

A STUDY ON THE CONSTRAINTS INVOLVED IN THE ADOPTION OF FISH FARMING PRACTICES IN JAGATSINGHPUR DISTRICT OF ODISHA

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Abstract—Fishing in India is a major industry in its coastal states, employing over 14 million people. In 2016-17, the country exported 11,34,948 metric tonnes of seafood 37,870.90 crore, frozen shrimp being the top item of export. Fish production contributes around 1% to India's gross domestic product and over 5% to the agricultural GDP. Odisha is one of the major maritime States, offering vast scope for development of inland, brackish water and marine fisheries. The State ranks 10th in terms of production of fish and produced 4.50 percent of the total fish production in the country during 2014-15. The study was conducted in Erasama, Kujanga and Tirtol blocks of Jagatsinghpur district. Both purposive and multistage random sampling methods were adopted for selection of the district, block, gram panchayat, village and respondents. A total of 120 (One Twenty) number of respondents were selected for the purpose of the investigation. It was observed that non-availability of herbicides, high cost of fish feed, excessive silt deposition and poor water retention capacity of pond and lack of nursery pond were the major resource constraints faced by the respondents. The study also revealed that high expenditure on technology management was the most common technological constraint encountered by the respondents followed by complexity of technology. The study indicated that irregular field visit by extension functionaries was the most common extension constraints as perceived by majority of respondents and ranked 1 with a mean score of 3.06. Working in the area, so that the fish farmers will adopt recommended practices and harvest desirable quantity of fish not only to increase their standard of living but also take the area as well as the state self-sufficient in fish production, to fulfill at least internal requirements.

INTRODUCTION

India is an agricultural country and villages are the unit in the organization of Indian society. Although the rural economy in the country is primarily agriculture-based, a vast majority of farming population either belongs to landless or marginal category. Therefore, suitable diversifications in occupation for rural masses would go a long way in bringing about a positive change in the rural economic scene and improving the household food security. Supplementary occupations which can conveniently be combined with agriculture should preferably be those that are less time consuming and less demanding in capital investments, generating a fairly additional income at the same time. In this context, pisciculture has a high potential as a lucrative economic

activity which can either be undertaken as an independent vocation or as subsidiary occupation along with agriculture. Moreover, India has vast water sources like reservoirs, tanks of both individual and community based, rivers, canals etc.

Fishing in India is a major industry in its coastal states, employing over 14 million people. In 2016-17, the country exported 11,34,948 metric tonnes of seafood 37,870.90 crore, frozen shrimp being the top item of export. According to the Food and Agriculture Organization (FAO) of the United Nations, fish production has increased more than tenfold since 1947 and doubled between 1990 and 2010. Fish production contributes around 1% to India's gross domestic product and over 5% to the agricultural GDP. Fishing in India employs about 14.5 million people.

In India, the annual fisheries and aquaculture production increased from 0.75 million tonnes in 1950-51 to 9.6 million tonnes in 2013-2014. Globally the country now takes the second position, after China, with regard to annual fisheries and pisciculture. According to the FAO, the total aquaculture production in 2012-2013 was 4.21 million tonnes. This constituted over a third of the country's total fish production.

Odisha is one of the major maritime States, offering vast scope for development of inland, brackishwater and marine fisheries. The State's 480 km long coastline with 24,000 sq. km area within the continental shelf has ample potential for marine fisheries development. Freshwater resources of the State are estimated to be 6.76 lakh ha comprising 1.25 lakh ha of tanks/ponds, 2 lakh ha of reservoirs, 1.80 lakh ha of lakes, swamps & jheels and 1.71 lakh hectares of rivers and canals. The State's brackishwater resources are of the order of 4.18 lakh ha with a breakup of 0.79 lakh ha of Chilika Lake, 2.98 lakh ha of estuaries, 32,587 ha of brackishwater area and 8,100 ha of backwaters.

The State ranks 10th in terms of production of fish and produced 4.50 percent of the total fish production in the country during 2014-15. During 2016 -17, Odisha produced 608.10 TMT of fish of which 455.00 TMT came from inland sources and 153.11 TMT from marine sources. The inland fish

production included 393.72 TMT from fresh waters and 61.27 TMT from brackish waters. Out of a total of 608.10 TMT disposition of fish production, about 84 percent were marketed in raw form while 7 percent were kept for sun drying and salting. The per capita fish consumption in the State is also showing an increasing trend from 8.70 Kg. during 2004-05 to 13.49 Kg. during 2016-17 as against 11 kg recommended by the WHO. This indicates an improvement of the standard of living and change in dietary pattern of the people of Odisha.

MATERIALS AND METHODS

The study was conducted in Erasama, Kujanga and Tirtol blocks of Jagatsinghpur district. Both purposive and multistage random sampling methods were adopted for selection of the district, block, gram panchayat, village and respondents. A list of fish farmers of these selected villages was obtained from the KVK scientists and assistant fisheries officer, from this list structure proportionate stratified random sampling method was followed to select respondents of the study. A total of 120 (One Twenty) number of respondents were selected for the purpose of the investigation. The response was obtained from each individual respondent in a structured interview schedule which was pretested with 10 per cent samples other than the respondents of the study.

RESULT AND DISCUSSION

1. The constraints involved in the adoption of fish farming practices:-

Like any other enterprises pisciculture is associated with a number of constraints at different levels. Here the investigator has tried to find out those constraints as perceived by the farmers as important problems which inhibit and influence acceptance and adoption different management practices as well as composite fish culture as a whole. This finding may go a long way in helping the researchers, planners, policy makers and implementing agencies in their future work.

Table 1: Resource Constraints:-

Sl. No.	CONSTRAINTS	SA (%)	A (%)	UD (%)	DA (%)	SDA (%)	MEAN SCORE	RANK
1.	Non-availability Suitable culture pond	20.00	16.67	3.33	30.00	30.00	2.67	VI
2.	Poor water retention Capacity of pond	33.33	30.00	6.67	26.67	3.33	3.63	IV
3.	Non-availability of herbicides	33.33	40.00	6.67	13.33	6.67	3.80	I

4.	Non-availability of fingerlings	13.33	6.67	3.33	20.00	56.67	2.00	VII
5.	Excessive silt deposition in pond	20.00	56.67	-	16.66	6.67	3.67	III
6.	High cost of balance feed	33.33	40.00	-	23.33	3.33	3.77	II
7.	Lack of nursery pond	10.00	33.33	-	43.33	13.33	2.83	V

From the table 1, it was observed that non-availability of herbicides, high cost of fish feed, excessive silt deposition and poor water retention capacity of pond and lack of nursery pond were the major resource constraints faced by the respondents as evident from the mean score 3.80, 3.77, 3.67 and 3.63 and 2.83 respectively and ranked I, II, III, IV and V in order of importance. The other constraints in the category in decreasing order of importance were Non-availability suitable culture pond, poor water retention capacity of pond, lack of irrigation source, lack of nursery pond, and non-availability of fingerlings. The study therefore, suggested that low cost feed using appropriate combination of locally available cheap feed ingredients needs to be formulated and promoted, production inputs like weedicides, fish disease medicines and modern fish culture tools and implements should be procured through fishermen cooperative societies or line department and provided to the fish growers at subsidized price.

2. Technological constraints:-

Adoption of composite fish culture requires a detailed knowledge about the various practices involved in the pre stocking, stocking and post-stocking stage. Complexity of the technology and high expenditure for its management sometimes limits its adoption by the end users. Attempts were made to record the technological constraints faced by the fish farmers which were analyzed and presented in table 2

Table 2 - Technological constraints:-

Sl. No.	CONSTRAINTS	SA (%)	A (%)	UD (%)	DA (%)	SDA (%)	MEAN SCORE	RANK
1.	Complexity of technology	7.50	45.83	3.33	36.67	6.67	3.11	II
2.	High expenditure on technology management	8.33	55.00	-	30.00	6.67	3.28	I
3.	Lack of knowledge about the technological knowhow	6.67	16.67	3.33	56.67	16.67	2.40	IV

4.	Lack of pond soil and water testing facility	10.83	23.33	-	39.17	26.67	2.52	III
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A look into the table 2 revealed that High expenditure on technology management was the most common technological constraint encountered by the respondents followed by complexity of technology, lack of pond soil and water testing facility and lack of knowledge about the technological knowhow were ranked I, II, III and IV respectively. The findings therefore, suggested that efforts should be made for providing sufficient knowledge through educational activities to the fish farmers in order to have thorough understanding of the technology and its operational procedures.

3. Extension constraints:-

It is the extension system which carries the technologies generated at the research stations to the farmer’s field. It employs a number of methods and techniques for effective dissemination of the technology at various levels with the ultimate aim of its adoption. Therefore, information were collected to assess the extension constraints faced by the respondents which were analyzed and presented in table 3

Table 3 - Extension constraints:-

Sl. No.	CONSTRAINTS	SA (%)	A (%)	UD (%)	DA (%)	SDA (%)	MEAN SCORE	RANK
1.	Lack of training facility	20.00	13.33	3.33	53.33	10.00	2.80	IV
2.	Lack of demonstration	13.33	33.33	-	36.67	16.67	2.90	II
3.	Irregular field visit by extension functionaries	6.67	50.00	-	30.00	13.33	3.06	I
4.	Lack of massmedia and other sources for information	20.00	10.00	13.33	50.00	6.67	2.87	III

The Table 3 indicated that irregular field visit by extension functionaries was the most common extension constraints as perceived by majority of respondents and ranked I with a mean score of 3.06. Lack of demonstration was recorded as the II ranked constraints followed by lack of mass media and other sources of information ranked III with the mean score of 2.87. Lack of training facility was of comparatively less important constraint for the fish farmers. It was suggested

from the findings that the extension functionaries of the line departments and other agencies engaged in fisheries development should give proper attention to the problem and pay visit to the farmer’s field at regular intervals which in turn will help the farmer to satisfy his queries, update his knowledge and find solution to his problem. Provisions for conducting a good number of demonstrations on different aspects of composite fish culture involving community approach and supply of easy to understand type farm publications in local language should be tailor made into the plan of work of the related extension organization, particularly Krishi Vigyan Kendras, FFDA, ATMA and the State Department of Fisheries.

CONCLUSION

The study as a whole indicated that fish farming is perceived as one of the profitable and feasible enterprise in the study area. But some of the constraints particularly leasing policy, insurance against calamities, preservation and the immediate marketing restricted them for use of recommended practices. They also need regular visit of the technical personnel, exposure for developing confidence, training for skill competency, literatures for reference and other advisory services particularly for manuring, feeding and disease management. It is therefore concluded that these aspects may be taken care of by the policy makers, scientist, extension agencies Working in the area, so that the fish farmers will adopt recommended practices and harvest desirable quantity of fish not only to increase their standard of living but also take the area as well as the state self-sufficient in fish production, to fulfill at least internal requirements.

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