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Socio-economic ranking of farm pond owners practicing fish culture in the Latur district of Maharashtra state

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Abstract
The socio-economic survey of farm pond owners from Latur District was conducted to collect the socio-economic information from them. Five samples from each Tahsil were collected by using random sampling from the farm pond owners for a period of Nine months from October 2021 to June 2022. The data were collected using structured questionnaires from 50 farmers by taking personal interviews. The study indicated majority of farm pond owners were of 41-50 years age group (36%). Majority of farm pond owners were found graduates (46%). Out of 30 fish farmers from 50 farm pond owners, 50% farmers (15 nos.) have annual income in the range of Rs. 50000-100000 followed by 33.33% farmers (10 nos.). In the present study, lack of technical knowledge (31.74%) is found to be the highest constraint followed by feed management issues (19.04%).

Keywords: Socio-economic ranking, farm pond owners, fish culture

1. Introduction
Fisheries sector plays crucial role in socio-economic development of the country. It provides employment opportunities and foreign exchange to millions of people. At the same time, it is an instrument of livelihood for a large section of economically backward population of the country. Fishery sector occupies an important place in the socio-economic development of the country (Ayyapan and Diwan, 2006) [3].

The total aquaculture production was 87.5 MT and India ranked 2nd in the World with 8.6 MT aquaculture production during the year 2020. (FAO, 2022) [5]. Freshwater aquaculture depends mainly on carp culture that account for around 80% of the total inland fish production. (Abraham *et al*., 2010) [1]. Fish farming could serve as means of employment and income generation resulting to poverty alleviation among the rural people. (Adeniyi *et al*., 2014) [2].

Farm ponds are regarded as one of the most effective methods for providing water in places that are prone to drought. A farm pond may collect rainfall, trap, filter, and store irrigation tailwater and surface runoffs, as well as divert water from streams during peak winter flow periods for use later in irrigation and other applications. Additionally, it may guard against frost, replenish groundwater, and provide a broad variety of other economic and environmental advantages. The agricultural ponds are built into the lower fields, and runoff from the upper fields is directed into the pond. Additionally, pumping pond water is far more energy-efficient than pumping groundwater. By building tail water return flow ponds, the water flow into the agricultural ponds is increased, maximising its potential. This accomplishes the dual goals of recycling runoff from irrigation systems and replenishing groundwater.

Farm pond-based fish culture is a popular fish farming technology due to its important role in agriculture as a supply of water and an aquatic medium for fish culture. Farm pond fish culture has been proved as an additional income source along with agriculture. In Maharashtra state, large numbers of farm ponds are created with financial assistance of Government of Maharashtra as well as various Central government sponsored schemes. The State government has introduced schemes like 'Magel tyala Shettale', (Farm Ponds on Demand) and 'Jalyukt Shivar Abhiyan', while the Union government has also supported farm ponds by allocating funds under schemes such as the National Horticulture Mission (NHM), Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), Rashtriya Krishi Vikas Yojana (RKVY), Pradhan Mantri Krishi Sinchai Yojana (PMKSY), etc which also provide subsidy for plastic linings.

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Latur is one of the districts of Marathwada Region of Maharashtra state and is situated in the Godavari River basin and has conducive climatic conditions for both agriculture and aquaculture. Farm pond-based fish farming practices in Latur district is gaining attention of many farmers day by day due to its complementary characteristics. But due to unawareness and less technical knowledge about fish farming, some farm pond owners are not practicing the fish culture in their ponds. College of Fishery Science is actively popularising the fish culture technology in farm ponds through conducting seminars, webinars as well as training programmes. But due to unavailability of baseline data about farm pond owners doing fish culture, College as well as State Fisheries Department are facing difficulty in popularising the 'fish culture in farm ponds' concept.

Basic information of fish farmers is not available hence the present work was carried out with an objective to conduct the baseline survey of farm pond owners doing fish culture in the Latur district of Maharashtra to assess the status of livelihood and constraints as well.

2. Materials and Methods
A survey was conducted initially to collect information of farm pond owners from all 10 talukas namely, Latur, Ausa, Nilanga, Udgir, Ahmedpur, Jalkot, Chakur, Shirur Anantpal, Deoni, and Renapur for about 9 months from October, 2021 to June, 2022. Five farm pond owners from each taluka were randomly chosen, and their information was gathered. The data was collected using structured questionnaires from 50

farm pond owners by taking personal interviews. The questionnaires consisted of demographic information as well as current engagement of farmers in fish farming practices with their income level and other information. The information obtained from the questionnaires were analyzed using descriptive statistics.

3. Results and Discussion
### 3.1 Personal Characteristics of the Respondents
In present study reveals the respondents of all age groups were involved in the fish farming practices. Majority of fish farmers (36%) were 41-50 years age group followed by 31-40 age group (34%), 51-60 age group (16%), 21 -30 (8%), Above 60 (6%) and Less than 20 age group (Nil). (Table 1)

Table 1: Personal Characteristics of the Respondents

Sr. No.	Age (Years)	Frequency (n = 50)	Percentage (%)
1.	Below 20	00	0
2.	21-30	04	8
3.	31-40	17	34
4.	41-50	18	36
5.	51-60	08	16
6.	Above 60	03	6

3.1 Educational levels of the Respondents
In present study, five categories were considered to determine education level in fish farmers and majority of fish farmers were found graduates (46%) followed by each primary and secondary level (24%) education. (Fig 1)
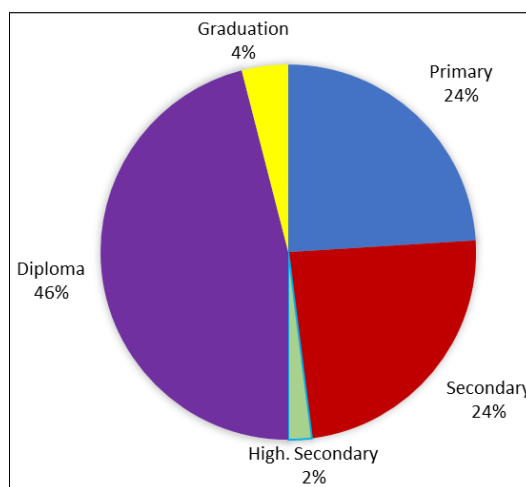
Fig 1: Educational levels of the Respondents

The level of education is more in present study as compared to work done by other researchers. According to Singh *et al*., (2015) [11] the educated, experienced and trained farmers take sound logical decisions regarding farming practices and the study reveals that a good proportion of fish farmers had graduate and postgraduate (26%), senior secondary (38%) and secondary (22%) education. While Bhutti *et al*. (2022) observed that only 3% of graduate fish farmers were found which was low and rest with primary(13%), secondary (28%), S.S.C. (16%) H.Sc. (31%) and (9%) with no education in Sabarkantha District of Gujarat.

3.2 Engagement of fish farmers in fish farming
It is encouraging observations among total farmers that 60% farmers are engaged in fish farming practices where 40%

farmers are not engaged in fish farming practices. But among the farmers who are not engaged in fish farming 70% farmers have shown keen interest towards fish farming practice. (Table 2)

Table 2: Engagement of fish farmers in fish farming

Sr. No.	Engaged in fish farming	Frequency (n = 50)	Percentage (%)
1.	No. of farmers engaged in fish farming	30	60
2.	No. of farmers not engaged in fish farming	20	40
3.	No. of farmers who are not doing fish farming but interested	14	70

3.3 Annual Income of Fish farmers through fish farming
Out of 30 fish farmers, 50% farmers (15 nos.) have annual income in the range of Rs. 50000-100000 followed by 33.33% farmers (10 nos.) farmers have annual income level below Rs. 50000 and only 16.66% farmers (05 nos.) have annual income level above Rs. 100000. (Fig 2)
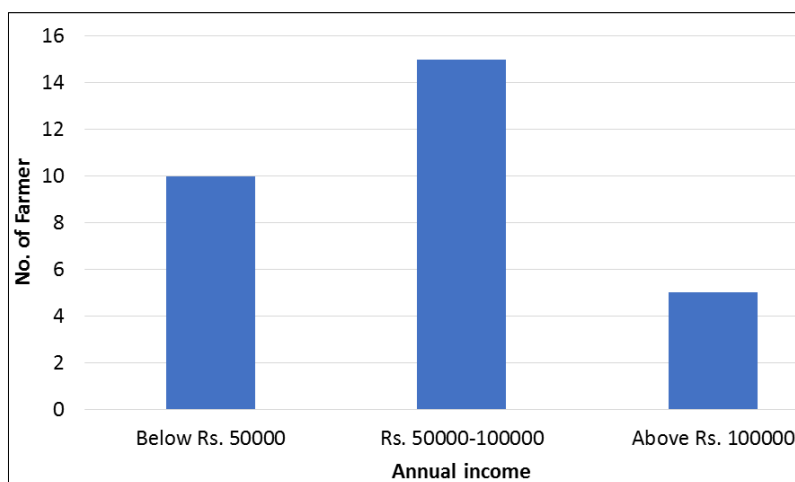

Fig 2: Annual Income of Fish farmers through fish farming

This low percentage of high income level is might be due to various factors like lack of technical knowledge, inadequate supply of inputs, financial crunch, water crisis etc. Kulkarni *et al*., (2018) [8] mentioned that technical knowledge and financial assistance are necessary factors for improvement of socio-economic conditions of fishermen and farmers.

3.4 Constraints of the fish farmers in fish farming practice
There are several problems which fish farmers generally faced. The constraints of production and marketing of fish had been studied by a number of researchers in different time and place (Sahoo *et al*. 2016; Abraham *et al*., 2010) [1]. Several researchers studied constraints of fish farmers such as flooding, lack of finance and poaching and these were reported as the major concerns in several underdeveloped and developing countries (Hasan and Ahmed, 2002; Jeney *et al*., 2002) [6, 7] and other states of India (Singh *et al*., 2015) [11].
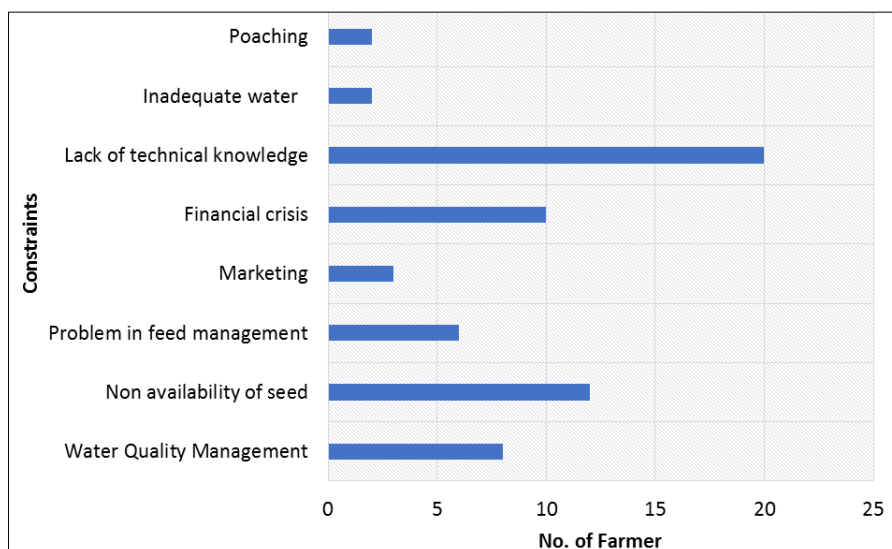

Fig 3: Constraints of the fish farmers in fish farming practice

In the present study, lack of technical knowledge (31.74%) ranked as the highest constraint followed by Problem in feed management (19.04%), Financial crisis (15.87%), Water quality problem (12.69%), Marketing (9.52%), Non availability of fish seed (4.76%), while the least constraints were Inadequate water (3.17%) and Poaching (3.17%). (Fig 3) factors were considered as a constraint which influences on production and profit. It is essential to impart technical information through training and demonstration to farmers in order to overcome the constraints based on technology. Mahanayak (2017) [9]

Also opined about necessity to provide advance knowledge of culture system through education and training to increase fish production.

4. Conclusion
In the conclusion, the present study has shown some personal characteristics of farmers of Latur district of Maharashtra. Majority of respondents were engaged in fish farming practices. Most of them are having moderate income level and facing with major constraints like lack of technical knowledge and financial crunch. It is necessary to provide need based

technical know-how and financial assistance to the farmers from the fisheries institutions and department respectively. These farmers will actively engage in fish farming practices with proper management and will improve remarkable income level of the farmers.

5. References

1. Abraham TJ, Sil SK, Vineetha P. A comparative study of the aquaculture practices adopted by fish farmers in Andhra Pradesh and West Bengal. Indian Journal of Fisheries. 2010 Jul 1;57(3):41-48.
2. Adeniyi OV, Folorunsho B, Olooto FM. Baseline Survey of Smallholder Fish Farming Enterprise in Moro Local Government, Nigeria. IOSR Journal of Agriculture and Veterinary Science. 2014;7(1):41-45.
3. Ayyappan S, Diwan AD. Fisheries research and development in India. Fishing chimes. 2006;26(1):19-23.
4. Bhutti JK, Lende S, Pargi NA, Vasava RJ, Taral PV. Studies on the socio-economic condition of fish farmer in Sabarkantha district of Gujarat state. The Pharma Innovation Journal. 2022;SP-11(4):970-974.
5. FAO. The State of World Fisheries and Aquaculture 2022. Towards Blue Transformation. FAO Rome; c2022.
6. Hasan MR, Ahmed GU. Issues in carp hatcheries and nurseries in Bangladesh, with special reference to health management. FAO Fisheries Technical Paper; c2002. p. 147-64.
7. Jeney Z, Hao NV, Trong QT, Mui NT, Hong PT, Thanh NM. Preliminary Results of the Fish Health Survey in Rural Aquaculture of Tien Giang Province, Viet Nam. FAO Fisheries Technical Paper. 2002, 323-332.
8. Kulkarni AS, Kunjir SN, Markad AT. Studies on socio-economic conditions of fishermen in Udgir in Maharashtra State. International Research Journal of Agricultural Economics and Statistics. 2018;9(2):300-304.
9. Mahanayak B, Chakraborty S, Panigrahi AK. Preliminary survey on the primary fishermen cooperative societies (PFCS) of Murshidabad district of West Bengal. Indian J Biol. 2017 Jul;4(2):142-145.
10. Sahoo PR, Ananth PN, Dash AK, Pati BK, Barik NK, Jayasankar P. Institution based intervention on promoting composite fish culture in rural Odisha: A case of KVK-Khordha. Int. J Fish. Aqua Studies. 2016;4(4):190-195.
11. Singh DR, Vasisht AK, Kumar S. Profitability and technical efficiency of aquaculture in Punjab, India. Indian Journal of Fisheries. 2015 Jan 1;62(2):49-55.