Identifying Socio-Economic Features of Fish Farmers

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Abstract

A study of the socioeconomic conditions is a prerequisite for the suitable design and successful implementation of any project, training, demonstration or Governments' developmental programmes. The present study was conducted to assess the socioeconomic characteristics namely education, employment, income levels from aquaculture and other farm and nonfarm activities of fish farmers of Jammu district, along with status of fish farming and livelihood of fish farmer. The numbers of fish farmers have been increasing due to awareness, fish demand and market price and different encouraging Govt. schemes. Data were collected with the help of well-structured questionnaire from the selected farmers of district Jammu was selected purposively for the study. The findings of the study showed that the majority of fish farmers are in middle age group, education up to middle level, medium family size with sufficient experience in aquaculture. They have medium level of social participation, smaller pond size with single ownership and low level of family income. These socio-economic characteristics of fish farmers must be taken into consideration while formulating, designing and implementing developmental programmes.

Keywords: Small-scale fish farmer; Aquaculture ;Education; Income

The socio-economic characteristics pertaining to demography, means of production and investment, income and expenditure pattern of people living in a particular location strongly influence their responses to the technological changes and participation in the development schemes. However, lack of authentic information on the socio-economic conditions of the target group and regular updation of information is one of the serious impediments in the successful implementation of the developmental programmes. Many micro and macro level socio-economic surveys have been conducted by various research workers in fisheries sector in different regions of the country to study one or the other parameter of the fish farming (*Sen,1973; Shambhu,1973; Prakasham,1974; Panikkar,1980; Sathiadhas and Venkatraman, 1981; Rao and Kumar, 1984; Rao, 1986; Sathiadhas and Panikkar,1988, Pandey and Upadhayay, 2012; Pandey, H. K. De, B. Hijam, 2014*). However, Jammu district of J&K state is still far behind and no systematic attempts to carry out similar studies of fish farmers of Jammu have been made so far.

Traditionally, fisheries in Jammu and Kashmir have been developed and popularized as sport fisheries, primarily as a means of attraction for tourists. During the past few years, there has been a reorientation towards development of fisheries as a major food resource. The diverse agro-climatic conditions of the state are a tremendous potential for the development of both cold and warm water fisheries. Jammu district is the most populous district in the state of Jammu and Kashmir. It is located at 32.73°N and 74.87°E with an average elevation of 327 m (1,073 ft). It is surrounded by Shivalik range to

the north, east and southeast while the Trikuta Range surrounds it in the north-west. The district is well endowed with fisheries resources in the form of lakes, seasonal and perennial swampy beels, rivers, tanks, ponds, canal etc. which can be developed on scientific lines of fish culture for production of more fish. Lakes and water bodies of District Jammu cover the area of 34.8ha in which biggest is Surinsar Lake with 28.6ha area (Directory of Lakes and Water Bodies of J&K State, 2012). However potentialities of these resources have not been fully tapped to fulfill the gap in domestic demand for fish and its supply. There is a big gap between demand and supply of fish. Fish is a valuable element of diet of the local people throughout the year, and there is also a demand for fish from the defence personnel and from tourists, especially during the peak tourist season. By harvesting the potential of fisheries in the state appropriately, considerable impact can be made in terms of fish production, revenue generation and employment creation as well as improving the nutritional level of the common man. Due to awareness, market price and different Govt. schemes related to Aquaculture, the numbers of composite fish culture ponds have been increasing rapidly in recent past and fish farming becoming popular among the farmers. A lot of new entrepreneurs and farmers are joining fish farming but the recommended cultural packages of practice are not followed *in toto* in most of the cases. The technology yield gap is mainly due to the differences in the biophysical environment and the farmer's socio-economical factors. To minimize the yield gap, it is necessary to know about biophysical conditions and the resources available with the farmers for adopting the technology and suitable extension programmes can be initiated with respect to technological assessment, refinement, dissemination and evaluation. This will reduce the gap between the researchers and farmers and minimize the risk of technological failure. Keeping in view of all these reasons, the present study was an attempt to examine the socio-economic dimensions of fish farming community of a cluster of village of district Jammu.

Materials and Methods

The present study was conducted in the Jammu district of Jammu and Kashmir state. The Jammu district was purposively selected as majority of fish ponds are in this district. A combination of purposive and convenience sampling procedures were adopted in selecting 25 fish farmers for the study from block R.S.Pura and Bisnah of Jammu district as more number of fish enterprise were taken in this two blocks..

The main instruments for primary data collection were well-structured interview schedule used to obtained information on the socio-economic characteristics of farmers. The collected primary data were tabulated and descriptive statistics for different socioeconomic variables were calculated using suitable statistical tool. The data was analyzed using descriptive statistics (e.g. frequency counts, percentages, etc).

Results and Discussion

Socio-economic status of fish farmers plays an important role in fish production activities. Socio-economic parameters such as family size, age of the farmer, education, social participation, income, and experience in aquaculture, size and nature of ownership of pond influence their response to adopt new technologies and their participation in development schemes sponsored by various agencies. Studies on these variables help to develop correlation between the farmers socio-economic conditions and the factors affecting the adoption or inhibiting the realisation of the full potential of the technology at the farmers field (Sathiadhas and Panikkar,1988). This also provides the appropriate area for intervention by any extension agencies, research workers or Government agencies. The interactions of personnel, psychological and situational factors always influence strategies and adoption of the scientific fish farming by fish farmers (Pandey and Upadhayay, 2012). Considering the financial hardship and other complexities of the rural fish farmers, it is important to analyze socioeconomic profile to determine the social status of the fish farmers and to identify the socio-economic problems / constrains associated with fish farming. Different attributes and characteristics representing the personal and social economic profile like family size and caste, social participation, educational status, experience in fish farming and income are presented in Table 1.

Table 1. Descriptive of the sampled farmers

Variables	Frequency	Percentage
Age		
Young (Up to 35 yrs)	6	24.00
Middle (36-50 yrs)	11	44.00
Old (Above 50 yrs)	8	32.00
Education		
Illiterate	2	8.00
Up to primary	21	84.00
Middle		
Metric and above	2	8.00
Caste		
General	20	80.00
O.B.C	1	4.00
S.C/S.T	4	16.00
Family size		
Small (1 to 5 members)	9	36.00
Medium(6 to 10 members)	16	64.00
Large (Above 10 members)		
Land holding		
Small (< 1 ha)	14	56.00
Medium (1 to 2 ha)	9	36.00
Large (> 2 ha)	2	8.00
Area of Pond		
0.2 to 0.5 ha	25	100
0.5 to 0.8 ha	-	-
Above 1 ha	-	-
Experience in fish farming		
Low (Up to 3 years)	2	8.00
Medium (4 to 10 years)	22	88.00
High (Above 10 years)	1	4.00
Annual income		
Low (< 1.5 lakh)	16	64.00
Medium (1.5 to 5 lakh)	9	36.00
Source of Income		
Agriculture + Fish farming	14	56
Agriculture + Fish farming + Government Job	2	08
Agriculture + Fish farming + Private Job	9	36

Age Distribution

Age distribution of fish farmers may provide good information about the shifting prodigm from elder to younger age groups. Table 1 and Fig. 1 reveals that out of the total 25 farmers, 44% belongs to the middle age group of 36 to 50 years followed by old age group consisting 32% farmers and 24% fish farmers belongs to young age group. It showed a shifting pattern from old age to young age which implies that aquaculture is attracting the interest of the younger generation.

Educational status

Education is an important socioeconomic factor while considering the adoption of any enterprises by farmers. In this study, it was observed that majority of respondents (84.00 per cent) who were involved in fish production were possessing middle level of education while 8% farmers were literate upto primary level and 8% of farmer were educated Metric and above (Figure 2). It infers that educated farmers were aware about new enterprises and taking advantages of schemes and programmes of state and central Government. It was also noted that few well educated and established businessmen were also taking part in fish farming practices.

Family size

The family size of the fish farmers were divided into three categories according to the number of the family members. About 64% of the respondents had medium size of family consisting 6-8 family members, while 36% had small family size with 4-5 members. Small family size indicates that fish farmers employ labour from outside during the fishing operations and during other fish pond management practices. Majority of the respondents (80%) belongs to general caste category followed by 16% per cent scheduled castes (SC)/scheduled tribes (ST) and 4 per cent of other backward communities (OBC). This shows that fish farming is not restricted to any caste and adopted very well by all communities of farmers (Figure 3).
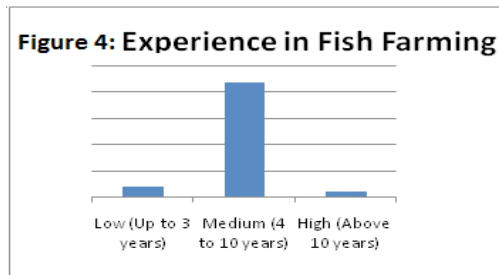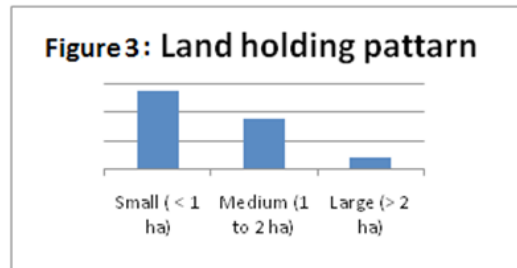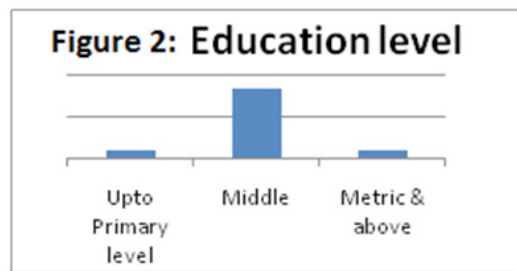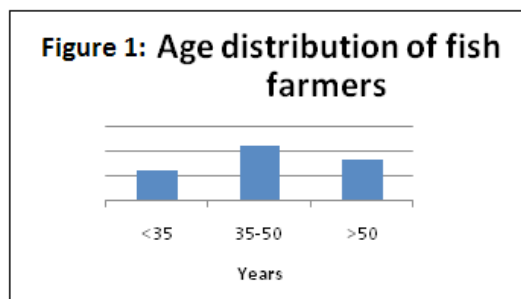
Land Holding

Majority of fish farmers (56%) had small land holding which was less than 1.0 ha followed by 36% of respondents having medium land holding. However, only small segment (8%) of fish farmer had larger land holding of more than 2.0ha and they were having higher level of social participation (Figure 4).

Area of pond

In the study area 100 % farmers were owned pond with a size of 0.1 to 0.5 hectares. This is clear indicative of smaller size of pond available with farmers of Jammu due to small land holding and availability of Government scheme on 0.1ha fish pond. The pond area and water depth are the important determinant of fish productivity as it provides living space for fishes.

Experience in fish farming

It is a well established fact that the experiences of farmers in aquaculture have positive influence on fish production. 88 per cent of the respondents having medium experience in composite fish culture i.e., 4 to 10 years, while 4 per cent of the respondents had high experience of more than 10 years. Remaining 8 percent respondents had low level of experience (<3years) in composite fish culture. This indicates that aquaculture took a flip in recent years.

Figure 1: Age distribution of fish farmers

Figure 2: Education level

Figure 3: Land holding pattarn

Figure 4: Experience in Fish Farming

Nature of ownership of pond

100% farmers were doing aquaculture on their own pond with single ownership in the study area. In fish farming operations, management decision mainly influenced by ownership of fish pond.

Total family income

Total family income is a decisive factor in determine the living standards of people of the region. Big gap between the income distributions disturb the harmony between different sections of people. Equitable distribution of income across the society enhances the social harmony among different sections of population. The classification of fish farmer families based on income level is given in Table 1. It showed that majority of the respondents, *i.e.*, 64% percent fall under low income group and had monthly income level about Rs 3, 000, whereas 36% per cent had medium income level. The low income

level reflected in fish farming operation like feeding of fishes which resulted in low fish production.

Sources of income

Most of the fish farmers were partially dependent on fish earning and getting income from other resources for major survival. Farmers completely dependent on Agriculture activity were falling in low income group while others were belonging to middle income group.

Investment Pattern by Fish farmers

The investment pattern on fish ponds has been estimated for an average area of 2 kanal and presented as below:

A. Capital cost (construction of pond) (1000m²)

(a) Pond construction	60000/-
(b) Pump set	25000/-
Total	= 85000/-

I. Annual depreciation on capital cost (10%) Rs. 850/-

B. Recurring cost (cost of fish seed and feeds)

a)	Fish seed	1200/-
b)	Fish feed	7500/-
c)	Lime	200/-
d)	Fertilizers and manures	1000/-
e)	Labour	16000/-
f)	Miscellaneous (Medicine, electricity, netting etc)	1000/-
	Total	= 26900/-
I.	Recurring cost	Rs. 26900/-
II.	Total Recurring cost per cycle (I+II)	Rs. 27750/-

Conclusion

To promote aquaculture among farmers and development of entrepreneurship among fish farmers, socioeconomic aspects of fish farming

community should receive due attention in planning the schemes and Government subsidies for promoting aquaculture. The socio-economic characteristics of fish farmers must be taken into consideration while formulating, designing and implementing of developmental programmes. The above discussed results give an idea about socio-economic status of fish farmers of the study area. The fish farmers fall under different age group with majority in middle age, education up to middle level, medium family size, in general categories, with sufficient experience in aquaculture, medium level of social participation, smaller pond area with single ownership and low level of family income. A farmer invested an average of Rs. 27750/- including fixed and recurring cost for running a fish pond of 2 kanal (0.10 hectare) area.

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