

# SRI

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What is it ?

# System of Rice Intensification



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- SRI begins with a philosophy, that rice plants are to be respected and supported as ***living creatures*** that have great potential. This potential will only be realized if we provide plants with the best conditions for their growth.
- Some of the things that have been done for hundreds of years by farmers in countries around the world to make rice plants grow have unfortunately ***reduced their natural potential***.

**SRI is all about**

LEARNING  
&  
EXPERIMENTING

*“Growing Rice in a new way !”*

# PRINCIPLES OF SRI

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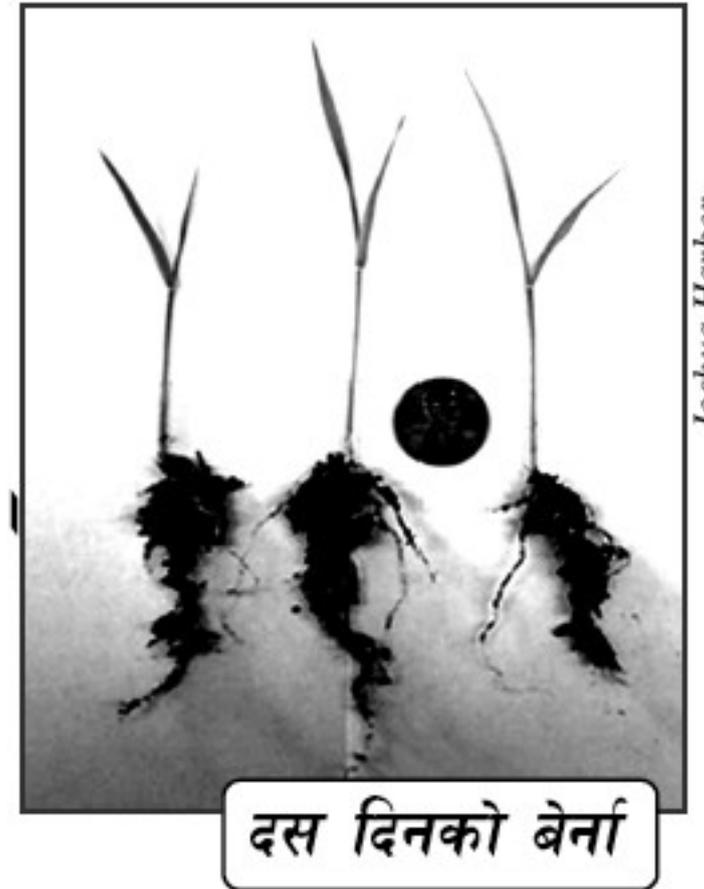
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# PRINCIPLES OF SRI

- Early transplanting
  - 2-leaf stage
  - Grain still attached
  - From 8 days after sowing
  - Latest by day 15
  - The earlier, the better
  - Reason: *Early transplanting encourages maximum tillering*



# PRINCIPLES OF SRI

- Plant single seedlings
  - Traditional practise is to plant 3-4 seedlings per hill
  - SRI: only 1 seedling per hill
  - Reason: *The rice plant to develop its full potential without competition*



# PRINCIPLES OF SRI

- Wide spacing
  - Reason: *gives individual plant more room to spread and encourages good root development*

त्यसपछि रेखा अनुसार यसरी बेर्ना लगाउँछ । एस.आर.आईमा २० देखि ५० से.मि. बेर्ना लगाउँदा राम्रो हुन्छ ।



Gamini Batuwitage

# PRINCIPLES OF SRI

- Careful transplanting
  - Reduce impact of transplanting shock
  - Within 30 minutes
  - *Seedlings must be treated like Babies!*
  - *Reason: Only healthy seedlings will develop their full potential*

# PRINCIPLES OF SRI

- Careful transplating

One idea from Nepal:

# PRINCIPLES OF SRI

- Careful transplating

One idea from Nepal:

- Taking patches of plants with soil from the nursery
- These can be transported to field and divided in handy pieces for the planters



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  - Once flowering begins, maintain a water level of 1-2 cm

# PRINCIPLES OF SRI

- Moist but unflooded soil conditions
  - Reason: *Oxygen supply to the soil must be maintained! This will maximise root development and tillering!*

# PRINCIPLES OF SRI

## ● Encouraging extensive root development

The following will encourage good root development:

- Organic fertiliser: compost, green manure (e.g. Dhaicha)
- Single transplants & wide spacing
- Mechanical weeding 2-4 times until canopy closes. Weeding aerates soil.

# PRINCIPLES OF SRI

See the difference between them (from Cuba)!



# PRINCIPLES OF SRI

See the difference between them (from Nepal)



# BENEFITS OF SRI

धान खेती गर्दा वर्तमान तरिका र एस.आर.आई. तरिकाको तुलना

	वर्तमान तरिका	एस.आर.आई. तरिका
प्रति गाँजमा बेर्नाको सङ्ख्या -	४	१
प्रति गाँजमा हाँगाको सङ्ख्या -	८.६	५५
प्रति हाँगामा गेडाको सङ्ख्या -	११४	१८१
प्रति गाँजमा गेडाको सङ्ख्या -	८२४	५८५८
उत्पादन (प्रति हेक्टरमा टन्) -	२.०	७.६

# BENEFITS OF SRI

- Raise rice yields to 6-8 t/ha
- Increase the factor productivity of land, labor, water and capital, all at the same time
- Make agrochemical inputs unnecessary
- Reduce water requirements for irrigated production by about half
- Lower costs of production -- making rice production more profitable for farmers
- Only 10% of seeds needed

# **Taruwa, Bardiya SRI Trial**

Nursery Management

# Taruwa, Bardiy a SRI Trial



24 hours pre-germinated seeds

# Taruwa, Bardiy a SRI Trial



Sowing in dry-nursery

# Taruwa, Bardiy a SRI Trial

Mulching &  
irrigating  
with  
watering can  
and “nali”



# Taruwa, Bardiy a SRI Trial



Dry-nursery

# Taruwa, Bardiy a SRI Trial



After 11 days

# Taruwa, Bardiy a SRI Trial



Comparison: Wet vs. Dry nursery

# **Taruwa, Bardiya SRI Trial**

Comparison of field cover  
over time

# Taruwa, Bardiy a SRI Trial



Day 15  
27 June

# Taruwa, Bardiy a SRI Trial



Day 15  
27 June



Day 22  
4 July

# Taruwa, Bardiy a SRI Trial



Day 15  
27 June



Day 22  
4 July



Day 32  
14 July

# Taruwa, Bardiy a SRI Trial



Day 15  
27 June



Day 22  
4 July



Day 32  
14 July



Day 122  
12 October

# **Taruwa, Bardiya SRI Trial**

Development of the single rice plant  
Closeup

# Taruwa, Bardiy a SRI Trial



Day 22  
27 June

# Taruwa, Bardiy a SRI Trial



Day 22  
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Day 32  
4 July

# Taruwa, Bardiy a SRI Trial



Day 22  
27 June



Day 32  
4 July



Day 63  
14 July

# Taruwa, Bardiy a SRI Trial



Day 22  
27 June



Day 32  
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Day 63  
14 July



Day 122  
12 October

# Results and Comparison

<u>Location:</u>	Taruwa, Bardiya		RARS,	Sunsari-Morang
	SRI I	SRI II	Bhairahawa	Irrigation System
	2003	2003	2001-02	2002
<u>Variety:</u>	<b>PL 84</b>	PL 84	<b>R. Masuli</b>	
<u>Area (ha)</u>	<b>0,0580</b>	0,0542		
<u>Productive Tillers:</u>				
Average:	<b>18</b>	16		
Minimum:	<b>5</b>	3		
Maximum:	<b>40</b>	31	<b>70</b>	
N of samples:	<b>72</b>	45		
<u>Yield:</u>				
Total kg:	<b>252</b>	264		
t/ha:	<b>4,35</b>	4,87	6,19	8,00
Total Grain Weight	<b>32 gr</b>	31 gr	<b>18.5 gr</b>	
<b>TREATMENTS</b>				
<u>Planting distance:</u>	30 cm	15-20 cm	30 cm	
	1 per hil	1-3 per hill		
<u>Fertiliser:</u>				
compost:	No	No		
Urea:	1 td	2 td		
Transplanting age (days):	<b>15</b>	17	<b>10</b>	
Nursery type:	<b>dry</b>	Wet		

# Results and Comparison

- OBSERVATIONS:
  - SRI II performed slightly better than SRI I
  - Water control was impossible. Plots were flooded from around day 30.
  - That resulted in less tillering and poor root development.
  - Due to these reasons SRI II with higher planting density performed better.
  - Still, the result is quite good without the use of inputs.

# Results and Comparison

- IDEAS FOR IMPROVEMENTS:
  - Use of compost and good land preparation.
  - Growing Dhaicha as GM beforehand.
  - Early sowing of a longer duration variety.
  - Transplanting between day 8-10.
  - Drain field before transplanting to get thicker mud.
  - Experiment with different planting distances.
  - Mechanical weeding for soil aeration.
  - Better water management.

# **Join the SRI- Nepal Network**

To subscribe to the email list:

[sri-nepal-subscribe@yahoogroups.com](mailto:sri-nepal-subscribe@yahoogroups.com)