

Perceived benefits and constraints analysis of 'VASAT' an 'ICT' initiative in India

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Received: 12-05-2016

Accepted: 09-06-2017

DOI:10.18805/asd.v37i03.8997

ABSTRACT

Present day Indian farming community is facing a multitude of problems to maximize crop productivity. ICTs play an important role in information between and among stake holders in agriculture. There is huge potential to harness ICT for agriculture development. VASAT (Virtual Academy for Semi-Arid Tropics) was initiated in Mahaboobnagar district of Andhra Pradesh by ICRISAT. Exploratory research design was adopted to know perceived benefits and constraints in utilizing the project services by the farmers. Web based agro advisory service was important service that was ranked first with cent percent accessibility. Agro advisory through video conference was ranked second with 52 per cent accessibility. Other services are accessible but less often. In terms of utility web based agro advisory was utilized by 64 per cent followed by agro advisory through video conference utilized by 28 per cent. Overall satisfaction of farmers towards services of VASAT was rated low by 50 per cent and as very low by another 40 per cent.

Key words: Accessibility, ICTs, VASAT, Utility and Satisfaction.

INTRODUCTION

Agricultural Extension in the current scenario of rapidly changing world has been recognized as an essential mechanism for delivering knowledge (information) and advices as an input into modern farming (Jones,1997). Present day Indian farming community is facing a multitude of problems to maximize crop productivity. In spite of successful research on new agricultural practices related to crop cultivation, majority of farmers are not getting upper bound yields due to several reasons. Farmers need timely expert advice to make them more productive and competitive.. Agricultural Extension which depends to a large extent on information exchange between and among farmers on the one hand and broad range of other actors on the other has been identified as one area in which ICTs can play significant role. Only few isolated ICT projects have been initiated in India in spite of the huge potential to harness ICT for agricultural development. One such project is Virtual Academy for the Semi Arid Tropic – South Asia (VASAT - SA). It links farm communities with researchers, credible intermediaries and markets through interface of ICT and distance learning methods. VASAT was initiated in Mahaboobnagar district of Andhra Pradesh state in India in 2002 with a view to leverage ICT mediated open and distance learning methods to reach drought information to a large section of communities in a short period time. The objective was to develop opportunities to exchange knowledge among researchers, extension workers and farmers, focusing on the community preparedness to cope with drought (Dileepkumar

et al. 2006.). And also to create demand driven content that can be localized to suit the rural communities and their intermediaries, to convert the scientific know how to field level do how. How far the VASAT Project is successful in providing information services and distance learning to the farmers is important issue to be explored. The study was taken to ascertain the perceived benefits accrued to the framers of this area and constraints of stake holders in this project.

MATERIALS AND METHODS

Exploratory research design was used for conducting the study. The study was conducted in Mahaboobnagar district of Andhra Pradesh. The district was selected purposively because VASAT Project is implemented in this centre. From that centre two villages and twenty five farmers from each village were selected randomly. Thus a total of 50 respondents constituted the sample for the study.

The perceived benefits were measured in terms of their access to services and their utility and overall satisfaction of the farmers towards this initiative. Accessibility was measured based on the schedule developed on six parameters for VASAT. The respondents were asked to mention their access to services based on the five-point scale developed as always, most often, often, less often and not at all and the scores assigned were 4, 3, 2, 1, 0 respectively. An index was developed using the formula given below.

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The utility was measured based on the schedule developed for the purpose with three point continuum viz., mostly utilized, utilized and not at all utilized and the scores assigned were 2, 1 and 0 respectively. The farmers' satisfaction towards services of ICT Project was measured following five point continuum with the scores of 0, 1, 2, 3 and 4 for very low, low, medium, high and very high respectively. An index was developed for all the above parameters as the ratio of score obtained to the maximum score expressed in percentage. Constraints were measured by asking to list out the important constraints they faced in adoption and delivery of ICT based extension services. Constraints were ranked based on frequency and percentage.

RESULTS AND DISCUSSION

VASAT was initiated in 2002, with a view to leveraging information and communication technologies (ICTs) mediated learning methods to reach drought information to a large scale section of communities in a short period of time. Its objective is to create demand content that can be localized to suit rural communities and their intermediaries, to convert the scientific know – how to field level do how. The correlation is led by the international crops Research institute for semi Arid Tropics (ICRISAT) and is jointly implemented by international live stock Research Institute (ILRI) and leaders among the National Agricultural Research Systems.

The operation of VASAT follows hub and spokes model for facilitating information flow into the project area. The hub is generally a setup with reasonable computing facility and internet access. This is where the value addition to generic information derived from the networks is carried out, and location specific information is carried out. Trained individuals with college level education operate the hub. Rural access points are linked to this hub by telephone. Volunteers at the rural access points receive location specific information from hub and deliver it to rural families in a variety of ways (Black boards, public speak outs etc.)

The hub for the pilot project is hosted in the Adarsha Mahila Samakhya (AMS) building. The AMS management selected three villages: Janampeta, Vemula and Kommireddipalli located within a radius of 5 km from central

hub as rural access points. These are the village information centers (VICs) which serves as spokes to the central hub. Three PCs, one colour printer with scanner, video conferencing equipment and low cost V-SAT for connectivity had been installed in the hub center. Two AMS volunteers acting as hub operators. The VICs are hosted in the village community buildings. Each VIC is managed by local resident identified by the AMS. Each VIC has PC with standard office software installed. ICRISAT-VASAT technical team configured a web-enabled learning content management system (LCMS) to enable the communication between VASAT subject matter experts (SMEs) and scientific community at ICRISAT to AMS volunteers. At spokes, the volunteers use local existing telephones to communicate with the hub center at AMS.

Services being offered at Village Information Centres (VICs)

1. Web based agro-advisory
2. Agro-advisory through video conference
3. Subject matter literacy training program through video conference
4. Technology induction program
5. Weather data
6. Computer literacy training program for youth and women

The services provided by VASAT were ranked in terms of their access and utility as perceived by end users. Ranking of services was done on the basis of mean scores obtained by each service and the details are given in Table.1

Web based agro advisory was most important service that was ranked first in terms of accessibility. Agro advisory through video conference was ranked second (52%) in terms of accessibility. Accessing weather data (60%) ranked third, technology induction programme was accessible to 44% and Subject matter literacy training programme was accessible to 40% and computer literacy training programme was accessible to 10% farmers but it is less often.

A glance at the results indicate that majority of the farmers having accessibility to web based agro – advisory

Table 1. Access to various services of VASAT by framers

Service	% of farmers		Level of access (in %)				Mean score	Rank
	having access	Always	Most often	Often	Less often	Not at all		
Web based agro-advisory	100	74	8	16	2	-	3.38	I
Agro-advisory through video conference	52	4	8	40	18	-	1.14	II
Subject matter literacy training program through video conference	40	-	-	-	40	60	0.66	V
Technology induction program	44	-	-	-	44	56	2.06	IV
Weather data	60	-	-	20	40	40	1.7	III
Computer literacy training program	10	-	-	-	10	90	1.08	VI

Table 2. Utility of various services of VASAT farmers

Service	Most utilized(%)	Occasionally Utilized (%)	Not at all utilized(%)
Web based agro-advisory	32	32	36
Agro-advisory through video conference	4	24	72
Subject matter literacy training program through video conference	-	2	98
Technology induction program	-	10	90
Weather data	-	16	84
Computer literacy training program	-	10	90

and agro advisory through video conference. This might be because of farmers are accessing through trained Adarsha Mahila Samaikhya volunteers. Other services such as subject matter literacy training programme, technology induction programme and computer literacy training programme was not conducted regularly and farmers are not much aware of these services. Due to publicity was not given by the implementing agency and local trained volunteers. These findings are in line with the results of Meera *et al.* (2004).

Table 2 reveals that web-based agro advisory service was utilized by 64 per cent farmers and remaining 36 per cent not at all utilized this service. This is due to lack of awareness on these services. Agro advisory through video conference was utilized by only 28 per cent farmers and remaining services utilized negligible per cent farmers. Majority were not at all utilized these services. This is due to the fact that these services are “less often” accessible to the farmers. Merely 24 per cent farmers perceived these services as contributing in their decision making of farm activities. With the VASAT services few per cent of farmers got aware of information sources and taking decisions based on available information. Farmers perceived these services are not quick in providing solution and took nearly 24- 48 hours. These results are in concordance with the findings of Reddy and Ramaraju, (2006).

Farmers felt that project should provide services related to INM, IPM, package of practices of major crops, crop insurance how to reduce cost of cultivation and marketing services, information on quality inputs and livestock management information as these services are perceived as ‘most needed’ by the farming community in this project area.

Over all satisfaction of farmers towards services of VASAT was rated low by 50 per cent and as very low by another 40 per cent farmers. No one was found to be in very

Table 3: Level of satisfaction of farmers towards services of VASAT

Level of satisfaction	Frequency	Percentage
Very low (0-20 %)	20	40
Low (20-40 %)	25	50
Medium (40-60 %)	2	4
High (60-80 %)	3	6
Very high (80-100)	0	0

high category. It is inferred from the results, majority of the farmers had low level of satisfaction with respect to overall activities of the project. This is due to fact that all these services are not accessible and few services which are provided by the project did not make glaring difference with respect to farming and earlier practices. More over absence of inter personal communication and majority of the advices are similar in nature. These results are in contrary with the findings of Prasad *et al.* (2013)(Table 3).

Table 4: Constraints as perceived by farmers in getting ICT based extension services

Problems/constraints	VASAT (n=50)	
	F	P
Connectivity (wire and wireless communication)	32	64
Assured supply of elasticity	10	20
Timeliness of services	33	66
Access to information centre	35	70
Appropriateness of information	32	64
Location specific content	30	60
Low efficiency of field functionaries (coordinators)	19	38
Capacity building of farmers in ICT extension mechanism	35	70
Less favourable attitude of extension functionaries (personnel)	28	56
IT illiteracy of farmers	35	70
Lack of required information from the center	35	70
Lack of follow up action by agency	32	64
Inadequate ICT infrastructure	30	60
More service charges	-	-
Crop guidance from experts	40	80

It was evident from Table 4 majority (80%) of farmers expressed that lack of crop guidance from experts, followed by access to information centre (70%), IT illiteracy of farmers (70%), lack of required information from the centre (70%), timeliness of services (66%), connectivity (64%), lack of follow-up action by implementing agency (64%), appropriateness of information (64 %), lack of location specific content (60 %), less favourable attitude of extension personnel (56%), low orientation of extension functionaries (38 %) towards ICT extension are the constraints perceived by the farmers in getting effective ICT based extension services.

CONCLUSION

The study showed in VASAT project, services offered are web-based agro advisory service and agro advisory through video conference. Project functionaries (AMS volunteers) are knowledge enough in maintaining the kiosk. All the information they provided is related to plant protection only. Farmers are utilizing two above said services only. Observations from the study area revealed majority of

farmers are not aware of all the services being offered at the kiosk. Hence it is recommended project official should conduct awareness camps at service area about ICT utility and improve awareness among farming community. This implies ICT mediated extension alone can't bring change in the existing agricultural extension system. Human factors play a critical role in technology adoption.

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