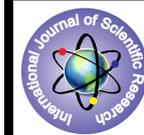


Study on The Economic Motivation Level of Farmers in The Adoption of Precision Farming Technology



Social Sciences

KEYWORDS : Precision farming, Economic motivation, Tamil Nadu Precision Farming Project (TNPFP).

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ABSTRACT

Precision farming as an emerging technology with substantial promise to aid both farmers and society Economic motivation level of farmers is an important criterion to adopt a technology in their farming activity.

Tamil Nadu Precision Farming Project (TNPFP) is a Tamil Nadu state sponsored turnkey project implemented by Tamil Nadu Agricultural University at Dharmapuri and Krishnagiri districts of Tamil Nadu state, India. Krishnagiri district was purposively selected considering the criteria of maximum beneficiaries and area covered under precision farming project. A Sample of 110 precision farming beneficiaries were taken for the study. A well structured interview schedule was used for data collection and collected data were analyzed by using appropriate statistical tools. The salient findings are more than half (58.18 %) of the respondents had higher level of economic motivation in the adoption of precision farming technologies.

INTRODUCTION

Precision farming is a modern agriculture which envisages judicious crop management through application of farm inputs only in required quantities. It is that form of agriculture where site-specific management practices are adopted giving due considerations to the spatial variability of land in order to maximize crop production and minimize environmental damage (Harshal et al., 2006). In conventional agriculture, spatial variability over the landscape is ignored and fertilizers, herbicides, insecticides, fungicides are applied at a uniform rate throughout the crop field. Precision farming emphasizes on the infield variability which is first recognized, located, quantified and recorded, then managed by applying farm inputs in applying farm inputs in specific amounts at specific time and at specific locations. The advantages of precision farming is it offers opportunities to improve agriculture productivity and product quality, reduces agro-chemical wastage through efficient application. It can address both economic and environmental issues that surround production agriculture today. It is clear that many farmers are at a sufficient level of management that they can benefit for precision management (Sanjay Arora 2005).

Tamil Nadu Precision Farming Project (TNPFP) is a Tamil Nadu State sponsored turnkey project implemented by Tamil Nadu Agricultural University (TNAU) with the co-operation of the state departments of Horticulture, Agricultural Engineering, Agriculture, Agricultural Marketing and Agri-Business and the District Administration. The project area lies in the districts of Dharmapuri and Krishnagiri of Tamil Nadu state, India. TNPFP covered 400 ha to train the farmers in precision farming technology. High value crops like Tomato, Brinjal, Sugarcane, Banana, Gherkins, hybrid Capsicum, Paprika, Baby Corn, and White Onion, Bhendi, Cabbage and Cauliflower were proposed to be cultivated under the scheme. Economic motivation analysis is becoming one of the important components of extension research. It referred to the motivation in terms of profit maximization and the relative value placed by a farmer on economic ends. Economic motivation analysis is one of the important components to diffuse the technologies among the farming community. Hence an attempt was made to study the economic motivation level of farmers in the adoption of precision farming technology.

RESEARCH METHODOLOGY

Research methodology is a way to systematically solve the research problems. It may be understood as a science of studying how research is done systematically. It explains various steps done that are adopted by a researcher in studying his research problem, along with logic behind them. It is necessary for the researcher to know not only the research methods and techniques but also the methodology (Kothari 1985).

Sample size and sampling procedure

The respondents were randomly selected based on farmers under Tamil Nadu Precision Farming project (TNPFP). A list of precision farming farmers of the Krishnagiri district was obtained from the Directorate of Extension Education, Tamil Nadu Agricultural University, Coimbatore, Tamil Nadu . A sample size of 110 precision farming farmers was fixed for conducting this study. The sample was proportionately allotted in each of all the selected taluks of Krishnagiri district. The required number of

respondents was selected by using the following formula.

$$n_i = \frac{N_i}{N} \times n$$

n_i - number of respondents to be selected from each taluk

N_i - number of respondents in the i th taluks

N - Total number of respondents in all the 3 taluks

n - Total number of respondents to be selected from all the 3 taluks

The final sample from each selected taluk was obtained by using random sampling technique. The taluk wise distribution and selection of respondents has been depicted below in table 1.

Table 1. Details of farmers selected

S.No.	Name of the selected TNPFP taluk	Total number of precision farming farmers	Precision farming farmers selected
1.	Krishnagiri	50	32
2.	Dekanikottai	100	65
3.	Hosur	20	13
	Total	170	110

Method of data collection

The data collection was done with the use of a well structured and pre tested interview schedule for farmers covering the objective of the study. When the investigator contacts the respondents and collects information by questioning them, it is known as interview method. Pre- testing was done to probe into the relevancy of the schedule to suit the area under the study. Based on the results of pre-testing, suitable modifications were made

and a final interview schedule was prepared. The respondents were personally contacted for collection of data. The data so collected were subjected to statistical analysis and interpretation was made for drawing meaningful conclusions.

Selection of statements

From the literature collected related to economic motivation six statements were selected upon which the fifth one was negative. Thus a list of possible statements was prepared and included in the interview schedule (Table. 2). The respondents were asked to give their agreement or disagreement or undecidedness about each of the statements by putting a \sqrt mark in the appropriate column from strongly agree to strongly disagree. It was measured with the help of scale developed by Supe (1969).

Table 2. Selected statements to assess the economic motivation level of farmers

S.No	Statements	SA	A	UD	DA	SDA
1	A farmer should work towards larger yields and economic profit					
2	The most successful farmer is one makes the most profit					
3	A farmer should try any new ideas which may earn him more money					
4	A farmer should try grow each crop to increase monetary profits in comparison to growing of food crops for house consumption					
5	A farmer must his living but the most important thing in life cannot be defined in economic terms					
6	It is difficult for farmers children for make good starts unless he provides them economic assistance					

SA – Strongly agree, A – Agree, UD – Undecided, DA – Disagree, SDA – Strongly disagree

The scale was administered in a five point continuum as strongly agree, agree, undecided, disagree and strongly disagree with scores of 5,4,3,2 and1 for positive statements and vice-versa for the negative statements. The pooling of the response scores measured at the five point continuum for both positive and negative statements constituted the total score obtained by a respondent for economic motivation. The maximum score an individual would obtain on the scale was 30 and minimum was 6. Based on the total economic motivation score, the respondents were classified into three categories using mean and standard deviation. Mean plus one standard deviation indicated high level and mean minus one standard deviation referred to low level. The range in between the + standard deviation indicated the medium level. Percentage analysis was used for making simple comparisons. For calculating percentages, the frequency of the particular cell was multiplied by 100 and divided by the total number of respondents. Percentage was corrected to two decimal place.

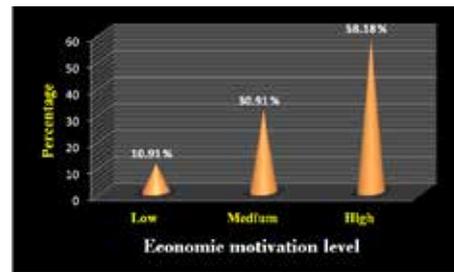
RESULTS

Economic motivation is one of the inducers to foot into venture-some risky activities. Every farmer normally tends to possess the basic urge to earn more. In order to understand the level of economic motivation, pertinent data were collected and the details are presented below.

Table 3. Level of respondents according to their economic motivation

S.No.	Category	Number	Percentage
1	Low	12	10.91
2	Medium	34	30.91
3	High	64	58.18
	Total	110	100.00

Chart 1. Level of respondents according to their economic motivation



The table.3 and chart.1 shows that more than half (58.18 %) of the respondents had higher level of economic motivation followed by 30.91 per cent of medium and 10.91 per cent low level of economic motivation under precision farming. This medium to higher levels of economic motivation shows that the respondents had basic urge to earn more and naturally that would have induced the farmers to adopt precision farming technologies. This desire to compete with each other in improving their standard of living to clear old debts and to fulfill family commitments resulted in medium to higher economic motivation.

Economic motivation was found to have a positive and significant relationship with the knowledge level. Generally the precision farmers who had higher level of extension agency contact were motivated by the extension personnels towards getting higher yield and profit. The higher level of economic motivation made them to gather more information and gain knowledge about critical technologies of precision farming.

CONCLUSION

Precision farming gives farmers the ability to use crop inputs more precisely including irrigation water, fertilizers, pesticides and tillage. Effective use of inputs lights path to get greater crop yield with high quality. Economic motivation is one of the factors that stimulate desire in people to adopt a technology. From this study it is concluded that more than half of the respondents had high level of economic motivation. Adoption level of precision farming technology is medium to high in the research area. This shows that practicing of precision farming technology brings higher profit to the farmers. Hence the farmers who are following the precision farming technologies have high level of economic motivation.

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