

**System of Rice Intensification (SRI)**  
*An action research initiative in Andhra Pradesh*

**Rabi season (Dec 2007 – May 2008)**



**Facilitated by:**



**Centre for World Solidarity**  
**Secunderabad, Andhra Pradesh, India**

**Partner NGOs:**

**Nava Jyothi, Ramayampet, Medak Dt. Andhra Pradesh**  
**CROPS, Jangaon, Warangal Dt. Andhra Pradesh**

## 1. Background:

Water is the driver of nature and civilizations. Less than 3 percent of total water on earth is fresh water and major portion of it is in the form of groundwater. Groundwater is serving around 80% of the rural drinking water supplies in India and other developing countries. In recent decades it has become primary force behind irrigation and agriculture especially in arid and semi arid areas.

In many parts of semi-arid regions groundwater is extensively mined for the cultivation of paddy. Extensive use of seed, fertilizer pesticides and labor making it a gamble and uneconomical. As an alternative, Promoting System of Rice Intensification (SRI) is one of the activities that ensure water use efficiency and supplement water conservation while increasing productivity. This low input, organic rice cultivation method is valid in all areas and most importantly in semi-arid regions. Following are some prime objectives of cultivating SRI

- *Enhancing water productivity and conservation*
- *Ensuring household food security*
- *Increasing profitability of paddy cultivation*

Social regulations programme has been carried out in 4 villages of drought prone semi-arid regions. As a part of this initiative, SRI is being promoted in two villages, namely Mailaram in Medak and Enebavi in Warangal districts. To attain the aim of conservative water management practices, new interventions are being incorporated in to the programme. SRI has been considered to be very suitable where rice is the staple food for all the population in the villages. The programme is envisaged at endearing the method to farmers. This is carried out in a research mode to make processes like weeding by improving tools and attempting different varieties, quantifying inputs, yields etc.

## 2. Programme:

For the season it was planned to carry out the cultivation in small plots with 10-15 farmers in both villages. After exposures and few more meetings, 17 farmers in both villages have begun cultivation. Out of 17 two farmers have left it due to irrigation and electric pump problems. Following tables shows the details of SRI coverage in both villages. The plot sizes ranging from 150 sq.m. to 4000 sq.m (one acre). For all the fields groundwater was the source of irrigation.

## 3. Villages and area covered:

Name of the partner NGO	Name of the village	Mandal and district	No. Of SRI farmers	Area of SRI cultivation in acres
Navajyothi	Mailaram	Chinna Koduru mandal of Medak district	9	5
CROPS	Enebavi	Lingala Ghanapur mandal of Warangal district	6	1.5

#### 4. Processes:

An exposure visit was organized to 10 farmers from each village to successful SRI field of Mr. Nagaratnam Naidu in Hayathnagar (outskirts of Hyderabad) on 14<sup>th</sup> of November 2007. Planning has been done for the Rabi 2007-08 season there on the day. It is decided to cultivate common variety of paddy in the villages which is grown in rabi. Foundation seed of IR 64 variety of paddy has been chosen which is common variety that is cultivated in



**Nursery bed preparation at Mailaram**

and manure from their own fields. Famous SRI Farmer, Mr. Nagaratanam Naidu provided guidance to the farmers in both villages.



**Farmers at SRI Field in Hayathnagar during Rabi season**

in the region. 2 markers and 5 weeders have been provided to each village. The weeders used in Enebavi are Mandava weeders. And at Mailram Con-weeders were used. Except slight design difference there is no much difference between both weeders.

To encourage farmers, inputs like weeders markers and organic manure (in Mailram) has been supported by CWS. In Enabevi, hence it is an organic village; farmers have applied vermi-compost and manure from their own fields. Famous SRI Farmer, Mr. Nagaratanam Naidu provided guidance to the farmers in both villages.



**Nursery bed preparation at Enabavi**





**Weeding in SRI paddy few day after transplantation**



**SRI paddy in younger stage**

**5. Observations in the season**

In the village two years ago an attempt was made to propagate SRI in both villages. Due to lack of proper follow up and guidance it has not resulted in to success. In this season, with proper planning, efforts and able guidance of Mr. Naidu farmers could achieve good yields in the crop. Regarding weeding famers have acquired the technique of operating weeder and it has driven away the thought that it is hard to operate the weeder.

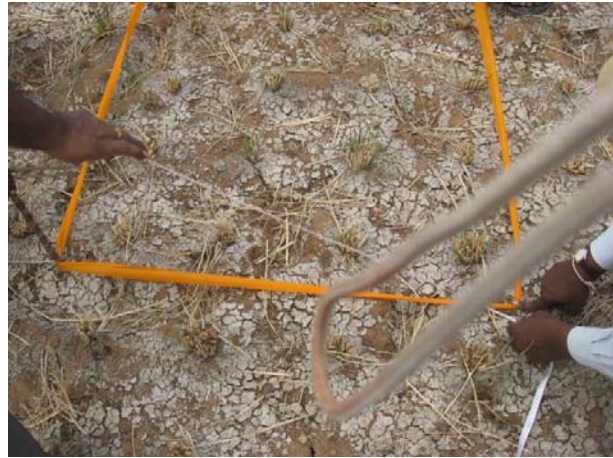
***Comparative figures of SRI and Conventional paddy during the season:***

<b>Item</b>	<b>SRI</b>	<b>Conventional</b>
Seed per acre	2 kgs	35 kgs
Nursery period	12 day	30 days
Transplanting labor engaged	10-15 members	20
Irrigation applied	For every two days kept the root zone wet	Every day kept the field with 3 inches of water column
Mechanized weeding	6 times through out the crop period	nil
Weeding labor applied	8	15-20
Tillers per clump	50-116	10-15
Panicles per clump	70-75	11-13
Grains per panicle	100-150	55-70
Yield (quintals per acre)	35-43	18-24

The crop yield, on average, has doubled. This is also expressed by all farmers in the village. This season the results are quite encouraging in both villages. Inspired by the results 31 farmers in Mailaram have been showing eagerness to cultivate in 30 acres of land in coming kharif 2008 season. In Enebavi also all farmers have come forward to cultivate in coming season.

## 6. Other observations:

During the season in March and April 2008 heavy winds have affected several crops in the area. Farmers said that all their other crops have affected and fallen to ground but SRI paddy has withstood the wind velocity and hail storm. It has surprised them they are articulating such events in the season. The post harvest clump count shows that conventional paddy has a density of clumps from 36-45 in one square meter area against the standard 16 clumps per square meter in SRI paddy.



**Post-harvest clump count taken up by farmers on their own at Enebavi**

SRI paddy was found to be more pest-resistant. In few plots, part of fields adjacent to conventional paddy was affected by pest attack but crop itself recuperated without application any pesticide. Where as conventional paddy was prone to diseases and pesticide granules were applied to control the pest attack. There is negligible amount of malformed grain (wastage) in SRI where as it is considerable in the conventional paddy. All farmers have expressed this fact in both villages.

## 7. Field day event at Mailaram:

On 9<sup>th</sup> of May field day was celebrated at Mailaram. Dr. Thyagaraj and Dr. PK Mathad, Scientists from Central Research Institute for Dryland Agriculture (CRIDA), Hyderabad participated in the event. All India Radio and local print media representatives also participated and covered the event.

CRIDA scientists had a long discussion and at they end they appreciate the initiative and congratulated the farmers and other participants in the initiatives. CRIDA scientists appreciated the efforts and said that they would also strive for propagating the method.



**Interaction between farmers and CRIDA scientists**

Crop-cutting experiment was done comparing both conventional and SRI paddy in one farmer's field in Mailaram village. Results are given in the following table:

Method of cultivation	Variety of seed	Tillers	Grains per panicle	Dry weight of grains per sq.m (in kgs)	yield (in kgs)/acre
SRI	IR 64	52	100-150	1025	4148
Conventional	IR 64	12	78-102	580	2330



**SRI farmer during crop cutting in his field at Mailaram**



**Dr.P.K.Mathad displaying conventional and SRI paddy**

## 8. Way forward

SRI experience of the farmers of Mailaram and Enabavi during Rabi 2007-08 helped to demonstrate that this is an eco-friendly and low-input system that maximizes production and facilitates efficient use of resources and inputs. Not only farmers are benefited from higher yields, but also groundwater resources are conserved and soil health is taken care. The potential of SRI in meeting the food security needs of small and marginal farmers is demonstrated and this small initiative gives inspiration to number of farmers in the neighbourhood to adopt SRI method in future.

Up scaling the practice with more farmers in both villages is an immediate aim set. Up scaling it to all social regulations programme villages will be taken up in future. Scaling-up of SRI in south Orissa targeting around 5000 acres has been initiated from April 2008. CWS will continue to strengthen the SRI movement by facilitating capacity building, demonstration, encourage innovations and scaling-up of SRI methodology in its operational States (Andhra Pradesh, Tamil Nadu, Orissa, Jharkhand and Bihar) in future.

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