

## TECHNOLOGICAL CONSTRAINTS FACED BY FARMERS IN ADOPTION OF COMPOSITE FISH CULTURE TECHNOLOGY

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**Abstract:** The study was conducted in Raipur district of Chhattisgarh. The major constraints perceived by the fish farmers were high cost of preparation, eradication of weeds, fertilizers feeds, and dragnet. Lack of knowledge, lack of availability of sources, lack of efficient marketing structure, lack of finance, high cost if lease, and aspect of recommended technology are some other major constraints reported by the respondents in adoption of recommended composite traditional practices of fish farming as a result the adoption rate of recommended technology was low (28.37 percent).

**Keywords:** Constraints in fish culture, Composite fish culture

### INTRODUCTION

The importance of fish culture as a source of food production was driven home more realistically and emphasis has laid on the need for extending fish cultural activities in all the part of the country with a view for developing the industry on scientific line, both in private and public sectors. The Government of India established the Central Inland Fisheries Research Station at Calcutta in 1947 to conduct scientific investigation for an appraisal of the inland fisheries resources of the country and for evolving suitable methods directed towards their proper conservation management and development. India's ranks second inland fish production in the world but the per capita consumption of fish in our country is very low (2.6 kg/year). At present, the yearly requirement of fish would be more than six million tones, but our present production is about 3.5 million tones only. Fish constitutes an important item of food to a large section of people in India. The National Commission of Agriculture (1976) estimated that the percentage of fish and meat eating population of about 70 per cent. Fish is an integral and essential item of daily diet and also for many ritual and social occasion. Though fish is on great demand by the fish eating population of the country, it continues to remain scare and costly. The nutritional imbalance in the diet of the fish acting population caused by protein deficiency would in the long run, affect their health and stamina, unless steps are taken to supply adequate quantities of fish at reasonable price. Fish production from inland water is of great significance to India.

Chhattisgarh is blessed with a number of resources including productive water in the form of rivers, tanks and reservoirs etc. Its climatic conditions (mainly temperature being 35° -30°C and rainfall being 1200-1500 mm) are quite congenial for pisciculture. The natural fish fauna consists of Catla, Rohu, Mrigal, Mahasheer, Siland, Padina, Singhad,

Bam Patola, Chittal, Kalbasu, Kursu, Kharpata, Bata etc. Exotic varieties like Common carp, Grass carp and Silver carp have become common here where Tilapia is also found sometimes. Each village of Chhattisgarh is bestowed with 2 to 5 ponds, but majority of them are seasonal in nature. Their fishing rights rest with the Gram Panchayat and panchayat gives them on lease to local fishermen, who in turn partially culture fish and release of fish seed is a common practice. Input addition is very poor and culture means release of seed and harvest only. The average fish production from these village ponds is 0.5 to 1.0 t ha<sup>-1</sup> year<sup>-1</sup>, these needs to be raised to at least 3.0 tonnes ha<sup>-1</sup> year<sup>-1</sup> (Anonymous, 2000-2001)

### MATERIAL AND METHOD

The study was conducted in Raipur district of Chhattisgarh. District was selected purposively because it has maximum fish production. Dharsiwa block was selected on the basis of maximum number of farm ponds for fish production as compared to other blocks. 67 villages have farm ponds for fish cultivation. For this study 16 villages were selected as they have more than 5 fish pond. From each of the selected village, 5 respondents were randomly selected. In this way total (16 x 5 = 80) respondents were selected. All the respondents were doing fish culture on lease pond and the leased fish farmers were considered in sample for the collection of data. Data were collected through pre-tested questionnaire and that was analysed through statistical tools.

### RESULT AND DISCUSSION

#### Constraints in adoption of composite fish culture technology

**Technological constraints as perceived by fish farmers in the adoption of recommended composite fish culture technology**

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The data compiled in Table 1 reveal that high cost of pond preparation and water supply were found as major constraint (81.67 MPS). Timely not available of different input was reported as second major constraint (70 MPS) and unavailable source of irrigation was ranked as third constraint with 15.62 MPS. With regards to constraints related with the

eradication of weeds, it was found that majority of respondents (36.67 MPS) faced the high cost of method. While fertilizer application in pond among major constraints, majority of the respondents (25.41 MPS) had lack of knowledge and minimum was due to government pond (20.62 MPS).

**Table 1.** Technological constraints as perceived by fish farmers in adoption of recommended composite fish culture technology (n=80)

Technology constraints		MPS*	Ranks
<b>(A)</b>	<b>Pond preparation and water supply</b>		
•	Timely not availability of different input	70	II
•	High cost of preparation	81.67	I
•	Not available irrigation source	15.62	III
<b>(B)</b>	<b>Eradication of weeds</b>		
•	Lack of knowledge	31.25	I
•	High Cost of method	36.67	II
<b>(C)</b>	<b>Fertilizer application in pond</b>		
•	Lack of knowledge	25.41	I
•	Due to Govt. pond	20.62	II
<b>(D)</b>	<b>Improved breeds and their ratio</b>		
•	Lack of knowledge	25.84	I
•	Not available	12.08	III
•	High cost of fingerlings	12.5	II
<b>(E)</b>	<b>Feed management</b>		
•	Not available	35.41	II
•	High cost of feed	51.67	I
<b>(F)</b>	<b>Control of disease/ harmful insect</b>		
•	Lack of knowledge	45	I
•	Lack of technical proficiency	28.33	II
<b>(G)</b>	<b>Harvesting of fish</b>		
•	High cost	23.66	II
•	Not available dragnet	40.20	I
<b>(H)</b>	<b>Transportation</b>		
•	High cost of transportation	19.28	II
•	Not available at proper time	19.79	I
<b>(I)</b>	<b>Market</b>		
•	Fluctuation in price during different seasons	10	III
•	Fluctuation in price during religious function		
•	Not available wholesale market	47.5	I
•	Lack of knowledge	6.25	IV
		12.5	II

MPS\* Mean per cent score.

About 25.84 MPS respondents reported that lack of knowledge, 12.5 MPS was found the high cost of fingerlings and 12.08 MPS was faced not availability of improved breeds and their ratio. Regarding the feed management, high cost of feed was reported as first major constraint (51.67 MPS), while, unavailability of feed was found as second major constraint with 35.41 MPS. Among major constraints in control of disease and harmful insect, lack of knowledge scored first with 45 MPS, while, lack of technical proficiency was reported as second ranked constraint was 28.33 MPS. With regards to

constraints related with the harvesting of fish, it was found that majority of respondents (40.20 MPS) faced the unavailability of dragnet and 23.66 MPS was found the high cost of the harvesting of fish. About 19.79 MPS the respondents reported that due to improper time of the transportation facility and 19.28 MPS was found high cost of transportation. Regarding marketing, first major constraint was (57.5 MPS) fluctuation in price during different seasons and religious functions with and was followed by 12.5 MPS by the respondents due to lack

of knowledge, while, only 6.25 MPS was found due to unavailability of wholesale market.

**Effect of different constraints as perceived by fish framer in adoption of recommended composite fish culture**

With regards to constraints (Table 2) related with the nature, erratic rainfall was found as major constraint with 86.67 MPS. Drought condition was recorded as second major constraint (53.75 MPS) and soil condition was found as third important constraint with 6.67 MPS. While accessing personal constraints, home related problems with 31.87 MPS recorded as first constraint. While lack of technical proficiency (29.79 MPS) was ranked second constraint followed by lack of time for the inspection

(20.83 MPS), Dislike among the family and social constituted the major social constraint (36.04 MPS). Whereas, not acquired mixed fish cultivation scored second rank with 20.83 MPS and followed by constraints competition for getting the ponds (18.75). With regards to economical constraints, lack of knowledge (48.34 MPS), was the major constraint followed by high rate of interest (41.47 MPS), lack of credit facility (35 MPS), improper time (32.3 MPS) and requirement of more investment (6.67 MPS). While data recorded for institutional constraint reveal that lack of extension facility (91.87 MPS) was the major constraint, whereas, lack of co-operative society ranked second (15 MPS) followed by lack of knowledge about institution help (10.62 MPS).

**Table 2.** Effect of different constraints as perceived by fish farmers in adoption of recommended composite fish culture technology (n=80)

	Constraints	MPS*	Ranks
(A)	<b>Natural</b>		
•	Erratic rainfall	86.67	I
•	Due to drought condition	53.75	II
•	Soil is not good	6.67	III
(B)	<b>Personal</b>		
•	Lack of technical proficiency	29.79	II
•	Home related problems	31.87	I
•	Lack of time for the inspection	20	III
(C)	<b>Social</b>		
•	Dislike among the family and social	36.04	I
•	Competition for getting the ponds	18.75	III
•	Not acquired mixed fish cultivation	20.83	II
(D)	<b>Economical</b>		
•	Requirement of more investment	6.67	V
•	Not available proper time	32.5	IV
•	Lack of credit facility	35	III
•	High rate of interest	41.87	II
•	Lack of knowledge	48.34	I
(E)	<b>Institutional</b>		
•	Lack of co-operative society	15	II
•	Lack of extension facility	91.87	I
•	Lack of knowledge about institution help	10.62	III
(F)	<b>Control of disease/ harmful insect</b>		
•	Lack of knowledge	45	I
•	Lack of technical proficiency	28.33	II
(G)	<b>Harvesting of fish</b>		
•	High cost	23.66	II
•	Not available dragnet	40.20	I
(H)	<b>Transportation</b>		
•	High cost of transportation	19.28	II
•	Not available at proper time	19.79	I
(I)	<b>Market</b>		
•	Fluctuation in price during different seasons	10	III
•	Fluctuation in price during religious function	47.5	I
•	Not available wholesale market		
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		12.5	II

MPS\* Mean per cent score.

#### CONCLUSION

The most important perceived by fish farmers was non-availability of optimum credit for fish cultivation followed by timely non-availability of different inputs, high price of input, lack of information about the technology of composite fish culture, lack of contact with competent fishery extension personnel and scarcity of seed of exotic carps, lack of pure seed of indigenous carps, diverse of fish and lack of facility for soil and water testing.

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