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Communication of Innovations Among Traditional Fishermen

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Communication of technological innovations is a fundamental pre- requisite for their rapid diffusion and adoption among traditional fishermen. This paper aims to highlight the conceptual framework of communication process, the communication behaviour of traditional fishermen and the factors influencing the communication of innovations. In traditional fishery sector, due to mechanization of country craft, several socio-personal and technological factors interplay and influence the communication behaviour. Their nature of influence and scope are presented in this paper. Further, the information sources utilized by fishermen, their information need and the credibility of various sources of information would facilitate the communication planners and administrators to strengthen the communication efforts. It would also help to suggest suitable communication strategies for effective communication of technologies among fishermen.

Communication of improved practices is a pre-requisite to meet the information needs of fishermen and to achieve the all round development through the adoption of improved practices. This paper highlights the communication behaviour of traditional fishermen, the variables influencing the communication of innovations and the strategies to bridge the communication gap.

Communication for traditional fishermen

The artisanal fishermen and the fishing industry are the two major clients in fisheries technology. The former is primarily rural based and contributed to nearly 60% of the total marine fish landings. The traditional fishermen operate about 2,06,000 indigenous craft ranging from "catamarans' to well built 'machwa' boats and the number of mechanised boats operated by traditional fishermen is estimated around 32,000. These fishermen use a wide range of gear such as gill nets, boat seines, shore seines, and bag nets in the inshore waters.

Effective communication with the traditional fishermen for achieving the aims such as the increase in fish production, the effective utilisation of fish, efficient and economic use of the modern inputs, credit etc. depends upon the proper selection and use of appropriate extension methods and media. In this context, it is necessary to consider the following aspects to understand the totality of the situation:

i) the comminication process

ii) the attributes of the technologies

iii) the characteristics of traditional fishermen

The communication process is directed towards eliciting specific response from the recipient. The defect in any one of the elements may lead to break down of the entire process. Further, the characteristic of an innovation as perceived by the clientele influence it's rate and extent of adoption. Six such major attributes which should be considered in any communication strategy are the relative advantage, compatibility, simplicity, trialability, observability and inputs availability. While communicating with the fishermen, these attributes of the technologies are usually focussed and it may be difficult to communicate effectively, if these attributes are not present in the recommended technology. In the communication

process, receiver is an important element affecting the effectiveness of the whole process. The variables that influence the communication behaviour of traditional fishermen are given below.

A *Socio-personal*

Age
Education
Socio-economic status
Type of leadership
Experience
Skills possessed
Number of family members
Number of fishing days
Organisational membership

B. *Socio-psychological*

Attitude
Knowledge about innovations
Value orientation
Innovativeness
Level of aspiration
Change proneness
Self-reliance
Role perceptions
Empathy

C. *Economic variables*

Total investment
Ownership pattern
Annual income
Marketing pattern
No.of crew members
Credit availability
Inputs availability
Production management

D. *Communication variables*

Contact with extension agencies
Mass media exposure
Interpersonal communication bahaviour
No. of channels used
Frequency of use of channels
Credibility of channels
Information processing
Information giving behaviour

Communication behaviour of traditional fishermen

Structured interview schedules were used to collect the data from 47 mechanised and 23 non-mechanised traditional fishermen from the six selected villages of Ernakulam district in Kerala State. In this study, communication behaviour of traditional fishermen was operationalised in terms of their information need perception, their utilization of the various communication sources and their credibility perception about these communication sources. The information need perception of a respondent was measured through a three point rating scale namely, most needed, needed and not needed for the selected technological areas and the information need quotient (INQ) scores were calculated based on the possibile and actual scores obtained by the respondents. Similarly, the extent of utilisation of the communication sources was calculated through an index developed for the study which considered the frequency of use of the channels, the extent of information received and the utility of the information received from each source. The credibility of each communication sources was measured through a four point rating scale and the mean credibility score was calculated for each source based on the total scores obtained by the sample respondents. The collected data were

Table 1. *Qualitative variables of mechanised and and non- mechanised traditional fishermen*

Sl. No.	Variables	Mechanised (n:47)		Non-mechanised (n:23)		Total		X^2
		No.	%	No.	%	No.	%	
1.	Types of fishing:							
	a. Seine net fishing	16	34.04	4	17.39	20	28.57	
	b. Seine net fishing & other types	30	63.83	-	-	30	42.86	52.095**
	c. Gill net fishing	-	-	16	69.57	16	22.86	
	d. Gill net fishing & other types	1	2.13	3	13.04	4	5.71	
2.	Subsidiary occupation:							
	a. With sub-occupation	36	76.60	19	82.61	55	78.57	
	b. Without Sub-occupation	11	23.40	4	17.39	15	21.43	0.3326
3.	Ownership pattern:							
	a. Owners	2	4.26	14	60.87	16	22.86	
	b. Share holders	28	59.57	-	-	28	40.00	35.3738**
	c. Fishing labourers	17	36.17	9	39.13	26	37.14	
4.	Organisational membership:							
	a. Members	41	87.23	19	82.61	60	85.71	
	b. Non-members	6	12.77	4	17.39	10	14.29	0.2664

**Significant at 0.01 level of probability

statistically analysed and the results are presented here.

(i) *Characteristics of mechanised and non-mechanised traditional fishermen*

The socio-personal characteristics of mechanised and non- mechanised traditional fishermen which were measured quantitatively and the 't' values calculated reveal that the mechanised and non-mechanised traditional fishemen had differed significantly in relation to the three variables such as no. of fishing days in a year, no. of crew members and total investment incurred for the fishing unit. In all other socio-personal variables such as age, education, experience, no.of family members, radio and newspaper utilisation, annual income, and information need perception, they did not differ significantly. The calculated mean values show that the non-mechanised fishermen had gone for fishing on more no.of days, used less crew members and invested less in their fishing unit than the mechanised fishermen. It is also interesting to observe that the mean annual income of mechanised fishermen did not vary significantly with that of non-mechanised fishermen (X_1 : 6365.9 and X_2 : 5647.8).

The qualitative characteristics of mechanised and non-mechanised fishermen are given in Table 1. Out of the four, variables, two variables such as types of fishing and ownership pattern had significant differences between the mechanised and non-mechanised traditional fishermen. It could be seen that the majority of the mechanised fishermen (97.87%) had operated the seine net while the majority of the non-mechanised fishermen (82.61%) had operated the gill net.

Most of the mechanised fishermen were share holders while non-mechanised fishermen were mostly owners. These two groups did not vary much in relation to their subsidiary occupations and organisational positions. Therefore, as suggested earlier, these characteristics of traditional fishermen have to be taken into considera-

Table 2. *Correlation and multiple regression analyses between the information need quotient scores of traditional fishermen and the selected independent variables*

Independent Variables	Mechanised (n:47)		Non-Mechanised (n:23)		Combined (n:70)	
	r	Partial 'b'	r	Partial 'b'	r	Partial 'b'
Age	-0.009	-0.287	-0.205	-0.918	-0.052	-0.472
Education	0.017	1.151	0.054	-1.091	0.018	-0.458
Experience	0.028	0.351	-0.149	0.913	-0.018	0.521
No.of fishing days/yr	0.267	0.077	0.194	-0.016	0.139	0.062
No.of family members	0.016	1.013	-0.188	-0.596	0.016	1.013
No.of crew members	0.126	0.089	-0.043	-0.130	0.204	0.126
Annual income	-0.144	-0.001	-0.332	-0.001	-0.161	-0.002*
Radio & Newspaper utilization	0.187	0.775	0.240	0.921	0.172	0.609
Total investment	0.232	0.023	-0.430*	-0.496	0.255*	0.022
*Significant at 0.05 level of probability	R^2 = 0.223 F = 1.182		R^2 = 0.399 F = 0.960		R^2 = 0.235 F = 2.042 *	

tion while planning any communication strategy.

(ii) *Information needs of traditional fishermen and the associated factors*

In order to find out the relationship between the selected independent variables and the information needs of traditional fishermen, correlation and multiple regression analyses were carried out and the results are given in table 2.

The correlation and partial regression co-efficients of the nine independent variables in the mechanised and non-mechanised fishermen samples reveal that none of the variables had any significant association with the information need scores except the total investment of non-mechanised fishermen. Here, the total investment was found to have significant and negative correlation with the information needs of non-mechanised fishermen. The information need is more for the low investors among the non-mechanised fishermen and hence, they may need more communication support to bridge the information gap.

Among the combined samples, total investment was found to have significant and positive relationship with the information needs of fishermen in the correlation analysis and in the multiple regression analysis, it's partial regression coefficient was not significant. This finding reveals that the information need increases, with the increase in investment in fishing and when other independent variables are taken into account and kept constant in the multiple regression analysis, it has not influenced the dependent variable significantly. On the contrary, for another economic variable namely, annual income, the correlation co-efficient was not significant but the partial regression coefficient was found to have significant and negative influence on the information needs of fishermen.

These findings suggest that information need of traditional fishermen has been influenced by some other variables apart from the socio- personal and economic variables included in this study. Moreover, it is observed that information need perception has been quite high for all the categories of fishermen and thus, indicate the possible role of technological and communication variables.

Table 3. *Differential source credibility perception among traditional fishermen*

Communication source	Credibility perception		't'
	Mechanised (n:47) Mean values	Non-mechanised (n:23) Mean values	
I. Institutional			
i) Fisheries extension personnel	3.192	2.696	1.589
ii) Scientists	2.829	2.130	1.843
iii) Development personnel	2.809	1.652	3.116**
iv) Training Programme	2.489	1.522	2.943**
v) Meetings	1.936	1.609	1.129
vi) Demonstrations	2.340	1.522	2.760**
vii) Exhibitions	1.915	1.565	1.185
viii) Input personnel	2.340	1.696	2.034*
ix) Private agencies	2.340	1.783	1.879
II Non-Institutional			
i) Family members	2.511	2.391	0.414
ii) Friends	3.128	3.174	0.241
iii) Neighbours	2.255	2.087	0.615
iv) Fellow fishermen	3.213	3.478	1.114
v) Opinion leaders	3.383	3.000	1.299
III Mass media			
i) Literature	1.830	1.217	2.593*
ii) Newspaper	2.255	1.869	1.367
iii) Radio broadcasts	2.362	1.522	2.959**
iv) Educational films	1.851	1.130	2.906**

** Significant at 0.01 level of probability
* Significant at 0.05 level of probability.

(iii) *Differential communication behaviour of traditional fishermen in relation to their utilization of the sources*

The extent of utilisation of the communication sources by the mechanised and non-mechanised fishermen were compared.

The 't' value calculated for the 18 communication sources reveal that fishermen did not differ significantly with reference to the utilisation of 13 sources. But, with reference to the utilisation of two sources such as 'friends' and 'opinion leaders' they had differed significantly. It could be seen that the non-mechanised fishermen had higher mean utilisation index for the 'friendly sources' and the mechanised fishermen had higher mean utilisation index for the 'opinion leaders' (44.2 vs 17.4) when compared with each other category.

The mean index values further reveal that the non-institutional sources are very important for fishermen and they have been more often utilised by the mechanised and non-mechanised fishermen than the institutional and mass media sources. This finding is in agreement with the reports of Black (1967), Rogers & Shoemaker (1971) and Balasubramanian & Kaul (1985) who have reported that traditional men tend to have more contacts with friends and relatives, neighbours, and fellowmen in the functional group and they used to get more information from these major information sources. Further, it is seen that among the institutional sources, extension personnel and private agencies have been more often used by the mechanised and non-mechanised fishermen than the other institutional sources. These findings emphasize the roles of well organised fisheries extension sources in the state and highlight the mandatory obligations of other organisations engaged in fisheries development.

(iv) *Different source credibility perception among traditional fishermen*

The credibility perceptions of the mechanised and non-mechanised fisher-

men were significantly different in respect of seven communication sources namely, development personnel, training programmes, demonstrations, input personnel, literature, radio broadcasts and educational films (Table 3). For all these seven sources, the mechanised fishermen had accorded higher credibility than the non-mechanised fishermen. The motorisation of traditional craft, service facilities offered and experience gained by the mechanised fishermen might have acted to accord higher credibility for these seven sources. The mean credibility scores of all the other 11 sources did not vary significantly. Both categories of fishermen had accorded almost similar credibility scores to these sources.

It is also evident that among the mechanised fishermen, 'opinion leaders' were considered as the most credible source followed by fellow fishermen, fisheries extension personnel, friends and other sources. But, for non-mechanised fishermen "fellow fishermen" were considered as the most credible source followed by friends, opinion leaders, fisheries extension personnel and other sources. Literature and educational films were considered as the least credible sources by both categories. Further, it is observed that among the mechanised and non-mechanised fishermen, most of the non-institutional sources were evaluated as the credible sources than the institutional and mass media sources.

Conclusion

Based on this study, the following strategies are suggested to strengthen the communication efforts:

(i) Conducting periodical in-service training programmes to the fisheries extension personnel on the communication methodologies

(ii) Considering the attributes of the technologies and characteristics of the clientele and selecting the suitable communication techniques

(iii) Exposing the same message through proper selection and use of combination of suitable media and methods in logical sequence to increase the communication efficiency

(iv) Organising short term training cources in the training centres for developing innovators, opinion leaders and key communicators among fishermen so as to provide sound base for inter personal communi cation and

(v) Using the mass media channels frequently to meet the information needs of clientele.

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