

# Impact of SRI technology on rice cultivation and the cost of cultivation in Mahabubnagar district of Andhra Pradesh

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**Abstract-** The System of Rice Intensification (SRI), developed in Madagascar is gaining increasing credence and momentum as the farmers are now using its methods to raise their rice production while also reducing their use of external inputs and production costs. This paper focuses on this agronomic opportunity that can be particularly beneficial for resource-limited households. In the sample area positive impact of SRI technology was observed on sample farmers followed the suggested wider spacing of 25×25cm or 30×30cm, and by using 8-12 days seedlings, weed management, and sample farmers completely adopted the suggested water management practice, weed management practice and by applying the suggested quantity of organic manure. Saving on seed cost as the seed requirement is less, saving on water as irrigated, higher yields due to profuse tillering, increased panicle length and grain weight. However, the farmers expressed difficulty in adopting SRI on two counts, viz., labour scarcity and weed menace. These constraints have to be addressed to enable wider adoption of SRI technology by more number of rice cultivators.

**Index Terms-** Innovative alliances, labour-saving, farmer-to-farmer extension, system of rice intensification, agricultural innovations, established institutions.

## I. INTRODUCTION

It has become difficult to increase production from traditional rice farming. It needs extra labour and a lot of fertilizers. Farming with modern methods is also expensive using outside inputs. It was noticed that, farmers adopting conventional methods could increase their production only by using expensive inputs such as chemical fertilizers, pesticides and hybrid seed. It is becoming increasingly difficult for the farming community to afford these things. It is also known that using chemicals is harmful to the environment. A new method of growing rice is designed for increasing rice production which can use the organic compost, and also the local seed. This method is called "System of Rice Intensification" (SRI). In this context, a study was undertaken in Mahabubnagar district of Andhra Pradesh to note the impact of the SRI method of rice cultivation by the farmers.

## II. METHODOLOGY

The study was undertaken in Boothpur and Hanwada mandals in Mahabubnagar district of Andhra Pradesh as SRI method of rice cultivation was practiced. From each of the selected mandals, 6 villages were selected and, from each village,

two farmers were selected randomly for the sample. The required data were collected for the kharif season in 2011 by personal interview method with the help of pre-tested schedules.

## III. FINDINGS

### General characteristics of sample farmers

SRI paddy farmers are found to be of younger age group. The average family size of SRI paddy farmers was medium. All the SRI paddy respondents were found to be educated. The average land holding of SRI paddy farmers was 6.02 hectares, respectively.

### Nursery cost for SRI paddy cultivation

The nursery cost of Rs. (178.29) per hectare was observed for SRI paddy farmers. The farmers did not use fertilizer in SRI nursery and hence the amount spent on fertilizer in SRI nursery management was zero. This resulted in lower cost in SRI nursery management.

### Costs and returns structure in SRI paddy production

Fixed costs like rental value of land and interest of fixed capital were found to be less for SRI paddy farmers. Depreciation cost on implements was more for SRI paddy farmers. However, land revenue remained same for both the methods of paddy cultivation. The share of human labour in the total cost was more in both conventional and SRI methods. The share of variable cost in total cost was 84.89 per cent in SRI paddy, respectively. SRI method paddy farmers harvested higher yields (8.51 tones/ha). The return per rupee spent was around RS.2.02 for SRI method paddy cultivation.

### Adoption level of SRI paddy farmers:

The complete, partial and no adoption levels in SRI cultivation practices of the sample farmers are given in the table as shown below.

**Table: Adoption level of SRI paddy farmers**

S.No.	Suggested practices in SRI method	Adoption level		No Adoption level
		Complete	Partial	
1.	Nursery area	(81.67%)	(18.33%)	(8.09%)
2.	Seed rate 5kg/ha	(43.33%)	(56.67%)	(19.23%)
3.	Transplanting 8-12 days aged seedlings	(56.67%)	(43.33%)	(16.34%)
4.	Careful transplanting of soil and roots intact seedlings	(75.00%)	(25.00%)	(12.32%)
5.	Wider spacing (25×25cm or 30×30cm)	(100.00%)	(0.00%)	(0.00%)
6.	Weed management	(66.67%)	(33.33%)	(0.00%)
7.	Water management	(41.67%)	(58.33%)	(18.67%)
8.	Organic manure application (10t/ha)	(36.67%)	(63.33%)	(20.45%)

The data indicated that all the sample farmers followed the wider spacing in SRI method of paddy cultivation. Complete adoption level was high in the case of maintaining nursery (81.67%), followed by plant spacing in transplanting (75%), weed management (66.67%) and age of plants for transplanting (56.67%).

Partial adoption level was high in the case of organic manure application (63.33%) followed by water management (58.33%) and seed rate (56.67%). Therefore, there is a need for awareness building and training programmes in the areas of partial and no adoption to increase the adoption levels to complete adoption in order to get maximum gains of SRI technology.

Major reasons for practicing SRI method by sample farmers were less water requirement and higher yield levels. Major constraints in practicing SRI method were high labour requirement and weed menace.

#### IV. CONCLUSION

The (SRI) system of Rice Intensification that evolved as a resource conserving technology management system from the informal research across the world is taking roots in Andhra Pradesh. The Andhra Pradesh farmers who are known for their innovativeness in adopting new technologies and adapting technologies to meet their requirements responded with great enthusiasm when SRI was introduced by individual farmers, organizations, formal research and extension system. The study has shown positive impact of SRI technology in terms of

reduction in cost of cultivation and increased yields per unit area for the rice cultivators in the study area. The constraints for adoption of SRI technology were indicated as labour scarcity and higher weed menace. If these constraints are addressed through improvised technologies and proactive policies it will pave way for wider adoption of SRI system among the farming community.

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