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Study on socio-economic and educational status of fishermen of Bijnor district, Uttar Pradesh, India

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Abstract

Local aquaculture has arisen as a fast-growing inventiveness and a viable alternative to the decreasing capture fisheries. Carp culture has shown viable over the years in India. In Uttar Pradesh, carp culture is main backbone of freshwater aquaculture that accounts for around more than 90% of the total inland aquaculture production of Uttar Pradesh. The present study shows the socio-economic profiles of the fish farmers of eight villages of block Budhanpur of district Bijnor, Uttar Pradesh. This study mostly emphases on their age, educational background, and experience in fisheries activities, fish production and species cultured. Present study divulges that majority of farmers are from age group of 45-50-year-old, have primary education followed by secondary educations and some old farmers have good experiences in fisheries activities for 15-20 years. This study also displays that the production of Bijnor district of Uttar Pradesh is slightly lower than state average production. This study also novelties that the maximum cultured species of fish are Indian major carps and one or two species of Exotic major carps that have good marketing values and consumer's preference. Although the farmers of block Budhanpur of district Bijnor of Uttar Pradesh cultured carps, size of the pond/farm, species cultured, fish seed procurement, nursery management, feed and feeding management, pond fertilization, source of information on aquaculture, fish seeds and disease treatment, awareness on aquaculture were noticed. Majority of the farmers in this block (60%) has undergone for full time aquaculture and few among them (30%) are participated as part time aquaculture. Fish contribution from this district to overall fish production of state can be improved through training programme by fisheries state department and their fisheries development schemes.

Keywords: Socio-economic profiles, fishermen, Budhanpur, Bijnor, Uttar Pradesh

Introduction

In India, inland aquaculture has emerged as a fast-growing enterprise and a viable alternative to the declining capture fisheries. It has developed as the worlds' fastest growing food-producing sector, with an annual growth rate of 10% since 1984 ^[1]. Asia contributes about more than 91% of the worlds' total aquaculture production with China, India, Japan, the Republic of Korea, the Philippines, Indonesia and Thailand as top producers ^[1]. In India, freshwater aquaculture has made notable progress in recent years and contributed about three-fourth of the total fish production in the country. India is the fourth largest producer of fish in the world and is second in inland fish production. India's share in the world's fish production has increased from 3.2% in 1981 to 4.5% in 2005 ^[2]. Fisheries development in India has made considerable progress over the successive Five Year Plan periods. Freshwater aquaculture depends mainly on carp culture that account for around 80% of the total inland fish production and have proved sustainable at different levels of production over the years.

Uttar Pradesh has brilliant with rich and varied inland water resources in the forms of ponds, tanks, reservoirs, rivers and lakes which offer great potential for freshwater aquaculture development. The state ranks fourth in the country in terms of inland fish production after West Bengal, Andhra Pradesh and Bihar, and contributes about 7.3% to the Indian inland fish production. Both fish and seed production in the state have been rising steadily in the recent past. The state's average annual growth of fish production was about 10% during the period from 1996-97 to 2001-02, while fish seed production increased by 11% annually during the same period. The average fish production of the state is about 2130 kg/ha/yr, which is marginally lower than the all India average production of about 2180 kg/ha/yr ^[3].

Uttar Pradesh state accounts for about one sixth of the total population of the country, food security of the nation is often associated with food self-sufficiency of Uttar Pradesh Uttar Pradesh has vast potential of aquatic bio-resources and offers considerable scope of inland

fisheries development and aquaculture. The State contributes approximately 14.68% of the total national fish diversity [4]. Aquatic resources are available in the form of 28,500 km of rivers and canals, 1.38 lakh ha of reservoirs and 1.61 lakh ha of ponds and tanks as well as 1.33 lakh ha of floodplain lakes and derelict water. The total fish production from all resources in the state is 3.93 million tonnes (2009-2010) (<http://fisheries.up.nic.in>). These all endowment is provided greater scope for the promotion of aquaculture activities in the state from the view point of both increasing production from existing farms and also by the expansion of area under farming as so far only 53% of the suitable area has been brought under aquaculture [5]. Although it has been revealed that by and large, fish farmers in Uttar Pradesh have been receiving a significant amount of income from the fish farming activity, production and income from fisheries are not as expected due to numerous problems, viz., lack of institutional support, seed related aspects, high costs of inputs, unfavorable price of fish, involvement of middlemen, lack of infrastructure facilities, inactive cooperative societies and pond related issues [6]. A few studies conducted on fish farming business in other Indian states have also revealed similar constraints [7]. In view of this, an attempt has been made to examine fish farmers' perceptions about the factors hindering higher fish yields and incomes in Mirzapur district of Uttar Pradesh. The purpose of this study was to explore the current status fish culture practices and socio-economic and educational status of fish farmers of district Bijnor (Uttar Pradesh).

Materials and Methods

The study covered Socio-economic and educational

characteristics of fish farmers involved in block Budhanpur of district Bijnor of Uttar Pradesh fisheries community. A cross-sectional interview-based survey was conducted in eight villages of block Budhanpur of district Bijnor of Uttar Pradesh (Fig.1), namely Seohara, Dhampur, Noorpur, Tajpur Chandpur, Sahaspur, Nagina, and Sherkot for about 6 months covering a total of 30 farmer's farms that culturing Indian major and minor carps and other varieties with a pre-tested structured questionnaire developed as per Thrusfield [8]. The Fishery Extension Officers of the Department of Fisheries, Government of Uttar Pradesh and also the officials of fisheries district department of Bijnor, were requested to provide a list of both registered and unregistered fish farmers in their block Budhanpur. From these lists, 30 farms in block Budhanpur were randomly selected for the survey. The size of the fish farms ranged from 0.5 to 2 hectares. The questionnaire was used to elicit information relating to the general personal data of the respondents, educational level, and year of experience in the occupation. The structured questionnaires were used to extract the socio-economic characteristics which include; age, educational level, year of fishing experience, marital status, household numbers and types of fishing activities. Completed questionnaires were collected and analyzed with simple statistical tools such as frequencies and percentages. Pie and bar charts were used to elucidate variables of interest.

Statistical Analysis: Completed questionnaires were collated and analyzed using descriptive statistical tool, involving the use of central tendency such as frequency, percentage and charts to explain the various variables of interest.



Fig 1: Map of the district Bijnor showing Ganga River and various areas of district [9].

Results and Discussion

Socio-economic characteristics of farmers

Age distribution of the fish farmers

The case study on status of fish farmers of different villages of block Budhanpur of district Bijnor, Uttar Pradesh. Age was an important factor in fisheries activities. However, respondents whose ages were between 15-30 years were the most prominent in fisheries activities, they were only for 3 in number, age old as over 20 years. The farmers in this category

are still in their active age to contribute meaningfully to fisheries production, reason behind this may be their young ages. This study shows that most number of farmer found to be active in fish culture were from age group 45-50, i.e., 10 in numbers. (Fig. 2) However, they were less educated but still more active to fisheries activities, because of their experiences in fisheries activity. There categories of fish farmers are in the middle age bracket and more favorably disposed to be innovative.

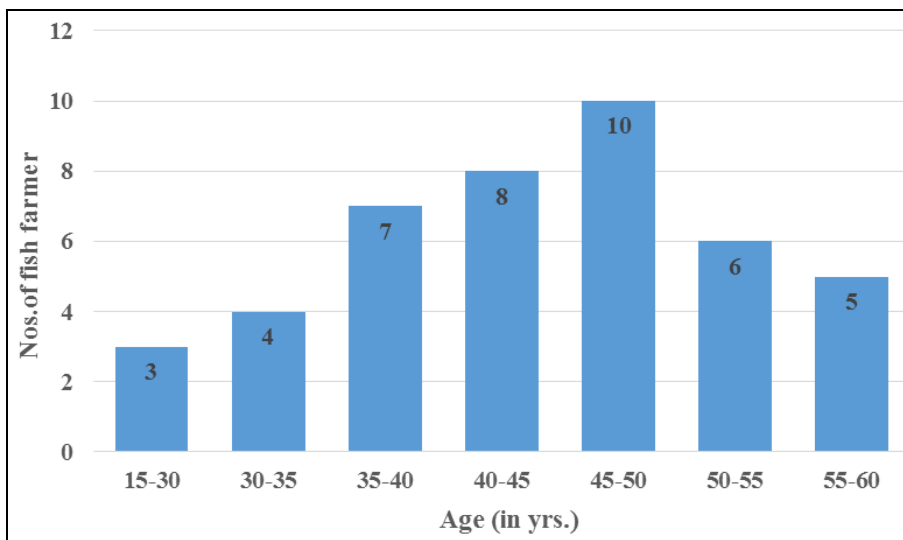


Fig 2: Age distribution of the respondents

Educational background

Study on the socio-economics variables influencing farmer participation in fisheries activities around block Budhanpur of district Bijnor, Uttar Pradesh found that 27% of the farmers had no formal education. About 33% had primary education, while 30% had secondary education. A very few 10% had graduation or higher education. Most of the fish farmers cannot read or write. The farmer that had no formal education were from age group above 50 years, this might be due to

poor education level of their district as well as state or might be their economic status at their era. However, this study shows that most percentage of farmers have primary education, it reveals that the cost of primary educational level at their state would be very low than secondary education and higher education. This study shows that the young generation are stepping toward higher education despite fish culture activities and other agricultural activities.

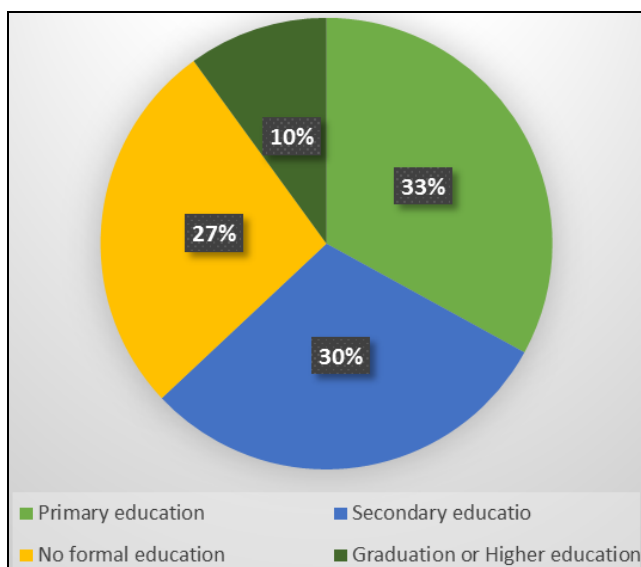


Fig 3: Educational background of respondents

Marital status of the fishermen

Fisheries activities are energy demanding jobs, so the farmers need to be physically strong to accomplish most of the tasks. Majority (64%) of the farmers interviewed in this study,

mainly are married, about 36% are unmarried (Fig. 4), most of married farmers were have 3-4 children, and family size was on an average 5 in numbers.

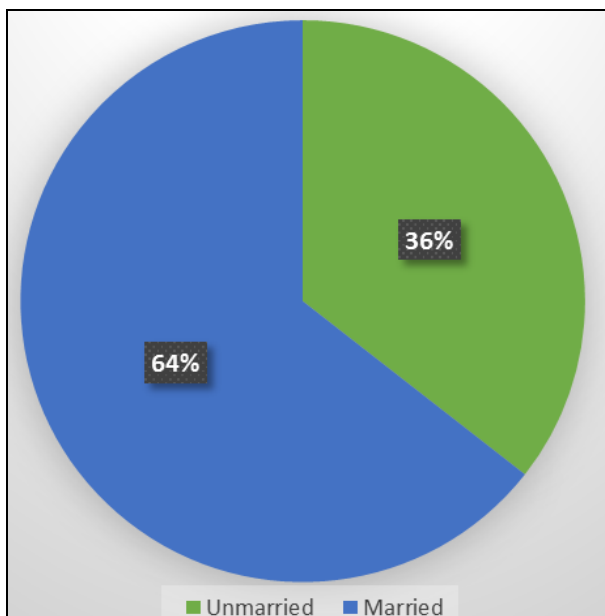


Fig 4: Marital status of fisherman respondents

Experience of the fish farmers in fisheries activities

This case study shows that most of the farmers (11 in numbers) had fifteen to twenty years’ experience, 7 farmers were have 20-25-year experience. Only 4 had above 25 years. The figure shows that 5 farmer had 10-15-year experience while a few no. of farmers i.e., 2-3 had only 5-10 year or less

than 5-year experience, in this group most of farmers were young in age and beginning activities in fish culture. This result shows that most of farmers were involved in their youthful age, this reason may definitely prove their level of experience.

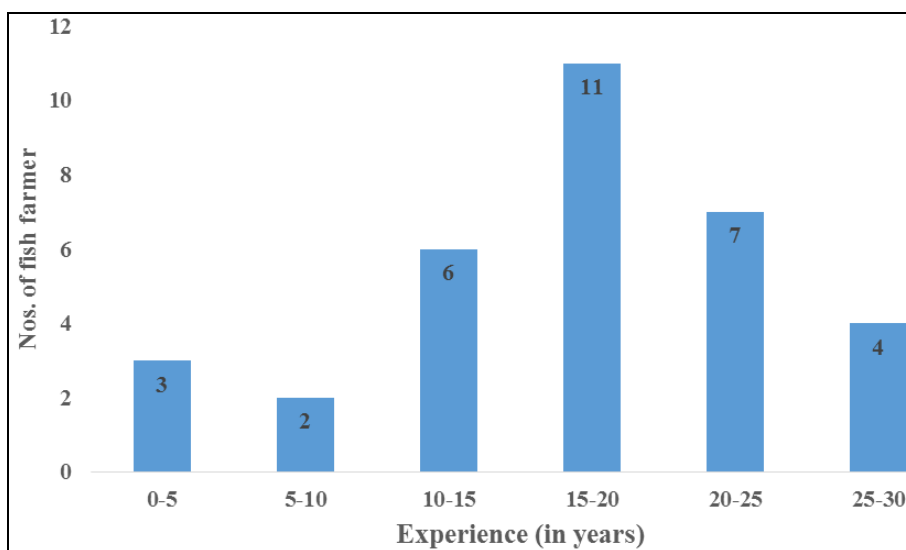


Fig 5: Experience of the fisherman’s in fisheries activities.

Mode of operation of fishermen folks in the study area

The mode of operation of fishermen folks in the area of block Budhanpur of district Bijnor of Uttar Pradesh indicated that

30% of men are engaged in fish farmer activities on part time basis while 60% on full time and 10% does it occasionally (fig. 6)

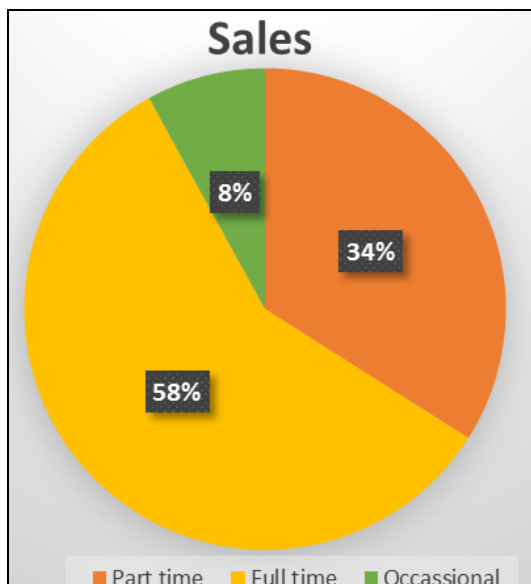


Fig 6: Mode of operation of fishermen in the study area

Caste category participation in fisheries activities

This study reveals that the fishermen was participated from different caste categories and sub-caste categories. The majority of farmers was found from ST/SC category that was

accounted as 55% followed by category OBC (other backward class), accounted for 36% and general category’s farmer was as 9%, this may be due to the capital and income from other sources of different categories.

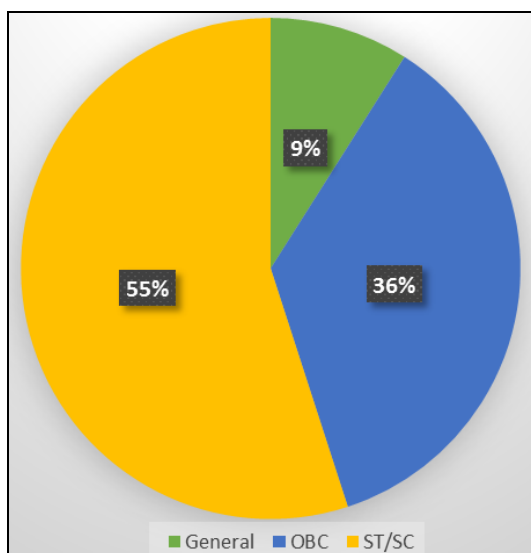


Fig 7: Caste wise participation of fisher folk in the study area

Production of fish

As this study shows that most of farmers of Bijnor district of Uttar Pradesh follow traditional aquaculture system such as extensive aquaculture system and some of them cultured semi-intensive culture system and few countable group of farmers are adopted intensive aquaculture system. The average production for extensive culture system was found as 12-15 quintal. In Intensive aquaculture system was found as 18-22 quintal and this study in intensive culture system shows the average production 25-33 quintals. These all results show that the production of block Budhanpur of district Bijnor is little low than average production of Uttar Pradesh state. This is definitely due to lack of fisheries educations, high culture techniques, departmental policies and poor knowledge of fish seed as well as fish species and their dietary food requirement and medicinal requirements.

Fish species cultured

The commercial freshwater aquaculture in Uttar Pradesh is of intensive and semi-intensive type but here is a considerable number of farmers adopted modified extensive and extensive farming. Catla (*Catla catla*), rohu (*Labeo rohita*) and mrigal (*Cirrhinus Mrigala*) cultured as Polyculture of Indian major carps was most common. This study shows in Bijnor district of Uttar Pradesh that maximum farmers are cultured Indian major carp (IMC) namely Catla, Rohu and Mrigala integrated with one or two species of Exotic major carp (EMC) such as Common carp, Silver carp and Grass carp. This study revealed that the common carp and silver carp of EMC group found to be maximum cultured species along with IMC, this may be due to consumer preference, faster growth rate, low mortality and easy to culture with low input.

Feed and fertilizers practices

According to De Silva and Anderson ^[10] that though natural food contributes to the nutrition of the cultured fish while the exogenous supply of artificial food is essential to supply nutrients, which may be deficient in natural food. However, application of artificial feed affects water quality more than any other management factors. Feeding of fish at 2-5% of the body weight is recommended based on natural productivity of fishpond ^[11]. The farmers of Uttar Pradesh used wide variety of feed ingredients of both plant and animal origin. The two important feedstuffs used as a combination are rice bran and groundnut oil cake. Mustard oil cake was also preferred as a feed ingredient. This study found that among fish feeds, bran

(34%), mainly rice bran cake was favoured mostly by the Bijnor district fish farmers because of its easy availability and nutritional quality along with Natural feed (62%) and 4% other ingredients such as wheat bran/husk. However, about 62% of the farmers were entirely dependent on natural production. The farmers of Bijnor district, Uttar Pradesh used different types of organic and inorganic fertilizers to facilitate the growth of natural food organisms. Application of organic fertilizers (91%) like cow dung, poultry manure in different doses, was most common in nursery ponds after one week of stocking. The inorganic fertilizers used by the farmers to augment primary productivity were urea, single superphosphate and di-ammonium phosphate.

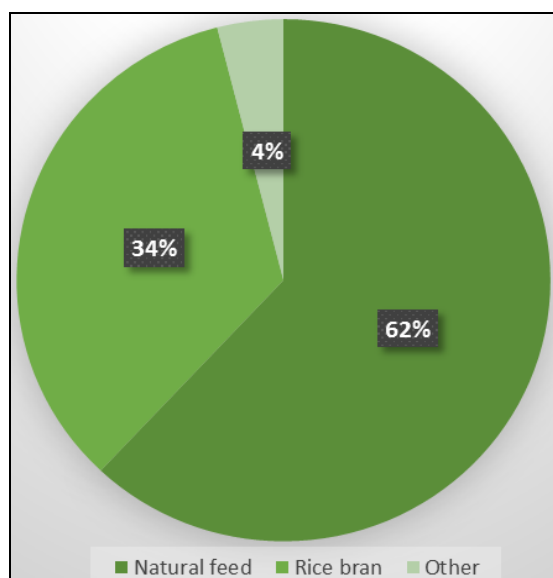


Fig 8: Feed stuff used by fisher folk in the study area

Source of information on aquaculture, fish seeds and diseases treatment

As shown in this study, majority of the farmers of Bijnor district of Uttar Pradesh learnt aquaculture through day-to-day experience and gain knowledge from other farmers. Information was also sought from Government extension workers, educational institutions and other farmers, friends and neighbors. As regards to the information on fish seeds, they depend on other farmers, self-knowledge, friends and neighbours, Government extension workers and educational institutions. However, for the information on disease treatment, the farmers sought help from feed and drug sales personnel who visit the farms regularly to promote their company products. Uttar Pradesh farmers learnt aquaculture on their own way (70%) and they also take advice from other farmers, friends and neighbours. For information on fish seeds, farmers were again dependent on other farmers, own knowledge, friends and neighbours. Government extension workers also provided some information on aquaculture and fish seeds. The results also reflected the lack of co-ordination between Government extension officers and farmers in implementing the scientific advancements in aquaculture. For knowledge on aquaculture, there was over-dependence on other local farmers, friends and neighbours. The Government extension officers were among the last source of information. A similar trend was observed in Bangladesh, Vietnam and Thailand ^[11-15].

Conclusion

This study concluded that the farmer of block Budhanpur of district Bijnor of Uttar Pradesh fisheries community produce fish as some low to the rate of state average production. Although farmers were from different age group, caste, communities, education level and different experience level. The farmers are found to be more innovative to culture different fish species and feed. Fisheries department of Uttar Pradesh are also provide training knowledge about culture new species. This has periodically changed due the new inventions and demands. In this life cycle, India has very good chance to play the dominant role once again very soon.

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