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Marketing of Shrimp through e_HUB in West and East Godavari Districts of Andhra Pradesh: An *Aquachoupal* Model

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A study was undertaken in and around West and East Godavari districts of Andhra Pradesh to analyse the ongoing activities of an *aquachoupal* model, to work out the usage patterns of *aquachoupal* services, to analyse the farmers' perception on the model, to observe constraints if any of the implementation of the *aquachoupal* and to analyse the suggestions of the farmers for the improvement of the model. Among the various services offered by the *aquachoupal*, farmers made use of market pricing and customized quality solution facilities frequently. Farmers strongly agreed that the prompt payment and the provision of giving discounted inputs at the farm gate, provide meaningful net economic benefits to farmers. With the information obtained from shrimp farmers, it appears that medium and big farmers are getting more benefits through *aquachoupal* than small farmers. Among the various constraints, ignorance of farmers about technology in progress was ranked as the major constraint followed by lack of awareness about services provided by the *aquachoupal* and lack of interaction with shrimp farmers association. Overall assessment of the *aquachoupal* model in the study area and the improvement of the initiative are also discussed.

Key words : ***Aquachoupal*, e_marketing, information and communication technology, Andhra Pradesh**

Modern information and communication technologies (ICTs) and electronic marketing (e-marketing) of agricultural produce hold great promise for the socio-economic development of rural India. This has attracted many rural developmental agencies to deploy websites for marketing agricultural and aquacultural produce. One such private initiative has been by Indian Tobacco Company's (ITC) International Business Division in the state of Madhya Pradesh. ITC's e-Choupal has resulted in efficient delivery channel for rural development and convertion of villages into potential markets in Chandigarh, Pune and Hyderabad (Matani, 2007). e-Choupal is a web supported initiative offering information, customized knowledge, products and services to enhance farm productivity and farm-gate price realization on various crops like soyabean, coffee, wheat, rice, pulses and shrimp (Mahalakshmi *et al.*, 2008).

The first and the largest e-Choupal network, '*Soyachoupal*,' was launched in June 2000 in the state of Madhya Pradesh. It has grown to include 976 kiosks that provide services to 6,00,000 soyabean farmers in 7,000 villages. '*Plantersnet'*, launched in the state of Karnataka in December 2000, includes 75 kiosks covering 6,000 coffee farmers in 125 villages. The *aquachoupal* network, launched in February 2001 in the state of Andhra Pradesh, includes 55 kiosks reaching 10,000 shrimp farmers in over 300 villages (Mahalakshmi *et al.*, 2008). *Aquachoupal* model has been established in seven districts in Andhra Pradesh *viz.*, Srikakulam, East and West Godavari, Krishna, Guntur, Prakasam and Nellore (Singh, 2007).

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The present study has been carried out to analyse the ongoing activities of an *aquachoupal* model in West Godavari and East Godavari districts, Andhra Pradesh. The study also envisaged to work out the usage patterns of *aquachoupal* services, to analyse the farmers' perception on the model, to observe constraints for the implementation of *aquachoupal*, and to analyse the suggestions for the improvement of the model.

Materials and Methods

West Godavari and east Godavari districts of Andhra Pradesh were selected for this study because of their significant contribution towards the *aquachoupal* activities such as number of choupal centres, soil and water testing labs, PCR labs, and cold storage and processing units in the state. A sample of 88 shrimp farmers was selected randomly from west Godavari and east Godavari districts. Data were collected from the targeted group by employing a well-structured and pre-tested interview schedule.

Usage patterns of services were measured by using a four point continuum and scored accordingly. It includes frequently (3), occasionally (2), rarely (1), and never (0). A five point rated scale was used where respondents were asked to indicate their response about the statements about *aquachoupal* model. The possible scores were 1 for strongly disagree, 2 for disagree, 3 for undecided, 4 for agree, and 5 for strongly agree.

The Rank Based Quotient (RBQ) was adopted for the present study to anaylse the constraints for the implementation of *aquachoupal*. It was also used for analysing the suggestions for the improvement of *aquachoupal* activities in the study area. The respondents were asked to rank the appropriate factors. The orders of merit thus given by the respondents were converted into RBQ value by using the following formula (Sabarathnam & Vennila, 1996)

$$\text{Rank Based Quotient (RBQ)} = \Sigma [Fi (n+1) - i] / (N \times n) \times 100$$

where, Fi = No of respondents giving the particular point at i^{th} rank

i = i^{th} rank

N = Total no. of respondents

n = No. of ranks or problems

The appropriate ranks were given based on the RBQ value.

Results and Discussion

The supply chain for the *aquachoupal* marketing system is depicted in Fig. 1. The previous day's closing price at the market was used to determine the benchmark price at the *aquachoupal*. The benchmark price is static for a given day. To initiate a sale, the *prathinithi* or operator, who runs the village *aquachoupal*, inspects the produce and based on the quality of the product gives appropriate deductions if any to the benchmark price and gives the farmer a conditional quote. The benchmark price represents the upper limit on the price a *prathinithi* can quote. If the farmer chooses to sell his crop to ITC, the *prathinithi* gives him a note comprising of his name, his village, particulars about the quality tests to which the seed and the produce has been subjected to, approximate quantity and the conditional price. The farmer takes the note from the *prathinithi* and proceeds with his crop to the nearest ITC procurement hub (processing centre) in west Godavari district, Andhra Pradesh.

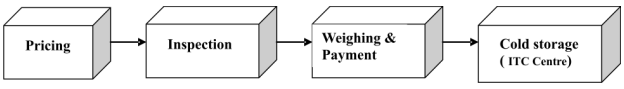

Fig. 1. *Aquachoupal* supply chain

Services generally provided in the centres include information on government schemes and procedures, weather forecast, market prices, general FAQs (Frequently

Asked Questions), transactional services like communication through e-mail and chat, buying and selling of goods (Table 1).

The services provided through *aquachoupal* and utilized by farmer are highlighted in Fig. 2. It is indicated that 36% of the respondents made use of the weather report facility rarely. They are interested to know about the weather reports through the radio and TV. Majority of the respondents (64%) made use of the pricing facility frequently. They also felt that the *aquachoupal* allows farmers, access to prices on a daily basis at their nearby centres. Moreover, through *aquachoupal*, farmers have access to prices and make the critical decision of when and where to sell their crop. About half of the respondents (51%) made use of the customized quality solution facility frequently. The farmers showed keen interest to know the ways to prevent the occurrence of disease, easy ways to detect them and methods of effective disease control. They also believe that they can improve the crop quality and yield with the help of customized quality solution given by the *aquachoupal*. More than 15% of the farmers made use of the best practices and FAQ facilities. More than 30% of the respondents used information pertaining to activities other than aquaculture related facilities provided by the choupal. In most of the cases, children and youth were using the choupals for eliciting information on computer education, examination results and job information. Women sought child care as well as health oriented information and programmes.

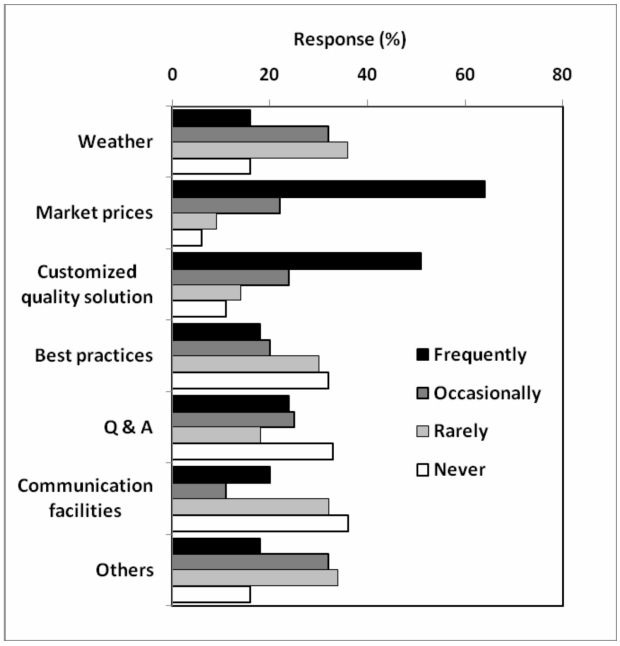

Fig. 2. Usage patterns of services of *aquachoupal*

Table 1. Services provided by *aquachoupal*

Services	Description
Weather forecast	Localized weather information at the district level.
Market pricing	Local, national and international company's rates. ITC's succeeding day rates are published every previous day evening. The prices are displayed prominently on the top of the web page on a scrolling sticker.
Customized quality solution	After completion of the sale of a crop, ITC performs laboratory testing of the sample collected. Based on these results, farmers are given customized feedback on how they can improve crop quality and yield.
Best practices	Scientific practices organized by crop type are available in the web site
FAQs	This feature enables two-way communication. Additional questions are answered through FAQs and access to experts who respond to emails from the village.
Communication	*Prathinithi* use the Internet to chat extensively among themselves about the status of operations and aquaculture in their villages.
Others	In addition to aquaculture related information, farmers are getting information on government schemes and procedures and educational information. They are benefited through health oriented programmes such as eye camp, blood testing, and blood donation.

The farmers' perception on *aquachoupal* model is depicted in Table 2. With an average score of 4.3 on the perception scale, majority of the shrimp farmers strongly opined that medium and large farmers derived greater benefits than small level farmers. Nearly 79 percent of the respondents strongly agreed that the prompt payment was made in the *aquachoupal* system, unlike in other marketing systems. Singh (2007) also reported that prompt payment was made in the *aquachoupal* marking system and also it provided discounted inputs at the farm gate. The average score, for reduction in procurement and transaction costs and for enhancing market margins in the *aquachoupal* system, provided by the respondents was 3.5. The advantages cited included availability of discounted inputs at the farm gate and reimbursement of cost of transporting the harvested shrimps to the procurement hub which substantially adds to the share of the consumer rupee to the farmer. Thus there are meaningful net economic benefits to the farmers. The *prathinithi* gets one percent share in the final share. Matani (2007) highlighted that the aggregation of the demand for farm inputs from individual farmers gave them access to high quality inputs from established and reputed manufactures at fair prices. Nearly half of the respondents agreed that the *aquachoupal* system can be considered as an alternate resource for accessing up to date information in aquaculture.

The constraints experienced by the farmers were ranked based on the RBQ values as per their significance (Table 3). The ignorance of the farmers about internet based information system and online marketing with a RBQ value of 93.37 was ranked as the first constraint, followed by lack of awareness about services and choupal activities (87.69), lack of interaction with shrimp farmers association (79.55), *aquachoupal* centres at the operators house (42.42), *aquachoupal* having limited number of processing plants and soil and water testing facilities (30.49) and females not having access to the computer (22.35) were the other constraints in the diminishing order of difficulty. Mahalakshmi (2008) stated that user equity from a gender perspective was found to be very low in the *aquachoupal* model.

The suggestions expressed by the farmers for the *improvement* of *aquachoupal* model are given in Table 4. Farmers suggested that awareness should be created with regard to the facilities in the *aquachoupal* for the benefit

Table 2. Farmers' perception on *aquachoupal* model

Statements	SA	A	UD	D	SD	Average Score *
Middle and big level farmers only getting benefits through *aquachoupal* than small level farmers	48	26	9	5	0	4.3
Prompt payment when compared to other marketing system	38	32	10	8	0	4.1
Reducing procurement and transaction costs	25	31	13	15	4	3.5
Enhancing of market margins in the *aquachoupal* system	20	30	22	12	4	3.5
Aquachoupal can be considered as an alternate resource for accessing upto date information in aquaculture	14	34	19	21	0	3.3

SA = Strongly agree; A = agree; UD = Undecided; D = Disagree; SD = Strongly disagree
* Based on a scale of 1 to 5, with 1 = SD, 2 = D, 3 = UD, 4 = A, 5 = SA

Table 3. Constraints for the implementation of *aquachoupal*

Constraints	RBQ Value	Rank
Ignorance of the farmers about internet based information system and online marketing	93.37	1
Lack of awareness about services and *aquachoupal* activities	87.69	2
Lack of interaction with shrimp farmers association	79.55	3
Aquachoupal at the *prathinithi's* house	42.42	4
Aquachoupal has limited number of processing plants and soil and water testing facilities	30.49	5
Females do not have access to the computer	22.35	6

Table 4. Suggestions for the improvement of aquachoupal model

Suggestions	RBQ Value	Rank
Awareness should be created with regard to the facilities in the *aquachoupal* for the benefit of the farming community	89.02	1
Extending the choupal facility to small farmers	84.28	2
Establishment of choupal centres at the public access location instead of *prathinithi's* house	68.56	3
Establishment of more soil and water laboratories and processing plants in coastal areas through *aquachoupal*	60.80	4
Linkages of *aquachoupal* with shrimp farmers association	58.71	5
Empower female population through *aquachoupal*	33.33	6

of the farming community. Extending the *choupal* facility to small farmers and establishment of choupal centres in public access location instead of *prathinithi* homes were needs felt. Establishment of more soil and water laboratories and processing plants in coastal areas was also desired. Farmers felt that these facilities will indirectly support the creation of awareness about activities and services of *aquachoupal* in the coastal areas. Farmers were of the view that linkages with shrimp farmers association were very important and efforts should be made for gender empowerment through *aquachoupal*.

The study shows that the awareness and utilization of *aquachoupal* model among medium and big farmers are high but small farmers rarely visit the centre due to lack of awareness about the services and activities of *choupal*. Generating awareness among small farmers about the availability of *aquachoupal* services is the first step to be considered to increase farmers' participation in *aquachoupal* initiatives. Strong interfaces should be developed with shrimp farmers association so that the information is exchanged among the fellow farmers which will check communication and time lag. It is suggested that the farmers are instructed in getting the best possible use of the services provided. User equity from a gender perspective was found to be very low in this model. Efforts should be made to incorporate information modules targeted specifically towards women farmers.

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