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SUGARCANE SUPPLY RESPONSE UNDER THE NEXUS OF CLIMATE CHANGE, DROUGHT AND AGRICULTURAL PRODUCTION TECHNOLOGY IN TRANSITIONAL ECONOMY

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Climate change is the interconnected phenomena which adversely affects the agriculture resource base across the globe. The trade-off due to climatic anomalies is even more robust and noticeable in transitional economies in which the contribution of agriculture sector is enormous. These abrupt changes may result into drought; the critical climatic factors that adversely affect the crop yield according to the diverge nature of the crop. Moreover, droughts are major environmental hurdle to higher crop productivity in production areas that link with temperature, precipitation and geographic characteristics of the areas as well. Many researchers have tried to estimate the impact with various methodologies and functional form of the variables without being considering the differentiation between climate change and climate variability. The exiting literature shows that the effect of climate change estimated predominantly on food crops since decades despite of identification of methodological problem(s) present in literatures. Therefore, serious attempts needed to estimate the impacts of climate change on other crop(s) with superior estimation technique and concrete method of variables construction based on strong theoretical background. The proposed study will estimate the impact of climate change on sugarcane supply response [yield and acreage response] in presence of methodologically superior estimated Palfai Drought Index, long-term climatic shocks, farm inputs and agricultural production technology at geographically disaggregated level. The results showed that sugarcane yield is more sensitive to precipitation than temperature at different phenological stages including germination, tillering and grand growth stages. The calculated values of drought index confirmed that severe drought situation in several part of the sugarcane producing areas ranging from normal to severe condition, which has significant negative impacts on crop supply response(s). This implies that persistent investment on drought resistant sugarcane varieties and adaptation strategies to deal with climate change would be crucial to sustain crop production.

Biography

Zeeshan Mustafa is the PhD Scholar in Doctoral School of Economics, University of Szeged. He has more than five years of practical experience with various international organizations including International Water Management Institute (IWMI) and International Livestock Research Institute (ILRI). He has also worked for Pakistan Institute of Development Economics (PIDE) in International Centre for Research and Development funded project. His main area of expertise/interests is agriculture and climate nexus, value chain analysis and livestock economics.

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