

Today's Presentation Outline

- Context of PRADAN's intervention-PRATIVA
- Comparison of SRI and Conventional Practices-PRATIVA
- Comparison of Economics of SRI and Conventional Practices-NITYA
- Analysis of Yield Data-NITYA
- Analysis of Labour Dynamics-BINJU
- Trends of SRI adoption-BINJU
- Conclusion-BINJU



SRI

PRADAN
(2007)

08.09.2005



AREA



Area profile

- High concentration of ST
- Farm based livelihood, 1200-1300 mm
- Small and marginal farmers with , 20% 1.25 ha and 71% 0.47ha
- Low mechanization
- Ave income per family per day- one dollar
- Rice staple crop
- Ave food security 5 months

PRADAN

- Works for livelihood promotion
- 1990 paddy intervention
- Changes in traditional practices to have more yield
- HYV, Pesticide, Fertilizer, irrigation, service systems like credit, input supply, skill and know how transfer etc

A photograph of a man in a rural agricultural setting. He is shirtless, wearing a pink headband and a green cloth around his waist. He is holding a large, healthy rice seedling with a thick, brown root ball. The background shows a lush green field with trees in the distance under a bright sky.

**SRI Demonstrated and
experimented with 5
farmers in 2002**

System of Rice Intensification

- Nervous professional, nervous farmers. From 5 farmers in 2002 to
- 6200 farmers, 1550 acres in 2006

The practices of SRI promoted

- **Seed selection and treatment:**
 - fresh seed stock.
 - brine water treatment



Nursery Raising in beds

Transplantation

- ◆ (9-15 days old) seedlings
- ◆ without disturbing the roots.
- ◆ one seedling per hill.
- ◆ spacing of 1 ft row to row
- ◆ Spacing of 1 ft plant to plant



**Transplantation, young,
one seedling/hill, proper space**

Fertilizer

- DAP 50kg /ha
- MOP 30kg/ha
- UREA 75kg/ha
- FYM 200kg/ha

Urea Split

A photograph of a rice field with vibrant green rice plants. A narrow, shallow water channel runs through the center of the field, reflecting the sky. The background shows a line of trees and a clear sky.

08.09.2005

Tillers per hill



Partial Water Management

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Alternate drying and wetting



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Patch promotion



Lift Irrigation back up



Weeding 2/3 times



Comparison between SRI and conventional practices

	Conventional	SRI
• Seed rate	30kg/ha	5kg/ha
• Age-seedling	21-35 days	9-15days
• Nursery size	10750 sq ft	800 sq ft
• Spacing	6 inches	1 ft-1 ft
• Transplantation	random	square
• Weeding	single	2/3 times
• Input cost	low	high
• Yield	2t/ha	6t/ha
• Fodder	less	more -50%

CROP ECONOMICS and YIELD ANALYSIS

Paddy yield in SRI practice

Yield range (t/ha)	No. of farmers	% of farmers
0-2	7	0.6
2-4	82	7.5
4-6	278	25.3
6-8	425	38.6
8-10	267	24.3
> 10	41	3.7
Total	1 100	100%

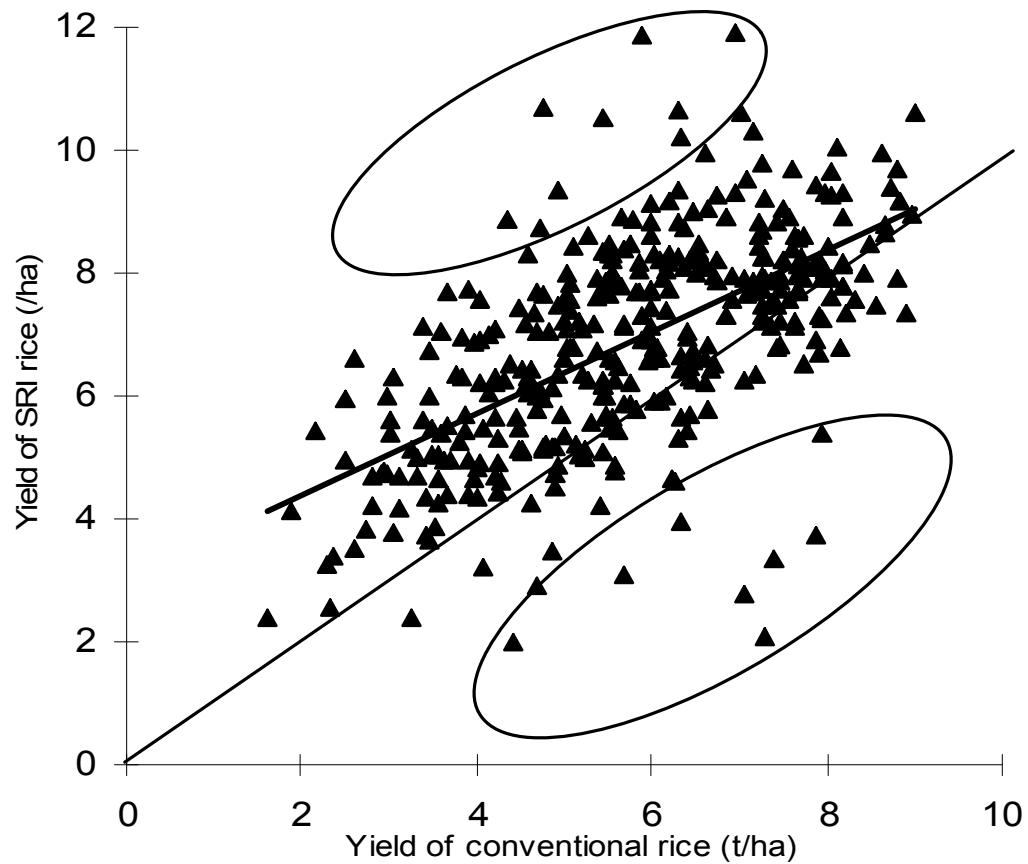
Comparative Analysis

(~~6.88 t/ha~~ Vs ~~5.78 t/ha~~)

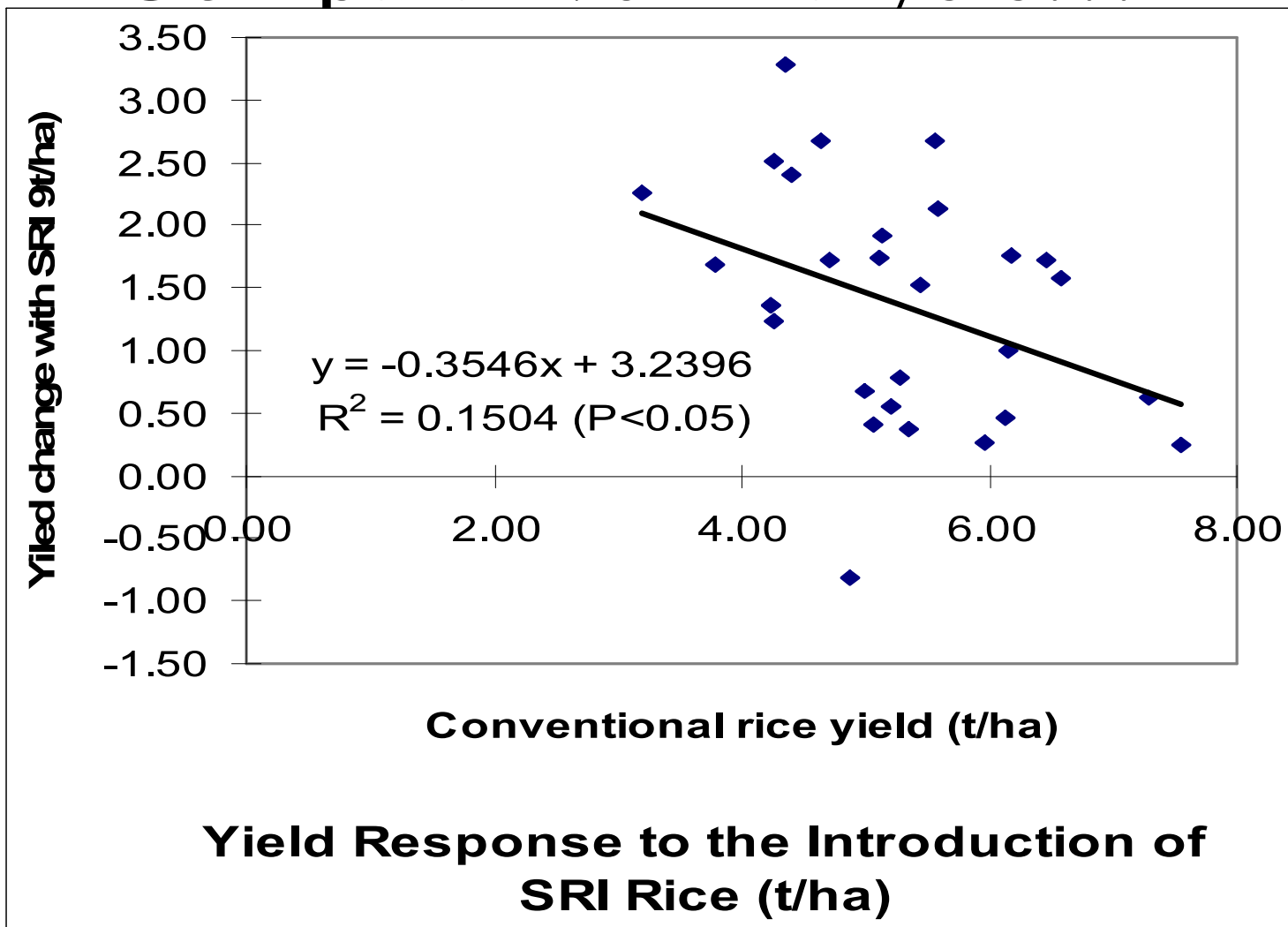
SRI			Conventional		
Range	No of farmer	%	Range	No of farmer	%
0-2	1	0.26	0-2	2	0.51
2 to 4	21	5.37	2 to 4	58	14.83
4 to6	94	24.04	4 to6	154	39.39
6 to 8	171	43.73	6 to 8	148	37.85
8 to 10	94	24.04	8 to 10	29	7.42
>10	10	2.56	>10	0	0.00
Total	391	100	Total	391	100

Vs

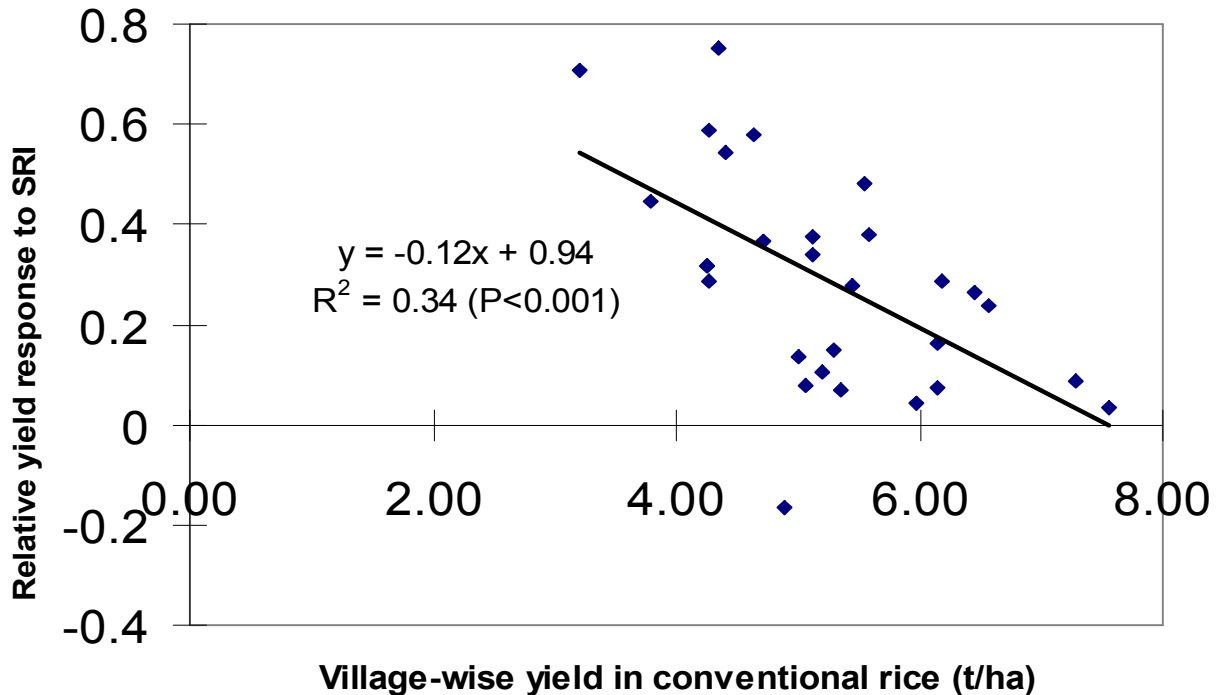
Comparative Analysis...



Comparative Analysis...



Comparative Analysis...



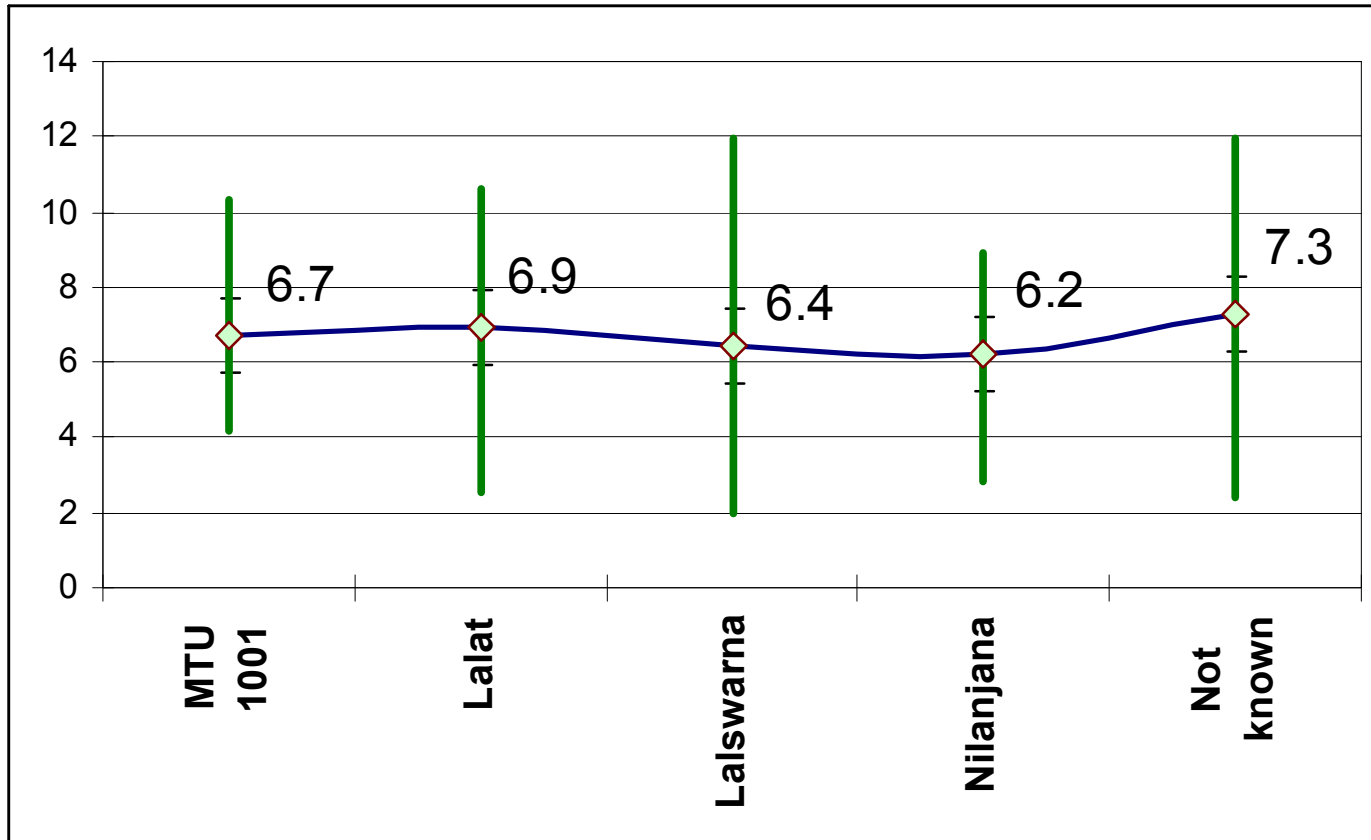
Relative yield response to SRI across 27 villages

(The village conventional yield is taken as a benchmark for potential yield at that village given climate, soil and other resources)

Coefficients and Significance Level of Independent Variables

		Un- standardized coefficients		Standardized coefficients	t-ratio	Signifi- cance level
Model		B	Std. Error	Beta		
1	(Constant)	1.648	4.836		.341	.734
	No. of hoeing	7.828	1.620	.515	4.831	.000
	Land size	3.595E-02	.040	.083	.892	.374
	Seedling age	.171	.144	.123	1.186	.239
	fertilizer/decimal	4.739	2.179	.213	2.175	.032

Response to Variety



Yield comparison in different land type

Parameter	Sample size		SRI		Conventional	
	SRI	Conventional	Paddy kg /acre	Straw kg /acre	Paddy kg /acre	Straw kg /acre
Purulia	106	106	2131.64	2051.07	1616.85	1362.76
Low land	83	41	2239.18	1974.00	1594.16	1370.19
Medium land	43	44	2064.03	2003.92	1605.80	1408.44

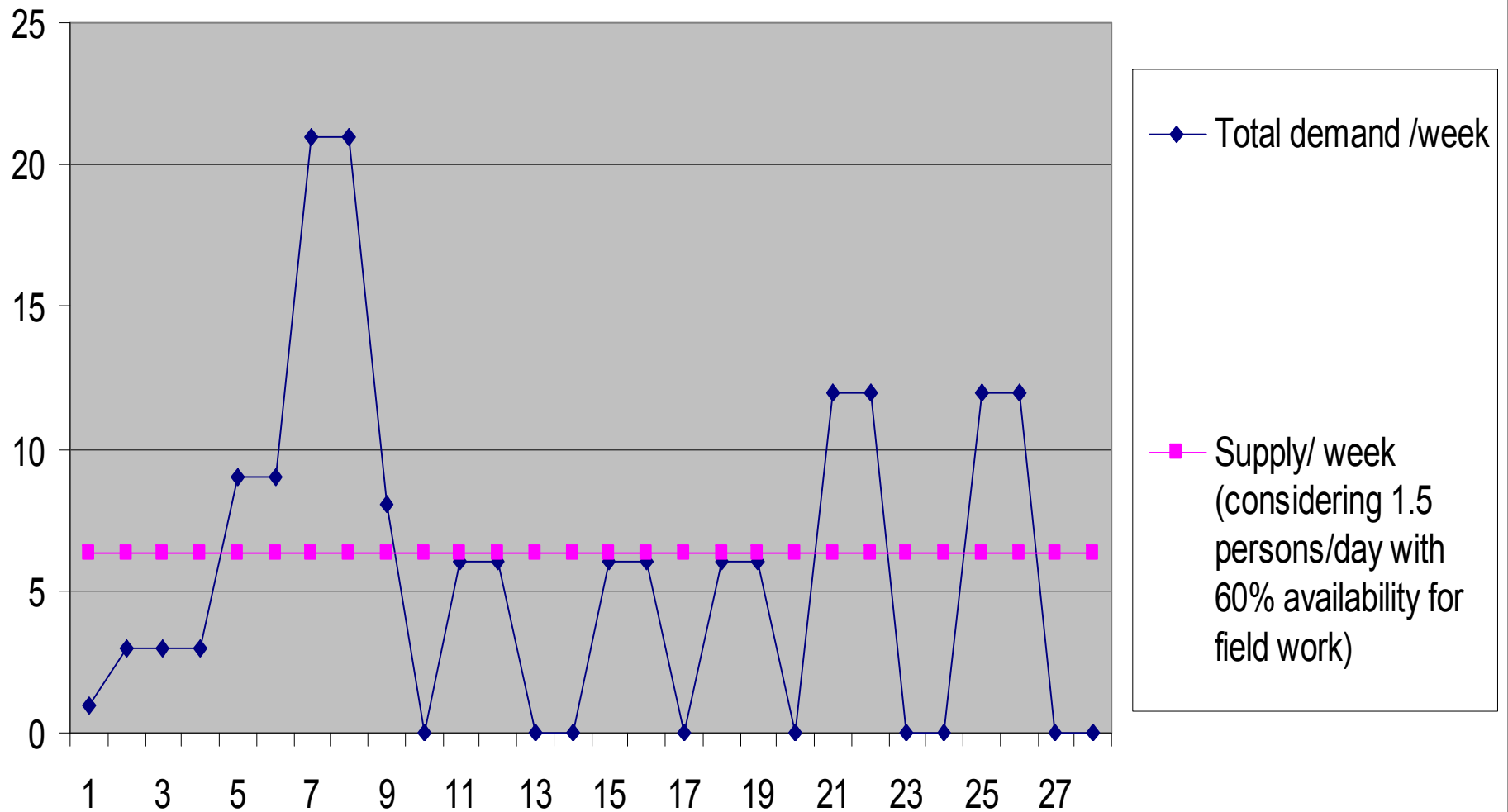
Input Productivity

Parameter	SRI	Conventional Paddy
Paddy yield (kg) /kg of seed	845.61	61.35
Paddy (kg)/kg fertilizer applied	42.40	36.60
Paddy (kg)/man days	46.20	32.20

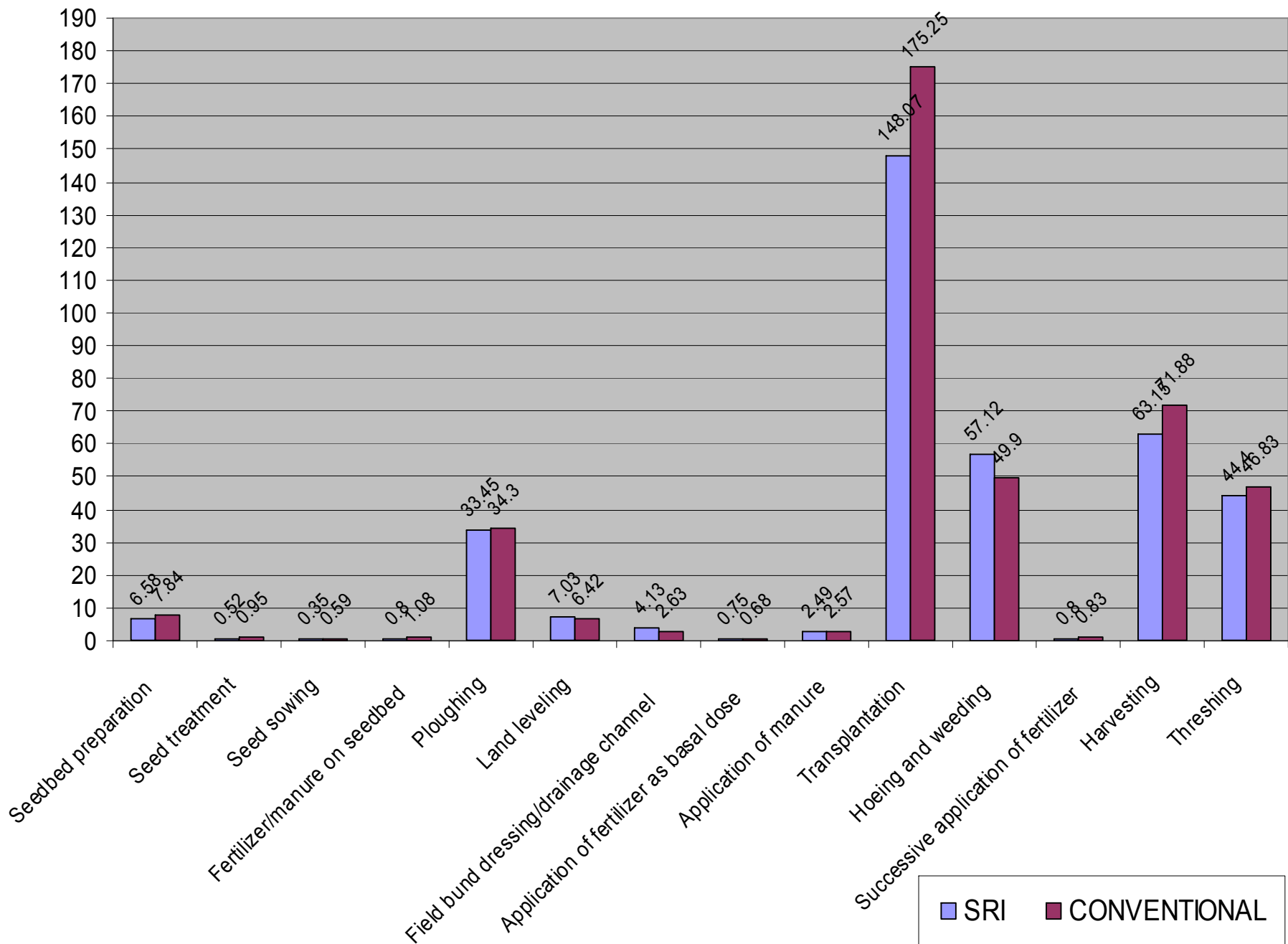
Crop Economics Comparison

Method	Value of output/acre (A)	Value of straw/acre (B)	Expense on seed/acre (C)	Expenses on labor (D)	Expense on fertilizer (E)	Net Return (A+B-C-D-E)
SRI	8526.58	1025	34.44	2076	389	7052.14
Conventional	6467.4	681	326.04	2260	339	4222.96

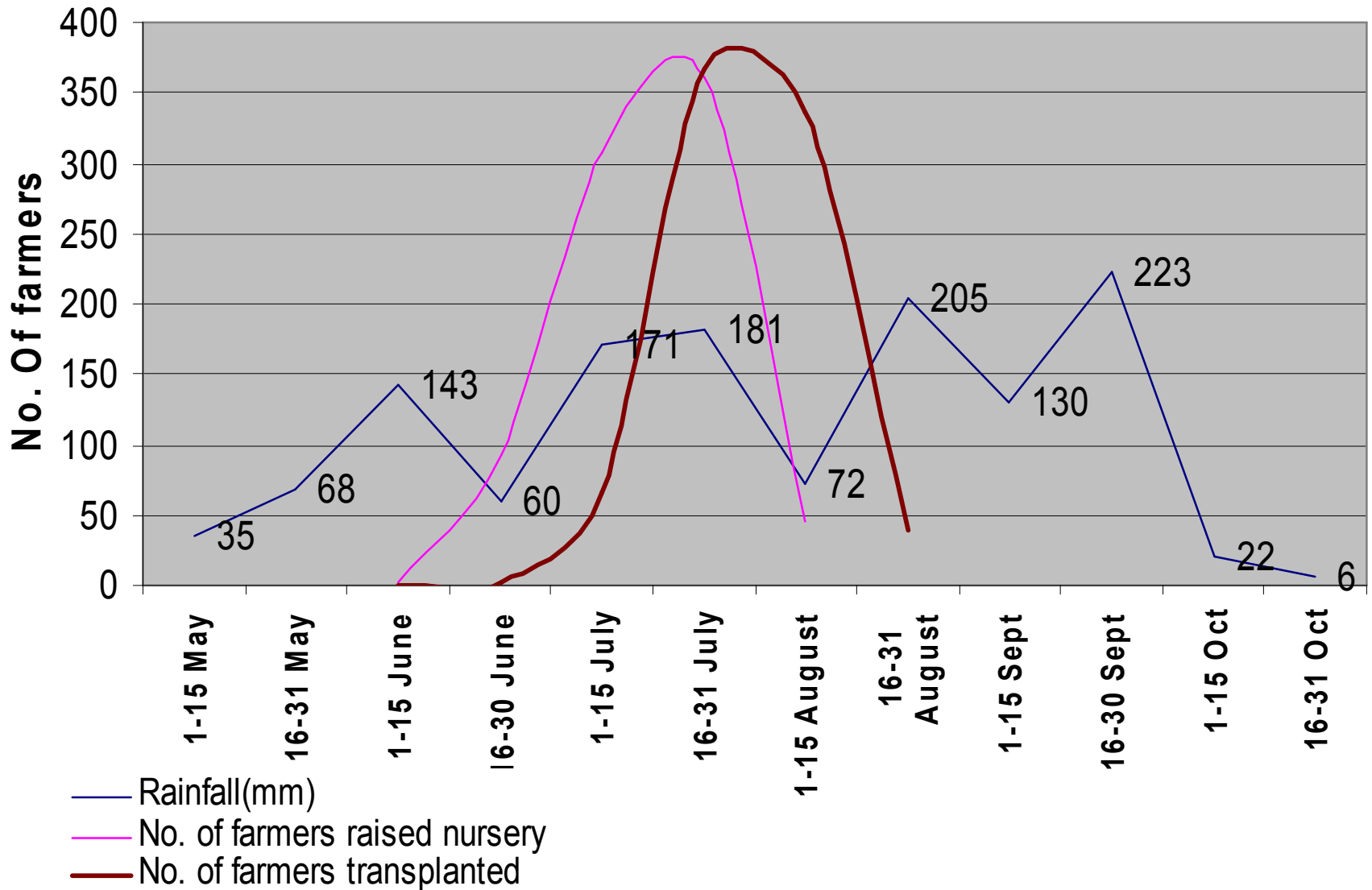
Demand Vs Supply distribution



COMPARISON OF LABOR HOURS [TABLE](#)



Rainfall & practice/labour dynamics



Trends in SRI adoption

Area Range (Decimal)	% Last year (05-06) (163 farmers)	% This year (06-07) (1565 farmers)
<16	54	32
16-32	24	27
32-48	12	22
48-64	3	2
64-80	3	7
>80	4	10
TOTAL	100	100

Trends in SRI adoption

Category of farmer	Same Year	1-year lag	2-years and above lag
Drop Outs	45		
Conv. Yields > SRI yields	21	7	4
SRI yields > Conv. Yields	34	48	26
TOTAL	54%	30%	16%

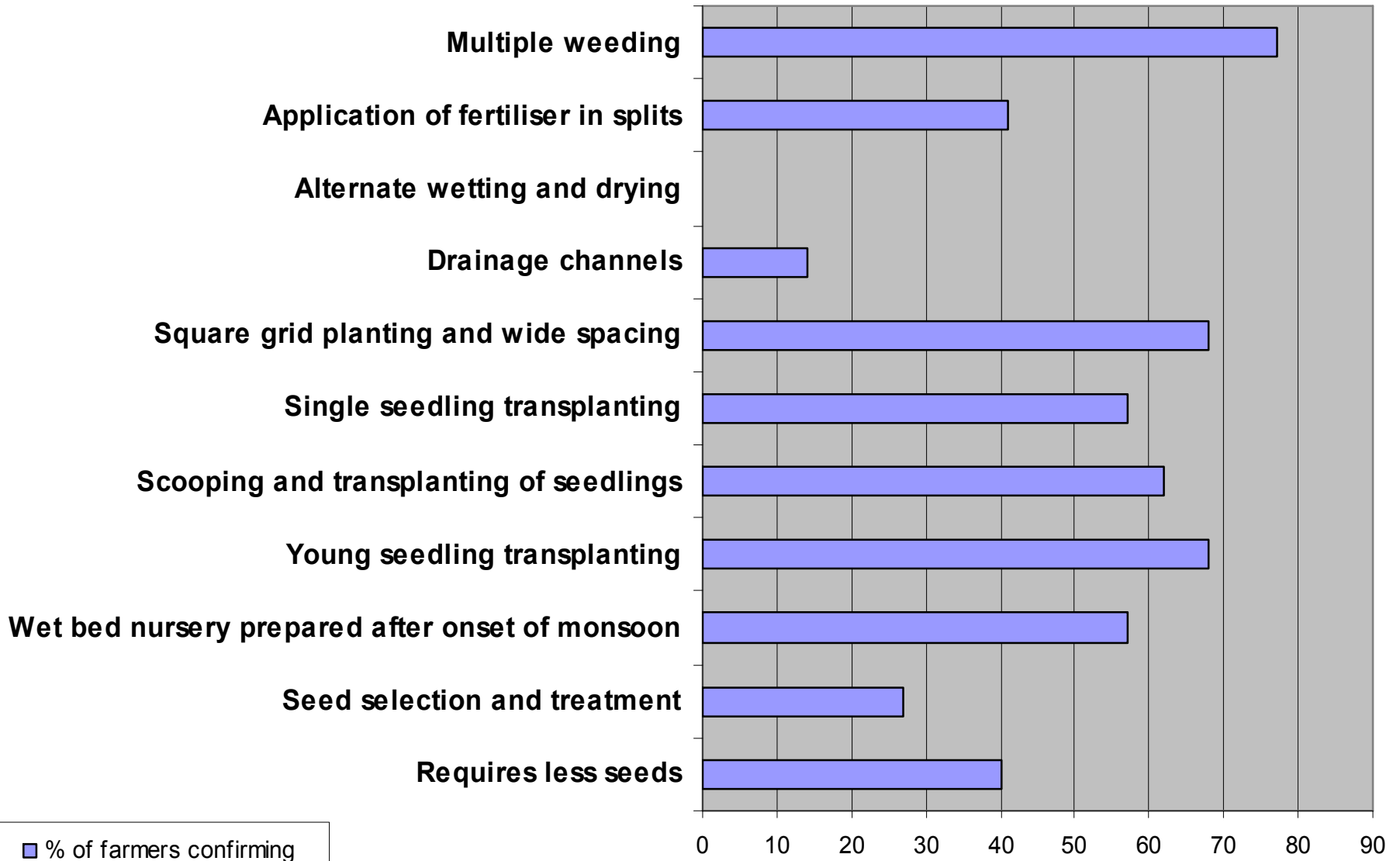
Trend of Practice adoption

**Table 1: SRI practices in Purulia
(N=110) in 2005 and (N=391) in 2006**

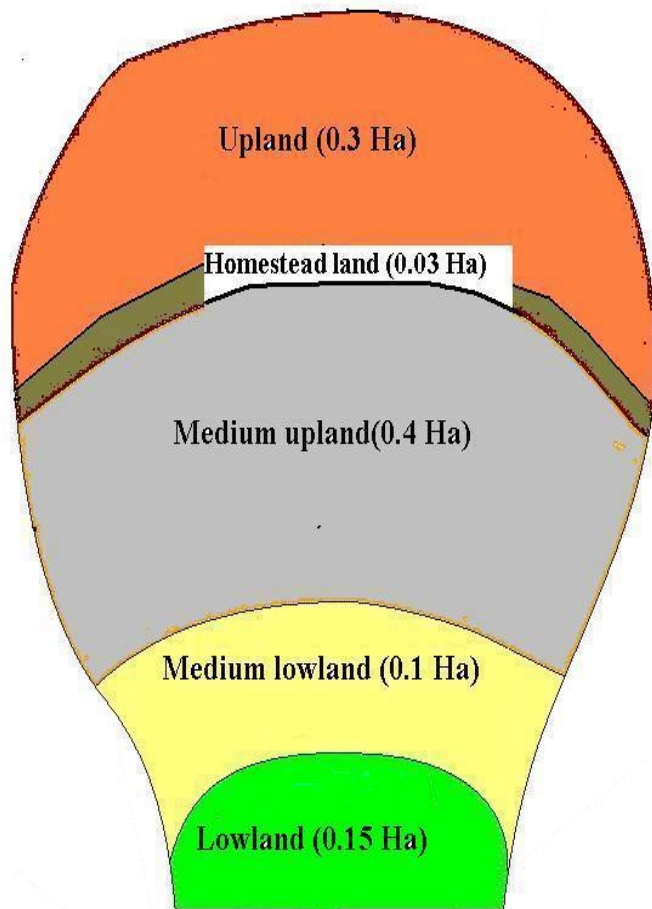
Practice	N=110	N=391
<i>Early transplant (<14 days)</i>	48%	75%
<i>Single seedling per hill</i>	97%	98%
<i>Wide spacing</i>	100%	100%
<i>Alternate wetting and drying</i>	12%	3%
<i>weeding (2 or more)</i>	54%	16%
<i>Mechanical weeding</i>	0%	86%

Trends in SRI adoption

% of farmers confirming



Trends in SRI adoption



Average land-holding of a target family

- 50% farmers choose in medium upland
- 25% each in medium upland and lowland.

Constraints in adopting SRI

- Lack of protective irrigation can discourage farmers to go for full SRI.
- Limitations in draining off water from lowlands
- Cash Flow requirement in weeding period restricts poor.
- Social factor's in self-replication.
- Timeliness of operations in SRI.
- Scalability of SRI would depend on land and water infrastructure development.

Scope of SRI as a pro-poor intervention

- Non-monetary intervention in enhancing food sufficiency
- Provides fodder for cattle
- Since the components of SRI are independent and flexible. So, that makes it very adaptable.
- Less technology intensive and self spreading
- Low requirement of Labour and staggering
- Ability to play with monsoon variations

Area of Future Research and Action

- Need to standardize the fertilizer dose under SRI package
- Fluctuations in SRI yield, low conversion of tillers to panicles.
- Institutionalizing SRI amongst researchers, rural dev practitioners, govt agri line departments for large-scale replication in low food sufficiency zones of the country.

