



# Perceived Constraints of Fish Farmers in Adoption of Scientific Fish Farming in Manipur

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## ABSTRACT

The present study was undertaken to identify the constraints faced by the fish farmers in adopting scientific fish farming in the state of Manipur. The study was conducted at four (04) valley district of Manipur namely, Imphal East, Imphal West, Bishnupur and Thoubal district which comprised of major fish farm of the state. The main constraints identified were lack of knowledge about scientific fish culture, lack of awareness and training programme, technology not suitable with existing environment and difficult to identify quality fish seed. The other constraints identified were non-availability of seeds in time, shortage of labour, inadequate financial institution and poor transportation facilities with a quotient value of 81.50, 73.4, 63.90 and 60.50, respectively. Moreover, economic constraints observed were non availability of credit, lack of financial support, insufficient marketing facilities, high cost of inputs, high wages & labour cost and inappropriate use of available resources with a quotient value of 97.80, 91.40, 79.60, 78.40, 55.10 and 54.60, respectively.

**Key Words:** Cost, Credit, Fish seed, Marketing.

## INTRODUCTION

Manipur is a small land lock state in the North Eastern corner of India having rich fresh water resources with aquatic diversity of distinct fauna and different drainage system, different types of water bodies. The state lies in the border of Indo-Myanmar, one of the hottest biodiversity hot spot of the world. It is situated between 23° 83'N and 25° 68'N latitude and between 93° 02'E and 94° 98'E longitude, at an altitude of 790 m above mean sea level. The total area of the state is 22,327 km<sup>2</sup> with hilly areas covering about 92per cnt of the landscape that enclose a central valley of about 1,800 km<sup>2</sup>.

Among the North Eastern States of India, Manipur is the third largest inland fish producer with a production of 31,996 t against the requirement of 40,810 t during 2017 (Anon, 2017). The indigenous Indian Major Carps (IMC), namely Catla (*Catla catla*), Rohu (*Labeo rohita*) and Mrigal (*Cirrhinus mrigala*) and exotic carp namely

Grass carp (*Ctenopharyngodon idella*), Silver carp (*Hypophthalmichthys molitrix*) and Common carp (*Cyprinus carpio*) form the predominant group among carps cultured in the state. Fish is the main food item of the majority of the people in the state leading to the demand for fish increasing over time with the increase in purchasing power and standard of living. This huge gap is to be met by proper utilization of the available fishery resources through adoption of advanced scientific techniques of fish culture.

Fish culture has become a popular enterprise in the state but the production level has not met the demand for a very long period. So, it is important to identify the barriers which are working behind the growth and development of fish farmers in the State. Thus, the present study was undertaken to identify the constraints faced by the fish farmers in adopting scientific fish farming in the state of Manipur.

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## MATERIALS AND METHODS

The present study was conducted at four (04) valley district of Manipur namely, Imphal East, Imphal West, Bishnupur and Thoubal district which comprised of major fish farm of the state. The information regarding farming practices followed by the fish farmers was collected from these four (4) valley district. Altogether, 200 respondents were selected randomly and interviewed using a structured and pre tested schedule to collect data regarding constraint face by the fish farmers in adoption of scientific fish farming. The data for the present study were collected during the year 2017-2018 from the four (4) valley district of Manipur.

The constraints were identified by personally interviewing the fish farmers of the selected district. The respondents were asked to rank the constraints as per their severity (1 = Adequate; 2 = Moderate; 3 = Fair; 4 = Good and 5 = Low). These ranks were converted to score and then averaged to arrive at Rank Based Quotient (RBQ). Further, the constraints were then subjected to prioritization by estimating Rank Based Quotient (RBQ) as per Reddy and Sontakki (2003).

## RESULTS AND DISCUSSION

### Socio economic profile of fish farmers

The emergence and development of any farming activity is not a spontaneous one but a dependent phenomenon of economic, social, political, psychological factors often nomenclature as supporting conditions for the activity development. These conditions may have both positive and negative influences on the emergence any farming activities. The socio-personal characteristics included age, education, caste, family size, land holding, farming experience and income of the farmers ( table 1). It was found that the majority of the fish farmers were in middle age 56 per cent where as young age group and old age group comprised of 23 and 21 per cent, respectively. As education level is concerned fish farmers with class level VI-X group comprised 47.50 per cent followed by class level X-XII group

(26%), class level upto V group (16%), class level above XII group (6%) and illiterate group (5%). The results further indicate that 64.50 per cent of fish farmers were from general category followed by other backward caste (28.50%), scheduled caste (6.5%) and scheduled tribes (0.50%). The maximum (51%) of fish farmers had medium size (6-10 members) of family size followed by small size (46%) and large size (3%). As regards land holding size (63.50%) of fish farmers belongs to marginal farmers with a land holding size of 0.1 to 1 ha. The farming experience of the fish farmers of study area showed that, 60.50 per cent belongs to low experience group, 23.50 and 16.00 per cent were in medium and high experience group. These results indicated that a large segment of fish farmers of the study area belonged to low income group, medium income group and large income group with 47.00, 38.50 and 14.50 per cent, respectively. The finding of the study were found similar to the earlier studies carried out ( Goswami *et al*, 2010; Abraham *et al*, 2010; Mohanty *et al*, 2011; Goswami 2012; Pandey *et al*, 2014 and Bhuyan *et al* 2017 in different parts of the country.

**Table 1. Socio-economic profile of the respondents.**

Variable	Frequency	Percentage
<b>Age</b>		
Young (Up to 30 yr)	46	23.0
Middle (30-45 yr)	112	56.0
Old (Above 45 yr)	42	21.0
<b>Education</b>		
Illiterate	9	4.5
Up to class V	32	16.0
Class VI to X	95	47.5
Class X to XII	52	26.0
Above XII	12	6.0
<b>Caste</b>		
General	129	64.5
O.B.C	57	28.5
S.C	13	6.5
S.T	1	0.5

## Perceived Constraints of Fish Farmers

<b>Family size</b>		
Small (1 to 5 members)	92	46.0
Medium (6 to 10 members)	102	51.0
Large (Above 10 members)	6	3.0
<b>Land holding</b>		
Marginal (Upto 1 ha)	127	63.5
Small Farmers (1 to 2 ha)	51	25.5
Medium Farmers (2 to 5 ha)	17	8.5
Large Farmers (Above 5 ha)	5	2.5
<b>Experience in farming</b>		
Low (Up to 3 years)	47	23.5
Medium (4 to 10 yr)	121	60.5
High (Above 10 yr)	32	16.0
<b>Annual income</b>		
Low (Below 1.5 lakh)	94	47.0
Medium (1.5 to 5 lakh)	77	38.5
High (Above 5 lakh)	29	14.5

### Perceived constraints of fish farmers

The constraints perceived by the fish farmers of four valley district of Manipur state are given were broadly categorized into seven categories *viz.* technological, economic, administrative, social, infrastructural, extension and culture constraints. The main constraints identified under technological constraint were lack of knowledge about scientific fish culture, lack of awareness and training programme, technology not suited with existing environment and difficult to identify quality fish seed. The quotient value was highest (85.0) for lack of knowledge about scientific fish culture followed by difficult to identify quality fish seed, technology not suited with existing environment and lack of awareness and training programme with a quotient value of 80.40, 66.70 and 61.60, respectively. These results were in line with the finding of Pandey *et al* (2014).

The constraints under economic were non availability of credit, lack of financial support, insufficient marketing facilities, high cost of inputs, high wages & labour cost and inappropriate use of available resources with a quotient value of 97.80, 91.40, 79.60, 78.40, 55.10 and 54.60, respectively. Poor implementation of fisheries development scheme was the major constraint under the administrative with a quotient value of 95.20. The quotient value for lack of government support and inadequate extension contact were 87.80 and 68.20, respectively. The main constraint identified for social was lack of financial support with a quotient value of 89.40. The other social constraint identified were inadequate family labour (82.70), lack of family encouragement (72.50), poaching & poisoning (63.70) and illiteracy (58.00). In case of infrastructural constraint, it was found that lack of facilities for soil and water testing was the major constraint identified with a quotient value of 97.70. The other constraints identified were non-availability of seeds in time, shortage of labour, inadequate financial institution and poor transportation facilities with a quotient value of 81.50, 73.4, 63.90 and 60.50, respectively. Lack of mass media exposure, lack of farm publication, ineffective communication, lack of extension services and lack of need based training program were the main constraint identified under extension with the quotient value of 93.40, 80.40, 64.40, 52.70 and 49.80. Less fish growth was the major constraint under culture with a quotient value of 81.60. The quotient value for extent of weed infestation, lack of water sources, fish feed in market and distance from the farm were 79.20, 78.80, 59.80 and 48.4, respectively. Similar trends of results were also reported by Goswami *et al* (2010), Goswami (2012) and Bhuyan *et al* (2017).

## CONCLUSION

The study revealed that majority of the fish farmers has not adopted scientific fish culture practices. Lack of knowledge about scientific fish culture, Lack of financial support, Poor

**Table 2. Ranking of constraints faced by the fish farmers along with RQB value.**

<b>Sr. No.</b>	<b>Items of Constraints</b>	<b>RBQ value</b>	<b>Rank</b>
<b>A.</b>	<b>Technological constraints</b>		
1	Lack of knowledge about scientific fish culture	85.00	I
2	Difficult to identify quality fish seed	80.40	II
3	Technology not suited with existing environment	66.70	III
4	Lack of awareness and training programme	61.60	IV
<b>B.</b>	<b>Economic constraints</b>		
1	Non availability of credit	97.80	I
2	Lack of financial support	91.40	II
3	Insufficient marketing facilities	79.60	III
4	High cost of inputs	78.40	IV
5	High wages & labour cost	55.10	V
6	Inappropriate use of available resources	54.60	VI
<b>C.</b>	<b>Administrative constraints</b>		
1	Poor implementation of fisheries development scheme	95.20	I
2	Lack of government support	87.80	II
3	Inadequate extension contact	68.20	III
<b>D.</b>	<b>Social constraints</b>		
1	Lack of financial support	89.40	I
2	Inadequate family labour	82.70	II
3	Lack of family encouragement	72.50	III
4	Poaching & poisoning	63.70	IV
5	Illiteracy	58.00	V
<b>E.</b>	<b>Infrastructural constraints</b>		
1	Lack of facilities for soil and water testing	97.70	I
2	Non-availability of seeds in time	81.50	II
3	Shortage of labour	73.40	III
4	Inadequate financial institution	63.90	IV
5	Poor transportation facilities	60.50	V
<b>F.</b>	<b>Extension constraints</b>		
1	Lack of mass media exposure	93.40	I
2	Lack of farm publication	80.40	II
3	Ineffective communication	64.40	III
4	Lack of extension services	52.70	IV
5	Lack of need based training program	49.80	V

## Perceived Constraints of Fish Farmers

G.	Culture constraints		
1	Less fish growth	81.60	I
2	Extent of weed infestation	79.20	II
3	Lack of water sources	78.80	III
4	Lack of fish feed in market	59.80	IV
5	Distance from the farm	48.40	V

implementation of fisheries development scheme, Lack of facilities for soil and water testing, Lack of mass media exposure, Less fish growth were some of the major constraint faced by the farmers to adopt the scientific fish farming to increase fish production as well as their socio economic conditions. The measures were more number of knowledge building activities like meeting, discussion, mass media etc need to be planned and conducted by fisheries extension personnel to increase knowledge on scientific fish farming, economic benefits of scientific fish farming need to be highlighted to convince fish farmers to adopt scientific fish farming practices, financial assistance arrangement has to be made to support the farming activities being majority of the fish farmers belongs to marginal and small farmer groups and more number of younger fish farmers need to be encouraged in training on scientific fish farming.

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