

# An Analysis of the Linkages Between Fishermen and Extension Personnel in Marine Fisheries in Kerala

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In marine fisheries the linkages between the fishermen and the extension system play an important role in technology transfer and its adoption. Research studies on linkages in marine fisheries are very limited. So this study was taken up to find out the linkage activities through which both the systems are contacting each other. It was found that 60 % of the fishermen had medium level of linkage of with the extension personnel followed by low (21.33%) and high (19.34%) linkage level. The paper also highlights the frequency of linkage and the level of perception about linkages between the two systems. The paper implies that the linkage activities need to be enhanced so as to derive an overall development in the fisheries sector.

**Key words :** Marine fisheries, technology transfer, linkages, analysis

Fisheries is primarily a state subject as per the constitution of India and the states have the responsibility for the development of fisheries within their respective territory, whereas the Central Government has the responsibility for the development of fisheries beyond the territorial waters of India. However, by virtue of constitutional provisions, the Central Government plays a key role in promoting growth of the sector through implementation of Centrally sponsored development schemes and provides guidance for overall fisheries development in the country. Fisheries extension

organizations such as state

department of fisheries and other agencies like Brackish Water Fish Farmers Development Agencies, Agency for Development of Aquaculture etc. are mainly involved in implementation of schemes for the fishermen through extension activities.

In fisheries, the linkage among research, extension and clients is very weak (CMFRI, 1980) and still the reason behind it remains unexplored. In spite of considerable investments in research and technology transfer, the expected increase in the flow of fisheries

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technologies relevant to the need and production conditions of the resource poor fishermen in India has not occurred. Poor linkage between fishermen and extension is one of the basic causes for the failure because it hinders the required exchange of information, knowledge, and resources among the members in the client system. These linkages are weak as there is no appropriate linkage strategy and management.

Linkages between the fishermen and the extension personnel have the potential to make relevant fisheries technologies feasible and accessible to different categories of fishermen. Omokore & Modo (1998) suggested that extension specialists must play a key role in setting research priorities, technology adaptability and technology transfer and help to enhance the extension linkage system. Since the studies on linkages in marine fisheries sector are very limited this study was taken up with a view to study the linkage pattern and perception of fishermen about their linkage with extension personnel.

### Materials and Methods

This study was conducted in the Ernakulam district of the Kerala state in India. The Ernakulam district was selected for the study because the offices of the Joint Director/Deputy Director of Fisheries, Regional / district offices of Agency for Development of Aquaculture (ADAK), Brackish Water Fish Farmers Development Agency (BFDA) and Co-operative Federation for Fisheries Development Ltd (MATSYAFED) are located in the Ernakulam District. Since the study is aimed at finding out the linkages, respondents from the clientele systems and extension were included

for the study

As respondents from extension system, staff of the State Department of Fisheries, ADAK, BFFDA and Matsyafed, who are involved in extension and extension related works were only selected. For the purpose of the study all the 40 staff involved in extension were selected. For studying the clientele system Vypin block of the Ernakulam district was selected for the study. The Vypin block has seven panchayats namely Edavanakaddu, Elankunnapuzha, Kuzhipilly, Njarrakkal, Nayarambalam, Mulavukaddu and Pallipuram. All the seven panchayats were considered for the study. A sample of 150 fishermen was selected were selected by applying the proportionate random sampling technique.

Data collection was done using pre tested interview schedule. Two types of schedules were prepared i.e. one for extension personnel and the other for the fishermen in local language. The independent variables of the study included age, education, occupation, annual income, family type, experience, social participation, communication asset, cosmopolitanness, innovativeness, scientific orientation and the dependent variable is Linkage. In order to measure the overall linkages existing between the fishermen and extension personnel the respondents of the respective systems were asked to indicate their response to each of the linkage activity as "Yes" (for having linkage) and "No" (for not having linkage). A score of " 1" was given for the response "Yes" and " 0" for the response "No". The total scores of all the respondents were added and using mean and standard deviation they were categorized as low, medium and high

group. To measure the frequency of linkage the respondents were asked to indicate their response to the frequency of use of or involvement in various linkage activities under a five point continuum viz. always, (Score 4) most frequently (3), frequently (2), sometimes (1) and never (0). The scoring procedure used by Kunju (1992) was used for this study also.

Percentage analysis was used to indicate their level of linkage on different linkage activities. Simple correlation was used to find out the relationship between the independent and the dependent variable.

### Results and Discussions

A brief look into the profile of the fishermen revealed that a total of 52.67 per cent of them belonged to middle age group and 43.33 per cent had middle school level of education and 8.67 per cent of them are illiterates. Since Kerala state is well known for its literacy rate, only a meager percentage of fishermen are coming under illiterate category. Nearly 38.67 per cent of them had fishing alone as their main occupation and 61.33 per cent of them were

Table 1. Overall Linkage of Fishermen with Extension Personnel

Linkage	No	Percentage
Low	32	21.33
Medium	89	59.33
High	29	19.34

Mean 23.58, S.D. 5.816 (n = 150)

involved both in fishing and farming. Majority (86.00%) of the respondents belonged to middle income category and 75.33 per cent of the fishermen had medium level of experience in fisheries. More than sixty per cent (61.33%) of them had medium level of social participation. Majority (69.33%) of the fishermen were found to have medium level of possession of communication assets (69.33). More than sixty

percentages had medium level of scientific orientation

The overall linkages between the Fishermen and Extension Personnel are presented in Table 1

Table 2. Linkages between fishermen and extension personnel

Linkage activities	No n=150	Percentage
Beneficiary of general welfare schemes	102	68.00
Beneficiary of extension schemes	85	56.50
Attending meetings organised by EP regarding project implementation	73	48.67
Contacting the EP through phone	79	52.67
Attending training given by EP	71	47.33
Reading articles written by EP in newspaper	68	45.33
Attending seminar	67	44.67
Consulting the EP for technology	62	41.33
Availing credit facilities	58	38.67
Visiting exhibitions	55	36.67
Attending awareness campaign	49	32.67
Participating in demonstrations	46	30.69
Hearing radio programmes given by EP	40	26.6
Reading articles in journals written by EP	34	22.67
Viewing Tv programmes given by EP	32	21.32

Nearly 60.00 per cent of the fishermen had medium level of linkage of with the extension personnel followed by low (21.33%) linkage level and high (19.34%) linkage level. The medium level of linkage might be due to the reason that the fishermen contact the extension personnel only when they need any subsidies or credit input and only when the extension personnel meet them in their villages. Thus the opportunities for the fishermen to have interactions with the extension personnel might be less. The fishermen who were selected under certain extension schemes might have fairly a good chance to have linkage with the extension personnel than the other fishermen.

It could be observed from Table 2 that 68.00 per cent of the fishermen had linkage with the extension personnel through participation in welfare schemes and 56.50 per cent as

Table 3. Frequency of linkage between fishermen and extension personnel

Linkage activities	Yes		A		M/F		F		S		N	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Beneficiary welfare schemes	102	68.00	-	-	-	-	42	28.00	60	40.00	48	32.00
Beneficiary of extension schemes	85	56.50	-	-	-	-	38	25.30	47	31.30	65	43.34
Attending by EP regarding												
project implementation	73	48.67	6	4.00	21	14.00	24	16.00	22	14.67	77	51.33
Contacting the EP through phone	79	52.67	10	6.67	20	13.33	33	22.00	16	10.67	71	47.33
Attending training given by EP	71	47.33	2	1.33	13	8.67	24	16.00	32	21.33	79	52.60
Reading articles written by EP in												
newspaper	68	45.33	-	-	19	12.67	14	9.33	35	23.33	82	54.67
Attending seminar	67	44.67	12	8.00	15	10.00	27	18.00	13	8.67	83	55.33
Consulting the EP for technology	62	41.33	9	6.00	8	5.33	19	12.67	26	17.33	88	58.67
Availing credit facilities	58	38.67	3	2.00	13	8.67	11	7.33	31	20.67	92	61.33
Visiting exhibitions	55	36.67	-	-	4	2.67	20	13.33	31	20.66	95	63.34
Attending awareness campaign	49	32.67	4	2.67	6	4.00	19	12.60	20	13.33	101	67.34
Participating in demonstrations	46	30.69	6	4.00	9	6.00	15	10.00	16	10.66	104	69.34
Hearing radio programmes												
given by EP	40	26.6	-	-	-	-	18	12.00	22	14.67	110	73.33
Reading articles in journals												
written by EP	34	22.67	10	6.67	4	2.67	8	5.33	12	8.00	116	77.33
Viewing TV programmes												
given by EP	32	21.32	-	-	4	2.67	12	8.00	16	10.67	118	78.66

A-Always MF-Most frequently F-Frequently S-Sometimes N-Never

beneficiaries of extension schemes. The fisheries department is implementing fisheries welfare schemes for the fishermen regularly and as beneficiaries of the schemes the fishermen have opportunity to have linkage with the extension personnel. The Peoples Planning Programme was implemented in Kerala state during the last five years and this may be one of the reasons for more beneficiaries under the extension schemes who had reported to have linkage.

It could be observed from Table 3 that nearly half (52.67 %) of the fishermen had linkage with the extension personnel through phone. Whenever the fishermen needed any information regarding technologies or about schemes they contacted the extension personnel through phone because it helps them to save

time and get the information immediately. Nearly 49.00 per cent had linkage through attending meetings and attending training programmes (47.33 %) and seminars (44.67 %). More than 15.00 per cent are 'frequently' having linkage through these methods

More than 40.00 per cent of the fishermen had linkage with extension personnel through consulting the extension personnel for technology (41.33%). More than 10.00 per cent are using this method 'frequently' and 'sometimes'. The fishermen used to have linkage with the extension personnel whenever they needed any technological information about the scientific innovations/ interventions.

The linkage of the fishermen with the extension personnel was found to be less than

30.00 per cent through radio programmes (26.60 %), through journals (22.67 %) and television (21.32 %) and the percentage of fishermen using these channels 'sometimes' was less than 15.00 per cent. The programmes covered through these channels was less and also the fishermen might not have enough time to use these channels for getting information. Instead they had preferred local channels like neighbors and friends

Table 4. Correlation Between Characteristics of Fishermen and their Linkages with Extension Personnel (n = 150)

Variables	"r"
Age	-0.040 NS
Education	-0.160 *
Occupation	-0.419**
Annual income	0.091 NS
Experience	0.125 NS
Family type	-0.008 NS
Social participation	0.198 *
Communication asset	-0.130 NS
Cosmo politeness	-0.022 NS
Innovativeness	0.040 NS
Scientific orientation	0.167 *

\* - Significant at 5% level

\*\* - Significant at 1% level

NS - Non Significant

The correlation analysis indicated that the variables, social participation, and scientific orientation had significant and positive association with the extent of linkage by fishermen at 5% level whereas education and occupation had negative association with linkage.

It could be inferred from the above findings that, fishermen having more social participation become much aware about the schemes implemented by the extension personnel and to obtain the benefits they would have contacted the extension personnel. The level of social participation has helped the fishermen to have interactions with the

members of the society and thereby gain knowledge about the activities taking place in the society.

It is quite logical that a person with more scientific orientation develops linkage with the extension personnel to gain more knowledge about the various aspects of fisheries. The fishermen with more scientific orientation have more faith in advanced scientific technologies and endeavor to adopt these technologies in their fields. They would have taken much interest to meet the extension personnel so as to update their knowledge. As the fishermen wanted to come out of the sphere of traditional fisheries activities they would have sought the support of the extension personnel and hence, they would have developed linkage with the extension personnel.

As the educational level of the fishermen increases their linkage with the extension personnel decreases because the fishermen themselves may have the capacity to read and understand literature and they gather information through the fisheries journals and also through other sources such as newspaper rather than extension personnel

As the fishermen are engaged more in fishing rather than involving themselves in farming their linkage with the extension personnel was less. This may be due to their lack of time to contact extension personnel.

This study has clearly brought about the activities through which the systems are having linkage with each other. It has also indicated the activities where there is low level of linkage. These findings may help the policy makers and planners to come out with suitable strategies to enhance the linkage between the two systems, which may indirectly contribute to the growth of the fisheries sector in the country.

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