Socio-Economic and Technological Constraints in Adoption of SRI

Mangal Sain
Principal Scientist & Head,TTT
Directorate of Rice Research
Hyderabad – 500 030

Materials and Methods

- Theis study was conducted to evaluate the socio-economic and technological constraints in adoption of System of Rice Intensification (SRI) by farmers

- Information was collected during 2007-2008 through structured a questionnaire addressed to 200 farmers in Chhattisgarh, Madhya Pradesh, Uttarakahand, Punjab, Tripura, and Andhra Pradesh

- Information thus collected was analyzed using descriptive statistics.

Results and Discussion

Popular varieties used in selected states

State	Popular varieties used for SRI	No. of farmers/ respondents
Punjab	PR116, Basmati 386, Basmati Super	15
Andhra Pradesh	BPT5204, MTU 1001, MTU 1064, 3626, NLR 3449, IR64, RGL 11414, etc.	50
Madhya Pradesh	MTU1001, HMT, Swarna	15
Chhattisgarh	MTU1001, Mahamaya,Swarna	20
Tripura	NDR359, Puja, Swarna, IR 64, Satabdi, Krishna Hamsa	50
Uttarakhand	China 4, China long, Parmal, Pant 11, Pant 12, Jhadu, Garsha	50
	Total:	200

Distribution of SRI Farmers according to Age (n=200)

Category	Number	%
Young: < 33 Years	24	12
Medium: 33-53 Years	128	64
Old: > 53 Years	48	24

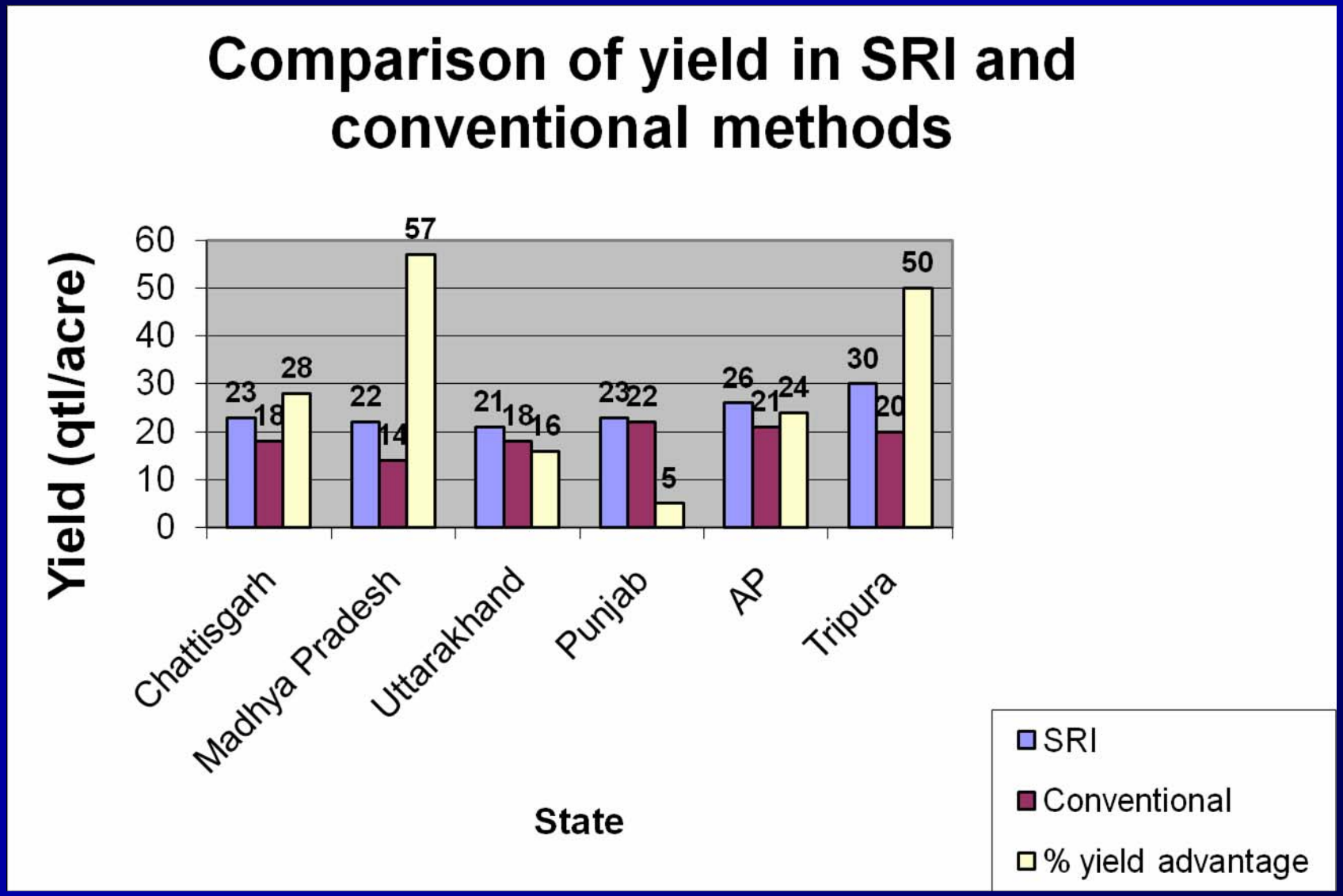
Distribution of SRI Farmers according to Education

Category	Number	%
Illiterate	76	38
Primary School	38	19
High School	64	32
College	22	11

Number of Years of SRI Cultivation Undertaken by Respondents

Experience in SRI Cultivation	No.	%
1 Year	88	44.00
2 Years	48	24.00
3 Years	64	32.00

Impact of SRI at Field Level (state-wise)



Comparison of returns: SRI vs. conventional methods

State	Chattisgarh		Madhya Pradesh		Uttarakhand	
	SRI	Con	SRI	Con	SRI	Con
Grain yield (kg/acre)	2,300	1,800	2,200	1,400	2,200	1,900
Straw yield (kg/acre)	4,600	4,000	4,500	4,800	4,500	3,000
Grain value (Rs./acre)	13,340	10,440	13,200	8,400	12,760	11,020
Straw value (Rs./acre)	900	800	4,500	4,800	5,400	3,600
Cost of cultivation (Rs./acre)	7,201	6,955	9,490	7,820	7,250	6,626
Gross income (Rs./acre	14,240	11,240	17,700	13,200	18,160	14,620
Net income (Rs./acre	7,039	4,285	8,210	5,380	10,910	7,994
C:B ratio	1.97	1.61	1.86	1.68	2.5	2.2

Comparison of returns: SRI vs. conventional

State	Punjab		AP		Tripura	
	SRI	Con	SRI	Con	SRI	Con
Grain yield (kg/acre)	2,300	2,200	2,658	2,100	3,000	2,000
Straw yield (kg/acre)	--	--	2,444	2,000	--	--
Grain value (Rs./acre)	13,455	12,760	19,305.5	15,168	21,000	14,000
Straw value (Rs./acre)	--	--	1,337.5	1,150	--	--
Cost of cultivation (Rs./acre)	6,510	5,170	10,923	11,237	7,985	6,003
Gross income (Rs./acre	13,455	12,760	20,643	16,318	21,000	14,000
Net income (Rs./acre	6,945	7,581	9,720.2	5,080	13,015	7,996
C:B ratio	2.1	2.4	1.8	1.45	3.5	1.75

CB Ratio

	Chattis-garh.		MP		Uttara-khand		Punjab		AP		Tripura	
	SRI	Con	SRI	Con	SRI	Con	SRI	Con	SRI	Con	SRI	Con
C:B Ratio	1.9	1.6	1.9	1.6	2.34	1.9	2.1	2.4	1.8	1.5	3.5	1.7

Impact of SRI at Field Level - Uttarakhand

	SRI	Conven-tional
Grain yield (kg/acre)	2,200	1,900
Straw yield (kg/acre)	4,500	3,000
Grain value (Rs./acre)	12,760	11,020
Straw value (Rs./acre)	5,400	3,600
Cost of cultivation (Rs./acre)	7,250	6,626
Gross income (Rs./acre)	18,160	14,620
Net Income (Rs./acre)	10,910	7,994
C:B ratio	2.5	2.2

Impact of SRI at Field Level-Madhya Pradesh

	SRI	Conven-tional
Grain yield (kg/acre)	2,200	1,400
Straw yield (kg/acre)	4,500	4,800
Grain value (Rs./acre)	13,200	8,400
Straw value (Rs./acre)	4,500	4,800
Cost of cultivation (Rs./acre)	9,490	7,820
Gross income (Rs./acre)	17,700	13,200
Net Income (Rs./acre)	8,210	5,380
C:B ratio	1.86	1.68

Impact of SRI at Field Level- Punjab

	SRI	Conven-tional
Grain yield (kg/acre)	2,300	2,200
Straw yield (kg/acre)	0	0
Grain value (Rs./acre)	13,455	12,760
Straw value (Rs./acre)	0	0
Cost of cultivation (Rs./acre)	6,510	5,179
Gross income (Rs./acre)	13,455	12,760
Net Income (Rs./acre)	6,945	7,581
C:B ratio	2.07	2.45

Impact of SRI at Field Level - Andhra Pradesh

	SRI	Conven-tional
Grain yield (kg/acre)	2,658	2,100
Straw yield (kg/acre)	2,444	2,000
Grain value (Rs./acre)	19,306	15,168
Straw value (Rs./acre)	1,338	1,150
Cost of cultivation (Rs./acre)	10,923	11,238
Gross income (Rs./acre)	20,643	16,318
Net Income (Rs./acre)	9,720	5,080
C:B ratio	1.8	1.45

Impact of SRI at Field Level - Tripura

	SRI	Conven-Tional
Grain yield (kgs/acre)	3,000	2,000
Straw yield (kgs/acre)	--	--
Grain value (Rs./acre)	21,000	14,000
Straw value (Rs./acre)	--	--
Total cost of cultivation (Rs./acre)	7,985	6,003
Gross income (Rs./acre)	21,000	14,000
Net Income (Rs./acre)	13,015	7,997
C:B ratio	3.5	1.75

Perception of SRI Farmers-Comparison

Perception of farmers	No. of farmers	% farmers	Rank
Reduced seed rate per acre	182	91	I
More tillers and panicles per plant	150	75	III
More spike lets/panicles	122	66	VI
More panicle weight	140	70	IV
Early maturity(7 to 10 days)	136	68	V
More head rice recovery during milling	166	83	II

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Perception of SRI Farmers- Comparison

Perception of farmers	No. of farmers	% of farmers	Rank
More straw per acre	150	75	III
More grain yield per acre	150	75	III
Less water/acre	122	61	VII
More production with less input	166	83	II
Less insect pests and diseases	122	66	VI

Major Constraints Perceived by SRI Farmers

Constraints faced by farmers	No. of farmers	% of farmers	Rank
Non-availability of skilled labour	60	30	VI
Transporting and transplanting young seedling	142	71	I
Water management	80	40	III
Non-availability of marker and cono weeder	106	53	II
Less yield as compared to conventional/ acre	44	22	VII
Drudgery with cono weeder	66	33	V
Weed management	70	35	IV

Overall satisfaction from SRI

Response	No.	%
Satisfied	137	68.5
Not satisfied	63	31.5

SRI: Principle-wise Perception

Transporting /transplanting 8-12 days seedlings:

- Farmers having small holdings do not have problem for transporting and transplanting young seedlings because they use trained family members.

- Farmers having large holdings are not getting skilled labourers for transporting and transplanting younger seedlings.

- Contract labourers feel that they waste more time with SRI as compared to traditional transplanting. Labourers feel that they can earn more in less time on a contract basis with conventional method

SRI: Principle-wise Perception

Weed Management

☞ Most of the farmers are not able to get cono weeder. They feel difficulty in removing the weeds by hand in dry soil conditions.

Due to poor quality of cono weeder, they are getting damaged very soon even in one season in some cases

Labourers are reluctant to use cono weeder because of drudgery

SRI: Principle-wise Perception

Water management

- Difficult due to uncertain supply of electricity
- During heavy rainfall in low-lying areas, hard to maintain well-drained soil
- Tail-end farmers are not sure of getting water

General Suggestions for Large-Scale Adoption of SRI

SRI is not favourable for all the regions. It should be recommended based on location-specific contexts.

Overall, SRI is very good for increasing rice production and productivity with less inputs as compared with conventional cultivation.

But scientists involved in SRI research should pay more attention to develop simplified strategies to overcome constraints faced by the farmers for adoption of SRI on large scale in all situations.

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General Suggestions for Large-scale Adoption of SRI

Blacksmith at the village level can be given soft loans to design to fabricate the conoweeders and markers that help SRI farmers.

Assured electric power supply will be useful to practice the water management related to SRI.

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Major Suggestions
(Multiple Responses)

Suggestions	No.	%
Subsidy on SRI	120	60
Create confidence among farmers	84	42
Training for farmers/labourers	56	28
Recommend suitable varieties	102	56
Clarity on pest management in SRI	96	48
Conoweeder (redesign)	184	92
Clarity in State agriculture department	76	38
Complete package of practices for SRI	148	74
Alternate steps/ contingency planning for SRI	134	67
Reduce labour-intensity	164	82


DEMONSTRATION ON SRI
(KHARIF, 2007)
MIRZA AGRI. SECTOR
MATABARI AGRI. SUB-DIVISION
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শ্রী পদ্ধতিতে ধান চাষ কেন করবেন?
বীজ কম (৮০০ গ্রাম কাণি প্রতি)।
সার কম (প্রথাগত পদ্ধতির ১/৪ ভাগ)।
জল কম (প্রথাগত পদ্ধতির ১/৩ ভাগ)।
৩১ থেকে ৩৫ মন কাণি প্রতি।

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Thank you