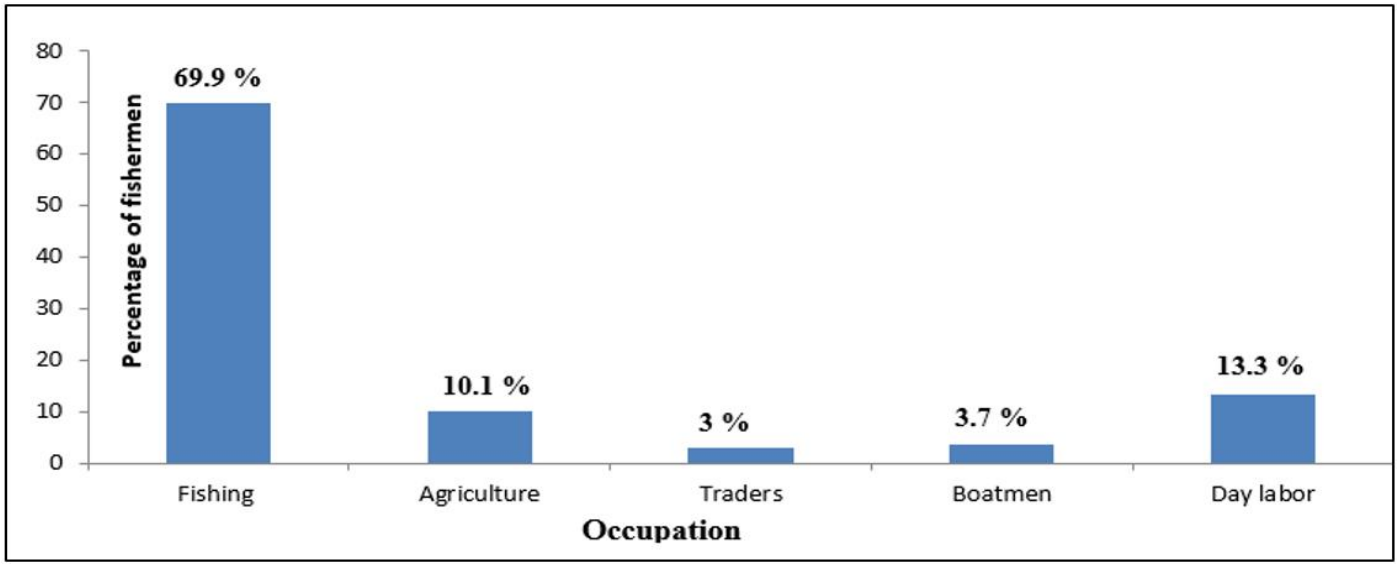

Fig 7 This figure represents occupation of fishermen.

➢ *Fish Selling Process*

In this study, two types of fish selling processes were observed directly and indirectly. A maximum of 64.6% of fishermen sell their fish directly to consumers on the bank of Indrapuri Dam. 35.4% of fishermen sell fish indirectly in the fish market of Dehri on Son, like from fishermen to wholesalers to retailers to consumers. Ultimately, understanding these processes sheds light on the economic strategies employed by fishermen and points out the importance of direct consumer engagement in enhancing local livelihoods.

➢ *Fish Preservation Process*

Here fish are caught and sold two times in every season. Indrapuri Dam is famous and in demand for fresh fish in the local area. Many local people come here in the early morning and evening just to purchase fish. Some of the fish from the dam are very demanded, delicious and tasty, like *Mystus bleekeri, Mystus tengra, Heteropneustes fossils, Ompok bimaculatus, Clupisoma garua, etc. The* fish preservation rate was found to be very low in this study. Only 11.4% of fish is preserved so that it can be sold in distant fish markets. 88.6% of fish were directly sold on the dam.

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Table 1 This table Represents fish Preservation Process in Indrapuri Dam.

Fish preserved	Directly sold
11.4 %	88.6 %

➢ *Source of water*

Due to the good water quality, the local fishermen use the dam water for drinking purposes. 64.9% of fishermen used water through a shared tube well, and 35.1% of fishermen used their own hand pump. The same results were found in this study [15]. This indicates that the water sourced from the dam is not only suitable for fishing but also safe for human consumption, reflecting the overall health of the aquatic ecosystem.

Table 2 This table Represents source of water of local Fishermen

Shared tube well	Own hand pump
64.9 %	35.1 %

➢ *Daily working hours*

This data illustrates the varying work hours of fishermen, indicating that the majority engage in lengthy shifts to sustain their livelihoods. Fishermen spend their lives with lots of hard work and effort. In this study the daily working hours of fishermen have been divided into three categories: 4 to 5 hours, 6 to 7 hours, and more than 9 hours. Fish are caught and sold here twice a day, in the morning from 5 to 8am and in the evening from 3 to 5 pm. There are changes in their timing according to the season. Their job is to make nets, set the nets, catch fish with the help of a boat, and sell fish on the bank of the dam or in the Dehri fish market. Maximum 55.3% of fishermen daily work 6 to 7 hours, 36.3% work more than 9 hours, and a minimum of 8.4% work 4 to 5 hours daily. Similar findings were revealed in Muzaffarpur, Bihar [1].

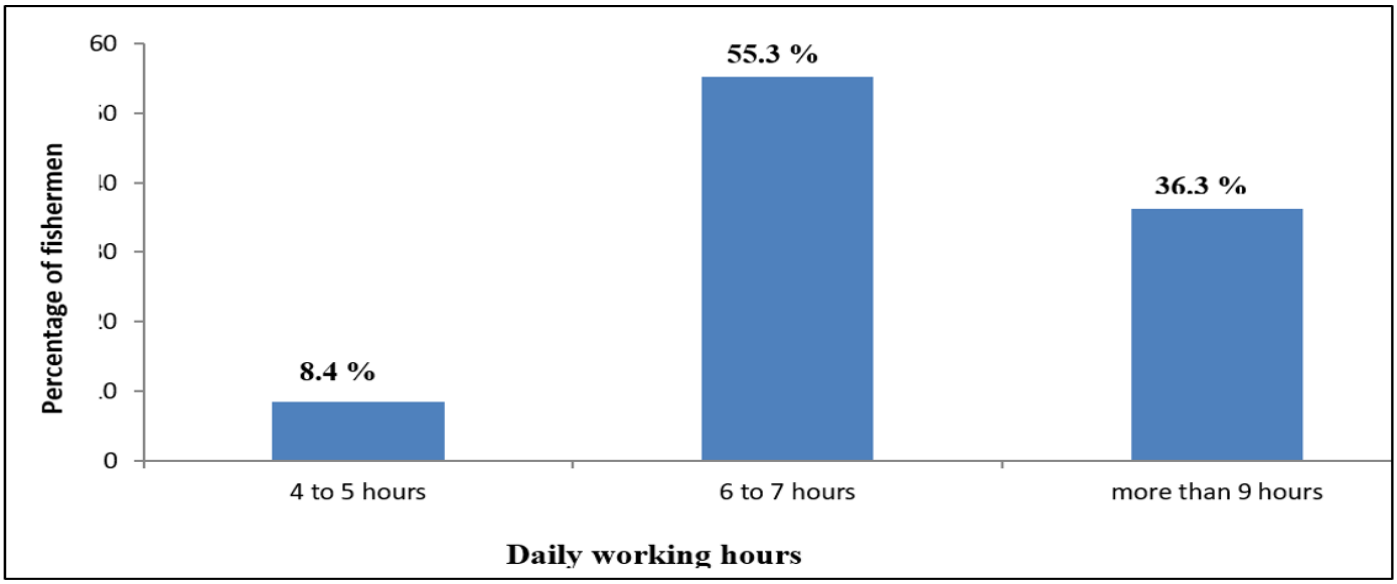

Fig 8 This figure represents of daily working hours of fishermen.

IV. CONCLUSION

The fishing practice plays an important role for the national economic development of a nation. The comprehensive assessment of the livelihood status and socio-economic conditions of fishermen reveals a multifaceted picture of their everyday lives. However, large family size, non-availability of fishing gear/net, lack of external support through government, lack of education, lack of opportunity for alternate livelihood, lack of awareness, etc., are the main causes of poverty of fisher families. The condition of education progress is not satisfactory, which is considered the most necessary requirement for all-round development to fight against social justice because education plays a significant role regarding economic as well as technical information about their livelihood. This study shows that the socio-economic condition and livelihood status of fisher families of Narari Khurd village and Meh village were unsatisfactory regarding income condition, livelihood condition, education condition, and non-support by government. The government should take a major step by establishing some form of management strategy as well as giving some additional protection during the fishing prohibition season. Education in the area should be enhanced. The non-governmental organizations (NGOs) must offer information on the availability of loans that may be utilized to upgrade the income procedure. Government should also provide access to healthcare facilities. This study lays a critical foundation for future research and policy development aimed at both existing challenges and emerging opportunities.

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- *Conflict of Interests*

  Authors declare no conflict of interest.

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