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## Socio-economic condition of fishermen community in Patna District, Bihar: Present status and probable strategies for improvement

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**Abstract-** The present study was conducted along the 39 Ghats from Digha to Didarganj in the Patna District of Bihar, with an objective to explore the demographic status of local fishermen communities, their academic, hygienic and health status, availability of the basic infrastructural facilities for livelihood, fish culture practices, marketing facilities and role of fisher in fisheries development. First of all, a list of various Ghats located along the bank of river Ganga between Digha to Didarganj in Patna was procured from the district fisheries department and concerned Thana, and then fish Ghats were surveyed for the demographic details and the socio-economic condition of the fishermen community residing there. For this the questionnaire was designed to get information on the demography, socioeconomic profile of fisher, the major fisheries activities performed by them, and to find out the problems encountered by the fish farmers for adoption of scientific fish farming practices. The primary data were collected directly as of the sampled respondents (randomly selected 101 fishermen and women) by visiting their location a number of times to get necessary relevant information like their family structure, their assets, occupation, investment, expenditure incurred in fish farming etc. with the help of precise and pre-tested schedule-cum questionnaire. The response sheets were systematically studied and data were generated separately for family structure, demography, academic status, health & hygiene, socio-economic status, availability and implementation of government schemes for the fishermen community, any positive intervention of non-government organization and cooperative societies like COFFED for the upliftment of their socio economic status etc. Majority of the fisher were middle aged, poorly educated, living in medium size joint family with low income and poor economic status. Most of the fisherwomen had poor extension contact and low level of mass media exposure and majority of the fishermen had a low level of knowledge, less social participation and they were traditional in their outlook. The present study revealed that large family size, non-availability of fishing gear/net, scarcity of opportunities for alternate employment etc. are the main cause of poverty of fisher families in the area. The findings of the present study may be critically analysed by the technocrats, government officials and state fishery department to decipher an amicable way for the benefit of the fishermen community of the state and to develop strategies for upliftment of their socio economic status in the state. It will definitely help in planning, development and execution of fishery policy and programme by the planners and administrators, policy makers and fishery extension educationists in a more meaningful and scientific manner.

**Key words:** Socioeconomic status, demography, fishermen community, Patna, strategies, upliftment.

### INTRODUCTION

Ponds, tanks, small reservoirs, rivers and water logged areas like ox-bow lakes and chauras etc. principally

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constitute the fisheries resources in the state of Bihar.<sup>1,2</sup> Around 65,000 ha of water areas are covered by ponds and tanks and nearly 35,000 ha of water areas consist of ox-bow lakes and chauras.<sup>1</sup> At present fish production in Bihar doubled in last 10 years due to sustained efforts made

by the state government of Bihar. As per the state fisheries department, Govt. of Bihar, the total fresh water fish production in Bihar in 2004-05 was 2.68 lakh metric tons which has gone up to 5.7 lakh metric tons in 2016, 6.83 and 7.62 lakh metric ton in 2021 and 2022 respectively. The data clearly reveals that an annual dividend of average 3.09 lakh metric ton is being added yearly since Mar 1999 to 2022. Fisheries sector plays a predominant role not only in terms of contributing to our food basket, but also acts as a cheap source of animal protein supporting our rural health, resource potential and employment opportunities. Most importantly, fishery is a source of livelihood for a large section of the economically backward population.

Fish farmers are the backbone of fish culture and they play a very important role in fish culture. The livestock production potential is based on the socio economic factors of the farmer,<sup>3</sup> which play a vital role in the adoption of improved technologies.<sup>4</sup> To a great extent, the socio-economic background of people determines their habits and attitudes, which shape their perceptions on entrepreneur activities.

The investigations on socio-economic status of fish community and fish farmers have been carried out in different states of India by different workers.<sup>5-14</sup> Somashekar and Shashikanth (2020)<sup>15</sup> surveyed the socio economic profile of fish farmers in Shivamogga districts of Karnataka. The most important impediments of fisheries progress in Bihar is need of knowledge about scientific fish culture, illiteracy and disorganized extension linkages amongst fishermen community. On account of these, bulk of fish farmers is still involved fish culture in traditional method. There are around 1.5 crore fishermen in Bihar. The economically backward community does not own cultivable land, and fishing is the only means of livelihood for them. There is need for creating the knowledge about the emerging development in aquaculture technology in the fishermen society. It is essential to systematize short term training for rural youth with importance on learning for creation of self-employment opportunities and socio-economic progress of fishermen community. Mechanization needs to be enhanced substantially in order to meet the recommended level and to enhance the productivity.<sup>16</sup> Mechanization has been defined as the use of improved hand and animal operated tools.<sup>16</sup> Mechanization of system gives better output, as well as serves as a cost recovery option to minimize or recover

operational investments, and is mostly eco-friendly.<sup>17</sup> Study depicted the pitiable situation of fish marketing practices in Bihar, which are based on exceedingly traditional patterns, unaffected and unfound elsewhere.<sup>18</sup> The review of literature clearly revealed that in recent years, the systemic detailed study on the socio- economic status of the fishermen community of Patna from Digha to Didarganj has not been carried out particularly in context of their demography, educational status, health and hygiene along with the assessment of government and NGO's involvement for the up-liftment of their economic status. Hence, the present study has been designed to assess and analyze the actual socio-economic status of the fishermen community of Patna (Bihar) and to design and recommend some of the strategies to improve the quality of their life.

## **MATERIALS & METHODS**

The study area is located in between 250.63'83" N and 850.10'050 E at Digha Ghat, Patna to 250.36'53.6" N and 850.09'10.2" E at Didarganj Ghat, Patna. A survey was conducted for the period from September 2022 to January 2023. A total of 110 fish farmers from 39 Ghats between Digha to Didarganj locality of Patna district in Bihar were selected randomly and they were interviewed at their respective riverine sites (Ghats) to collect the first hand information with a pre-tested structural questionnaire. The selected sites were-Nasariganj Ghat; Shiva Ghat; Patipul Ghat; Minar Ghat; Bind Toli Ghat; Digha Ghat; Kurji Ghat; LCT Ghat; Baans Ghat; Collectorate Ghat; Club Ghat; Anta Ghat; Mahendru Ghat; Adalat Ghat; Mishri Ghat; T.N Banerjee Ghat; Kali Ghat; Bansi Ghat; Kadam Ghat; Krishna Ghat; Gandhi Ghat; Baharwa Ghat; Law College Ghat; Rani Ghat; Gulbi Ghat; Ghagha Ghat; Roushan Ghat, Sultanganj; Pathari Ghat; Chaudhary Tola Ghat; Koyala Ghat; Alamganj Ghat; Loharwa Ghat; Hanuman Ghat; Gosai Ghat; Raja Ghat; Gai Ghat; Bhadar Ghat; Mittan Ghat; and Kangan Ghat, Patna City. A well-read questionnaire having all detailed information related to demography, age, family size, health and hygiene status, academic background, basic amenities, occupation, socio-economic status, government and NGO's facilities, procurement of fishing crafts, nets, gears, package and practices of fish culture, operational economics were studied in terms of personal interview as well as response sheet made by them in the questionnaire. The data were also collected based on local availability of different species

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of fishes under capture as well as culture fishery, agricultural practices associated with aquaculture, mechanization gap and available mechanization status. The response sheets were systematically studied and data were generated separately for family structure, demography, academic status, health & hygiene, socio-economic status, availability and implementation of government schemes for the fishermen community, any positive intervention of non-government organization and cooperative societies like COFFED for the upliftment of their socio economic status etc.

**QUESTIONNAIRE RELATED TO A STUDY ON SOCIO- ECONOMIC STATUS OF FISHERMEN COMMUNITY IN PATNA (BIHAR)**

**Demography:**

Name-	Age-	Sex-
Address-		
Adhaar no.-	Wife -	Age-

**Total No. of Family Member:**

Male-	Female-	
No. of Children -		
Male-	Name-	Age-
Female-	Name-	Age-

**Academic Qualification:**

Fisherman -	Wife -
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**Academic Evaluation of Children-**

Nearby Government School-  
 Facilities at Government School  
 Books - Copies -  
 Academic Facilities -

**Ward Commissioner -**

**Government Facilities-**  
 Tap Water - Electricity -  
 Public Health Center (PHC) - Ration Card -

**Types of Ration Provided -**

L.P.G- Subsidiary-  
 Eradication of Mosquitoes -  
 Drainage Cleaning -  
 Spraying of Bleaching Powder -  
 (How Many Days) -

**Municipal Disposal of Waste -**

**No. of Toilets -**  
 Gents -  
 Ladies -

**Medical Status -**

Health Status -

Male - Female - Children -

**Facilities made available by the Government -**

Public Health Center -  
 Free Medicine -  
 Help from Fisheries Department -  
 Concept of Cooperative Societies -

**Socioeconomic Status -**

Self- Boat -  
 Hired Boat -  
 Fishing Work as Labour Fisherman -  
 Fishing Without Boat -  
 Major Fish Catch -  
 Catch Statistics -  
 Fish Marketing -  
 Earning (Monthly) -

**Any Idea of Government Plan of Fisheries Department -**

Supply of Net -  
 Supply of Boat -  
 Cooperative Societies -

**Any idea of NGO like**

COFFED / COMFED -

**Thumb impression / Signature**

**Statistical Analysis**

The percentage estimation and statistical calculation have been done as per standard methods.

**RESULTS & DISCUSSIONS**

Traditionally, Bihar's economy is dominated by rural sector. Around 88% of the population live in the rural areas. Ganga is the main river which is joined by tributaries such as Ghaghra, Gandak, Burhi Gandak, Bagmati, Kamla-Balan, Kosi and Mahananda. The species of major and minor carps found in the Ganges river system are extensively used for culture in ponds, lakes, reservoirs and enclosures throughout the country.

The state is endowed with adequate freshwater resources. The state's average rainfall of 1091 mm is considered to be adequate; however, owing to change in climate over the years, droughts and floods are adversely affecting the agriculture, fisheries output and GSDP. Capture and culture of fish are traditional activities in Bihar. Both traditional communities and new entrepreneurs are engaged in such activities.

Capture fisheries resources are evident in vast span of aquatic ecosystems like rivers, reservoirs and flood prone

wetlands in the form of ox-bow lakes and chours. Ox-bow lakes are cut off segments of rivers and popularly known as Mauns. These water bodies usually get connected with the main course of the river during floods or rainy season. However, some ox-bow lakes have permanently lost their connection with the river of their origin. The state has also extensive network of irrigation canals which retains water for considerable period and offer opportunities for aquaculture through cage and other enclosure based aquacultural practices. However, this potential is still lying untapped even at national level. Besides, vast area of lands adjoining the canals remains often water logged for several months which could also be developed for aquaculture and fish seed production. Fisheries resources of the state such as reservoirs are common public property which provide productive source of livelihoods for a large number of resource poor landless and marginal farming communities, especially traditional fishing communities. Chours, on the other hand, are largely multi-ownership based resources which offer an additional crop of fish during the period of water availability. So far, this resource is lying unutilized.

Aquaculture is one of the hopeful, fast growing foods farming area of Bihar. It positions 12th biggest fisheries resources in India and engaged 3rd place in inland fish production and 6th in fresh water seeds production within India.<sup>19</sup>

**Demographic Status:**

**Age and Family size:** During study, it was found that the age of fishermen surveyed varies from 20 to 60 years or more. The family size of fisher family was categorized into three classes like small, medium and large size family. Based on study, it was found that maximum family, nearly 44.48% were considered to be large family, which was composed of 7 or more members, followed by 37.29% Medium sized family, composed of 5 to 6 members. About 19% of the surveyed families were small family i.e., composed of 2 to 4 members.

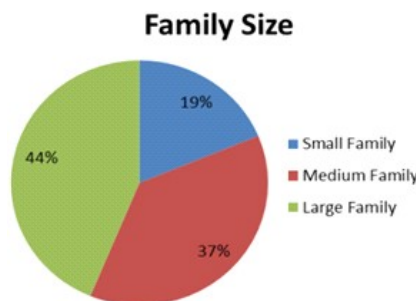


Fig. 1: Family size of the fisherman of Selected Area

**Occupational status:** Based on the data collected, it has been observed that capture fishing practice is the more common activity of the people residing in the adjoining area of Gangetic Deltaic region between Digha to Didarganj in Patna. The main region behind it is the presence of maximum families belonging to fisher community. However, besides fishing some of them were also engaged in agricultural activities such as cereal crops and seasonal vegetable cultivation apart from fishing practices. Some of them were working as a labour under private as well as governmental project besides fishing. They performed labour work either privately from some social construction work or engaged themselves in any project running under government like Manrega etc.

Data shows 34.44% people of these Ghats were only concern towards fishing practice either capture or culture. About 20.66% of people were working as vegetable seller including fishing practices. Fishing and agriculture practice is done by 29.50% people of this region. Rest remaining about 15.50% people of this region were fisher as well as working as labour. From the data collected from the fisher families, it is revealed that the highest production of fish and benefit from the same was found from captured fisheries practice. It was also observed that production increased from last decade. During study, it was found that the age of fishermen surveyed varied from 20 to 60 years or more.

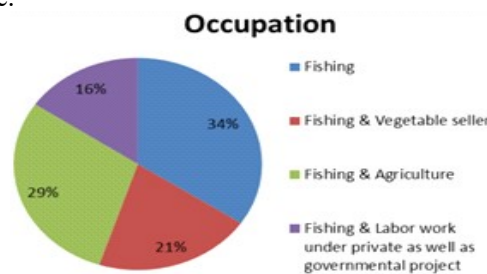
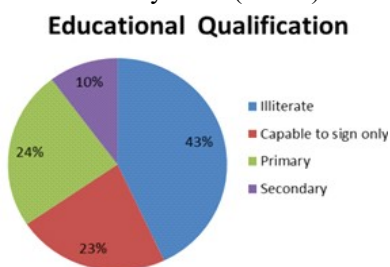


Fig. 2: Occupation of people (Generally fisher families were joint families).

**Literacy status:** Data collected from survey showed that the maximum number of individuals (around 43%) were illiterate and amongst them maximum belong from old generation), even some fisher has never gone to school but somehow they had learned to sign only (around 22.50%). Some of them have studied up to primary level (around 24.25%) and hardly a few individual had gone up to 6th standard (around 10%). The maximum number associated to the categories going for study above 6<sup>th</sup> standard was of young generation. Young generation came

forward for study. This happened only due to the several attempts made by Government of Bihar.

However, a sharp increase in the number of higher secondary pass fishers were noticed in contrast to the previous census. In nearly ten fishermen families a dozens of graduates were also reported. But nearly 80 of them were engaged in some other professions than the fishery practices. Only three post graduate individuals were spotted in the entire fishermen community of the surveyed area. Out of 39 Ghats surveyed only ten Government primary and six middle schools were located. Even the books, copies and other amenities made available by the Government to the fishermen children were not satisfactory. Although there was provision of mid-day meal (MDM).



**Fig 3: Educational Qualification details**

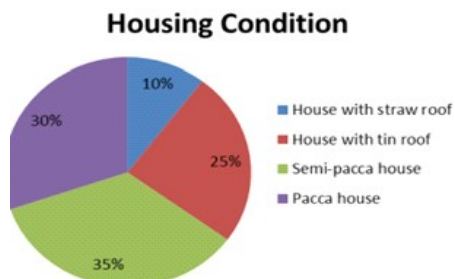
More than 70% of fisher families had their own fishing gear, the rest of same had to depend upon their neighbour, retailer and wholesaler for fishing gears resulting low income.

**Basic amenities/ facilities available:**

Survey was also conducted for the enquiry of living condition of fisher family. The condition of housing was categorized as:

1. House with straw roof (nearly 10.20%)
2. House with tin roofing (nearly 24.95%)
3. Semi pacca house with tin roof upto base of the window (nearly 35.43%) and
4. Pacca house with concrete floor (nearly 30%).

The survey states that the most of the people had semi-pacca house and pacca house.



**Fig. 4: Housing condition of Fishermen community**

**Health and hygienic Status:**

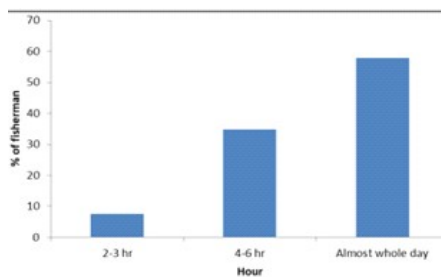
Besides, some basic amenities like municipal tap water facility, common Boring hand pump, Sulabh Shauchalaya, community hall etc. were found to be satisfactory. Majority of the fish farmers had their own ration card and they were consistently receiving the allotted quota of their ration regularly (approx. 16 kg to 40kg).

Although, improper drainage system, sewage waste disposal, unorganized crematorium, abundance of pigs and dead body eating dogs, disposal of carcasses at majority of Ghats have made them unhygienic for the fishermen communities. Sanitary condition of the fishermen locality was not satisfactory. Nearly 40% of the members of the fishermen community reported about their own toilets, while 40% were utilizing paid public toilets, rest 20% of the community including women defecate in the open field, predominantly on the impediments of river Ganga.

A detailed survey on the health condition of the fishermen, women and the children including adolescent boys and girls were considered. It was found that nearly 40% of the fishermen and women of age group 50-60 years were anaemic. Although the haemoglobin content of individuals of age group 12-45 years was quite satisfactory. Not a single case of Malaria was reported by the individuals. However nearly 17.21% aged fishermen as well as few women showed the filarial symptoms. Majority of the fishermen and women of age group 45-65 years were quite unknown about the diabetes. Although, nearly 28% of them reported the symptom of pre diabetic and diabetic condition. The disorders related to prostate gland and kidney were mostly reported in elderly fishermen. Any report of CKD was not declared by the fishermen community. Although, a clinical diagnosis was suggested for a few of them. Nearly 35% of the fishermen and women were diagnosed with hypertension. Surprisingly, 60-70% of the patients had never visited a physician nor taken any hypertensive drug. Nearly 5% of the fishermen were quite aware of their cardiac problems and nearly 80% of them were under proper medications. Respiratory diseases like asthma etc. were found to be more common among the aged fishermen. However, among females it was prevalent in those families where still foods are cooked on wood and coal. Nearly 1.05% known cases of tuberculosis in the fishermen community were also reported. ENT disorders were reported from elderly fishermen. Some fishermen also reported the symptoms of vertigo and insomnia. Besides, fragmentary

complains of acute gastritis, liver cirrhosis and even undetected hepatitis were also made by the fishermen. Nearly 0.68% fishermen were known cancer patients and they were under chemotherapy. Nearly 32% of the children were reported to be suffered from viral fever and cough and cold at one or more times every year. Data clearly reveals that the overall hygienic condition was found to be poor and the health status was also not good. The medical facilities available in the local public health centres was found to be unsatisfactory. It seemed to be far away from the reach of the local fish farmers. Provisions of free medicines supply to the fishermen were not executed properly. Surprisingly, various schemes of the state fisheries department, meant for the welfare of the fishermen community were not known to the local fish farmers, which is evident from their response sheet. Even the fishermen community were not at all acquainted with the various schemes and policies of the fish cooperative societies like COFFED and COMFED etc.

Daily working hour of fishermen was also collected through survey. The working hour of fisherman was divided in three different categories as 2-3 hr per day, 4-6 hr per day and almost whole day based on majority of people.



**Fig. 5: Daily working hour percentage of Fishermen Community**

Result obtained from data collected clearly showed the working hour percentage of fisherman as 7.50%, 34.75% and 57.75% for 2- 3 hr per day, 4-6 hr per day and almost whole day respectively. The income of fisherman was calculated by averaging the whole month income through all sources.

**Economic status of the fishermen community:**

Based upon the personal interview and the data submitted by the fishermen in their response sheet, it was evident that nearly 50-60% fishermen's monthly income was in between Rs 5000-6000, with an average daily income of Rs 150-200 only. 15% of the community reported their monthly income about Rs 9000-10000 (with a daily

average of Rs 300-350), 10% of the fishermen have shown their monthly income of about Rs 12000-18000 (with an average of Rs 500-600 daily). 10% of the community members have reported their monthly income of Rs 20000-30000 (with an average of Rs 1000 daily), while 5% of the fishermen reported their monthly income about Rs 40000-50000 (with an average of Rs 1500-2000 daily). There was found to be direct correlation between the possession of nets and crafts and the catch statistics of the fishermen. It was found that only 20% of the fishermen had their own boat and nets. Rest 40% of them used to hire the boat and paid the monthly rent to the owners and the money lenders, while 30% used to work as daily labourers on the boat and worked as professional fish catchers on paid basis and 10% of the fishermen are found to be engaged in the profession other than fishing. The fish catch statistics at various Ghats varied considerably and it ranges in between a catch of 3-4Kg/day/fisherman to 15-20Kg/day/fisherman. The major fishes caught by the fishermen along the 39 Ghats were *Labeo rohita* (rohu), *Labeo catla* (Catla), *Cirrhina mrigala* (naini), *Cyprinus carpio* (common carp), *Hypthalmichthys molitrix* (silver carp), *Etenopharyngodon idella* (grass carp), *Pangasius bocourti* (bachwa), *Puntius chola* (pothiya), *Mystus* spp. (tengara), *Heteropneustes fossilis* (singhi), *Clarias batrachus* (mangur), *Mastacembalus armatus* (gaichi), *Macrognathus aculeatus* (pataya), *Fenneropenaeus indicus* (Indian prawn), *Channa* spp.(garai), *Pangasius pangasius* (piyas fish) etc. This result shows that the economic condition of the people in the adjoining region of Digha to Didarganj is moderate and their only source of livelihood is capture fishery in Ganga-river and they did not have any additional water body for their fishing activity. Secondly, educational progress is not satisfactory, which is considered as the most necessary requirement for the overall development to fight against social injustice, because education play a crucial role regarding economical as well as technical information about their livelihood.<sup>20</sup> Being uneducated the fisher families are demoralized by the middlemen.<sup>21,22</sup> Thirdly, the studied areas are located in remote area and due to lack of nearby market; they are fully depending on the wholesalers and middlemen for their fishes to be sold. Due to this they did not obtain the authentic price that they should get for the fishes. This difference of selling fishes at a low price against purchasing household requisite at elevated price contributes to the poor condition of the

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people in terms of economy.<sup>23</sup> However large family size, non-availability of fishing gear/net, scarcity of opportunities for alternate employment etc. are the main cause of poverty of fisher families.

**Suggestive measures for upliftment of present socio-economic status of fishermen in Bihar:**

Based on the primary data obtained through rigorous survey of socio economic status of fishermen community at 39 different Ghats along the River Ganga from Digha to Didarganj, Patna city and the findings of the present study, the subsequent suggestive measures are urged for adopting and implementing measures to eradicate the drawbacks and the causes of the poor socio-economic conditions of the fishermen in Patna for proper development of the fisheries sector in Bihar.

1. The bulk of the fish farmers are illiterate. It is highly desirable that they must be made literate, so that they can fight out the adverse scenario judiciously.
2. Fishermen from scheduled castes and scheduled tribes ought to tend special coaching and incentives to require to the profession of fish catching. Now a day the number of scheduled castes and scheduled tribes within the sphere of fish catching is nearly negligible. However, in particular area committees have been formed by sahani people, known as Matshay Jeevi Committee, which is also registered under Bihar government. In terms of fishing, sahani community as well as schedule caste and schedule tribe, get subsidy upto 90% and other OBC get upto 50% of subsidy from state government. These all benefits may reach to fisher family through Matshay Jeevi Committee with the survey under Animal & Fish Resource Department, Bihar.
3. The cooperative societies of fishermen ought to be strong and created free from corruption and factionalism. COFFED and COMFED are two most potential cooperative fisheries societies in Patna, Bihar. Various schemes may be launched by such NGOs and needs to be implemented and expedite at grass route level.
4. Arrangements ought to be created for correct selling of the fish that are perishable commodities. Refrigeration of transport vehicles ought to be done on an oversized scale.
5. An organisation ought to be originated by the Govt. to relinquish technical help to the fishermen. The organisation ought to include persons, who have a huge experience within the sphere of fishing.
6. The government officers of the fisheries department ought to be equipped with sufficient information and invested the required power to unravel the day to day issues featured by the fishermen.
7. The Government of Bihar ought to establish a minimum of one 'fish market centre' in every region with correct facilities as well as cold storage. It will ease them to curtail their loss, which would otherwise maximum due to lack of preservation techniques and lack of standard fish market nearby.
8. There is a need to strengthen the 'extension service system and human resource development' to enhance the information, skill, angle and observe of individuals engaged in fishing.
9. For assortment of field data and investigation into the issues and prospects of cultivation within the region, stress ought to be arranged on the 'Participatory Approach' among the researchers, scientists, and extension market and fish farmers. Such an approach can produce sturdy and effective linkage between the extension personnel and fish farmers to create their capability.
10. Stress ought to tend to determine regional analysis and coaching centres by the govt., so as to unravel the sector issues of fishermen, it is essential to prepare coaching to create them up, thus far with the advancement in cultivation analysis. 'Long term vocational education program ought to be unionized for rural youth with stress on 'learning by doing' for generation of self-employment.
11. Stress ought to tend to strengthen the prevailing workplace, cooperative societies and to determine a lot of primary cooperative societies and assistance teams at the gram panchayat level for strengthening the service delivery system.
12. A comprehensive cultivation policy is to be developed by the govt. for providing economical extension program, planning, research, training, education, input offer, and credit and selling systems.

13. Fishermen and their families are a very important part of Bihar. The social matrix is the strength of the fishing trade. Therefore, special thought must be given to the current cluster to sustain the long way forward for the trade and therefore the life and welfare of the communities.
  14. Government may also channelize the fishermen to export the yield to foreign countries at higher value by its motivation and steering.
  15. Government will organize for common storage facility which might be availed by fishermen on a rental basis. This may facilitate them to earn a lot of throughout favourable reasons.
  16. Throughout strike amount, the Govt. will organize for different other ways of employment and earnings
  17. The Govt. ought to produce awareness among the fishermen community concerning tiny savings and self-facilitate teams, loan facilities from the banks in order that they might get warning facilitate, rather than borrowing at a high rate of interest.
  18. The fishermen society ought to volunteer to create homes for them within the space far away from the near bank of river Ganga and its tributaries so as to shield them from natural calamities.
  19. Most countries have policies for the event of cultivation however lack the strategic development plans and allocation of adequate resources (human and financial) to confirm that these policies really profit the poor, it is necessary that these policies be properly enforced.
  20. A lot of assistance teams are often fashioned particularly for girls to affect fishing connected activities.
5. Choose attributes and develop good indicators.
  6. Develop methods and identify data sources.
  7. Map the logistics and timeline for implementation.
  8. Articulate a plan for analysing and presenting the results.
  9. Discuss how results will be evaluated.
  10. Develop a plan for communicating results.
  11. Formulate a process for deliberation and deciding future actions.

A monitoring and evaluation plan is like a roadmap to guide the entire process.

Besides in context of Patna (Bihar) where the socio economic status of the fishermen is highly miserable, it depicts the apathetic attitude of the Government towards the welfare of the community. So there is an emergent need to cadre the basic needs of the community. A study on the role of various state fisheries co-operative societies for improvement of fishing community in Bihar will be highly solicited. Besides, a study on the role of state policies and schemes for fishing community upliftment in Bihar along with a comprehensive approach on the role of self help group (SHG) for girl fish staff in Patna and Aquaculture dominating areas of Bihar should be given priority.

## CONCLUSION

In spite of being lamented by vast aquatic resources, Bihar is still lying far behind among the aquaculture sector of different states in India. The fishermen are generally rather poor, semi-literate or illiterate and hardly have the other different job chance to modify over. The limited quantity of capital that they may presumably save, gets drained away in medication or for mending of the nets that for the foremost a part of the year stays idle. A number of these options like poor family financial gain, low level of accomplishment and family size not to mention poor monetary inputs have left several of the fishermen in an impoverished financial condition. Instability in earning potential from fishing has in several cases compelled the offspring of the fishermen to show to different employment prospects. This trend has to be countered by bettering steps.

Besides, the correct selling facility for the harvested fish, storage facility at intervals, simple reach of the fishermen covering variety of cooperatives or teams and even provision of dissemination of time-to-time data concerning market costs and demand to the fishermen, offering viable fishing methods, causative for rising their

### Scope for future studies:

For development of socio-economic assessment plan adapted to the specific context of fisheries, a ten step process is highly recommended:

1. Consider the level of participation and the constitution of the team.
2. Define the purpose of doing socio-economic monitoring and evaluation.
3. Describe and delineate the scope and scale of the project.
4. Clarify the policy, management or programmatic objectives.



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business, are essential. it would be troublesome to implement all of these at the same time, however the implementation of site-specific combos of many of those strategic choices at totally different degrees is very necessary to resuscitate the condition of fishermen and rejuvenate the prospects of a viable future for the fishermen.

Fishing community follows the Indian culture in their regular life. Their occupation is seasonal. They're not turned in to different field throughout off season they did not earn any financial gain from their activities and face issues financially. They are indebted, rely on the cash lenders and are exploited by agents and middlemen, whereas mercantilism their product within the market in Patna. The findings of the present study may be critically analysed by the technocrats, Government officials and state fishery department to decipher an amicable way for the benefit of the fishermen community of the state and to develop strategies for upliftment of their socio economic status in the state.

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### CONFLICT OF INTEREST

Authors declare no conflict of interest.

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