

Evaluation of profile characteristics of SRI cultivation farmers in relation to their extent of adoption of technologies

G. Ashok Kumar, V. Sailaja, P. V. Satyagopal and S. V. Prasad*

Department of Agricultural Extension, S.V. Agricultural College, Acharya N.G. Ranga Agricultural University, Tirupati-517502, Andhra Pradesh, India

*E-mail:sailajavenna9@gmail.com

ABSTRACT

Rice is an important staple food crop for the Asian region and India is center of origin with a wide variability. In Tamil Nadu, rice alone consumes 63% of the total irrigated area, which necessitates the need for developing the alternative methods of its cultivation to reduce the stress on this dwindling natural resource. SRI (System of Rice Intensification) is a suitable alternative method of cultivating rice which not only reduces water usage and external inputs like fertilizers but also has a better yield potential. In spite of many concerted efforts since 2000, by Dr. Thiagarajan of Tamil Nadu Agricultural University, Department of Agriculture, and NGOs, the spread of SRI with in Tamil Nadu was relatively slow. Recently it was accelerated by the state government in order to attain the goals of National Food Security Mission and Sustainable Agriculture and the pace has been altered now. Hence, a study was taken up to find out the profile characteristics of SRI farmers and the relationship of these characteristics with their knowledge level on SRI technology in Nagapattinam district of Tamil Nadu. The result of the study revealed that, Education, Training undergone, Social participation, Extension contact, Economic motivation, Scientific orientation, Management orientation, Achievement motivation, Innovativeness, Mass media exposure and Risk orientation were found to be positively significant at 0.01 level of probability with their Extent of Adoption of SRI technology. Age and Farming experience showed significant negative relationship whereas Land holding had non-significant relationship with their extent of adoption of SRI technology.

KEY WORDS: Adoption, rice, SRI technology, Tamil Nadu

INTRODUCTION

In India, out of the total 604 districts, rice is grown in 560 districts, indicating its importance as a food crop. Tamil Nadu is considered as one of the leading rice producing and consuming states of India. It occupies 7% of the nation's population, 4% of the land area and 3% of the water resources at all India level. The annual average rain fall at all India level is 1200 mm whereas the rainfall in Tamil Nadu is 930 mm. In this situation, the land and other natural resources are fully utilized in this State. The average land holding was 1.25

hectares during 1976-77 and it is 0.83 hectares as per 2005-06 censuses which is lower than the all India average of 1.33Ha. Thus, 91% farmers in Tamil Nadu are small and marginal farmers. Of the total geographical area of 130 lakh hectares, around 51 lakh hectares are the net cultivated area. About 28.63 lakh hectares constituted the net irrigated area and the balance area of 22.37 lakh hectares is rainfed. So it was felt necessary to adopt a low water consuming rice production technology to attain the targets of National Food Security Mission. Thus System of Rice

Intensification was introduced by the State Government.

SRI is a method of increasing the yield of rice. It is also possible to apply the same method to other crops and vegetables for getting higher yield. So it is important to study the knowledge level of SRI farmers. This study reveals the gap in the knowledge level of the farmers. It is possible to evolve strategies to bridge the knowledge gap among the farmers. It has a wider scope and the study will give location specific solutions to the problems pertained in the study area. This would help the extension personnel to concentrate on promoting this technology. And this could be helpful for the policy making and strategy alteration.

MATERIALS AND METHODS

The study was conducted in Nagapattinam district of Tamil Nadu. Nagapattinam district was purposively selected for the study because it is one of the leading rice producing districts of Tamil Nadu as it lies in the Cauvery Delta zone and also it ranked first in SRI paddy Coverage for the period of 2011-12 in the Tamil Nadu. Out of eleven blocks from the Nagapattinam district four blocks were purposively selected to represent the north and southern parts of the districts according to the highest area under SRI.

Three villages from each selected block were purposively selected according to the highest area under SRI. From each village 10 farmers were selected by following simple random sampling procedure, thus making a total of 120 respondents. Extent of adoption of SRI technology by the respondents was studied by a well-structured and pre-tested schedule developed for the study.

RESULTS AND DISCUSSION

Economic Motivation vs. Adoption

It was evident that coefficient of correlation value ($r= 0.5613$) between Economic motivation and Extent of Adoption of SRI technology by the respondents was significantly positively related (Table 1). Hence the null hypothesis was rejected and the empirical hypothesis was accepted, and it was concluded that there was positive and significant relationship between Economic motivation and Extent of Adoption of SRI technology by the respondents.

It might be due to the reason that every farmer involved in the farming activity will expect higher yield and returns. Every person engaged in farming aims to attain maximum monetary profit. Hence, this might be the possible reason for the existence of positive relationship between the two variables. This finding is in agreement with results of Kumar (2004), Gopinath (2005) and Thiagarajan (2011).

Scientific Orientation vs. Adoption

From Table 1, it was evident that coefficient of correlation value ($r= 0.6149$) between Scientific orientation and Extent of Adoption of SRI technology by the respondents was positively and significantly related. Hence the null hypothesis was rejected and the empirical hypothesis was accepted, and it was concluded that there was positive and significant relationship between the above said variables.

Farmers having more scientific orientation will always search for new and advanced production technologies and have keen observation power to find out the cause effect relationship in any constraint situation. Person who believes in science

always looks for innovation. Most of the innovations will be adopted by the persons with more scientific orientation who prefer new technology. So a portion of respondents adopted SRI technology. Thus scientific orientation had positive relationship with the extent of adoption of SRI technology. This finding is in agreement with result of Kumar (2004), Gopinath (2005) and Thiyagarajan (2011).

Management Orientation vs. Adoption

The results showed significant positive correlation ($r= 0.3367$) between Management orientation and Extent of Adoption of SRI technology by the respondents (Table 1). Hence, the null hypothesis was rejected and the empirical hypothesis was accepted, and it was concluded that there was positive and significant relationship between Management orientation and Extent of Adoption of SRI technology by the respondents.

Management orientation is the ability of the farmer in scientific farm management in planning, production and marketing. As the farming is always disturbed and determined by the vagaries of the nature, much careful planning and management is necessary for the better yields. So this might be the reason for the positive and significant relationship between two variables.

Innovativeness vs. Adoption

From Table 1, it was evident that coefficient of correlation value ($r= 0.6074$) between Innovativeness and Extent of Adoption of SRI technology by the respondents was positively and significantly related. Hence the null hypothesis was rejected and the empirical hypothesis was accepted, and it was concluded that there

was positive and significant relationship between two variables.

Innovativeness is associated with the individuals' earliness in the use of new practices. Innovative farmers will always be experimenters. During any constraint situation farmers with high levels of innovativeness will experiment the new ways of doing things to change the existing situation. Generally person with more Innovativeness would be looking for new ideas. Thus innovativeness was found positively related with adoption of SRI technology. This finding is in agreement with results of and Kumar (2004), Gopinath (2005) and Thiyagarajan (2011).

Achievement Motivation vs. Adoption

Significant positive correlation ($r= 0.3056$) was observed between Achievement motivation and Extent of Adoption of SRI technology by the respondents. Hence the empirical hypothesis was accepted and the null hypothesis was rejected, and it was concluded that there was a positive and significant relationship between two variables.

It was found that there was a positive relationship between Achievement motivation and Extent of Adoption. Individuals with medium levels of achievement motivation put efforts to reach their goal of obtaining more yields. In this process he recognizes the importance of latest technical knowledge which paves way to the adoption of new technology. Therefore the individuals with medium levels of achievement motivation mostly adopt new ideas or skills better than others. This might be the probable reason for the positive and significant between the two variables. This finding is in relationship with

the findings of Gopinath (2005) and Thiyagarajan (2011).

Mass media Exposure vs. Adoption

The results showed that significant positive correlation ($r= 0.5790$) existed between Mass media exposure and Extent of Adoption of SRI technology by the respondents. Hence, the null hypothesis was rejected and the empirical hypothesis was accepted, and it was concluded that there was positive and significant relationship between Mass media Exposure and Extent of Adoption of SRI technology by the respondents.

Most of the households of the respondents possessed Television. Free television distribution by the state government could be the possible reason for this. Availability of the newspapers at even Rs.2 increased the readership count. The state department of agriculture issued advertisement through all this means of mass media. Respondents came to know about this technology through reading newspapers and watching television. This might be the possible reason. This finding is in agreement with result of Kumar (2004), Gopinath (2005) and Thiyagarajan (2011).

Risk Orientation vs. Adoption

From Table 1, it was evident that coefficient of correlation value ($r= 0.2102$) between Risk orientation and Extent of Adoption of SRI technology by the respondents was positively and significantly related. Hence the null hypothesis was rejected and the empirical hypothesis was accepted, and it was concluded that there was positive and significant relationship between Risk orientation and Extent of

Adoption of SRI technology by the respondents.

Risk taking is the ability to take the right decision during uncertainties; these uncertainties are nothing but the constraints. The farmer who is willing to take calculated risks during constraint situation will gain better results. It was observed that many farmers were taking risks due to peer pressure or demanding situation. There is a generalization that "Early adopters are better able to cope with uncertainty and risk than are later adopters"-Rogers E.M. Here the respondents selected for the study were innovators, early adopters and early majority. Accordingly the Risk orientation was positively related with the adoption. This finding is in agreement with results of Kumar (2004), Gopinath (2005) and Thiyagarajan (2011).

CONCLUSION

The results showed that, Education, Training undergone, Social participation, Extension contact, Economic motivation, Scientific orientation, Management orientation, Achievement motivation, Innovativeness, Mass media exposure and Risk orientation were found to be positively significant at 0.01 level of probability with their Extent of Adoption of SRI technology. Age and Farming experience were found negatively and significantly related whereas; Land holding had non-significant relationship with their Extent of adoption of SRI technology. Hence, there is an immediate need to promote SRI method of cultivation, focusing more on imparting the principles of SRI during the training programmes and demonstrations, skill development among rural youth and farmers.

Table 1: Association of independent variables of SRI Farmers with their extent of adoption

Variable No.	Variables	Correlation co-efficient 'r' value
X ₁	Age	-0.5077**
X ₂	Education	0.6343**
X ₃	Farming Experience	-0.5224**
X ₄	Land Holding	0.1542 ^{NS}
X ₅	Training Undergone	0.5464**
X ₆	Social Participation	0.3831**
X ₇	Extension Contact	0.3331**
X ₈	Economic Motivation	0.5613**
X ₉	Scientific Orientation	0.6149**
X ₁₀	Management Orientation	0.3367**
X ₁₁	Innovativeness	0.6074**
X ₁₂	Achievement Motivation	0.3056**
X ₁₃	Mass Media Exposure	0.5790**
X ₁₄	Risk Orientation	0.2102*

** - significant at 1% level; * - significant at 5% level, NS - Non- Significant

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