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'E- VELANMAI' – AN INNOVATIVE APPROACH OF AGRICULTURAL EXTENSION IN TAMIL NADU

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Abstract: *The study on e-Velanmai model of extension, implemented by Tamil Nadu Agricultural University, was undertaken in three districts viz., Coimbatore, Tirupur and Villupuram of Tamil Nadu with 90 beneficiary respondents and 90 non-beneficiary respondents. It was found that hardly any of the non-beneficiary respondents were aware about the functioning of e-Velanmai project in their locations. Majority (54.40 %) of the respondents had medium level of increase in extent of awareness on agricultural innovations due to e-Velanmai. Large proportion of the beneficiary respondents (80.00 %) and non-beneficiary respondents (92.20 %) had high level of extent of knowledge. With respect to the constraints faced by beneficiaries, an overwhelming percentage (94.40 %) of the beneficiary respondents had expressed that they faced no constraints, while a small percentage (5.50 %) indicated that there is no direct contact with TNAU Scientists', and no follow-up visit by Field Coordinators after giving advice (1.10 %).*

Keywords: *e-Velanmai, ICT, Awareness, Knowledge, Constraints.*

Introduction

During July 2007 the e-Velanmai scheme was implemented in Palar sub-basin by selecting five villages spread over five Water User Associations covering 25 farmers, allotting five farmers from each village. One Field Coordinator (FC) was appointed to offer technical advice from the experts to the farmers. The FC visited one village per day to offer extension advice to five farmers, thus covering all the 25 farmers in a week. The expert team of Scientists comprising of an Entomologist, Soil Scientist, Pathologist, Crop Physiologist, Agronomist and Horticulturist was set up at TNAU, Coimbatore to offer technical advice considering the damaged specimen photographs captured using digital camera and sent to them through www.fileflyer.co website using Computer and Internet facility. The advises were given by the Scientists to the FC using mobile phone which were then transferred to the farmers.

A similar model of e-Velanmai was implemented at Aliyar sub-basin of Coimbatore district from 1st May 2008 covering 25 farms from five villages drawn from five WUAs. Later, e-Velanami was replicated at Varahanadhi sun-basin in Villupuram district of Tamil Nadu during 1st July 2008. These two districts were distinctly different in terms of crops, water resources and agroclimatic conditions.

According to Karthikeyan (2012), e-Velanmai was a combination of interpersonal and ICT (Information and Communication Technology) based, demand-driven and participatory extension model aimed at providing timely agro advisory services to the registered farmers. The TNAU Scientists served as experts and provided advise for the decision-based queries and problem-based queries raised by farmers by means of modern ICT tools viz., Laptop computer, Digital Camera, Internet and Mobile Phone, which was coordinated by the Field Coordinator.

The objectives of the study were as follows:

- To assess the impact of e-Velanmai model of extension among the beneficiaries.
- To find out the constraints experienced by e-Velanmai beneficiaries.

Methodology

The e-Velanmai project was implemented in three districts of Tamil Nadu viz., Coimbatore (Aliyar sub-basin), Tirupur (Palar sub-basin) and Villupuram (Varahanadhi sub-basin), and therefore the study was carried out in all these three districts.

The respondents of the study were registered members (beneficiaries) of e-Velanmai. Based on probability proportionate sampling method, 30 beneficiary respondents were selected from two Water User Associations (WUAs) in Aliyar sub-basin; 30 respondents from three WUAs in Palar sub-basin; and 30 respondents from three WUAs in Varahanadhi sub-basin, and thus the total sample size of the beneficiaries was 90.

The impact of e-Velanmai model was assessed in terms of changes in the Extent of Awareness and Extent of Knowledge gained by the beneficiaries over non-beneficiaries.

Findings and Discussion

The findings and discussion are presented as follows:

Extent of Awareness

The extent of awareness was assessed in terms of awareness of non-beneficiaries about e-Velanmai project and innovation-wise awareness. The analysis of the results is presented in Tables 1 and 2.

Awareness of Non-beneficiaries about e-Velanmai project

The distribution of non-beneficiary respondents according to their awareness on e- Velanmai project is presented in Table 1.

Table 1: Distribution of Non-beneficiary Respondents according to their Awareness on e-Velanmai Project

Awareness Categories	Non-beneficiaries	
	No. (n=90)	**Per cent**
Aware of e-Velanmai project	4	4.40
Not Aware of e-Velanmai project	86	95.60
Total	**90**	**100.00**

Table 1 shows that almost all (95.60 %) the non-beneficiary respondents were not aware of the functioning of e-Velanmai project, and the rest (4.40 %) were aware of the e-Velanmai project.

Most of the non-beneficiary respondents were not aware of the functioning of the e-Velanmai project. This may be due to the reason that enough publicity was not given about the project in the project area. Moreover, it also indicates that the technical seminars organized periodically in selected places did not generate enough publicity in the respective areas about the e-Velanmai project.

Innovation-wise Awareness

The distribution of beneficiary and non-beneficiary respondents according to their innovation-wise awareness is given in Table 2.

Table 2: Distribution of Respondents according to Innovation-wise Awareness

Innovation-wise Awareness categories	Beneficiaries		Non-Beneficiaries	
	No. (n = 90)	**Per cent**	**No.** (n = 90)	**Per cent**
Low (10- 13 scores)	1	1.10	0	-
Medium (14- 17 scores)	5	5.60	1	1.10
High (18- 20 scores)	84	93.30	89	98.90
Total	**90**	**100.00**	**90**	**100.00**
Mean	18.69		18.77	
Difference between means	0.08			
't' value	0.406^{NS}			
C.V %	5.78		8.02	

NS: Non-significant

Table 2 shows that a vast majority (93.30 %) of the beneficiary respondents had high level of innovation-wise awareness, followed by medium (5.60 %) and the rest (1.10 %) had low level of innovation-wise awareness. In respect of non-beneficiary respondents, almost all (98.90 %) had high level of innovation-wise awareness, and the remaining (1.10 %) had medium level of innovation-wise awareness.

Since, the 't' value was non-significant, it is concluded that there exists no significant difference between both the categories of respondents with respect to innovation-wise awareness. The Coefficient of Variation of the beneficiary respondents (5.78 %) was lower than that of the non-beneficiary respondents (8.02 %) indicating that the innovation-wise awareness level of beneficiary respondents was more consistent than their counterparts.

e-Velanami model of extension was designed mainly to provide farm specific and need based information for decision-based queries and problem-based queries demanded by farmersand it was not meant for creating awareness on innovations. This may be the reason why there existed no significant difference between the two respondents with respect to innovation-wise awareness. However, ICT projects in future should also focus on generating awareness about agricultural technologies.

Extent of Knowledge

The extent of knowledge was assessed in term technology-wise knowledge. The results are presented in Table 3.

Table 3 reveals that the more than three-fourths (80.00 %) of the beneficiary respondents had high level of technology-wise knowledge, and the rest (20.00 %) had medium level of technology-wise knowledge. Whereas, among the non-beneficiary respondents, an overwhelming majority (92.20 %) had high level of technology-wise knowledge and the remaining (7.80 %) had medium level of technology-wise knowledge.

Table 3: Distribution of Respondents according to Technology-wise Knowledge

Technology-wise Knowledge Categories	Beneficiaries		Non-Beneficiaries	
	No. (n = 90)	**Per cent**	**No.** (n = 90)	**Per cent**
Low (10- 13 scores)	0	-	0	-
Medium (14- 17 scores)	18	20.00	7	7.80
High (18- 20 scores)	72	80.00	83	92.20
Total	**90**	**100.00**	**90**	**100.00**
Mean	17.79		17.12	
Difference between means	0.67			
't' value	3.019**			
C.V %	5.49		10.34	

**Significant at 0.01 level of probability

Since, the 't' value was significant at 0.01 level, the null hypothesis is rejected, indicating that there existed a significant difference between beneficiary and non-beneficiary respondents with respect to their technology-wise knowledge. The C.V. with respect to technology-wise knowledge level of beneficiary respondents (5.49 %) was lower than that of the non-beneficiary respondents (10.34 %) indicating that the technology-wise knowledge level of beneficiary respondents was more consistent than their counterparts.

e-Velanmai model of extension was designed mainly to provide information for farm specific decision-based and problem-based queries, and it was not meant for increasing the knowledge on technologies. However, technology-wise knowledge level of beneficiaries was significantly higher than that of their counterparts. Since, when problem-based queries are resolved, farmer learned specific solutions that add to their knowledge level.

Correlation of Independent Variables with Behavioural Impact

Correlation analysis was carried out between the Independent Variables and Behavioural Impact Variables viz., Innovation-wise Awareness and Technology-wise Knowledge and the results are presented as follows:

Correlation of Independent Variables with Innovation-wise Awareness

Table 4 shows the correlation between 12 profile characteristics of beneficiary respondents and non-beneficiary respondents with innovation-wise

awareness. Out of the 12 profile characteristics of beneficiary respondents, four characteristics viz., age, educational status, contact with extension and other agencies and scientific orientation had positive and highly significant relationship with innovation-wise awareness on agricultural innovations. The remaining characteristics were found to have a non-significant association with the dependent variable.

Similarly, of the 12 profile characteristics of non-beneficiary respondents, farm size and annual income exhibited a positive and significant correlation with innovation-wise awareness. The correlation value of farm size was significant at 0.05 per cent level of probability, while the correlation value of annual income was significant at 0.01 per cent level of probability.

Table 4: Correlation of Independent Variables with Innovation-wise Awareness

S. No.	Independent Variables	'r' value	
		Beneficiaries (n = 90)	**Non-beneficiaries** (n = 90)
1.	Age	0.276**	-0.192^{NS}
2.	Educational Status	0.234**	0.181^{NS}
3.	Occupational Status	0.135^{NS}	-0.072^{NS}
4.	Farm Size	-0.139^{NS}	0.216*
5.	Farming Experience	0.156^{NS}	-0.036^{NS}
6.	Annual Income	0.035^{NS}	0.343**
7.	Social Participation	0.007^{NS}	0.128^{NS}
8.	Contact with Extension and other Agencies	0.376**	0.039^{NS}
9.	Exposure to Agricultural Messages	0.200^{NS}	0.091^{NS}
10.	Innovativeness	0.134^{NS}	-0.013^{NS}
11.	Risk Orientation	0.053^{NS}	0.144^{NS}
12.	Scientific Orientation	0.280**	0.038^{NS}

** Significant at 0.01 level of probability

* Significant at 0.05 level of probability

NS = Non-Significant

Rejecting and accepting the null hypothesis for significant and non-significant correlation values respectively, it is inferred that the innovation-wise awareness of beneficiary respondents was the function of age, educational status, contact with extension and other agencies and scientific orientation, while it was the function of farm size and annual income in the case of non-beneficiary respondents.

Thus, it is concluded that higher the age, educational status, contact with extension and other agencies and scientific orientation of beneficiary respondents, higher will be their innovation-wise awareness, irrespective of their, occupational status, farm size, farming experience, annual income, social participation, exposure to agricultural messages, innovativeness and risk orientation. With regard to non-beneficiary respondents, higher their farm size and annual income, higher will be their innovation-wise awareness, irrespective of their age, educational status, occupational status, farming experience, social participation, contact with extension and other agencies, exposure to agricultural messages, innovativeness, risk orientation and scientific orientation.

Correlation of Independent Variables with Technology-wise Knowledge

It is seen from Table 5 that 12 profile characteristics of beneficiary respondents and non-beneficiary respondents were considered for the correlation analysis. Out of 12 profile characteristics of beneficiary respondents, three characteristics viz.,

educational status, farming experience and scientific orientation had positive and significant association with technology-wise knowledge. In the case of non-beneficiary respondents, out of the 12 profile characteristics, three characteristics viz., educational status, contact with extension and other agencies and risk orientation had positive and significant association with technology-wise knowledge. The remaining characteristics were found to have a non-significant association with Technology-wise knowledge.

Table 5: Correlation of Independent Variables with Technology-wise Knowledge

S. No.	Independent Variables	'r' value	
		Beneficiaries (n = 90)	Non-beneficiaries (n = 90)
1.	Age	0.183^{NS}	0.014^{NS}
2.	Educational Status	0.361**	0.255**
3.	Occupational Status	0.056^{NS}	0.040^{NS}
4.	Farm Size	0.139^{NS}	0.075^{NS}
5.	Farming Experience	0.636**	0.152^{NS}
6.	Annual Income	0.182^{NS}	-0.120^{NS}
7.	Social Participation	-0.006^{NS}	-0.055^{NS}
8.	Contact with Extension and other Agencies	0.135^{NS}	0.554**
9.	Exposure to Agricultural Messages	0.106^{NS}	0.016^{NS}
10.	Innovativeness	0.119^{NS}	0.014^{NS}
11.	Risk Orientation	0.056^{NS}	0.344**
12.	Scientific Orientation	0.226*	-0.14^{NS}

** Significant at 0.01 level of probability

* Significant at 0.05 level of probability

NS = Non-Significant

The correlation values of educational status and farming experience were significant at 0.01 per cent level, while the correlation value of scientific orientation was significant at 0.05 per cent level. With respect to non-beneficiary respondents, the correlation values of educational status, contact with extension and other agencies and risk orientation were significant at 0.01 per cent level.

Rejecting and accepting the null hypotheses for significant and non-significant correlation values respectively, it is inferred that the technology-wise knowledge of the beneficiary respondents was the function of their educational status, farming experience and scientific orientation while, it was the function of educational status, contact with extension and other agencies and risk orientation in the case of non-beneficiary respondents.

Thus, it is concluded that with regard to beneficiaries, higher the educational status, farming experience and scientific orientation higher will be their technology-wise knowledge, irrespective of their age, occupational status, farm size, annual income, social participation, contact with extension and other agencies, exposure to agricultural messages, innovativeness and risk orientation. With regard to non-beneficiary respondents, higher their educational status, contact with extension and other agencies and risk orientation, irrespective of their age, occupational status, farm size, farming experience, annual income, social participation, exposure to agricultural messages, innovativeness and scientific orientation, higher will be their technology-wise knowledge.

Constraints faced by beneficiaries while availing extension services under e–Velanmai

The distribution of beneficiary respondents according to the constraints faced while availing extension services under e-Velanmai is presented in Table 6.

It is seen from Table 6 that an overwhelming percentage (94.40 %) of the beneficiary respondents had expressed that they faced no constraints while availing services under e-Velanmai project. A meagre percentage (5.50 %) indicated that there is no direct contact with TNAU Scientists and no follow-up visit by FC after giving advice (1.10 %).

Table 6: Distribution of Beneficiary Respondents according to Constraints Faced while availing Extension Services under e-Velanmai

S. No.	Constraints	Beneficiaries	
		No. (n=90)	**Per cent***
1.	No constraints	85	94.40
2.	No direct contact with TNAU Scientists	5	5.50
3.	No follow-up visit by Field Coordinators after giving advice	1	1.10

* Multiple Reponses.

Conclusion

Wide awareness about the e-Velanmai project is crucial for the success of this novel initiative. During the project period, technical seminars where organized periodically in different places of each sub-basin by involving around 50 farmers. However, this did not seem to have had any ripple effect on the community, which needs to be viewed seriously. It is suggested that wide publicity may be given prior to conduct of the seminars in the respective localities, so that not only will more member of farmers participate in the programme, but also create wide publicity about the project in the community. For this purpose, it is suggested that adequate funds may be allotted for publicity and propaganda about the e-Velanmai model of extension.

Reference

Karthikeyan, C. 2012. "e-Velanmai- An ICT Enabled Agricultural Extension Model". *International Journal of Extension Education*, Vol. 8, pp. 24 – 30.