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Information sourcing and utilisation by fish farmers of Tripura State in north-east India

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ABSTRACT

Information is the key resource for right decision making process by farmers. Effective delivery of information to farming community has remained a challenge for agriculture extension. Understanding information usage pattern by farmers is of paramount importance. The present study was carried out in Tripura Sate in north-eastern India to identify different sources of information available to fish farmers, its order of preference, extent of use of such sources and the factors determining its usage. Panchayat has emerged as the prominent local source of information, followed by fish seed dealers/hatchery owners, friends and relatives. Meetings and discussions are the most frequently used cosmopolite source of information. Farmers use television, newspaper and radio as mass media source in decreasing order of preference. Among the socio-personal factors, education, income and aspiration had positive and significant relation with utilisation of information sources. A more proactive role from line departments, Krishi Vigyan Kendras and other information providers is emphasised in order to accelerate the usage of cosmopolite sources of information.

Keywords: Fish farmers, Information sources, Mass media, Tripura

Introduction

Information sources play key role in communicating innovative technologies to the ultimate users making them not only aware of the useful information but also create interest, promote understanding, assist in mental evaluation and ultimately motivate them for adoption (Kiran Gupta and Deepak De, 2011). Information is the most essential element required at various operational levels of an enterprise, especially in the decision making process. The value of information is directly dependent on its content, relevance and timeliness. In this context, to access right information at the right time, users have to be aware of the various sources of information, the services being offered and existing information systems (Jain, 2007). Media has an important role in raising the level of desirability and future intention to engage in 'entrepreneurship'. This can be more readily translated into entrepreneurial outcomes through initiatives designed to develop skills and capacity building (Levie *et al*., 2010).

In the recent past, Indian fisheries has shown a major shift from traditional production system to modern systems. However, this change has been confined to certain areas of the country, few specific farming groups and also only in certain fisheries enterprises. This pattern of change is not due to the lack of technologies and scientific discoveries but this is mainly due to the lacunae in converting these available technologies into production accomplishment and using them as an instrument for economic growth and social change. Hence, it is imperative to understand the totality of the situation in which new technologies are generated, processed, communicated and integrated into the farming system. However, without giving due consideration to these linkages, nowadays large number of aquaculture innovations generated by the fisheries research institutes, fisheries colleges, state government organisations and NGOs are being communicated to fish farmers. As a result, the effects of such innovations and communications are not always well pronounced due to inadequate knowledge/understanding/skill, or negative attitude resulting in delayed actions.

Fish forms one of the most important daily diet component of 95% people of Tripura and the state also registered highest per capita consumption of fish amongst the inland states in the country. In the state, fisheries and aquaculture are considered to be important economic activities for income generation, gainful employment and to ensure nutritional security (Das, 2012). However, half of the fish farmers of Tripura have either low or medium level knowledge of improved carp production practices and mean score for knowledge was found to be 54.2 (Saha, 2011) and technical efficiency of fish farms in the

state has been reported to be 0.66 (Singh *et al*., 2009). Therefore, to bridge the knowledge gap and to improve the technical efficiency of fish farms in the state, it is imperative to identify the information sources preferred by fish farmers for efficient delivery of farm information. In view of the above facts and notions, an attempt was made to identify the information sources preferred and used by the fish farmers and also the determinants of information utilisation.

Materials and methods

Two blocks each from West Tripura and South Tripura districts were selected for the study, based on maximum concentration of fish farmers during 2012. From each block, five villages having higher density of fish farmers were selected randomly. Thereafter, 12 respondents were selected randomly from each village. and thus the sample comprised of 240 respondents. The data were collected using pre-tested structured interview schedule. The frequency of using information sources by the respondents was worked out to identify the segment of fish farming community using a particular information source. However, to measure the extent or level of use of information source, three-point interval scale was used. The three points *viz*.,'regularly', 'often' and 'least frequently'were assigned scores of 3, 2 and 1 respectively. The psychological variable aspiration level was measured using the scale devised by Cantrill (1965). The statistical techniques including frequency distribution, weighted mean, standard deviation, correlation and multiple regressions were applied for analysing the primary data using SPSS-16.

Results and discussion

Socio-personal characteristics of fish farmers play an important role in their choice and preference of communication sources as proved in past studies. Thus socio-economic and psychological profile of the respondents were collected before the investigation (Table 1).

The socio-personal characteristics included in the study were age, education, social participation, land holding and income of farmers. It is reflected from Table 1 that about an equal percentage of fish farmers (42.50%) were in old and middle aged groups and only 14.58% of them were from younger age group. High literacy rate (91.08%) was observed among fish farmers of Tripura. However, the frequency distribution of fish farmers was found skewed towards lower education categories like primary (33.75%), middle (27.92%) and high school (18.75) educated classes. The results obtained further indicate that only 14.17% of fish farmers were members of any social organisations, indicating poor social participation. Majority (81.25%) of fish farmers had small size (<5 acre) of land holding. Analysis of the income of fish farmers of the study area indicated that, 42.5% were from low income and 35% were from medium income category. The aspiration level of majority of fish farmers (71.25%) was in medium category. These results indicated that a large segment of fish farmers of the study area had low income, small land holding, poor social participation, low level of education and medium aspiration level. In 2011 census, 91.1% literacy rate was reported among the males in Tripura. Average annual per capita income pattern observed was similar to that reported (₹ 55,000) by Bhowmik (2013) for the state of Tripura.

Table 1. Distribution of respondents according to their socio-economic and psychological profile (n=240)

Classification	Frequency	Percentage
A. Age		
Young age (<35 yrs)	35	14.58
Middle age (36-50 yrs)	103	42.92
Old age (>50yrs)	102	42.50
B. Level of education		
Illiterate	19	7.92
Primary school	81	33.75
Middle school	67	27.92
High school	45	18.75
Higher secondary school	16	6.67
Graduate	12	5.00
Post-graduate	0	0.00
C. Caste		
General	30	12.50
OBC	31	12.92
SC	31	12.92
ST	148	61.67
D. Social participation		
Not a member of any organisation	206	85.83
Member of an organisation	34	14.17
E. Size of land holding		
Small (<5acres)	195	81.25
Medium (5acres)	35	14.58
Big (>5acres)	10	4.67
F. Annual income		
Low (up to ₹ 50,000)	102	42.50
Medium (₹50,000-100,000)	84	35.00
High (above ₹ 100,000)	54	22.50
G. Level of aspiration		
Low (<X–1SD)	37	15.42
Medium (X±1SD)	171	71.25
High (> $\bar{X}$+1SD)	32	13.33

The information sources were broadly categorised into localite, cosmopolite and mass media and the results related to their usage is summarised in Table 2. It is evident that among the localite information source, village panchayat emerged as the most frequently used source with mean score (MS) of 2.28. Similarly other information sources like fish seed dealers/hatchery operators stood second with MS of 1.63 followed by

Table 2. Ranking of information sources used by the fish farmers (n=240)

Communication source/ information source	Frequency			Weighted Mean Score	Rank
	Regular	Often	Sometimes		
A. Localite					
Neighbours	-	28	49	1.44	V
Friends and relatives	-	40	66	1.61	III
Progressive farmers	-	10	82	1.43	VI
Farmers' club	1	2	9	1.07	X
Panchayat	21	64	116	2.28	I
Cooperatives	-	3	13	1.08	IX
Fish seed dealers/hatchery	-	14	122	1.63	II
Fertilizer dealers	-	23	45	1.38	VII
Pesticide dealers	-	5	54	1.27	VIII
Fish feed sellers	1	19	68	1.45	IV
B. Cosmopolite					
Office calls	8	22	66	1.56	III
Farm and home visit	2	68	32	1.73	II
Tour/field visit	-	1	19	1.09	VIII
Meetings/discussion	14	79	45	2.02	I
Training	-	3	92	1.41	VI
Kisanmela	-	-	104	1.43	V
Demonstrations	-	2	121	1.52	IV
KrishiVigyan Kendra (KVK)	-	2	22	1.11	VII
C. Mass media					
Newspaper	70	36	27	2.29	II
Radio	13	5	47	1.40	III
Television	68	59	62	2.60	I
Farm magazines	1	1	10	1.06	VI
Booklets	-	12	49	1.30	IV
Leaflets/folders	-	7	33	1.20	V

friends and relatives with MS 1.61, fish feed sellers (MS 1.45), neighbours (MS 1.44), progressive fish farmers (MS 1.43), fertiliser dealers (MS 1.38), pesticide dealers (MS 1.27) cooperatives (MS 1.08) and farmers, club (MS 1.07). Tripura has a long history of good local self-governance (Chaudhury, 2005). In the state, village panchayats are fully empowered to select beneficiaries for developmental schemes including fisheries. Hence fish farmers regularly visit such grassroot level institutions to obtain information about schemes and programmes including information on government subsidies. Less usage of other interpersonal local information sources like cooperatives and farmers' clubs may be due to dormant and malfunctioning fisheries cooperatives societies (Public Accounts Committee, 2011-12) and lack of awareness about the famers club among the fish farmers. Among cosmopolite sources, meeting and discussions ranked first with weighted mean score of 2.02 followed by farm-and-home visit, (MS 1.73), office calls (MS 1.56), demonstrations (MS 1.52), kisanmela (MS 1.43), training (MS1.41) and Krishi Vigyan Kendra (MS 1.11). However, tour/field visit with MS of 1.09 was found to be the least frequently used cosmopolite source. In mass media sources, television was found mostly used and it stood first with mean score of 2.60 followed by newspaper (MS 2.29), radio (MS 1.40), booklets (MS 1.30) and leaflets/folders (MS 1.20). However, farm magazines (MS 1.06) were found as the least used information source in spite of higher literacy rate among the fish farmers. The poor usage of these farm publications may be due to its poor circulation or limited availability since readership of newspaper was found much higher among the farmers. A bar diagram plotted incorporating all 24 information sources (Fig. 1) revealed that television, newspapers, panchayat, meeting and discussion, farm-home-visit and fish seed dealers were the sources of information most utilised by the fish farmers whereas, farm magazine, farmers' club, cooperative, field visit and KVK were the least used information sources. A study on assessment of the effectiveness of media conducted by Indian Institute of Mass Communication (IIMC), New Delhi also showed that majority (78.8%) of north-east people and 93% of people in Tripura had found television 'very effective' in imparting information and in educating masses (Anon., 2009).

The results presented in Table 3 indicate that majority (61.67%) of fish farmers had medium level of exposure to various sources of information. They were found to have high level of exposure to various sources of information. It was noticed that only 19.58% of the fish farmers and 18.75% farmers had low exposure to various sources of information. Similar trend in overall

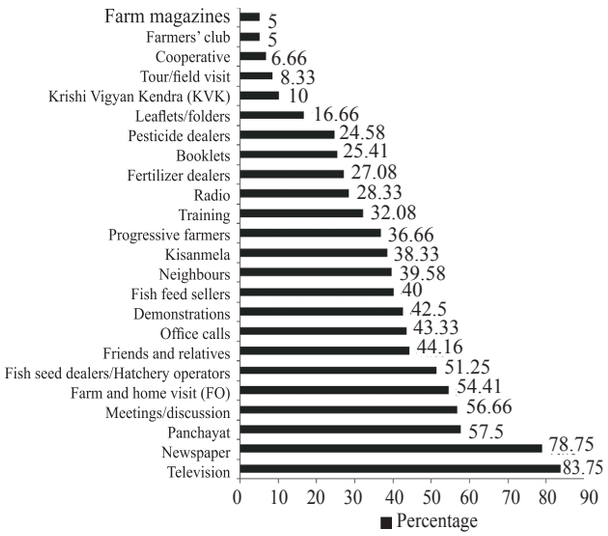

Fig. 1. Utilisation of different communication sources (%)

Table 3. Distribution of respondents according to overall usage of information sources (n=240)

Category		Frequency	Percentage
Low	($< \bar{X}$-1SD)	45	18.75
Medium	($X \pm 1SD$)	148	61.67
High	($> \bar{X}$+1SD)	47	19.58
Total		240	100

$\bar{X}$=14.75; SD=8.15

usage of information sources was also reported by Verma *et al.* (2012) about tribal farmers of Chhattisgarh and Lakra *et al.* (2012) towards organic hybrid rice production technology in Surguja District of Chhattisgarh. Transport and communication was identified as major bottleneck in the landlocked state of Tripura (Anon, 2011). As such this restricts mobility of the farmers as well as officials involved in dissemination of farm information. This may also hinder farmer's exposure to scientific fish culture. Moreover, low level of education and income may also contribute to poor usage of information sources as has been proven by the correlation study (Table 4).

Determinants of information utilisation by fish farmers

Correlation analysis indicated that levels of education, income and aspiration have positive and significant association with overall utilisation of information sources. However, regression analysis reflected that altogether, independent variables explain 20% of total variation in the overall information utilisation score. Further, the regression coefficients for education, income and level of aspiration turned out to be significant which indicates that these are the important determinants of utilisation of information sources by the fish farmers of Tripura. Hence, it may be inferred that respondents with higher level of education, income and aspiration, are the greater users of information sources.

Majority of fish farmers were educated and have access to mass media, cosmopolite and localite sources. Village panchayats and input dealers/hatchery operators were identified as vital interpersonal sources of information to the fish farmers. As usage of cosmopolite sources of information was not encouraging, the study suggests exploration of other sources like office calls, trainings, farm and home visits, demonstrationsand meetings for dissemination of fish production technologies. More proactive role on the part of line departments, Krishi Vigyan Kendras and other information providers is necessary to accelerate the usage of cosmopolite sources of information. The extension agencies of the state department may focus on identified sources of information for dissemination of fish production technologies and farm information. Efforts are also needed to improve the level of education, income and aspiration of fish farmers for promotion and effective utilisation of information on fish production technologies. Mass media, particularly television may be more utilised for information delivery as 90% of people of Tripura found television 'very effective' in imparting information and in educating fish farmers.

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Table 4. Correlation and multiple regression coefficient of socio-personal characteristics of fish farmers with their overall utilisation of communication channels (n=240)

Variables	Correlation coefficient (r)	Partial 'b'	S.E. (b)	't' Value
Age (X_1)	0.002	0.740	0.720	1.026^{NS}
Education (X_2)	0.251^{**}	1.298	0.422	3.078*
Caste (X_3)	0.086	0.175	0.464	$.378^{NS}$
Land holding (X_4)	-0.173^{**}	-3.725	1.008	-3.696**
Social participation (X_5)	0.084	1.337	1.400	$.955^{NS}$
Income (X_6)	0.272^{**}	1.927	0.696	2.770**
Level of aspiration (X_7)	0.235^{**}	0.335	0.131	2.555**

Coefficient of multiple regression (R^2 = 0.203); 'F' value = 7.744**; *Significant at p> 0.05; **Significant at p>0.01; NS = Non-significant

References

Anon. 2009. *Impact and penetration of mass media in North-East and J and K regions*. Indian Institute of Mass Communication, New Delhi. http://www.iimc.nic.in/Ex-summary-Media-penetration.pdf [accessed on 17 July, 2013]

Anon. 2011. *Economic review of Tripura 2010-11*. Directorate of Economics and Statistics Planning (Statistics) Department, Government of Tripura, Agartala, 251 pp.

Bhowmik, K. 2013. *Economic development: condition of Tripura according to the per capita income.* http://www.tripurainfo.com/Info/ArchiveD.aspx? What Id=177 [accessed on 23 July, 2013]

Cantrill, H. 1965. *The pattern of human concerns*. Rutgers University Press, New Burnswick, USA, 427 pp.

Chaudhury, D. R., 2005. Autonomous District Councils and Panchayati Raj Institutions in North-East India. *Dialogue,* 7 (1): 37-41.

Das, A. 2012. *An economic evaluation of aquamodel village scheme of Tripura*. M. F. Sc. Dissertation. Central Institute of Fisheries Education, Mumbai, India.

Jain, P. C. 2007. *Handbook for new entrepreneurs*. Oxford University Press, New Delhi, 338 pp.

Kiran, Gupta, B. K. and Dipak De 2011. Media possession and information source utilisation pattern of rural women regarding child health care management. *J. Comm. Stud.,* 29**:** 95-102.

Lakra, P. K. Chaturvedi, M. K., Sharma, M. L. and Yadav, K. N. 2012. Communication behaviour of the tribal farmers towards hybrid rice production technology in Surguja District of Chhattisgarh. *J. Comm. Stud.,* 30**:** 161-166.

Levie, J.**,** Hart, M. and Karim, M. S. 2010. *Impact of media on entrepreneurial intentions and actions*. Hunter Centre for Entrepreneurship, University of Strathclyde, 51 pp.

Saha, B. 2011. Knowledge level of the fish farmers in Tripura regarding scientific fish production practices. *J. Comm. Mobil. Sust. Dev.*, 6 (1): 82-88.

Singh, K., Dey, M. M., Rabbani, A. G., Sudhakaran, P. O. and Thapa, G. 2009. Technical efficiency of freshwater aquaculture and its determinants in Tripura, India. *Agri. Eco. Res. Review*, 22(2): 185-195.

Verma, S. K., Sengar, R. S., Yadav, K. N. and Suryawanshi, R. K. 2012. Utilisation pattern of different communication sources for seeking information about organic farming used by the tribal farmers of Chhattisgarh. *J. Commun. Stud.,* 30**:** 151-160.

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