

Aqua Farmers Perceptions on Extension Services – A Paired Comparison Approach

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Owing to the weak Research-Extension -Farmers linkage system, most of the technologies do not reach the farmers when they are in need. In this study extension services were categorized into five broad heads namely training programmes, communication support, extension programmes, method demonstration and technical assistance. An attempt has been made to study the farmer's perception towards these extension services and prioritise these services. The psychological scale developed in this study indicated that communication support ranked first with a scale value of 0.647 followed by technical assistance (0.470), training programmes (0.182), extension programmes (0.026) and demonstrations (0). The order of priority of extension requirements was thus analysed that indicated that the farmers preferred good communication support and technical assistance. The transfer of technology can be made effective to the client system when it is need based.

Key words : Technical assistance, training, extension, demonstrations, communication support

The technologies for sustainable brackishwater aquaculture are rapidly increasing worldwide. The strength and expansion of aquaculture industry rely upon the extension and support services. Krishna (1992) indicated that the structure of most of the fisheries extension organizations like State Departments of Fisheries are not strong enough to meet the extension requirements at the grass root level. However due to weak Research-Extension-Farmers linkage system, most of the technologies are not reaching the farmers when they are in need. The requirements of the shrimp farmers are often case specific, i.e. related to seed, feed, pond, soil, water and disease management in shrimp culture. The aqua farming is passing through a transitional stage

and hence the need for extension services cannot be overemphasized. The two major problems impeding the effectiveness of aquaculture extension services in India are inadequate and untimely extension services and lack of holistic approach. The reason behind inadequacy of extension services could be the inadequate extension personnel and time-bound needs of farmers.

Requirements of the farmers vary ranging from simple recommendations to complex technical assistance. They expect technical information to be circulated in the form of handouts and simple publications. Training programmes are felt necessary by the farmers for crisis management and resolving problems.

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These requirements also include the conduct of awareness campaigns including disease management programmes, exhibitions, cultural meets to exchange their views and share ideas with one another. Further, knowledge – sharing group meetings to encourage, motivate and assist them in decision making with regard to water exchange, stocking and the like are necessary. Thus the choice and offer of extension services should base on the need and preference of the audience. The above mentioned different extension services can be categorized into five broad heads namely; training programmes, communication support, extension programmes, method demonstration and technical assistance. In the present study, an attempt has been made to study the farmer's perception towards these extension services and prioritisation.

Materials and Methods

A field study was undertaken in the districts of Visakhapatnam and Vizianagaram districts of Andhra Pradesh. Vishakapatnam with a coastline of 132 Kms and Vizianagaram with 23 Kms, has culture area of about 816.074 ha and 32.096 ha respectively. The aqua farmers in Visakhapatnam and Vizianagaram have adopted extensive and modified-extensive methods of farming. The farmed species are tiger shrimp (*Penaeus monodon*), Asian seabass (*Lates calcarifer*) and crabs (*Scylla spp*). Out of the total 123 farmers in the study area, a sample of 33 respondents were selected at random, and responses were obtained by means of a questionnaire.

The present study attempted by the "Method of paired comparisons". It is based on the law of comparative judgment which provides a basis for ordering the variables along a psychological continuum (Ray&Mondal,1999, Haque ,1981).

In the present study, the five categories of extension services viz, training programmes, communication support, extension programmes, method demonstration and technical assistance were presented in pairs in all possible combinations. The responses obtained was consolidated into frequency matrix or F- matrix. This generated 'n' number of times and each statement was judged more favourable than the other. The cell entries corresponded to the frequency with which the column variable was judged more favourable than the low variable. The F-matrix was then converted to Proportion matrix or P-Matrix. This was computed by dividing each of the cell entries of F matrix by N. Thus, Z-matrix was obtained from the table of normal deviates corresponding to the proportions in the table of P-Matrix . Further, the column sums for each column was obtained by adding the respective cell entries and corresponding column means will be calculated. The absolute scale value of the variable with the largest negative deviation was added to the entire column means to make the scale value for this variable zero and all other with positive sign.

Results and Discussion

A brief profile on personal and socio economic status of sampled farmers is presented in Table 1.

It can be observed that more than half the numbers were middle aged. About 75 % of the respondents fall in the literate group. Out of which, about 65% were educated at school and about 35 % at college levels. Majority of them are from nuclear families. An approximate of 78 % of the sample were engaged with aquaculture. The rest 22% had an additional occupation. Most of the farmers had their own land for farming. Many of them were small

farmers with an experience ranging between 1-10 years. Social participation and exposure to mass media were at a very low level. The sources of information and communication were the State Department of Fisheries, feed technicians, and progressive fellow farmers.

In order to study the farmers' perception towards extension services and their prioritisation, they were asked to select one

Table 1. Profile of the respondents

Variables	Percentage(%) N=33
Age	
Young	33.33
Middle	57.58
Old	9.09
Educational level	
Primary	18.18
Middle	27.27
High School	18.18
Collegiate	36.36
Family type	
Nuclear	63.63
Joint	36.37
Occupational status	
Aquaculture as primary occupation	21.21
Aquaculture as secondary occupation	78.79
Aquaculture alone	
Farm size	
Up to 2.00 ha	36.37
2.01-4.00 ha	15.15
4.01-6.00 ha	18.18
6.01-8.00 ha	6.06
> 8 ha 8	24.24
Farming experience	
Up to 5 years	24.24
6-10 years	72.72
> 10 years	3.03
Social participation	
Low	75.76
Medium	24.24
High	-
Mass media exposure	
Low	87.88
Medium	12.12
High	-
Extension agency contact	
Low	87.88
Medium	12.12
High	-

statement over the other from each pair that is judged more favourable and consolidated into frequency matrix or F- matrix (Table 2) converted to P-Matrix (Table 3). As mentioned in the methodology, the relative distances between variables and final scale values were

Table 2. Frequency Matrix of the respondents

	TP	CS	EP	MD	TA
TP	16.5	24	13	13	21
CS	9	16.5	9	11	13
EP	20	24	16.5	14	23
MD	20	22	19	16.5	22
TA	12	20	10	11	16.5

TP - Training programmes; CS- Communication support;

EP - Extension programmes;

MD - Method demonstration; TA - Technical assistance

Table 3. Rearranged proportion matrix (highest to lowest)

	MD	EP	TP	TA	CS
MD	0.5	0.576	0.606	0.667	0.667
EP	0.424	0.5	0.606	0.697	0.727
TP	0.394	0.394	0.5	0.636	0.727
TA	0.333	0.303	0.364	0.5	0.606
CS	0.333	0.273	0.273	0.394	0.5
	1.985	2.045	2.348	2.894	3.227

Table 4. Prioritisation of extension services

	MD	EP	TP	TA	CS
MD	0.000	0.192	0.269	0.432	0.432
EP	-0.192	0.000	0.269	0.516	0.604
TP	-0.269	-0.269	0.000	0.348	0.604
TA	-0.432	-0.516	-0.348	0.000	0.269
CS	-0.432	-0.604	-0.604	-0.269	0.000
Scale values	0.000	0.025	0.182	0.470	0.647

obtained and presented in Table 4 and the diagrammatic representation of the same is depicted in Fig 1. The psychological scale indicates that communication support ranks first with a scale value of 0.647 followed by technical assistance (0.470), training programmes (0.182) extension programmes (0.026) and demonstrations (0). The relative distance between each variable is quite significant. The order of priority of extension requirements is thus assessed.

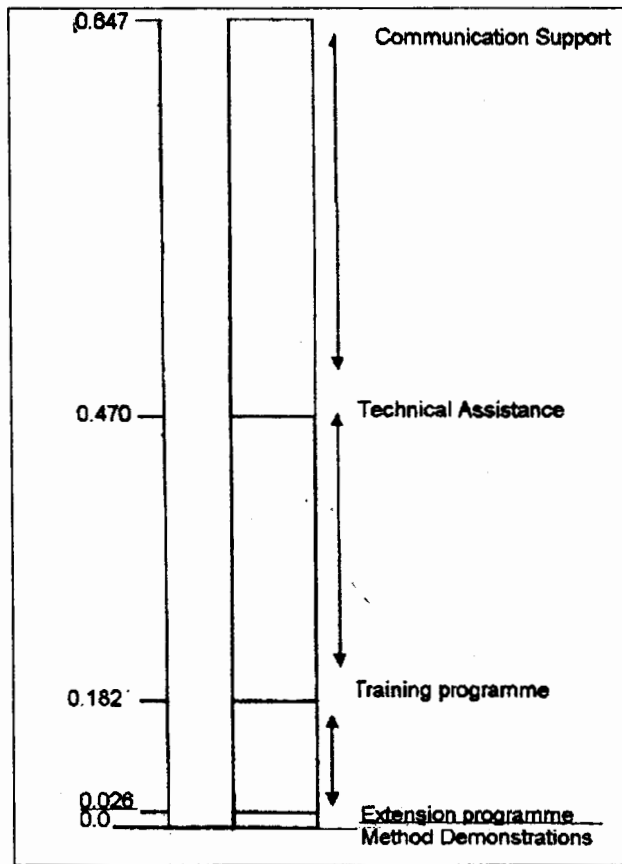


Fig. 1 Hierarchy of Extension services by Aqua farmers

The psychological scale value of communication support clearly indicates that the respondents falling under literate group prefer magazines, bulletins, leaflets, folders, pamphlets and handouts as their source of information (Fig 1). It is clear that they want information and are in need of simple publications relating to particular topics, especially in times of crisis. These publications relating to diagnosis and management of disease, feed preparation, effluent water treatment and use of immuno stimulants may be useful. The promotional agencies should provide timely and periodical publications to farmers on new practices and disease management strategies to help shrimp growers to adopt immediate measures during disease outbreaks. Publication of extension materials in

local languages for various categories of end-users is required for creating technology awareness (Ayyappan and Biradar 2002).

Chandra (2000) in his study found that the farmers wanted the consultants to visit them periodically and provide information about the farm activities already undertaken or to be undertaken. They strongly feel that they need first hand information and advice from Research Institutes who are considered as an authentic source of information. Due to less number of personnel, it may not be possible in all areas. Training of extension personnel at state and central level in various aspects could enable technical assistance at desired and specific occasions. Periodical visits of a multi disciplinary team of scientists and private consultants could also help the farmers improve their technical skills.

Training programme occupies the third place in the psychological scale. Farmers have the need to undergo short term and long – term training courses. Besides classroom teaching, training at field level could be organized to explain the technological developments and merits to the farmers (Krishna, 1995). The respondents also opined that hand on training facilities in shrimp-health management, environmental impact assessment and soil and water quality management, would be more beneficial. While designing the training, duration, course content, and expertise of faculty and facilities required have to be borne in mind. It is beneficial if training is imparted in regional languages. Academic training should be integrated formally with life and work experiences and it should be demand driven. Related works have also been articulated by many researchers. Deboral *et al* (2002) opined that lack of training programmes was found to

be one of the constraints of the farmers of Thanjavur district of Tamil Nadu. Deboral (2003) highlighted that farmers in Tamil Nadu wanted to undergo training programmes in disease, water and soil management.

The need for extension programs is ranked fourth by the respondents of the study area. The extension programmes includes awareness campaigns, exhibitions, group meetings etc. Awareness campaigns could be organized to engage the farmers in that area for a week during lean period. More extension programmes like exhibitions may be held on themes relating to farm management for effective generation of new ideas. Group meetings can also be arranged for handling situations like the white spot virus outbreak. This would certainly generate new ideas. The social responsibility of promotional agencies lies in disseminating the aquacultural information in the form of seminars, trade fairs at strategic venues, so that the farmers get updated on current information (Santhanakrishnan & Rajesh, 1995).

Method demonstration proves to be the least preferred variable as compared to other extension services. As method demonstration is skill based and talent demanding, a possible reason for giving least preference could be that farmer's time is not at his disposal and he is forced to spend his time till the end of a demonstration.

It is important to study and analyze the field problems of the shrimp farmers, in order to offer the right solutions at the right time. The solutions should be need based and it should guide and enable the farmer for practical implementation. In offering the solution, it is important to recognize that the client base is

heterogeneous, both with regard to the farmer himself and the farming system. Transfer of technology can be made effective if the information is well equipped with proper planning and the technologies evolved and updated to meet the changing environmental and socio-economic conditions. It should also be ensured that the technologies being transferred, use efficient, viable and need based extension methods.

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