



Research Paper

Factors influencing productivity of major crops in various districts of Gujarat: A socio-economic analysis in the context of climate change

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ABSTRACT : Climate change is likely to intensify the variability of summer monsoon dynamics and its impact on the productivity of crops is inevitable. In order to study the impact of climate change on the productivity of selected crops of Gujarat, an econometric bio-model of crop production was attempted. Cobb Douglas production function was fitted as it gave the best fit according the statistical criteria of high co-efficient of multiple determination (R^2) and low standard error. Seven climatic and socio-economic variables affecting crop yields were selected. The district wise results revealed that there was no consistency in the nature of impact (positive or negative) of the selected climatic and socio-economic variables on the crop yields in different districts due to vast diversity in the agro-climatic conditions and uncertainty in the timing of rainfall *i.e.*, the stage at which the rainfall might have occurred. However, since the majority of the results were found to be significant there is a need to focus on investments in adaptation research capacity: particularly, in the development of climate proof crops (drought resistant and heat tolerant varieties) as well as redeploying the existing improved crop varieties that can cope with wide range of climatic conditions.

KEY WORDS : Cobb Douglas production function, Climate change, Adaptation, Crop productivity

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