

Technical Efficiency of Growing Rice Crop in Karnataka: A Panel Data Study

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This study attempts to estimate the technical efficiency of growing rice crop in different regions of Karnataka, India from 1991-92 to 1994-95. It employs the stochastic frontier production function methodology for unbalanced panel data. The estimation results indicate that the technical efficiency varies widely across regions and is time invariant. The mean efficiency is 86 per cent, indicating a scope for raising the output of paddy, without employing additional resources. This study can prove useful to policy makers and researchers in evaluating the performance of rice crop in Karnataka. The existing gap between observed and potential output highlights the need for strengthening extension services in different regions.

I Introduction

Indian agriculture faces several challenges as well as opportunities for growth amidst the economic reforms. High population growth in the country has led to a heavy demand for agricultural products. The opening of the agricultural sector for exports has aggravated the problem and has increased the pressure on the Indian farmers to produce more. However, the growth in production is constrained by resources such as, land and water. International comparisons also indicate that agricultural productivity in India is relatively poor. Reasons for low productivity in Indian agriculture are many. One important reason is that most farmers have a low literacy rate, poor extension services, and inadequate physical infrastructures face difficulty in understanding new technologies. Therefore, they fail to fully exploit any given technology. In the light of the above facts, an increase in agricultural production can come from an increase in production efficiency. Hence, it is essential to know how well the resources are being used and what possibilities exist for improving the efficiency of raising agricultural crops.

This study attempts to measure the Technical Efficiency (TE) of raising rice crop (an important cereal crop) in Karnataka. During 1993-94, it occupied a total area of 1.374 million hectares (accounted for 22.8 per cent of total area) with an annual production of 4.772 million tonnes (accounted for 36.6 per cent of total cereal production) and a yield of 36.56 Quintals per hectare (Government of Karnataka, 1995). In the present scenario, the consumption of rice in the state is widespread and increasing at a rapid rate due to its higher income elasticity of demand. However, further growth of rice production in the state is seriously constrained by a lack of irrigated areas, since rice is a water intensive crop. Therefore, an increase in production has to come from a breakthrough in productivity and increased efficiency in production.

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