Efficiency of Agricultural Production in India: An Analysis using Non-Parametric Approach

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ABSTRACT

The study estimates the technical efficiency (TE) in agricultural production in India and decomposes it into its constituents- pure technical efficiency (PTE) and scale efficiency (SE). The analysis is undertaken using a non-parametric approach- data envelopment analysis. The districts are considered as the decision making units (DMUs). The study also identifies major determinants that influence the TE by regressing the estimates of efficiency yielded in the first step on plausible causative variables. A total of 409 districts are included in the analysis. The district level per-hectare value of crop output is the output variable considered in the analysis. The input variables included are fertiliser application, rainfall, extent of degraded land, irrigation, availability of workers per hectare of net cropped area. The overall mean level of TE is reported as 42 per cent. The PTE is about 54 per cent and SE is about 78 per cent, pointing to presence of large level of inefficiencies. The study reveals large variation of efficiency over agro-ecologies. The highest level of TE is exhibited by the hill and mountainous region, and the lowest by the rainfed region. The rainfed and irrigated regions posts comparable level of PTE, highlighting the possibility for improving the productivity through manipulation of conditions that enable efficiency. The study identifies significant and positive effect of infrastructure, education, and capital assets in enhancing the TE. One highlight of the study is the usage of a variable depicting health of agro-ecosystem, captured using the extent of degraded land as a determinant of TE. This variable exhibited significant and negative effect calling for accelerated efforts to conserve the natural resource base.

Key words: Education, land degradation, Infrastructure, Sustainable intensification, Technical efficiency.

JEL: C14, Q15, Q16, Q18

RESEARCH NOTE

Food Consumption Pattern and Nutrient Intake in Rural and Urban Karnataka

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ABSTRACT

The present study aims to estimate the income and price elasticities of demand for different food commodities and nutrients in the rural and urban regions of Karnataka. For the purpose, the Quadratic Almost Ideal Demand System is estimated. The study has used the National Sample Survey Organisation's household consumer expenditure data on food commodities for the years 2004-05 and 2011-12. The results of the study reveal that food consumption patterns and nutrient intakes in rural and urban areas are quite different. The per capita income of households and the price of rice emerge as the major determinants of the food consumption pattern and nutrient intake in both rural and urban regions of Karnataka.