DOI: 10.15740/HAS/AU/12.TECHSEAR(7)2017/1748-1752 *Agriculture Update*
Volume **12** | TECHSEAR-7 | 2017 | 1748-1752
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RESEARCH ARTICLE :

E-velanmai model of extension service among the farmers of Tamil Nadu

■ **D. PRABHA, RAVI KUMAR THEODORE AND C. KARTHIKEYAN**

ARTICLE CHRONICLE :
Received :
19.07.2017;
Accepted :
03.08.2017

SUMMARY : A study was undertaken to study the impact of e-Velanmai model of extension, implemented by Tamil Nadu Agricultural University, which was undertaken in three districts *viz.*, Coimbatore, Tirupur and Villupuram of Tamil Nadu, with 90 beneficiary respondents. A large proportion of the beneficiary respondents of Palar and Aliyar sub-basins had expressed 11-20 per cent yield increase. In case of the Varahanadhi sub-basin, more than one-fourth of the respondents had reported 11-20 per cent yield increase. Majority of the beneficiary respondents had reported low level of income increase. With respect to social impact, nearly three-fourths (73.40 %) of the beneficiary respondents had reported medium level of social impact.

How to cite this article : Prabha, D., Theodore, Ravi Kumar and Karthikeyan, C. (2017). E-velanmai model of extension service among the farmers of Tamil Nadu. *Agric. Update*, **12**(TECHSEAR-7) : 1748-1752; **DOI: 10.15740/HAS/AU/12.TECHSEAR(7)2017/1748-1752.**

KEY WORDS :
E-Velanmai, Yield, Income, Social impact

Author for correspondence :

D. PRABHA
Department of Agricultural Extension, Tamil Nadu Agricultural University, COIMBATORE (T.N.) INDIA
Email : mahaprabha014@gmail.com

See end of the article for authors' affiliations

BACKGROUND AND OBJECTIVES

The new ICTs are changing the way the world works, including the way agriculture and natural management are practiced (Odumbe *et al.*, 2003). ICT has changed the management of knowledge. It has become instrumental for networking and rapid problem solving, and it conveys new information for decision-making and entrepreneurial activity (Mansell and When, 1998). ICTs will augment the reach and two-way interaction among key stakeholders in a big way. The new technology offers new opportunities. It will add more interactivity. It will add speed. It will add two-way communication and also more in-depth messaging. It will widen the scope of extension and it will also improve quality. It will subtract costs and reduce time. It will reduce dependency on so many factors in the chain of extension system, and it will change the whole method of extension.

E-Velanmai means 'Electronic Agriculture'. It is a World Bank sponsored project which was operated by the Tamil Nadu Agricultural University (TNAU) from July 2007 to March 2013. e-Velanmai is a combination of personal and ICT based, demand driven and participatory technology transfer model in agriculture to provide timely agro advisory services by a multidisciplinary team of agricultural scientists to farmers using ICT tools (Digital Camera, Computer, Internet, Mobile Phone, etc.) through a Field

Coordinator (FC) on need basis (Karthikeyan, 2012).

The objectives of the study were as follows to assess the impact of e-Velanmai model of extension among the beneficiaries.

RESOURCES AND METHODS

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 project. 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 evaluation of e-Velanmai project was assessed in terms economic impact and social impact.

Economic impact :

Economic Impact referred to the economic gain or loss faced by the beneficiaries of e-Velanmai model of extension as a result of adoption of technologies recommended by TNAU Scientists, as well as making certain modifications in selected farm operations. The direct and indirect economic impact was assessed in two ways viz., Variation in Yield, and Variation in Income as experienced by the beneficiaries.

Yield variation :

Variation in yield was measured in terms of percentage level of increase in yield as expressed by the beneficiaries, due to adoption of technologies recommended by TNAU Scientists. The percentages were as such considered, and thereby lower percentage indicated less yield increase, while higher percentage meant high yield increase. Frequency distribution method was followed to categories the respondents.

Income variation :

Variation in income was measured in terms of percentage level of increase in income as expressed by the beneficiaries, due to yield increase as a result of adoption of technologies recommended by TNAU Scientists. The percentages were as such considered, and thereby lower percentage indicated less income increase, while higher percentage meant high income increase. The respondents were classified into three categories *viz.*, 1- 33 %, 34- 66 % and 67- 100 %.

Social impact :

Social impact was operationalized as a measure of the social changes that occurred in the life of the beneficiaries due to their participation in the e-Velanmai model of extension. Social Impact was measured by means of a schedule developed for the study. The tool comprised of six statements that covered different dimensions of social change that are likely to have occurred in the life of the beneficiaries due to their participation e-Velanmai. Each statement was measured with a dichotomous response of 'yes' or 'no'. The details are given as follows :

Sr. No.	Statements
1.	Better relations developed with the extension workers.
2.	Better relations developed with TNAU Scientists.
3.	Many farmers approached me for guidance.
4.	Emerged as an opinion leader in the village.
5.	Outside contacts increased.
6.	Gained more recognition in the village.

'Yes' response carried a score of two, and 'no' response a score of one. The item-wise scores were summed upto arrive at the Social Impact score of a respondent. The maximum score was 12 and minimum score was 6. Higher score indicated 'greater social impact' and lower score meant 'less social impact'. Based on the total scores, the respondents were classified into low, medium and high categories using frequency distribution method.

OBSERVATIONS AND ANALYSIS

The results and discussion are presented as follows:

Yield variation :

Table 1 reveals that in Palar sub-basin a large proportion (43.30 %) of the beneficiary respondents had reported 11-20 per cent yield increase, followed by 31-40 per cent (20.00 %), 21-30 per cent (16.70 %), upto 10 per cent (13.30 %), and the rest (6.70 %) had reported 41-50 per cent of yield increase.

Table 1 : Distribution of respondents according to yield variation

Yield variation categories	Palar sub-basin beneficiaries (Coconut)		Aliyar sub-basin beneficiaries (Coconut)		Varahanadhi sub-basin beneficiaries (Mostly rice and sugarcane)	
	No. (n = 30)	Per cent	No. (n = 30)	Per cent	No. (n = 30)	Per cent
Upto 10 %	4	13.30	4	13.30	0	-
11- 20 %	13	43.30	12	40.00	2	6.70
21- 30 %	5	16.70	8	26.70	2	6.70
31- 40 %	6	20.00	1	3.30	3	10.00
41- 50 %	2	6.70	3	10.00	8	26.70
51- 60 %	0	-	2	6.70	2	6.70
61- 70 %	0	-	0	-	6	20.00
71- 80 %	0	-	0	-	4	13.30
81- 90 %	0	-	0	-	3	10.00
91- 100 %	0	-	0	-	0	-
Total	30	100.00	30	100.00	30	100.00
C.V %	44.57		56.66		35.08	

The co-efficient of variation was found to be 44.57 per cent, inferring that the internal variation was less among the beneficiary respondents with respect to yield variation.

In Aliyar sub-basin, more than one-third (40.00 %) of the beneficiary respondents had reported 11- 20 per cent of yield increase, followed by 21-30 per cent (26.70 %), upto 10 per cent (13.30 %), 41- 50 per cent (10.00), 51- 60 per cent (6.70 %), and the rest (3.30 %) had reported 31- 40 per cent of yield increase.

The co-efficient of variation was found to be 56.66 per cent, inferring that the internal variation was high among the beneficiary respondents with respect to yield variation.

In Varahanadhi sub-basin, more than one-fourth (26.70 %) of the beneficiary respondents had reported 41-50 per cent yield increase, followed by 61- 70 per cent (20.00 %), 71- 80 per cent (13.30 %), 31- 40 per cent and 81- 90 per cent (10.00 %), and the rest (6.70 %) had reported 11- 20 per cent , 21- 30 per cent and 51- 60 per cent of yield increase.

The co-efficient of Variation was found to be 35.08 per cent, inferring that the internal variation was less among the beneficiary respondents with respect to yield variation.

Income variation :

Table 2 shows that majority (54.40 %) of the respondents had expressed low level of income variation, followed by medium (28.90 %) and the rest (16.70 %) had expressed high level of income variation.

Table 2 : Distribution of respondents according to income variation (n = 90)

Income variation categories	Beneficiaries	
	No.	Per cent
Low (1-33 %)	49	54.40
Medium (34- 66 %)	26	28.90
High (67- 100 %)	15	16.70
Total	90	100.00
C.V %	47.90	

The co-efficient of variation was found to be 47.90 per cent, inferring that the internal variation was less among the beneficiary respondents with respect to income variation.

Table 3 : Distribution of respondents according to social impact (n = 90)

Social impact categories	Beneficiaries	
	No.	Per cent
Low (6- 7 scores)	3	3.30
Medium (8- 9 scores)	66	73.40
High (10-12 scores)	21	23.30
Total	90	100.00
C.V %	0.89	

Social impact :

Table 3 indicates that nearly three-fourths (73.40 %) of the beneficiary respondents had medium level of social impact, followed by 23.30 per cent with high level of social impact, and the rest (3.30 %) had low level of social impact.

The co-efficient of variation was found to be 0.89

Table 4 : Correlation of independent variables with economic impact and social impact **(n = 90)**

Sr. No.	Independent variables	Beneficiary respondents r value		
		Yield variation	Income variation	Social impact
1.	Age	-0.009^{NS}	-0.009^{NS}	-0.127^{NS}
2.	Educational status	-0.012^{NS}	-0.012^{NS}	-0.009^{NS}
3.	Occupational status	0.157^{NS}	0.157^{NS}	0.168^{NS}
4.	Farm size	0.223*	0.223*	-0.129^{NS}
5.	Farming experience	-0.022^{NS}	-0.022^{NS}	-0.052^{NS}
6.	Annual income	0.119^{NS}	0.119^{NS}	0.016^{NS}
7.	Social participation	0.109^{NS}	0.109^{NS}	0.188^{NS}
8.	Contact with extension and other agencies	0.323**	0.323**	0.450**
9.	Exposure to agricultural messages	0.248*	0.248*	0.238*
10.	Innovativeness	0.401*	0.401*	0.628*
11.	Risk orientation	0.303**	0.303**	-0.448**
12.	Scientific orientation	0.210*	0.210*	-0.258*

* and ** indicate significance of values at P=0.05 and 0.01, respectively level of probability NS = Non-significant

per cent, which indicates that there existed a very high level of internal consistency among the beneficiary respondents with respect to social impact.

Correlation of independent variables with economic impact and social impact :

Correlation analysis was carried out between the Independent Variables with Economic Impact (Yield Variation and Income Variation) and Social impact. The results are presented as follows:

Table 4 shows the correlation between 12 profile characteristics of beneficiary respondents and non-beneficiary respondents with yield variation, income variation and social impact. Out of the 12 profile characteristics of beneficiary respondents, five characteristics *viz.*, contact with extension and other agencies, exposure to agricultural messages, innovativeness, risk orientation and scientific orientation had significant relationship with yield variation, income variation and social impact. The remaining characteristics were found to have a non-significant association.

Conclusion :

The findings on yield and income variation, wherein it was observed that beneficiaries have experienced significant gains in yield and income levels. In general, the main reason for any farmer who participates in any of the extension programmes is whether his participation will lead to increase in farm income levels or not. On this account, since e-Velanmai model of extension has resulted in income gain, it not only indicates the far reaching consequences of this project, but also makes us realize the importance of this ICT model capable of creating a greater impact in Tamil Nadu agriculture in the years to come. As far as social impact is concerned, nearly three-fourths (73.40 %) of the beneficiary respondents had reported medium level of social impact, which is understandable Social recognition is a product of specific achievements made by individuals in a particular area of interest. In this case, it is the success achieved by the beneficiary respondents due to their membership in e-Velanmai model of extension. Though, the success level, in terms of extent of adoption, increase in yield, income, and net gain, are significant but still the e-Velanmai members did not enjoy much social recognition. This is because social recognition has to come from the same community to which the beneficiaries belong to. When awareness of the community (non-beneficiaries) about the e-Velanmai model of extension is very less, then the question of recognizing the farmers who have been benefited though e-Velanmai does not arise. It otherwise underlines the need for creating more awareness on the e-Velanmai project by the State Department of Agriculture, so that members will be recognized more for the impact that the e-Velanmai has created in the life of the beneficiaries. This would also help to perpetuate the success stories caused by e-Velanmai among the community.

Authors' affiliations :

RAVI KUMAR THEODORE, Department of Agricultural Extension, Kumaraguru Institute of Agriculture, ERODE (T.N.) INDIA
Email : rk.theodore@gmail.com

C. KARTHIKEYAN, Department of Agricultural Extension, Tamil Nadu Agricultural University, COIMBATORE (T.N.) INDIA
Email : karthikeyanextn@yahoo.com

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