

FACTORS INFLUENCING SMALLHOLDER VEGETABLE FARMERS' ADAPTATION TO CLIMATE CHANGE: A CASE STUDY IN NORTH CENTRAL PROVINCE, SRI LANKA

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The smallholder vegetable farmers are highly dependent on rainfall and temperature for their agricultural needs hence are vulnerable to climate change. Vegetable production of the country dropped by 9.1% in 2017 due to adverse weather conditions. Adaptation is the key strategy to mitigate adverse effects of climate change on agriculture. Therefore, this study was designed to explore the factors affecting smallholder vegetable farmers' adaptation to climate change in Anuradhapura district. A pre-tested structured questionnaire was used to collect data from 150 respondents selected using multi-stage random sampling technique from three divisional secretariats. An index for climate change adoption was developed using Weighted Principle Component (WPC) method by categorizing similar adaptation strategies. Multiple Linear Regression model was used to identify the factors affecting different adaptation strategies. According WPC, six climate adaptation strategies were identified namely crop diversification, soil and water conservation, changing crop calendar, flood prevention, irrigation practices and off farm activities. Results of the regression analysis revealed age ($p < 0.05$), land ownership ($p < 0.1$) and use of extension service ($p < 0.1$) significantly increase the use of crop diversification strategies while only age ($p < 0.1$) significantly increase the use of flood prevention strategies. Use of soil and water conservation strategies are significantly increased by gender and age ($p < 0.05$) while engaging in off farm activities is positively influenced by household size and type of employment ($p < 0.1$). Gender ($p < 0.1$) and household income ($p < 0.05$) significantly affect the increased use of irrigation strategies. This study recommends that programs on climate adaptation strategies should consider the heterogeneity of the population and develop tailored programs meeting the diverse needs of different population segments. Moreover, future government policies need to focus on strengthening smallholder farmers' adaptive capacity through providing access to climate related information.

Keywords: Adaptation strategies, Climate change, Limitations, Smallholder vegetable farmers