

VILLAGE RESOURCE CENTRES - AN ANALYSIS OF FEEDBACK FROM FARMERS OF KARNATAKA, INDIA

ABSTRACT

Interactive video conferencing through satellite is an effective means of transferring the latest technologies to farmers. One such initiative of Indian Space Research Organization is establishment of Village Resource Centres which are located in different remote villages. A study was done in Karnataka state of India to collect the feedback from farmers to find out the effectiveness of interactive video conferencing in disseminating the technologies to the farmers. Two hundred farmers who attended the programme regularly were selected randomly for the study. The advantages, constraints and suggestions were collected from farmers. Interactive video conferencing had helped farmers to increase their knowledge on various agricultural technologies and made adoption of technologies easier. Technology transfer to farmers through this modern method of communication can empower the rural farmers in developing countries, enhance ecological and livelihood security and accelerate human development and quality of life.

KEYWORDS:, Interactive video conference, Village Resource Centres, Information, Knowledge

Introduction

ISRO has embarked upon the Village Resource Centre programme to disseminate the portfolio of services (like tele education, tele health care, land and water resource management, interactive advisory services, tele fishery, e- governance services, weather services and others

depending on the local needs) emanating from the space systems as well as information technology tools directly down the line to the rural communities. The VRC is a totally interactive VSAT (Very Small Aperture Terminal) based network, where teaching, learning and interaction is done through personal computers networking. The system consists of two element.:Expert Centre (EC) or Teacher end and VRC or Student end. The Expert Centres are being established in different states to provide information support to the student ends generally situated or located in remote areas. In the ECs, opportunity is provided for two way audio video conferencing. One individual or group of individuals at student end can directly interact with the expert(s) in the Expert Centre.

The Village Resource Centre (VRC) or student end is the receiving ends where the end users can receive the information from experts as well as interact with them. VRC provides space enabled information related to land records, natural resources, drinking water wells, ground water recharge, soil types, alternate cropping pattern, waste lands, etc. VRCs also provide variety of services in its tele-education and tele medicine programmes, online decision support, weather forecasting, water management, interactive farmers advisory services (video conferencing) and so on.

The expert end has two major components - lecture and interactive sessions. During lecture session, the subject experts deliver live lectures using audio-visual aids and during interactive sessions the students consult the experts for any problems or clarifications. This is computer based technology where two way audio-video is used for connecting the expert end with the student ends.

ISRO started VRCs to provide various space enabled services in an integrated manner, by establishing Village Resource Centers in the country in phase wise. More than 500 VRCs are set up in the country in association with Universities, NGOs, Trusts, State and Central agencies. Chauhan (2008) reported that among the various means of information communication available, satellite based information communication was found to be very efficient, accurate, quick and somewhat cheaper in the field of disseminating information from research system to farmers. Direct interaction with farmers through video conferencing will go a long way in empowering the farming communities and also enable them to handle technology absorption and adoption issues.

One of the major portfolios of VRCs is to provide information to the farmers who are the pillars of our nation. It is important to know how the farmers are satisfied with the programmes given by VRCs on farming activities. Being a unique innovative information support system designed and implemented for the first time in the country, it is time to conduct a study to overview the usefulness of the system especially to farming community as well as to generate feedback from them to improve its functioning. In this context, the present study is designed with the objective of documenting advantages, constraints and suggestions from stake holders for improving the functioning of VRCs.



Locale and Methodology of the study

The study was conducted in Karnataka state where 51 VRCs and seven Expert Centres were operating. The Expert Centre University of Agricultural Sciences, Bangalore conducts majority of the farming related programmes for the Village Resource Centres like programmes on Improved technology on field crops, Fruit crops, Vegetables, Flower Crops, Organic farming,

65 Integrated Nutrient Management, Integrated Pest Management, Fishery, Poultry, Sericulture,
66 Harvest and Post Harvest Technology, Value addition, Bio fertilisers and Weather forecast.

67 Ten VRCs which were functioning from more than two years were selected for the study.
68 Twenty farmers who frequently visit the VRCs were selected randomly from each VRC, thus
69 constituting a sample size of 200. Personal Interview method was used for data collection. The
70 advantages, constraints and suggestions for the functioning of the VRCs were documented based
71 on the analysis of the data collected. The results are presented under the following heads.

72 With the intention of direct interaction with people in rural areas, around five hundred
73 VRC are established all over India in association with universities, non-governmental
74 organisations, trusts, State and Central agencies. Through VRC, farmers can interact with experts
75 directly and get information related to land records, natural resources, improved crop production
76 methods, drinking water wells, ground water recharge, soil types, alternate cropping pattern and
77 waste lands.

78 **MATERIALS AND METHODS**

79 This study is undertaken in the Karnataka state in India where 51 VRCs are established
80 and are used intensively to disseminate technologies to farmers in remote and rural areas and
81 interact with them directly. The programme on Agriculture was given to the VRCs through a
82 two-way audio and video by the Expert Centre at University of Agricultural Sciences, Bangalore.
83 The centre had successfully completed three years covering various programmes on improved
84 technology in field crops, fruit crops, vegetables, flower crops, organic farming, Integrated
85 Nutrient Management, Integrated Pest Management, fishery, poultry, sericulture, harvest and
86 postharvest technology, value addition, bio fertilizers and weather forecasting. The effectiveness

of the interactive video conferencing was analysed by interviewing farmers who attended the programme regularly at 10 different VRC. Two hundred farmers were selected randomly for information collecting. Individual interviews were conducted to understand the impact of interactive video conferencing through VRCs at micro level.

RESULTS AND DISCUSSION

Advantages of the Village Resource Centres as indicated by farmers

The data collected from two hundred farmers who attended the programmes was analysed and the results are presented in Table 1.

A vast majority of farmers (94.5 %) indicated that interactive video conferencing have played a greater role in increasing the knowledge of farmers on various farming activities. A majority of farmers (88.5%) stated that interaction was more like face to face interaction which helped them to clarify their farming related questions with the experts.

Most of the farmers (84%) were happy with the system because the experts and facilitators of the programme took care to repeat the programmes on the request of the farmers. Another significant advantage expressed by the respondents is saving in expenditure and time due to less travel, as all the information they needed could be obtained from the nearby VRC through interactive mode. As farmers from different areas assembled in a VRC to participate in the interactive video conferencing, social interactions among them also increased, which helped them to share the benefits of their own farming experiences with others. The other advantages indicated by the respondents were that information about inputs are obtained through the system effectively (72%), storage pest management could be done effectively (69.5%), information

108 about the latest cultivation practices of different crops and enterprises could be obtained (68.5%),
109 and the best resources could be obtained irrespective of geographical location (68%).

110 Two third of the respondents (66.5%) indicated that the information through VRC has a
111 multiplier effect and they also opined that weather forecast information helped them to take
112 decisions regarding plant protection, harvest, threshing and other management aspects (61.5%).
113 Fifty-six per cent of the respondents opined that they could decide the best crop for the season
114 because of the information from VRC. Interactive video conferencing also helped many to find
115 proper markets for their agricultural produce (34.5%) and follow efficient water management
116 practices (31%).

117 From the above advantages mentioned by the farmers it is clear that interactive video
118 conferencing through VRC can undoubtedly reach the farmers effectively and efficiently . The
119 results are in line with the findings of Ghosh (2006) who pointed out that the tele-education on
120 agriculture has the advantages like more awareness of innovative approaches, improved food
121 production and seasonal planning and risk mitigation for the farmers. The findings are also in
122 line with the findings of Bhatia (2000), Miller *et al.* (2007) and Shivram and Sultana (2008).

123 VRCs can significantly change the existing farming situation by reaching more and more
124 farmers with location specific technologies. The participants develop self-confidence as they
125 learn to approach and interact with the modern world. People living in rural areas are empowered
126 with information to face current challenges. Even those in the remotest of villages can feel
127 connected to the rest of the world and benefit from its progress through exposure to new
128 technology.

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130 **Constraints experienced by users of VRCs**

131 A detailed analysis of constraints experienced by the users of VRCs were conducted
132 (Table 2) and the results are discussed in the subsequent paragraphs.

133 More than two third of the respondents (69.5%) opined that VRC programmes on
134 farming activities were time consuming. Most of the farmers had work in their own farms right
135 from morning. Due to shortage of labour and high labour charges, many farmers' own labour
136 also contributed to the total labour force. Hence they find it difficult to attend the VRC
137 programme for two and half hours. They would rather like to spend forty five minutes at the
138 most in the VRC.

139 Some farmers told that they were not informed in advance about the programme. So they
140 could not plan their activities accordingly to attend the VRC programmes. Delay in informing
141 the farmers may be due to delay in uploading the time table in the VRC system. VRC operators
142 sometimes may not keep track of things and inform farmers. Sometimes VRC operators fail to
143 give information about time schedule to all the farmers because they are geographically
144 dispersed.

145 Few farmers were not satisfied with duration of question answer discussion. This may be
146 due to the difficulty of experts to attend many questions from different centres within the
147 stipulated time schedule. This had created dissatisfaction to those farmers who could not interact
148 with experts. The time slot for University programme is from 11.00 AM to 1.30 PM on Mondays
149 and followed by this, Karuna Trust's expert centre will take over the teaching end for conducting
150 their scheduled programmes.

151 Another constraint expressed by some of the farmers was VRC is located away from their
152 village. At present VRCs are only limited in numbers. Farmers visit these centres from nearby
153 villages also. Sometimes they have to travel long distance and the mode of transport is also very
154 inadequate. For this reason they feel the need for a VRC in their village. Some of the farmers
155 expressed that the programme through VRC are lengthy especially lecture session. Many were
156 not having the patience to listen for one to one and half hour. They also expressed that the
157 specimens shown were not very much clear.

158 The respondents also pointed out that programme being not relevant to their situation as a
159 constraint. In Karnataka, VRCs are located in different agro ecological zones and it is quite
160 natural that crops of one region do not suit to the other regions. For this reason, programme on a
161 particular crop cannot be of same importance to all the agro-eco regions.

162 Video transmission quality was not good according to 36 per cent of respondents. This
163 may be due to lack of picture clarity or lack of a projector or big screen to see the video clearly.
164 Some farmers also felt that no new information was supplied by resource persons. The probable
165 reason may be many farmers who are attending the VRC programme are progressive farmers
166 who are already following latest cultivation practices in their own fields. Some programmes were
167 repeated based on the request from various centres as it is very much relevant to their location.
168 This repetition of programmes created boredom among the farmers of other centres.

169 Some farmers have expressed that the time schedule of the programme was not suitable.
170 They had indicated that generally Mondays are market days in their localities and they fall in
171 short of time to visit VRC. A few had indicated that since the water is released from canals in to
172 their fields during this time, they faced difficulty in attending the programmes. Some had

173 expressed that the programme was not timely. They felt that the programme on a particular
174 activity in field should be given well in advance as against scheduling the programme just one
175 week before. They told that this will help them in taking better decisions and planning the
176 activities accordingly.

177 Another constraint pointed out by some of the farmers is VRC operator was not trained
178 properly. Sometimes when problem arises in audio or video reception, it was not solved
179 immediately. According to farmers more training to VRC operators will help to solve the
180 problems to an extent.

181 The least expressed constraints were connectivity problem (8%) and VRC operator was
182 not present always (8%). In rainy season and due to heavy winds, sometimes problems arouse in
183 receiving satellite signals due to the disturbance in the position of antenna. Due to lack of
184 sufficient staffs in some centres, the VRC operator also had to attend other works. Hence the
185 VRC operator may not be able to concentrate entirely on the VRC programme. These may be the
186 reasons for the above mentioned constraints. The findings are supported by the findings of
187 Purohit (2008) and Miller *et al.* (2007).

188 **Suggestions to improve the performance of Village Resource Centres as indicated** 189 **by the users**

190 It could be seen from Table 3 that majority of the participants of VRCs expressed that
191 programme through VRCs should include more of experiences of progressive farmers and
192 success stories followed by the suggestion to carry out need assessment before finalizing the
193 programme schedule, conduct meeting of VRCs every month end for feedback, make the visuals
194 more clear and readable, include more demonstration and live specimen.

Nearly three fourth of the respondents also suggested to conduct quiz competition for farmers once in a month and allow sufficient time for question answer. They also suggested adding an element for entertainment.

Around two third of the respondents suggested to make the presentation simple and understandable and to check the system well in advance. More than half of the respondents suggested to include the use of more teaching aids. Most of them also had the opinion of provision of some facilities at the student end to record the programmes and save the power point slides in the system for future use.

CONCLUSION

Village Resource Centre which is a SATCOM application has many advantages when compared to other mass media like Radio and Television where the communication is one way, where as in case of Village Resource Centres the information is given to farmers through two way audio and video conferencing. The results of the study also showed that the farmers felt the type of communication through VRC as face to face. There is a vast scope for VRCs to reach millions of farmers with modern farming technologies. Hence, this media or channel should be made use off to empower farmers on new technologies and for the effective transfer of the technologies from lab to land.

Many experiences can be quoted from the length and breadth of India wherein the direct and indirect use of video conferencing, satellite communication and multi-media are currently being implemented to reach out to farmers. This will help launch a knowledge revolution in rural India designed to enhance ecological and livelihood security and accelerate human development

217 and quality of life by improving the productivity, profitability and sustainability of agriculture
218 and for generating value added employment both on the farm and off the farm.

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233 Table 1: Advantages of VRCs as indicated by the users

234 (n=200)

Sl.No	Statements	No.	%
1.	VRC Programmes helped to increase the knowledge on various farming activities	189	94.5

2.	Learning through VRCs is equivalent to face to face interaction.	177	88.5
3.	Important programme could be repeated on request	168	84.0
4.	VRC Programmes helped to improve my farming	165	82.5
5.	Substantial saving in expenditure due to saving in travel /logistics	162	81.0
6.	Participation helped to make more social interactions	147	73.5
7.	I could save time spend in traveling to research stations/ universities for information	144	72.0
8.	Information about inputs is obtained through the system timely.	144	72.0
9.	VRC is a credible source of information	153	76.5
10.	Storage pest management could be done effectively	139	69.5
11.	Learning and communication environment is adaptable to all	137	68.5
12.	I could obtain information about latest cultivation practices	137	68.5
13.	Best learning resources could be availed irrespective of location	136	68.0
14.	The information through VRC have multiplier effect	133	66.5
15.	Timely weather forecast information helped to take decisions regarding plant protection, harvest, threshing and other management aspects.	123	61.5
16.	I could decide best crops for the season because of information from VRC	112	56.0
17.	VRC Programmes helped to know the best markets of different crops	69	34.5
18.	I could follow effective water management practices	62	31.0

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237 **Table 2. Constraints experienced by the users of VRC**

238 (n=200)

Sl.No	Statements	No.	Percentage
1.	Programme was time consuming	139	69.5
2.	Advance intimation about the programme was not given	128	64.0
3.	Question answer discussion duration was not sufficient	118	59.0
4.	VRC located at a distant place from the location of user	116	58.0
5.	Information was lengthy	108	54.0
6.	Specimen shown was not very much clear	99	49.5
7.	Programme was not relevant for our situation	77	38.5
8.	Video transmission quality was not good	72	36.0
9.	No new information was supplied by the resource persons	69	34.5
10.	Programmes were repetitive	61	30.5
11.	Time schedule of the programme was not suitable	51	25.5
12.	Power problem	49	24.5
13.	Programme was not timely	41	20.5
14.	VRC operator was not trained properly	33	16.5
15.	Connectivity problem	16	8.0
16.	VRC operator was not present always	16	8.0

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242 **Table 3. Suggestions to improve the performance of Village Resource Centres as**
 243 **indicated by the users.**

244 (n=200)

Sl.No	Statements	No.	Percentage
1.	Programmes through VRCs should include more of experiences of progressive farmers and success stories.	178	89.0
2.	Carry need assessment before finalizing the programme schedule	176	88.0
3.	Make the visuals more clear and readable	164	82.0
4.	Conduct meeting of VRCs every month end for feed back	164	82.0
5.	Include more demonstrations	153	76.50
6.	Include more live specimens	151	75.5
7.	Conduct Quiz competition for farmers once in a month	149	74.5
8.	Allow sufficient time for Questions and answers	147	73.5
9.	Add an element for entertainment	145	72.5
10.	Make the presentation simple and understandable	137	68.5
11.	Provide facilities to record the programme at student end	136	68.0
12.	Check the entire system well in advance of the programme.	139	65.5
13.	Provide the programmes in a CD format to the Student ends for future reference	130	65.0
14.	Include the use of more teaching aids	113	56.5
15.	Provide more training to VRC operators	62	31.0
16.	Avoid repetition of programmes	36	18.0

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17.	Provide generator to all VRCs	28	14.0
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