

Linkage between Research System and Extension System in Marine Fisheries in Kerala, India.

Sheela Immanuel *¹ and K. Kanagasabapathy ²

¹ VRC of CMFRI, Visakhapatnam, Andhra Pradesh, India.

² Faculty of Agricultural Extension, Annamalai University, Chidambaram, Tamil Nadu, India.

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ABSTRACT

Generally in fisheries in India, the linkage among research ,extension and clients is very weak and the reason behind it still remains unexplored. Poor linkage between research and extension is one of the causes for the failure as it hinders the required exchange of information, knowledge and resource among the actors in the technology transfer system. Linkages between research and extension system have potential to make relevant fisheries technologies feasible and accessible to different categories of fishermen of different hydro climatic zone. Keeping the above facts, the present study attempts to explore the present linkage pattern existing among research and extension system. The study was carried out in the Ernakulam district of Kerala state in India, The sample consisted of 40 researchers from a fisheries research organisation ,40 extension personnel from state department of fisheries, Agency for Development of Aquaculture (ADAK), Brackish water Fish Farmers Development Agency (BFDA) and Co- operative Federation for Fisheries Development Ltd(MATSYAFED). It was noticed that 47.50 % of the researchers had medium level of linkage with extension personnel followed by 35.00 per cent with high and 17.50 per cent with low level of linkage. The paper highlights the frequency of linkage and also the socio personable variables contributing to the linkage.

Key words: Linkages, Fisheries, Kerala state , research, extension

INTRODUCTION

Marine fisheries play an important role in the economy of all maritime countries in the world and it forms an important source of food, livelihood and employment. India has nine maritime states, and Kerala state is one among them. It is a narrow stretch of land in the west coast of India. The Ker-

ala state is blessed with a coastline of 590 km coastline which is 7.25 % of India's coast line. The continental shelf area is about 38,000 km². The EEZ extends up to 200 nautical miles far beyond the continental shelf.

The population of fisher folk in Kerala is 1.136 million and the fishermen live in 222 villages in marine sector and 113 vil-

* Corresponding author

lages in inland sector. The estimated average number of active fishermen in a coastal village is 810. The estimated density of population in the fishing villages works out to 2176 per km² as against 749 for the entire state. (Anon 2002).

India has one of the largest agricultural research systems in the world with more scientific personnel of any developing country except China. The research system includes approximately 30,000 scientists and more than 100,000 supporting staff actively engaged in research related to agriculture, animal husbandry and fisheries. Although the total number of scientists engaged in research work in India looks very impressive, it compares less favourably with developed countries.

The present agricultural research system comprises essentially two main streams, the Indian Council of Agricultural Research (ICAR) at the national level and the Agricultural Universities at the state level. Besides, several other agencies such as general universities, scientific organizations, central Ministries / Departments, private and voluntary organizations are directly or indirectly involved in research activities related to agriculture and fisheries.

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. However, by virtue of constitutional provisions, the Central Government plays a key role in promoting growth of the sector through implementation of a number of Central and 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 (BFDA), Agency for Development of Aqua culture (ADAK) are mainly involved in implementation of schemes for the fishermen and in doing other extension activities.

In fisheries, the linkage among research, extension and clients is very weak (CMFRI, 1980) and the reason behind it still remains unexplored. The expected increase in the flow of fisheries technologies relevant to the need of the fishermen in India has not occurred in spite of considerable investments in research and technology transfer. Poor linkage between research, extension and fishermen is one of the basic causes for the failure, as it hinders the required exchange of information, knowledge, and resources among the members in the technology system. These linkages are weak as there is no appropriate linkage strategy and management. Omokore and Modo (1998) suggested that extension specialists must play a role in setting research priorities, technology adaptation and transfer

Linkages between research and extension system have the potential to make relevant fisheries technologies feasible and accessible to different categories of fishermen. Linkages between major institutional actors in Agricultural Knowledge and Information Systems (AKIS) are widely recognized as essential for an effective flow of technology and information between research, extension and farmers. (Peterson warren *et al.*, 2001). Keeping the above facts under consideration the present study attempts to explore the present linkage pattern existing between fisheries research and extension system.

MATERIALS AND METHODS

The Ernakulam district of the Kerala state in India was selected for the study since most of the fisheries research organizations are located here. 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 also located in the Ernakulam District.

Since the study aimed at finding out the linkages, respondents from research and extension were included. The research system consisted of 40 researchers from a fisheries research organisation and 40 extension personnel from state department of fisheries, Agency for Development of Aquaculture (ADAK), Brackish Water Fish Farmers Development Agency (BFDA) and Co-operative Federation for Fisheries Development Ltd (MATSYAFED). The data were collected using a questionnaire. The independent variable viz, job satisfaction, job esteem, achievement motivation, organizational climate, were measured by using already developed scales. Linkage activities were stated in the questionnaire and the respondents were asked to mark against each question under five point continuum of frequency namely always, most frequently, frequently, rarely, and never.

Based on mean and standard deviation the respondents were categorized under low, medium and high category of linkage.

RESULTS AND DISCUSSION

Linkages Existing Between Researchers and Extension Personnel

The overall linkage of researchers with the extension personnel were assessed and presented in Table 1

Table 1. Overall linkage of researchers with extension personnel (n=40)

| Sl. No. | Linkage | No | Percentage |
|---------|---------|----|------------|
| 1. | Low | 7 | 17.50 |
| 2. | Medium | 19 | 47.50 |
| 3. | High | 14 | 35.00 |

It is observed from Table 1 that 47.5 per cent of the researchers had medium level of linkage with extension personnel followed by 35.00 per cent at high and 17.5 per cent at low level of linkage. The medium level of linkage with extension personnel might be that the researchers had contacts with the extension personnel only on certain occasions such as technology discussions, training programmes, seminars, and meetings, which were organized in the Research Institute. Moreover, the researchers are mainly concentrating on the research projects which offer only little scope for the researchers to have linkage with the extension personnel.

Different linkage methods used by the researchers with the extension personnel were analysed in terms of percentage of researchers using them. The data regarding the linkage as reported by the researchers and its frequency are presented in Tables 2 and 3 respectively.

Table 2 . Linkages among researchers and extension personnel **n=40**

| Linkage activities | Yes (No.) | Percentage (%) |
|--|-----------|----------------|
| Giving training through TTC | 33 | 82.50 |
| Contacting the extension personnel through Phone | 31 | 77.50 |
| Serving as consultant for technology | 30 | 75.00 |
| Reading leaflets prepared by extension personnel | 30 | 75.00 |
| Conducting seminars involving the extension personnel | 29 | 72.50 |
| Reading articles in journals written by extension personnel | 28 | 70.00 |
| Reading fisheries articles in the newspaper written by extension personnel | 25 | 62.50 |
| Participating in exhibitions conducted by extension personnel | 26 | 60.00 |
| Organising meetings to extension personnel | 22 | 55.00 |
| Involving extension personnel in deciding research programmes | 17 | 42.50 |
| Conducting demonstrations to extension personnel | 18 | 45.00 |
| Involving extension personnel through Regional level committees | 18 | 45.00 |
| Hearing Radio programmes given by extension personnel | 18 | 45.00 |
| Involving extension personnel in assessing research need | 15 | 38.50 |
| Viewing TV programmes given by extension personnel | 15 | 37.50 |

The findings in Tables 2 and 3 revealed that 82.5 per cent of the researchers had contacts with the extension personnel by offering training to them through the Trainers Training Centre (TTC) . The Trainers Training Centre of the Institute is located in the head quarters and mostly the training programmes are organized in the Institute itself. The TTC's mandate is to organize training to state department officials and other entrepreneurs and hence this served as the main source for the re

searchers to contact the extension personnel.

Most (77.5 %) of the researchers had linkage with extension personnel through phone. Whenever the researchers needed any information about the schemes and programmes implemented by the extension personnel and any clarification regarding the performance of technologies in the field the researchers used to contact the extension personnel through the phone.

Seventy five percent of the researchers had linkage by serving as consultants for technology. Researchers (75.0%) were having linkage with extension personnel through reading leaflets prepared by extension personnel on extension schemes and other developmental programmes and they keep themselves updated about the latest developments in the field of fisheries. Twenty five per cent of the researchers had 'most frequent' linkage through this.

The linkage, the researchers had with

the extension personnel through conducting seminar was 72.5 per cent. The researchers serve as resource personnel in the seminars organized by the Institute in which the extension personnel participated. Moreover the basic concept of conducting a seminar is to impart knowledge to the extension personnel and update them with the relevant fisheries technologies. Nearly 20.00 per cent of the researchers had linkage through this method 'frequently' and 'sometimes'. Seminars

Table 3. Frequency of linkages between Researchers and Extension Personnel (EP)

| Activities | Always (%) | Most Freq (%) | Frequently (%) | Rarely (%) | Never(%) |
|---|------------|---------------|----------------|------------|----------|
| Giving training through TTC | - | 5.00 | 17.50 | 60.00 | 17.50 |
| Contacting the EP through Phone | 17.50 | 20.00 | 7.50 | 32.50 | 22.50 |
| Serving as consultant for technology | 20.00 | 10.00 | 16.00 | 30.00 | 25.00 |
| Reading leaflets prepared by EP | 7.50 | 25.00 | 20.00 | 22.50 | 25.00 |
| Conducting seminars to the EP | 20.68 | 20.68 | 20.00 | 22.50 | 27.50 |
| Reading articles in journals written by EP | 7.50 | 5.00 | 7.50 | 50.00 | 30.00 |
| Reading articles in the newspaper written by EP | 12.50 | 20.00 | 15.00 | 15.00 | 37.50 |
| Participating in exhibitions organized by EP | 2.50 | 2.50 | 15.00 | 40.00 | 40.00 |
| Conducting meetings to EP | 7.50 | 17.50 | 12.50 | 17.50 | 45.00 |
| Involving EP in research programme | 10.00 | 5.00 | 7.50 | 20.00 | 57.50 |
| Demonstrations involving EP | 10.00 | 12.50 | 5.00 | 17.50 | 55.00 |
| Regional level committees with EP | 7.50 | 10.00 | 7.50 | 20.00 | 55.00 |
| Radio programme given by EP | - | - | 20.00 | 25.00 | 55.00 |
| EP in assessing research need | 15 | 7.5 | 5.00 | 10.00 | 62.50 |
| TV programmes given by EP | - | - | 25.00 | 12.50 | 62.50 |

are conducted on specific themes and the researchers working in that particular thematic area alone participated in the seminar. The seminars are not organized regularly and hence the participation is not regular.

Majority (70.0%) of the researchers were having linkage with extension personnel by reading fisheries articles in professional journals written by extension personnel. The researchers in order to update their knowledge in fisheries might be using this print media.

Less than 20.0 per cent of the researchers were found to have linkage with the extension personnel through reading fisheries articles in journals 'always'. The linkage through mass media channels like newspaper was only 62.5 per cent and through television it was only 37.5 per cent. The researchers who were found to use these media 'always' were less than 10.0 per cent because the fisheries programmes disseminated through these channels were very limited. As in agriculture there are no separate programmes for fisheries disseminated through these media.

The linkage between researchers and extension personnel through involving extension personnel in regional level committees was only 45.00 per cent.

Only a few senior level researchers are permitted to involve in the regional level committees and hence the linkage through this method was found to be low. There exists no regular Zonal workshops (as in the case of agricultural department) to have regular interactions with the extension personnel.

The involvement of extension personnel along with the researchers in deciding research programmes (42.5%) and in assessing research needs (38.5%) was below

50.0 per cent. The research programmes were decided mainly based on the mandate of the Institute and only few field oriented applied research projects were taken up.

Relationship Between Characteristics of Researchers on their Linkage with Extension Personnel

Correlation analysis was carried out to find out the relationship of characteristics of the researchers on the dependent variable linkage with extension personnel and the results are presented in Table 4.

Table 4. Correlation Between Characteristics of Researchers and their Linkage with Extension Personnel

* – Significant at 5% level

** – Significant at 1% level

NS – Non Significant

(N=40)

| S. No. | Variables | "r" value |
|--------|-----------------------------|-----------|
| 1. | Age | 0.270* |
| 2. | Education | 0.416** |
| 3. | Experience | 0.149 NS |
| 4. | Background | -0.215 NS |
| 5. | Subscription to print media | 0.163 NS |
| 6. | Communication assets | -0.108 NS |
| 7. | Organizational climate | 0.299* |
| 8. | Job satisfaction | -0.004 NS |
| 9. | Job esteem | -0.223 NS |
| 10. | Achievement motivation | 0.252 NS |

A perusal of Table 4 showed that among the variables studied the variables age and organisational climate exhibited

positive correlation with linkage towards extension personnel at 5% level and education exhibited correlation at 1.0% level of significance respectively. Other variables like experience, background, subscription to media communication assets, job satisfaction, job esteem and achievement motivation had no association with the dependent variable of linkage.

In any organization only highly qualified researchers will be nominated for serving as resource persons in seminars, meetings and workshops and this would have helped the researchers to have more interactions with the extension personnel. Educationally qualified researchers mostly serve as consultants for technology because of their high practical knowledge and the extension personnel also would like to have linkage with the qualified researchers.

Moreover, by virtue of their qualification they would have contributed more through publications in journals and other mass media channels and thereby the linkage with the extension personnel might be more. It is also quite natural that age and qualification on a job helps in building self-confidence of the individual and it helps the individual to have more linkages with other personnel.

A conducive organizational climate definitely makes the researcher to contribute better and to involve themselves in most of the programmes organized by other departments and hence this variable organizational climate had established association with the extent of linkage. If the organizational climate is conducive in a research system it influences almost everything that happens in an organization.

If the organizational climate is conducive, the researchers can make their own

decisions and solve problems without the influence of the seniors and they will be motivated to work and can also freely interact with the extension personnel. This will in turn help them to develop more linkages. More over if the researchers are encouraged to do their work by way of providing them recognition and rewards they will be motivated to work efficiently establishing more linkage with extension personnel.

The other variables did not exhibit significant relationship with linkage and it might be due to that whenever the researchers are in a need to have a linkage with the extension personnel they used to do so irrespective of their profile characteristics.

CONCLUSION

The linkage existing among research and the extension system has given a clear insight about the activities through which both the systems were having linkage with each other. In order to have a viable linkage among the two systems, there should be a concrete platform for both researchers and extension personnel to meet and to have frequent interactive meetings. Technologies developed should be demonstrated to the extension personnel by the researchers. To know about the feedback about the technological performance a feedback mechanism should be evolved. Training should be organized to the extension personnel as and when required. Researchers should be given free hand to contact the extension personnel through mass media and other channels of communication. Based on the above recommendations the administrators, development offi-

cials and other policy makers may bring about suitable reforms to enhance linkage between both the systems.

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