

Constraints encountered by the fish farmers while adopting indigenous practices

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Abstract

Field survey was carried out in the Nagaon district of central Assam to identify the constraints faced by the indigenous fish farmers while adopting indigenous technical knowledge in fisheries. The present study identified and ranked nine constraints as perceived by the indigenous fish farmers and documented three popular suggestions perceived by them to overcome the constraints to save and conserve the Indigenous Traditional Knowledge (ITK) for wider application in fisheries based on the information gathered through usage of semi structured interview schedule, focus group discussion and observation methods. All the farmers perceived that 'ITK alone is not complete panacea for fish production practices'. Around 77.50% of the farmers were having lack of full confidence in applying ITKs as Government officials and educated people give less recognition to this knowledge. All the respondents (100%) suggested that Government officials should look at the traditional knowledge with due consideration and be ready for its proper assessment. The farmers practicing ITKs should be made partners with research scientists for evolving appropriate technologies. Local ITK practitioners are needed to be honoured and recognized.

Keywords: Fishery, Constraints, Adoption, Suggestions, Assam, ITK.

Introduction

Often, it has been seen that good thoughts do not materialize into the practices. That is why; our efforts aimed at promoting development could not achieve the desired results to the expected level. Another reason for this phenomenon is that the policies, strategies and projects did not take sufficient account of the local environment as an integral part of development planning and implementation. Emphasis was not given to the development of sustainable forms of production, sympathetic to farmers' social and economic circumstances and to the natural resources available. Indigenous knowledge was local

knowledge that was unique to a given culture or society. Such knowledge was passed down from generation to generation, in many societies, by word of mouth. It was acquired by local people through accumulation of experiences, informal experiments and intimate understanding of the environment in a given culture. It has value not only for the culture in which it evolves, but also for the scientists and planners striving to improve conditions in rural areas (Warren, 1991). In comparison with most "modern" techniques, indigenous approaches were equally effective, locally available, relatively cheap and less destructive to local environments. In this

context, it is important to identify and preserve these traditional technologies in order to sustain the productivity and protect the ecosystem. To achieve this it is very pertinent to identify the constraints faced by the traditional farmers and their perceived suggestions to overcome the constraints.

Assam is a heartland of indigenous groups. Since hundreds of years, many indigenous groups have been living in the State, maintaining their originalities in every sphere of life with difficulties. The central Assam stood as highest fish production zone with maximum fisheries resources. The indigenous knowledge accumulated through experience of the farmers in these areas have never been documented systematically, hence these are not easily accessible to fishery researchers, extension workers and development practitioners. With this backup a study was undertaken to identify the constraints faced by the traditional fish farmers while adopting indigenous practices and their perceived suggestions to overcome the constraints.

Methodology

The study was conducted in the Nagoan district of Assam in the year 2012-2013. Out of the 18 blocks in the district of Assam four blocks (Batadrawa, Kaliabar, Rupahi and Binakanti) were selected with the help of purposive sampling method based on traditional fish farmers' populations. Further, two villages from each block were selected purposively based on the population of traditional fish farmers. From each village 10 fish farmers who have the experience around 10 years were selected through Snow ball sampling technique as used by Saha *et al.* (2015).

Thus a total of 80 fish farmers were selected. The ITKs were documented through interaction, observation and focus group discussion with farmers by the help of semi structure interview schedule with standardized questionnaire. Accordingly suggestions were also be elicited from the perception of respondents as well as scientists. The data obtained were then expressed in frequency and percentages.

Results and Discussion

A total of 60 items of different ITKs on fisheries were documented and categorized into 8 areas. Majority of ITKs documented were on fish capture and harvesting category including gear and trap (43.34%); this was followed by post harvesting operation (13.33%), feeding management (10.00%), water quality management (8.33%), disease and pest control (8.33%), pond preparation & renovation(6.67%), stocking management(5.00%) and piscicidal plants/ fish attractants used for catching fishes (5.00%).

Various constraints as reported by farmers in adopting the ITKs are listed with frequency and rankings (Table 1). Existing constraints found in the adoption ITKs pose a major threat to the sustainability of fish farming in rural India. All (100%) the farmers participated in the survey perceived that 'ITK alone is not a complete panacea for fish production practices'.

Another constraint expressed by majority (77.50%) of the farmers was that 'Lack of full confidence in applying ITKs as Government officials and educated people give less recognition to this knowledge'.

'Low yielding nature of traditional package of practices' was the constraint reported by more than 70 per cent of the farmers.

More than half of the farmers (52.50%) experienced that 'lack of knowledge in application with proper standard dosage when it requires' (Table 1).

Another major constraint, as expressed by the elderly farmers (42.50%) was that 'many ITKs become extinct due to non practice by the younger generation'. In contrast, 12.50 per cent of the farmers, who were comparatively young aged complained that, 'the elder experienced farmers did not transfer the ITK to any other person except their son' to maintain their monopoly in the field. Less than one fifth (18.75%) of the farmers perceived that 'traditional knowledge

has no written documents as it is transmitted orally'. These were the major constraint found in the widespread adoption of ITK in a social system.

In the context of above constraints as perceived by the farmers in adopting ITKs, certain practical strategies and inventions need to be devised and implemented for effectively utilizing ITKs for the economic benefits to the farmers.

Suggestions perceived by the farmers to overcome the constraints

Only three suggestions were given by the respondents. However, all of the three suggestions are important and indicative of the rational thinking and intent of farmers to find out some everlasting solutions for the problems.

Table 1 - Constraints perceived by the farmers regarding the use of ITK

Sl. No.	Constraints	Frequency	Percentage	Rank
1.	ITK is not a complete panacea for fish production practices	80	100.00	I
2.	Lack of full confidence in applying ITKs as Government officials and educated people give less recognition to this knowledge	62	77.50	II
3.	Low yielding nature of traditional package of practices	58	72.50	III
4.	Lack of knowledge in application with proper standard dosage when it requires	42	52.50	IV
5.	Many ITKs become extinct due to non practice by the younger generation	34	42.50	V
6.	Many new problems have no traditional cures	25	31.25	VI
7.	Lack of sufficient number of required plant materials for practice	22	27.50	VII
8.	ITK has no written documents as it is transmitted orally	15	18.75	VIII
9.	Elderly, experienced farmers do not transfer their knowledge to any other person, except their son	10	12.50	IX

Table 2 - Suggestions perceived by the farmers to overcome the constraints

Sl. No.	Suggestions	Respondents (N =80 fish farmers)	
		Frequency	Percentage (%)
1.	Government officials should look at the traditional knowledge with due consideration and be ready for its proper assessment.	80	100.00
2.	Effective ITKs should be disseminated in the social system with effective dose and recommendation	41	51.25
3.	ITKs as well as plant materials should be preserved for future use	30	37.50

First suggestion was that, ‘Government officials should look at the traditional knowledge with due consideration and be ready for its proper assessment’. All the (100%) respondents gave this suggestion (Table 2).

Another valuable suggestion was given by 51.25 per cent of farmers; ‘effective ITKs should be disseminated in the social system with effective dose and recommendation’ (Table 2).

More than one third of the respondents (37.50%) recommended that ‘ITKs as well as plant materials should be preserved for future use’.

Conclusion

The farmers practicing ITKs should be made partners with research scientists for evolving appropriate technologies. Local ITK practitioners are needed to be honoured and recognized. Publications of local innovation in regional magazines by providing name and photograph of the innovators can motivate traditional practitioners to disseminate their knowledge. Preparation of slide shows, videos news, documentaries and educational materials involving the aquatic plants will result in more positive efforts. Efforts should be made to store

the information in simple files managed by villagers themselves. The resource constraints of fish farmers and escalating cost of inputs in fish production practices make an imperative to seek an alternative in the form of blending the indigenous knowledge with modern practices. Efforts should be made to preserve various plants, which have high economic importance in terms of curative and preventive properties. In many situations, lack of knowledge for processing herbs, lack of time to document and validate ITKs and lack of knowledge for development of suitable dosage form hinder the wider use of ITKs for field applications. If ITKs were used in farming systems along with frontier technologies developed by the fisheries scientists, it would be more practical and not only, the farmers would adopt quickly, but also increase the beneficiary, practicability and acceptability of technology (Raiput, 2005).

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