

Information Management Behaviour of Coastal Aqua Farmers

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Information is the first unique input to proceed further towards an enterprise building. Aquaculture sector needs to be supported with 'full information' to help every stakeholder to help themselves. The present study undertaken with the shrimp farmers of coastal Andhra Pradesh and Tamil Nadu to understand the shrimp farmers' information seeking, processing and sharing behaviour indicated that technicians/consultants of feed inputs companies (76% and 84%) and peers (40% and 80%) were prominent information sources. The information provided was triangulated and shared with fellow farmers. Enforcing fishery extension service as the 'prime function' of State fisheries departments, audience segmentation and targeting of message, capacity building of fishery extension personnel on effective handling of ICT, involving farmers groups, farm opinion leaders and private extension agencies as partners of extension would give 'cumulative effect' in information diffusion and adoption of good farm management practices.

Key words : Aquaculture, Information management, Private Extension, Extension strategy

Information is the first unique input to proceed further towards an enterprise building. Aquaculture, being a nascent and upcoming enterprise needs to be supported with 'full information' to help every stakeholder to help themselves. Fisheries extension service is the official information carrier collecting and disseminating the required information to all concerned to keep the system 'well informed'. Extension research has shown that different sources of information are important from first hearing about an innovation to making final decision to adopt or reject it. In a farming situation, the potential user of an innovation makes the decision to adopt or reject innovations, having personal discussions with people they know and trust. An extension agent

plays a very important role in this situation. Extension studies have observed that personal cosmopolite (extension), personal localite (peers) and mass media sources were the sources of information for first hearing of an innovation by 30, 59 and 30 percent respectively. However, the above sources of information contribute 25, 72 and 41 percent respectively as far as trying/deciding to adopt an innovation. Individual and group contact methods are highly influential in reaching the farmers (Van Den Ban and Hawkins, 1988). Lack of information delivery methods, mechanisms, ineffective information exchange and dissemination were the major constraints in aquaculture development (FAO, 1997). Perhaps information commodity should be seen and recognized

as one of the essential resources needed by shrimp farmers to aid them in taking proper decisions and improve farming practices (Shibanda, 1996).

In India, coastal aquaculture with an enormous potential untapped in coastal (1.2 million ha) and inland saline soils of north and northwest parts of the country (app. 8 million ha) could contribute immensely for augmenting its fisheries production. However, presently coastal aquaculture is confined to tiger shrimp culture (*Penaeus monodon*) which is being practiced in 1.54 lakh ha with a production of 1.13 lakh metric tonnes with a national productivity of 730 kg/ha/annum (Table 1). Shrimp is a major foreign exchange earner accounting for about 29% of the fisheries export (in terms of volume) and about 66% in terms of value. Aquaculture contributes about 2.6 million tonnes of country's total fish production of about 6.2 million tonnes. It can be increased considerably through area expansion, technological interventions, diversification of species and productivity improvement. To achieve these goals, the fish farmers/entrepreneurs are to be educated (about the 'know-hows' and 'do how's') and motivated to adopt Good farm Management Practices (GMPs). The present study was undertaken to understand the shrimp farmers' information management behaviour which is essential for formulating appropriate extension methodologies and communication strategies for effective dissemination of scientific information to the end users.

Materials and Methods

The study was carried out with 311 and 154 shrimp farmers who were drawn proportionately from six and seven coastal

districts of coastal Andhra Pradesh (AP) and Tamil Nadu (TN) respectively. For the present investigation, Information Management Behavior of shrimp farmers includes information sources used, frequency of their use, level of satisfaction, validating the information and extent of sharing. The following scoring pattern was followed as information source (one score for each information source used), frequency of use (frequent -2, score, occasional-1 and never-0), level of satisfaction (satisfied - 1 and not satisfactory - 0) validating the information (yes -1; and No-0), extent of sharing (Yes - 1 and No-0 and fully - 1 and partially -0). The scores of the above four aspects were added to arrive at an individual's information management score. The data collected were processed with descriptive and Mann-Whitney statistics using SPSS package to interpret the findings.

Results and Discussion

Socio-personal attributes of an individual play an important role in determining his/her behavioural change. Accordingly the socio-personal attributes of aqua farmers were studied using appropriate tools and the major findings are reported in Table 2. It may be seen from the Table 2 that majority of AP farmers and half of the TN farmers were aged above 40 years and the rest belong below 40 years. As far as education is concerned, TN had highly qualified farmers than AP as indicated by the percentage of graduated farmers. However, AP farmers (85%) had above seven years of experience in shrimp culture and TN farmers (65%) had below seven years of farming experience. Aquaculture was the primary occupation for most of the farmers (90%) of both the States. About one-fifth (19%) and one-third (31%)

Table 1. State Wise Details of Shrimp Farming (2005-06)

Sl. No.	State	Area Developed (ha)	Area under culture (ha)	Production (Mt)	Productivity (Mt/ha/Yr)
1.	Andhra Pradesh	79270	69638	53124	0.76
2.	Goa	1001	963	700	0.73
3.	Gujarat	1537	1013	1510	1.49
4.	Karnataka	3435	3085	1830	0.59
5.	Kerala	16323	14029	6461	0.46
6.	Maharashtra	1056	615	981	1.60
7.	Orissa	12880	12116	12390	1.02
8.	Tamil Nadu	5416	3214	6070	1.89
9.	West Bengal	50405	49925	29714	0.60
	TOTAL	171323	154598	112780	0.73

(Source: Agricultural Research Data Book, 2006)

of respondents of AP and TN farmers hold less than 2 ha of farm size. About half of the respondents of both the States hold 2 to 5 ha of farm size and about thirty percent of farmers had more than 5 ha of farm size in both the States. Most of the farmers (84% and 93%) had not attended any training on shrimp farming. Their social participation was confined with aquaculture related institutions. They were found to be highly entrepreneurial. One-third of AP farmers (33%) and majority of TN farmers (63%) possessed license issued by Aquaculture Authority. Majority of the respondents, 66% and 73% of AP and TN respectively, adopted the Good Management Practices (GMPs) of shrimp farming recommended by the research and development institutions.

It may be viewed from Fig.1 and 2 that, technicians of the feed and other input companies were the foremost information source in all aspects of shrimp culture for 76% and 84% the farmers of AP and TN. Marketing personnel of the feed companies

influenced farmers to promote their feeds and expand their market share. They visited their client farms at weekly intervals and advised the farmers on the practices of culture. The advice was written in farm notebook and the same was followed. These people were easily accessible for any problem at any time through mobile phones. The input companies organized farmers meetings twice a year concurrent with summer and winter cultures at suitable places and educate the farmers on the do's and don'ts. Farmers were taken for field tours to various shrimp farming areas within and outside the

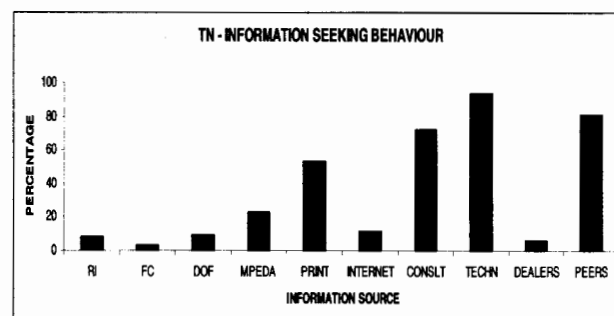


Fig. 1. Information Seeking Behaviour of TN Aqua Farmers

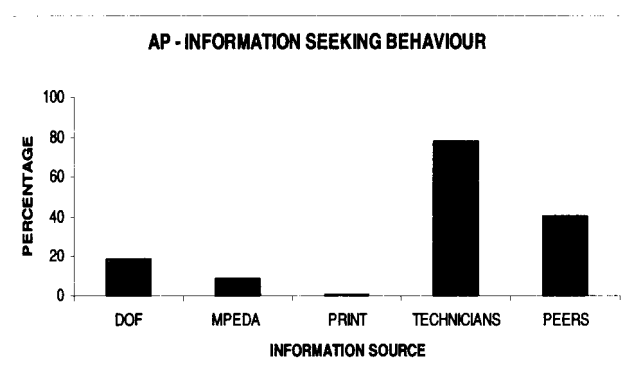


Fig. 2. Information Seeking Behaviour of AP Aqua Farmers

country and provided opportunity to interact with their counterparts. Successful farmers were given awards and served as role models for motivating fellow farmers. Further, most of the farmers availed feed and other inputs on credit basis from local feed dealers and it can be repaid after the harvest with interest. Further, 'buyback' arrangements were also found among the farmers and inputs traders in both the States. Due to these reasons, the private technicians were perceived as the 'real' extension personnel for the farmers of both the States.

Peers (fellow farmers) were the next important information source for processing and triangulation of the information obtained from other sources for 40 and 80 percent of AP and TN farmers respectively. Accessibility and credibility strongly facilitated the information exchange among them. The farmers had fully shared the information they received from various sources with their fellow farmers and other information providers for its validation. The farmers were transparent with their fellow farmers because all the farmers need to follow the GMPs to ensure success. One's mistake could spoil things for every one. Hence, information sharing among the farmers was found

to be pretty accurate. Farm publications in the form of manuals, booklets, journals etc. issued by the public and private aqua related institutions was an important information source for the farmers of TN.

Among the public R&D institutions, the Marine Products Export Development Authority (MPEDA) was an information source for about 25% and 10% of TN and AP

Table 2. Personal Attributes of Aqua farmers (in %)

Sl. No.	Attribute	Andhra Pradesh (N=311)	Tamil Nadu (N=154)
1	Age		
	Up to 40 Years	33.44	49.35
	> above 40 years	66.56	50.65
2	Education		
	Illiterate	12.54	3.25
	Primary	13.50	9.74
	Middle	15.43	8.44
	SSLC	22.82	18.18
	HSC	16.39	21.43
	Graduation & Above	16.72	40.26
3	Farming Experience		
	Up to 7 years	14.14	65.58
	Above 7 years	85.85	34.42
4	Occupation		
	Primary	92.60	90.26
	Secondary	7.40	9.74
5	Farm Size		
	Up to 2 ha	19.19	31.17
	2-5 ha	50.80	40.26
	Above 5 ha	30.01	28.57
6	Training		
	Attended	15.75	7.14
	Not attended	84.24	92.86
7	Social Participation	30.08	40.26
8	Entrepreneurial Behaviour	84.24	90.26
9	Extent of Adoption of GMPs	66.00	73.00

farmers respectively. MPEDA with an aim of producing more fish for export, operated several subsidy oriented programmes and organised awareness campaigns against the use of antibiotics and other chemicals to ensure higher quality standards of farmed shrimp. Further, to avail institutional credit from nationalized banks, the aqua projects have to be approved and recommended by MPEDA. Hence, it occupied an important position among the shrimp farmers. Research Institutions and Fisheries College were information sources for 10% and 5% respectively of TN aqua farmers and these sources were not popular among AP farmers because of their inadequate presence in the State. Department of Fisheries was an important source of information since it was the official extension service provider of the State for 20% of AP and 12% of TN farmers respectively. Facilitating farm licensing was the major role played by it at present. However, due to their excess concentration on fishermen welfare measures, limited manpower and budget they could not help the farmers as much as expected.

The findings of the study confirmed the earlier findings that private extension sources like technicians and peers were the primary information providers and sources with whom farmers shared and triangulated their experiences and got benefit for the reasons

mentioned elsewhere in the paper (Kumaran et al, 2003 & 2004). The public funded extension agencies need to be elevated with manpower, material and budgetary support to ensure that their presence is felt. Re-orienting the extension function of the State Fisheries Departments would give them enough hands and time to help the farming community.

Though the farmers of both the States utilized the available information sources to the possible extent, there is a significant difference among them in their information management behaviour may be because of the influence of other socio-personal attributes. This is aptly explained by the Mann Whitney statistic with the significance value lesser than 0.01 (Table 3).

Information is a critical input in aquaculture. The study has shown that private extension agents appeared to be nearer to the farming community. Under this circumstance, collaboration between the public and private extension agencies could be the appropriate extension strategy. Public funded research and extension agencies may possibly forge partnership with private extension agencies especially with farmers groups and farm opinion leaders for on farm validation of research findings and technology dissemination. Fishery extension service should be accorded as the 'major function' of State fisheries departments with adequate manpower, material and budgetary resources to be 'on par' with their potential counter parts.

The authors are grateful to the Indian Council of Agricultural Research for funding the project. They are thankful to the Director, CIBA, for his encouragement and guidance.

Table 3. Test Statistics - Mann-Whitney Test

Information Seeking Behaviour	
Mann-Whitney U	3329.500
Wilcoxon W	51845.500
Z	-15.242
Asymp. Sig. (2-tailed)	.00000**

** Significant at 1% level

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