

System of Rice Intensification Vs. Conventional System: A Case of Gujarat

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Abstract

The objective of this paper is to examine farm level performance of System of Rice Intensification method of paddy cultivation as against the traditional method of paddy cultivation, howsoever small it is in scale of adoption in the state of Gujarat. Lessons from the analysis are expected to contribute to the ability of the government to support strategies which would go a long way in increasing returns to farmers.

Keywords: System of rice intensification, conventional method, technical efficiency.

1. Context

This paper is located in the wider context of the debate pertaining to the ways to approach limits of economically optimum yield of paddy with available technologies. System of Rice Intensification (SRI) is one such method first developed in Madagascar and adopted in various South East Asian Countries that addressed the issue of crop productivity and natural resource conservation along with suitable packages of agronomic and crop management practices (Uphoff, 2004).

The paper aims to explore the extent to which farmers are producing rice efficiently using SRI introduced by AKRSP in South Gujarat in 2006 and conventional method and understand factors affecting inefficiency of cultivating paddy using both these methods. This is done by drawing upon the data and findings of study undertaken by the author in South Gujarat. This paper is organised in the following manner: Section 2 briefly discusses the concept of SRI method of paddy cultivation and the result of two micro studies undertaken by the author in the year 2009. Section 3 presents summary of the major findings and policy recommendations.

2. Analysis of Micro Studies

SRI is a method for increasing the productivity of irrigated paddy cultivation by changing the management of plants, soil, water and nutrients that are at times radically different from the traditional ways of growing paddy. N. Uphoff, (2004) has shown differences in SRI methods and conventional methods.

Given the dearth of enquiries into the extent of inefficiency of crop cultivation in the region, a meta analysis as attempted here is expected to help us synthesize the existing findings to derive some broad and valid patterns.

2.1 Micro Study

The first study reports the findings of the mid-course assessment of the SRI implemented by Aga Khan Rural Support Programme-India (AKRSP-I) since 2006. The baseline study was conducted in April-May 2009 among 443 households and the mid-course assessment in August-September 2009 among 237 farm households. As SRI is in the nascent stage, these farmers were experimenting with this method by allocating small patch of land for growing SRI paddy while in the rest of the land; paddy using traditional methods is grown. An improvement in yield and low input cost on seed and fertilizer in SRI method was attributed to efforts involved in soil preparation, transplanting, weeding and so on (J Pathak, 2010). However farmers felt the need for easy availability of inputs including irrigation facilities, guidance in various activities of growing paddy in order to adopt SRI on the large scale.

2.2. Micro Study

Detailed primary survey using a questionnaire was carried out among 119 farm households adopting SRI indicated that farmers cultivating paddy under SRI gain 66% more yield compared to those who follow traditionally cultivation practices. This has its positive impact on resolving food security problems faced by this area. The OLS estimates of Cobb-Douglas function among the chosen variables explain nearly 80% and 91% respectively of the variations in paddy yield using SRI and traditional methods. Maximum Likelihood Estimates of the production frontier and a significant sigma square shows the difference between observed and frontier output is primarily due to factors which are under the control of the farms. Sources of inefficiency show that training of farmers is imperative in reducing technical inefficiency of cultivating not also paddy using SRI methods but also traditional methods as well. This calls for an improvement in extension services. Besides higher allocation of funds for research and development is needed so that crop diversification could be facilitated.

3. Recommendations

Against the backdrop of increasing demand for food and its inextricable linkage with dwindling water resources, process innovations as carried out in SRI need to be encouraged. On the basis of the findings from the study, we intuitively conclude that promotion of the resource conservation method of cultivation like SRI requires multi

dimensional and integrated effort towards promoting agricultural extension services, soil and moisture conservation, non-farm employment programmes and so on.

References

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