

*WELCOME*

# Experiences of SRI Adoption/Promotion in India

---

**Dr. L.G.GIRI RAO**

**Director of Extension**

**ANGRAU, Hyderabad**

## FACTS

- **Water requirement for human and industrial needs is increasing**
- **So, water availability for agriculture will become scarce commodity in future**
- **Demand for rice growing is increasing with increasing population**
- **Rice is a water intensive crop**
- **Hence, any activity to produce more rice with less water will be important for sustainable water and food security**

## Solution ?

- **System of Rice Intensification (SRI) is one such system to improve productivity of land, labour, capital and water simultaneously**

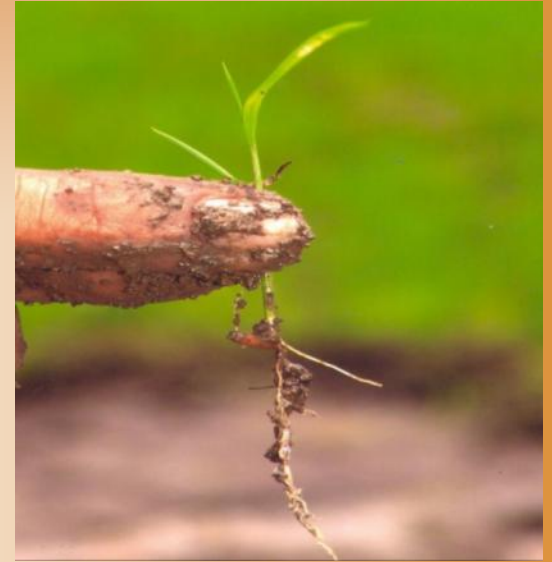
## 6 KEY SRI PRINCIPLES

- ✓ Young seedlings
- ✓ Careful transplanting
- ✓ Wider spacing
- ✓ **Water management**
- ✓ Weeding
- ✓ Compost

**ANGRAU has streamlined its activities in SRI promotion by emphasizing these 6 key principles**

## **1. Young Seedlings:**

**Transplanting very young seedlings, usually 8-12 days old.**



## 2. Careful transplanting:

**Seedlings are transplanted singly and very carefully, to cause minimum 'trauma' and 'shock' to the young plants.**



### **3. Wider Spacing:**

**Transplanting seedlings with wide spacing and in a square pattern, at 25X25 cm.**





## **4. Water Management:**

**The soil is kept moist but not inundated during the vegetative growth phase.**

**A thin layer of water should be maintained during panicle initiation and grain filling stage.**





## 5. Weeding:

3-4 weeding at 10 day interval with Rotary weeder is essential.



## **6. Compost:**

**Instead of chemical fertilizers alone, FYM or compost should be applied as a source of nutrients**



# History of System of Rice Intensification (SRI) – Indian scenario

- **Introduced in India at TNAU during 2000 with 3 principles**
- **Subsequently SRI with 6 principles in farmers fields by ANGRAU in A.P. from kharif 2003 onwards in 22 districts**
- **TNAU, Coimbatore popularized SRI through World Bank Project, implemented in 63 selected sub-basins : increased yield from 4.2 to 5.4 t/ha**
- **UAS, Bangalore with Jala Samvardhana Yojana Project followed PTD approach in 13 locations of Karnataka : from 4.47 to 6.63 t/ha whereas 6.8 t/ha in aerobic rice.**
- **Ekoventure, Pondicherry based NGO promoted SRI during 2002-05 : reported yield increase and reduced cost of cultivation**

- In Gurudarspur district of Punjab during 2006-07 under a Central sponsored project “Support to State extension programme for extension reforms” : SRI yielded 3.14 t/ha compared to 1.9 t/ha in non-SRI
- PRADAN, an NGO with 10 farmers in Purulia district of World Bank during Kharif 2004, an average yield increase by 32% in SRI than conventional.
- In Tripura, yield increase of 6.75 t/ha in SRI compared to conventional (5 t/ha). Here, Directorate of Agriculture gave an incentive of Rs.4000/ha for SRI adoption
- The people’s Science Institute (PSI), Dehradun conducted trials on SRI in 40 farmers fields in Uttarakhand and H.P. and reported 26% increased yield over conventional. This year, SRI is extended in 600 farmers fields.

## **SRI in ANDHRA PRADESH**

- **KVK, CRIDA, Hyderabad – organized FLDs for 2 years (2005-07) in 17 villages at 134 locations and reported 25-36% yield advantage over conventional.**
- **AME Foundation, Mahabubnagar on FFS approach reported seed, water, labour resource efficiency besides 32% yield increase in SRI over conventional**
- **DOA, Govt. of AP extended support to farmers in supplying weeder and marker on 50% subsidy.**
- **Directorate of Rice Research, Hyderabad has developed an ODL module under e-learning strategy for SRI promotion**
- **CROPS, an NGO from AP conducted 30 SRI on-farm trials in Nalgonda district during Rabi 2006 – reported that food grains produced in SRI is better for health due to the addition compost**

# ANGRAU Initiatives in SRI Promotion

- ❑ A National level training programme on SRI for Nodal Officers of DOA from various states in July 2004 with the support of Directorate of Rice Development, Patna, GOI
- ❑ 250 FLDs on SRI technology were organised during kharif 2004 in all the districts in collaboration with DRR, Hyderabad.



# ANGRAU Initiatives in SRI Promotion

- ❑ Farmers workshop on SRI was organised during 2004 with 60 SRI cultivators under WWF-ICRISAT project
- ❑ ANGRAU entered into MOU with WWF International-ICRISAT for an **Action Research Project** namely dialogue with farmers, scientists and Private firms to understand the role of SRI method of paddy cultivation in reducing water crisis during rabi 2004-05
- ❑ Conducted Farmers workshops on SRI in East and West Godavari and Warangal districts in 2004-05





# ANGRAU Initiatives in SRI Promotion

- All scientists of DAATTCs and KVKs actively participated in Rythu Chaitanya Yatras in all the districts of AP during May of 2005, 2006, 2007
- WWF International ICRISAT and ANGRAU jointly organised a dialogue on SRI with Chief Minister, Politicians, scientists, farmers and media in November 2005



# ANGRAU Initiatives in SRI Promotion

- ❑ ANGRAU-WWF organized SRI farmers meet in June 2006 with 60 farmers from AP participated and shared.
- ❑ WWF SRI interaction meeting with scientists and farmers was organized in October 2006. Dr. Norman Uphoff shared his experiences with SRI farmers.
- ❑ Several on-farm demonstrations conducted through DAATTCs & KVKs on SRI
- ❑ Several capacity building programmes, farmers meets were organized
- ❑ FLDs at 602 locations in 14 districts for 4 seasons (2004-06) : gave positive impact in terms of plant growth, yield and net returns, with an average yield advantage of 25%.



# Impact of SRI in Andhra Pradesh (2004-06)

## Yield Contributing Characters

### ❖ **Tiller Number :**

**Ranged from 10 - 60 percent with an average of 39.0per cent**

- **First season 92.7 per cent**
- **Second season 9.9**
- **Again raised to 39.0 per cent**
- **Declined to 15.0 per cent**

### ❖ **Panicle Length**

**Ranged from 8.3-7.2 per cent with an average of 12 per cent**

### ❖ **Grain Number per panicle**

**Ranged from 38-66 per cent with an average of 48 per cent**

Contd...

- **Grain Yield**

Ranged from 21-30 per cent with an average of 25 per cent

- **Cost of production**

Reduced from 6-19 per cent with an average of 11 percent

- **Gross income**

Grew from 27-32 per cent with an average of 28 per cent

- **Net Returns**

Grew from 41-60 per cent with an average of 49 per cent

# Contd...

- **Pest and Disease Incidence**  
**Relatively low especially Stem Borer/Leaf Folder / BPH**
- **Extent of Adoption of 6 principles of SRI**  
**3 Principles viz : Careful transplanting young seedlings, wide spacing, and planting young seedlings adapted fully**  
Remaining 3 principles viz; water management practices, use of FYM/ Compost and Cono weeding adapted partially
- **Harvesting of Rice under SRI comes 10 days in advance over conventional method**

## Constraints – Farmers' view

- ❑ Drudgery involved in nursery raising & transplanting young seedling using marker and manual cono weeding
- ❑ **Weed management in SRI field is difficult**
- ❑ **Lack of standardised protocol, as a result, different actors are going differently with SRI process**
- ❑ **Lack of Institutional support**
- ❑ **Most of the farmers felt that SRI is labour intensive technology**





## Lessons Learnt



- ❖ Sufficient awareness among farmers on SRI due to various educational programmes
- ❖ Though a misconception that SRI is best suited for small and marginal farmers, study revealed that SRI is taken up by all types of farmers
- ❖ SRI was practiced on all types of soils except on saline soils due to alternate wetting and drying result salination and effect the crop
- ❖ Positive effects of SRI – increased yield, savings in seed and water, reduced demand for external cash inputs like fertilizers & herbicides
- ❖ Barriers of SRI adoption – high labour requirement, non-availability of organic manures & drudgery in cono weeding
- ❖ Gaps in skills required viz., nursery raising, transplanting method and weeding
- ❖ Since difficulty in operating rotary weeder, a need to develop a mechanized/motorised weeder for large scale SRI adoption



# Strategies for SRI up scaling

- ❖ **Massive awareness building programme**
- ❖ **Formation of State/National level working committees on SRI to monitor SRI process**
- ❖ **Capacity building of farmers field extension staff and labourers.**
- ❖ **Imparting skills to farm labourers**
- ❖ **Govt. subsidies for critical inputs**
- ❖ **Documentation of success stories, exposure visits and interaction sessions**
- ❖ **Large scale on-farm demonstrations**

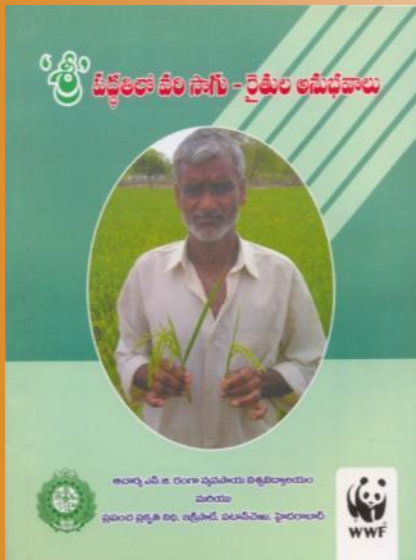
# Working Committee on SRI

- ❖ **Constituted with representatives from scientists, farmers, Govt. departments and NGOs**
- ❖ **Constituted to monitor, guide and promote the SRI process in AP**
- ❖ **1<sup>st</sup> meeting was held in August 2007 at ANGRAU**

# SRI Resource material

With the support of WWF International- ICRISAT, ANGRAU has produced

- 5000 SRI manuals
- 10,000 Booklets (5000 each in English and Telugu)
- 2000 copies of book on SRI farmers experiences
- CD on SRI cultivation
- 1000 copies of Farmers experiences in SRI cultivation (English)



# Conclusions

- **SRI has the advantages of cost effectiveness and increased yields per unit area over conventional paddy cultivation**
- **Extension, research and policy support must be given immediate attention**
- **Strong research data base on SRI, large scale demonstrations, multi location trials, motorised cono weeder and skills up gradation of SRI partners are needed for scaling up SRI**



*THANK YOU*