



Article

Fatalism, Climate Resiliency Training and Farmers' Adaptation Responses: Implications for Sustainable Rainfed-Wheat Production in Pakistan

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Abstract: Climate change is a severe threat to the agricultural sector in general and to rainfed farming in particular. The aim of this study was to investigate the factors that can potentially affect the adaptation process against climate change. This study focused on wheat farmers and farming systems in the rainfed agroecological zone of Pakistan. Farmers' data that related to climate change *fatalism*, the availability of climate-specific extension services, socioeconomic and institutional variables, and farm characteristics were collected. A logit model to assess farmers' decisions to adopt an adaptation measure and a multinomial logit model to assess their choice of various adaptation measures were used. The results showed that fatalistic farmers were unlikely to implement climate change adaptation measures. The variables related to the climate-specific extension services, including farmers' participation in training on climate-resilient crop farming and the availability of mobile communication-based advisory services, had highly significant and positive impacts on farmers' decisions and their choice of adaptation measures. Input market access and tractor ownership also had positive and significant impacts on farmers' decisions to adapt and their choice of adaptation measures. This study highlights the need to improve rainfed-wheat farmers' education levels to change their fatalistic attitudes towards climate change. Furthermore, government action is needed to provide climate-specific extension services to ensure sustainable production levels that will ultimately lead to food and livelihood security under a changing climate.

Keywords: *fatalism*; climate-specific extension services; climate-resilient farming; rainfed farming; adaptation