An empirical assessment of socio-economic characteristics and adoption constraints of climate change adaptation strategies in cotton farming: Evidence from Palnadu district Andhra Pradesh

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ABSTRACT

Climate change poses significant challenges to cotton production, particularly in rainfed regions where farmers are increasingly exposed to delayed monsoons, prolonged dry spells, declining soil moisture, pest and disease incidence and production uncertainty. The present study was undertaken to examine the socio-economic characteristics of cotton farmers and identify the major constraints influencing the adoption of climate change adaptation strategies in Palnadu district of Andhra Pradesh. The study was conducted among 180 cotton farmers, comprising 60 adopters and 120 non-adopters, selected from the study area. Primary data were collected from the sample farmers through a structured schedule. The socio-economic characteristics of the farmers were analysed using descriptive statistics, while Garrett's ranking technique was employed to identify and prioritize the major constraints affecting the adoption of climate change adaptation strategies. The findings revealed that adopter farmers were relatively more educated, had larger average operational landholdings, greater access to market information, higher participation in crop rotation, greater access to non-farm income and a higher proportion of land ownership than non-adopters. The constraint analysis revealed that lack of adequate credit facilities was the most important constraint, followed by lack of training on climate change adaptation strategies and high cost of inputs. Other major constraints included inadequate access to weather forecast information, non-availability of quality seeds, lack of market information and price volatility, scarcity of labour and inadequate irrigation facilities. The study recommends strengthening institutional credit, farmer training and extension services, access to climate-resilient inputs, weather information, quality seeds, market information, mechanization and irrigation facilities to enhance farmers' adaptive capacity and promote sustainable cotton production under changing climatic conditions.

Key Words: *Adaptation strategies, Adoption constraints, Climate change, Cotton farmers, Garrett's ranking technique, Palnadu district Andhra Pradesh and Socio-economic characteristics*