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Research Article

INFLUENCE OF SOCIO-ECONOMIC CHARACTERISTICS ON AWARENESS OF CLIMATE RESILIENT TECHNOLOGIES AND THEIR ADOPTION

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ABSTRACT

Since building resilience among the farming community has become the most critical endeavor to adapt with climate change impacts in agriculture, it is high time to popularize and advocate the farmers to adopt climate resilient technologies to the extent possible. For this, their current knowledge on climate change and its impacts has to be assessed. Moreover, their current cognizance on the climate resilient practices and those which they are currently in practice has to be studied to make this endeavor easier. Since this awareness and adoption are found to be greatly influenced by the socio-economic characteristics of the farmer, an analysis was done to draw out the profile of the farmers for the study and to find out whether these characteristics significantly influenced the level of awareness and adoption shown by them. Spearman rank correlation was done to find out the significant socio-economic factors that influence the awareness on climate resilient practices and its adoption among the respondents. It was found that farm size, annual income, extent of farming integration, innovativeness, exposure to training, extension agency contact, access to climatological information and institutional support availed were having a positive and significant correlation with the awareness on climate change and adoption of climate resilient practices. Whereas, awareness on climate resilient practices and its adoption is having a positive correlation with educational status of the farmer (0.278 and 0.717 respectively at 0.01 level of significance) apart from the before mentioned factors.

INTRODUCTION

India is more vulnerable in view of the high population depending on agriculture, excessive pressure on natural resources and poor coping mechanisms. A significant negative impacts have been implied with medium-term (2010-2039) climate change, predicted to reduce yield by 4.5 to 9 per cent, which is roughly up to 1.5 per cent of GDP per year (Venkateswarlu *et al*, 2013). Rainfed agriculture which constitutes nearly 58 per cent of net cultivated area will be the most impacted. Therefore, it is of utmost importance to enhance resilience of agriculture to climate change through planned adaptation. A pragmatic roadmap to climate resilient agriculture requires integrated emphasis on adoption of climate resilient technologies, participation of farmers, partnership and support of political and service organizations. The impact of climate change on agriculture could result in problems with food security and may threaten the livelihood activities upon which much of the population depends. Value orientation and perception of practitioners towards climate resilient sustainable agriculture are of also of paramount importance. This study focused on understanding the influence of socio-economic characteristics on awareness on climate change and awareness on climate resilient technologies and their adoption. The significant factors affecting awareness and adoption in this respect were identified.

MATERIALS AND METHODS

Based on the frequency and severity of climate change phenomena like excessive rain and/or drought, Palakkad and Wayanad were selected for the study. The study followed *ex post facto* design and data were obtained through pre- tested structured interview schedule and focused group discussions. The sample of respondents were drawn randomly from ten GramaPanchayaths which were selected based on the proportion of GramaPanchayaths in the two districts (i.e.; seven out of the 95 GramaPanchayaths in Palakkad and three out of the 27 GramaPanchayaths in Wayanad). From each GramaPanchayath, 10 prominent farmers were randomly selected to make a sample of 100 farmers. The independent socio-economic variables that could influence the farmer's awareness on climate resilient practices and their adoption were identified; age, gender, educational status, farming experience, farm size, annual income, extent of farming integration,

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innovativeness, exposure to training, extension agency contact, social participation, access to climatological information and institutional support availed. Simple frequencies and percentages were worked out to find the distribution of respondents according to socio-economic variables. Spearman rank correlation was done to find out the significant socio-economic factors that influence the awareness on climate resilient practices and its adoption among the respondents.

RESULTS AND DISCUSSION

Among the selected variables, farm size, annual income, innovativeness, extent of farming integration, exposure to training, contact with extension agency, access to climatological information and institutional support were found to have positive and significant relation with awareness on climate change and its impacts on agriculture. It may be due to the fact that farmer who possessed large landholding observed visible impacts of changing climatic conditions. Level of education and access to extension services had significant association with awareness on climate change which was also observed by Kamruzzaman (2015) and Raghuvanshi *et al*. (2017).

Among the selected variables, education, farm size, annual income, innovativeness, extent of farming integration, access to climatological information and institutional support were found to have significant relation with awareness on climate change and its impacts on agriculture. The results were in consistent with the findings of Latha *et al*. (2012); Shashidahra and Reddy (2012) and Legesse *et al.* (2013) who also observed a positive and significant correlation between awareness on climate change and socio-economic characteristics like farm size, income, innovativeness and institutional support.

Among the selected variables, education, farm size, annual income, innovativeness, extent of farming integration, exposure to training, contact with extension agency, access to climatological information and institutional support were found to have significant relation with awareness on climate change and its impacts on agriculture. The results indicated that experienced farmers had a higher probability of perceiving climate change as they had been exposed to past and present climatic conditions.

Factors affecting awareness and adoption of resilient practices and awareness on climate change

Socio-economic characters	Awareness on climate change	Awareness on climate resilient practices	Adoption of climate resilient practices
Age	-0.083	-0.128	-0.134
Gender	-0.083	-0.057	-0.183
Education	0.183	0.278**	0.717**
Farming experience	0.103	0.013	0.114
Farm size	0.472**	0.385**	0.773**
Annual income	0.424**	0.352**	0.748**
Innovativeness	0.468**	0.368**	0.761**
Extent of farming integration	0.667**	0.387**	0.692**
Exposure to training	0.288**	0.132	0.304*
Extension agency contact	0.371**	0.187	0.262**
Access to climatological information	0.278**	0.213**	0.507**
Institutional support	0.361**	0.327**	0.458**
Social participation	-0.22	0.007	-0.119

** Sig. at 0.01 level

The results also suggested that greater the years of involvement with farming practices, more the adoption of climate resilient technologies which was also concluded by many authors (Maddison, 2006; Ishaya and Abaje, 2008; Deressa*et al.*, 2009 and Jasna, 2015).

CONCLUSION

Though the farming community and the extension systems in Kerala are becoming increasingly aware of the impact of climate change, adoption of climate resilient practices are not very encouraging. The findings of the study will provide feedback to the institutions engaged in dissemination of climate resilient technologies for further redesigning the interventions, in order to improve its output and outcome. Thus, climate resilience can be made possible by enhancing the standard of life of the stakeholders, which can be possible through community action and concentrating on the significant socio-economic factors which are having direct and positive correlation with the farmers level of awareness on climate change and its impacts and also with their extent of awareness on climate resilient practices and its adoption. Since farm size, annual income, extent of farming integration, innovativeness, exposure to training, extension agency contact, access to climatological information and institutional support availed were having a positive and significant correlation with the awareness on climate change and adoption of climate resilient practices, institutional focus should be made more concentrated on enhancing the annual income of the farmers from the limited farm size with the idea of farm diversification. Institutional support should be strengthened by means of capacity building training programmes and by introduction of regional specific innovations to fight climate change challenges. Whereas, awareness on climate resilient practices and its adoption is having a positive correlation with educational status of the farmer (0.278 and 0.717 respectively at 0.01 level of significance) apart from the before mentioned factors.

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