

Facts & Figures on SRI

Extracts from Reports of Sub-Group Constituted for the
12th FYP Under Various Working Groups & others

Background notes for discussion in the :

Round Table Discussion on SRI

13th January, 2012, at CSD, Delhi

Contents

Grain yields in SRI recorded in experiments across India:.....	2
Findings from Directorate of Rice Research and.....	3
All India Coordinated Rice Improvement Project (AICRP) Centers	3
INDICATORS OF PERFORMANCE OF SRI.....	5
SRI – WATER SAVINGS IN GROUNDWATER SITUATION: (extract from a published paper).....	6
Potential Areas for SRI promotion in different states under irrigated and rainfed situations.....	7
Potential area for SRI Scaling Up in Different Rice Eco-systems.....	8
Proposed Areas for Scaling Up SRI under different categories of the states.....	9
PROGRAM TYPOLOGY for SCALING UP SRI	10
Extension Needs of SRI.....	11
Institutional Framework for Integrated SRI:	13
Financial modality and institutional streams for up scaling SRI in different categories of states.....	14
Overall area for up scaling of SRI and its phasing.....	15
Overall Budget Estimate for Scaling Up SRI	15
Budget estimate for Scaling UP SRI (Example of Dept of Agri, AP under NFSM):.....	17
SRI SCALING BUDGETS FROM SUB-GROUP ON UPSCALING INNOVATIVE TECHNOLOGIES.....	21

**Grain yields in SRI recorded in experiments across India:
Compilation from published sources**

Location	Grain yield (t/ha)		% increase over Conv.	Source
	Conv	SRI		
<i>Tamil Nadu Rice Research Institute, TNAU, Aduthurai (2005)</i>	4.7	7.1	48.9	<i>Rajendran et. al., 2005</i>
<i>14 Research stations, ANGRAU, Andhra Pradesh (2007)</i>	4.9	5.7	16.6	<i>Mallikarjuna Reddy et. al., 2007</i>
<i>Indira Gandhi Agricultural University, Raipur, Chattisgarh (2007)</i>	4.3	5.1	17.8	<i>Shrikant Chitale et al., 2007</i>
<i>Agricultural Research Institute, Patna, Bihar(2007)</i>	3.9	6.1	55.1	<i>Ajaykumar et. at., 2007</i>
<i>Pandit Jawaharlal Nehru College of Agriculture and Research Institute, Karaikal, Puduchery (2007)</i>	2.2	3.7	68.3	<i>Sridevi and Chellamuthu, 2007</i>
<i>ICAR complex , Umiam Meghalaya (2007)</i>	4.7	5.2	10.2	<i>Munde et.al., 2007</i>
<i>Central Rice Research Institute, Cuttack, Orissa (2006)</i>	5.6	7.0	25.0	<i>Rao. et al., 2007</i>
<i>Regional Agricultural Research Station, Shillong, Assam (2007)</i>	3.1	4.5	45.2	<i>Bora and Dutta, 2007</i>
<i>Agricultural Research Station, UAS, Kathalagere, Karnataka(2005)</i>	8.8	10.2	15.9	<i>Jayadeva et.al., 2008</i>
<i>Main Rice Research Station, AAU, Bawagam, Gujarat</i>	4.7	7.5	37.1	<i>Chauhan et al., 2008</i>
<i>Birsa Agricultural University, Ranchi, Jharkhand</i>	4.3	5.0	16.3	<i>Singh et.al., 2009</i>
<i>G.B. Pant University of Agriculture- Uttarakhand</i>	6.5	5.8	- 10.4	<i>Bisht et.al., 2007</i>
<i>Agricultural Research Station, Mannuthy, Kerala</i>	4.6	3.7	-18.6	<i>Anitha et.al., 2007</i>

Source: *More Rice with Less Water (WWF 2008).*

Findings from Directorate of Rice Research and All India Coordinated Rice Improvement Project (AICRP) Centers

For the past 5 years (2005 onwards), SRI comparative trials were conducted at DRR and other 25 AICRIP centers across the country for its feasibility and quantification of the benefits of SRI. Broad conclusions are as follows.

- The number of effective tillers /m², panicle length, dry matter and other yield attributes such as grains per panicle are higher in SRI.
- Irrigation water reduced by 25-30 % there by enhanced water productivity in SRI in different seasons.
- SRI performed well and found superior (7- 12% higher grain yields) over Conventional flooded irrigation with reduced inputs but the response is not same in all the situations. (ACRIP reports 2005-2010, Mahender Kumar et al, 2010). SRI was not promising at Kapurtahala - Punjab, Karaikkal-Pondicherry, and Sabour- Bihar emphasizes the need for suitable modifications for its adoption in large scale. (see Tables below)
- Observed differential response of varieties for yield under SRI, however most of the varieties tested found promising in SRI over conventional method. Hybrids and medium duration cultivars showed greater promise better yields under SRI method
- SRI method with conjunctive use of organic and inorganic fertilisers found promising initially and organics recorded on par yields with chemical fertilizers after 3-4 seasons
- Long term trails on nutrient management in SRI indicated that there is no depletion of nutrients from soil due to continuous SRI cultivation

Mean Grain yield increase (%) under SRI over Normal Transplanting (25 Locations)

Year/Season	SRI over NTP
<i>Kharif 04</i>	12.0
<i>Kharif 05</i>	7.0
<i>Kharif 06</i>	12.0
<i>Kharif 07</i>	20.5
Over all GY	12.6

Summary of Multi location trials (2004-2007)

S No	Item	Yield Advantage	No. of locations
1.	SRI superior over NTP	5 - 65.2 %	19
	Locations : Aduthurai(ADT), Agriculture research Institute (ARI-Rajendranagar), Arundhathi nagar(ARD),Jagdapur(JGD), Karjat(KJT), Patna (PTN), Ranchi(RNC), Siriguppa (SRG), Titabar (TTB), Chinsurah (CHI), Coimbatore (CBT), Panth nagar (PNT), Umiam(UMM), Malan(MLN), Mandya (MND), Maruteru (MTU), Nawagam (NWG), Pusa(PSA)		
2.	STD over SRI	5-10% yield advantage	3
	Locations: Kapurthala (KPT), Karaikkal(KRK), Sabour (SBR)		

INDICATORS OF PERFORMANCE OF SRI

Table 1: Indicators of performances of SRI among the stakeholders

Benefits to Rural Households	Benefits for Countries	Benefits for Environment
More rice to eat and sell from same amount of land in a cost-effective manner (III food security)	Improved food security	Less pressure to convert remaining forests and natural landscapes to agriculture
Higher incomes/lower costs including less water (income security)	Water freed up from rice sector for other crops, people, natural systems	Enhanced ecosystem services involved in regulating water, soil, climate
Reduced dependency on purchased inputs [seeds, fertilizers, pesticide]	Realigning smaller water projects, food imports, energy, and fertilizer subsidies	Reductions in GHG, especially methane
Enhanced natural resource base	Improved soil and water quality from reduced loads of nitrogen fertilizers and pesticides	Less loss of plant and animal biodiversity from soil and water pollution
Reduced risk and vulnerability	More resilient, productive rural communities	Reduced flashpoints for conflict over food, water, land
Improved farm family health	Improved public health	Improved planetary health

Source : http://www.sri-india.net/documents/More_Water_For_The_Planet.pdf

Some of the observed advantages of SRI as observed at the farm level include:

- Higher net incomes (85 – 163 %)
- Lower costs (11 – 20 %), less labour
- 22 – 72 % less water and energy use for irrigation
- Reduced dependency on purchased inputs : seeds (80 – 90 %), fertilizers, pesticide
- Climate change adaptability (drought tolerance, resistance to storm, reduced pest damage, enhanced natural resource base)
- Conserving Biodiversity (good response from indigenous varieties)
- SRI is fundamentally ‘Pro poor’ and effectively oriented towards the small farmers (< 1 acre)

Table 2: Impact of SRI on household food security in Jharkhand

Landholding (acres)	No. of days of food security		
	Traditional	SRI	Additional
0 – 1	153	217	64 (41.8 %)
1 – 2	268	416	148 (55.2 %)
> 2	326	738	412 (126.4 %)

SRI – WATER SAVINGS IN GROUNDWATER SITUATION: (extract from a published paper)

Table 5 Estimated water application in SRI and conventional paddy cultivation

Crop stage	Number of irrigations		Number of pumping hours		Water application (m ³ ha ⁻¹)		Cumulative water application(m ³ ha ⁻¹)	
	Non-SRI	SRI	Non-SRI	SRI	Non-SRI	SRI	Non-SRI	SRI
Land preparation	7.4	6.3	87.9	99.5	2,198	2,488	2,198	2,488
Nursery	54.3	20.5	16.3	2.7	407	67	2,605	2,554
1st weeding	47.0	47.0	298.8	102.0	7,472	2,549	10,077	5,104
2nd weeding	36.0	11.6	187.7	73.0	4,693	1,826	14,770	6,930
3rd weeding	29.6	9.9	158.1	62.8	3,952	1,570	18,722	8,500
Panicle initiation	59.3	32.4	380.4	205.7	9,510	5,143	28,231	13,643
Panicle devt	44.4	19.4	256.9	127.7	6,422	3,193	34,653	16,836
Maturity	37.1	15.2	224.8	92.8	5,619	2,320	40,273	19,156
Total	315.1	162.3	1610.9	766.2	40,273	19,156		
Reduction between SRI and conventional	152.8 (51.5%)		844.7 (52.4%)		21,117 (52.4%)			

Fig. 5 Cumulative water applications in SRI and conventional rice cultivation

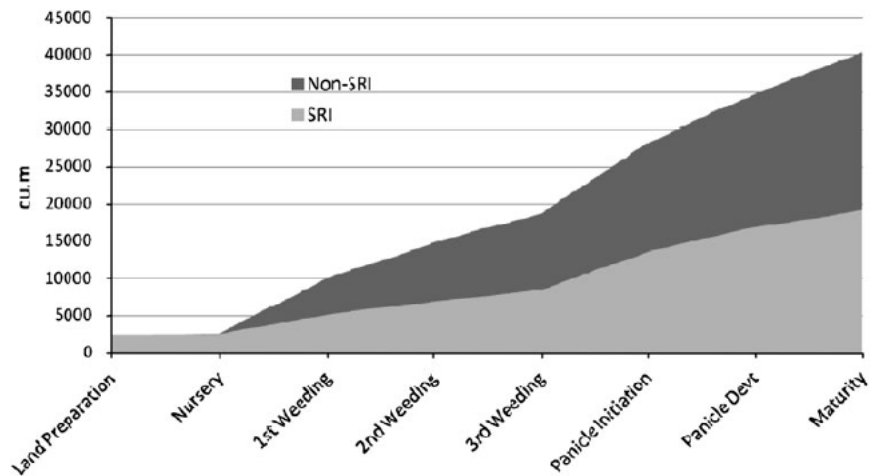
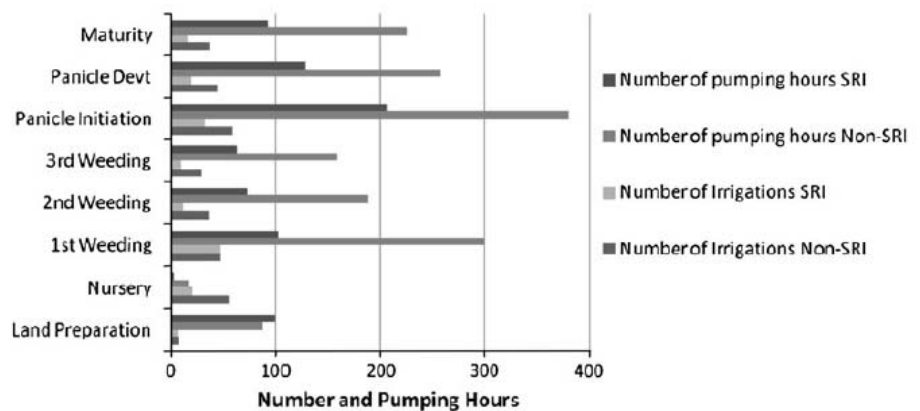


Fig. 4 Comparisons of tubewell irrigation amounts between SRI and conventional rice production, according to crop growth stage, according to farmer information



Potential Areas for SRI promotion in different states under irrigated and rainfed situations

State	Rice area (1000 ha)					
	Irrigated condition		Rainfed condition		Total Rice area	Potential SRI area
	Total rice area	Potential Areas for SRI	Total rice area	Potential Areas for SRI		
A.P.	3819	2181.88	116	12	3935	2193.88
Assam	110	45.99	1748	175	1858	220.99
Bihar	1914	785.89	1244	124	3158	909.89
Chattisgarh	1192	319.31	2532	253	3724	572.31
Gujarat	418	126.09	316	32	734	158.09
Haryana	94	460.69	947	95	1041	555.69
Jharkhand	81	55.01	1542	154	1623	209.01
J&K	25	61.36	227	23	252	84.36
Karnataka	1018	202.74	377	38	1395	240.74
M.P.	249	73.02	1412	141	1661	214.02
Maharashtra	398	105.97	1132	113	1530	218.97
Orissa	2047	628.54	2347	235	4394	863.54
Punjab	2595	1482.94	26	3	2621	1485.94
Tamil Nadu	1777	825.08	78	8	1855	833.08
Tripura	38	64.75	213	21	251	85.75
Uttar Pradesh	4559	2288.44	1263	126	5822	2414.44
Uttarakhand	58	81.26	231	23	289	104.26
West Bengal	2730	1563.06	2787	279	5517	1842.06
All India	23502	11586.91	19297	1855	42799	13441.91
% potential area		49%		9.65%*		31%

*can be enhanced substantially with supplementary irrigation.

Potential area for SRI Scaling Up in Different Rice Eco-systems

Ecosystem	Area under rice (m ha)	Potential Area under SRI (m ha)	(%) of area	Remarks
Irrigated	23.50	11.58	49	Highly suitable
Rainfed Low land and uplands	19.29	1.86	9.6	Suitable in favorable up lands (can be enhanced with supplementary irrigation in other lands)
Deep Water	1.30	Nil	Nil	Not suitable
Total	44.09	13.44	30.4	

Further, the potential area in different ecosystems is categorized based on the feasibility of the SRI adoption (Table.6). There is a scope to upscale the SRI technology to an extent of 30 % of the total rice area in the country. However, deep water and ill drained and saline soils need to be avoided for SRI adoption till suitable modifications are evolved for their specific requirements.

Proposed Areas for Scaling Up SRI under different categories of the states

Category of states	Name of the State	Proposed SRI Rice area (1000 ha)					
		Irrigated condition		Rainfed condition		Total Rice area	Total Proposed SRI area
		Rice area	Proposed Areas for SRI	Rice area	Proposed Areas		
A	A.P.	3819	1090.94	116	12	3935	1102.94
	Tamil Nadu	1777	825.08	78	8	1855	833.08
	Tripura	91	64.75	213	21	304	85.75
	Sub total	5687.0	1980.8	407.0	41.0	6094.0	2021.77
B	Bihar	1914	392.945	1244	62	3158	454.945
	Chattisgarh	1192	159.655	2532	126.5	3724	286.155
	Jharkhand	81	27.505	1542	77	1623	104.505
	J&K	25	30.68	227	11.5	252	42.18
	Karnataka	1018	101.37	377	19	1395	120.37
	M.P.	249	36.51	1412	70.5	1661	107.01
	Maharashtra	398	52.985	1132	56.5	1530	109.485
	Orissa	2047	314.27	2347	117.5	4394	431.77
	West Bengal	2730	521.02	2787	139.5	5517	660.52

	Sub total	9654.0	1636.9	13600.0	680.0	23254.0	2316.94
c	Assam	110	22.995	1748	87.5	1858	110.495
	Gujarat	418	63.045	316	16	734	79.045
	Haryana	94	115.1725	947	47.5	1041	162.6725
	Punjab	2595	370.735	26	1.5	2621	372.235
	Uttar Pradesh	4559	457.688	1263	63	5822	520.688
	UttaraKhand	58	20.31	231	11.5	289	31.81
	Sub total	7834.0	1049.9	4531.0	227.0	12365.0	1276.9455
	All India	23175	4667.656	18538	948	41713	5615.6555

Proposed Areas for Scaling Up SRI under different categories of the states

Category of states	Name of the State	Proposed SRI Rice area (1000 ha)					
		Irrigated condition		Rainfed condition		Total Rice area	Total Proposed SRI area
		Rice area	Proposed Areas for SRI	Rice area	Proposed Areas		
A	A.P.	3819	1090.94	116	12	3935	1102.94
	Tamil Nadu	1777	825.08	78	8	1855	833.08
	Tripura	91	64.75	213	21	304	85.75
	Sub total	5687.0	1980.8	407.0	41.0	6094.0	2021.77
B	Bihar	1914	392.945	1244	62	3158	454.945
	Chattisgarh	1192	159.655	2532	126.5	3724	286.155
	Jharkhand	81	27.505	1542	77	1623	104.505
	J&K	25	30.68	227	11.5	252	42.18
	Karnataka	1018	101.37	377	19	1395	120.37
	M.P.	249	36.51	1412	70.5	1661	107.01
	Maharashtra	398	52.985	1132	56.5	1530	109.485
	Orissa	2047	314.27	2347	117.5	4394	431.77
	West Bengal	2730	521.02	2787	139.5	5517	660.52
	Sub total	9654.0	1636.9	13600.0	680.0	23254.0	2316.94
c	Assam	110	22.995	1748	87.5	1858	110.495
	Gujarat	418	63.045	316	16	734	79.045
	Haryana	94	115.1725	947	47.5	1041	162.6725
	Punjab	2595	370.735	26	1.5	2621	372.235
	Uttar Pradesh	4559	457.688	1263	63	5822	520.688
	UttaraKhand	58	20.31	231	11.5	289	31.81

Sub total	7834.0	1049.9	4531.0	227.0	12365.0	1276.9455
All India	23175	4667.656	18538	948	41713	5615.6555

Programme Typology for scaling up SRI

At present there is a large variation regarding the existing area under SRI in different states. Some are already having a significant area while in other states, SRI is not even introduced so far. Keeping this in view, the states have been divided into the following three categories.

Category – A: This includes those states, which are having higher area under SRI varying between 0.6 to 6.5 lakhs ha. This includes 3 states namely Tamil Nadu and Andhra Pradesh (under irrigated condition) and Tripura (under rainfed condition)

Category – B: This includes states which are having lesser area under SRI varying between only 0.02 – 0.10 lakhs ha. This includes states like Bihar, West Bengal, Odisha, Chattisgarh and Karnataka which are having about 0.1 lakhs ha in each state. Besides this, there are other states like Madhya Pradesh, Jammu and Kashmir and Maharashtra which have only 0.01 – 0.02 lakhs ha. Jharkhand is however having about 0.05 lakhs ha under SRI

Category – C: This includes states where SRI has not yet been successfully introduced through any source of funding.

Keeping in view, the above variation, it is appropriate to upscale SRI through the following three approaches.

- (i) The states under category 'A' are ready for large scale horizontal expansion through mainstream organizations like state department of agriculture (with financial support from MoA). Sustainable results would however be achieved if a compact block area approach is followed on a project mode of operation with incentives on critical inputs / practices for every farmer and for a period of 3 years so that the new management / skill oriented package can get internalized

(ii) The states under category 'B' are those where existing area under SRI is less but full potential has not yet been explored. In such states, SRI can be upscaled preferably through "informal" developmental organizations like NABARD, para-statal organizations, farmers' commission ??, experienced NGOs, etc. This requires a professional approach with regard to management of the upscaling process in a project mode of operation. The current approach of development through "challenge fund" may be promising for 'B' category of states. Under this approach, experienced organizations (outside the mainstream) can also participate through an open bidding system.

The states under 'C' category are those where SRI has not been introduced so far. This may be either due to lack of adequate extension effort or lack of relevance of existing package of SRI. Hence, in such states there is a need to carry out intensive applied / adapting research at farm level as well as in farmers' fields to refine the existing package of SRI. Besides this, adequate efforts are needed to build the capacity of a number of new NGOs through work experience to provide back-up support for upscaling in future. This type of effort may be made by KVKs and innovative NGOs / CBOs in the above states.

Extension Needs of SRI

The conventional model of extension (in which demonstrations are carried out to motivate farmers with an understanding that the technology will be automatically diffused to other farmers during subsequent years) does not seem to be effective in the case of SRI. New knowledge and skill are to be learnt by every farmer and labour. A major change is also required with respect to the management of resources (time of operation, labour use, irrigation management, etc). This requires at least 3 years for internalizing the whole system of SRI by majority of farmers. Critical features of the proposed extension approach for "SRI" are as follows

(i) Compact block demonstration in a contiguous area of 100 ha (in a cluster of villages) in place of an isolated individual demonstration (in a particular village). The proposed geographical unit of 100 ha can be covered in a phased manner over a period of three years with village as an operational unit

- (ii) Working with all farmers in the compact block through farmers organizations. It may be appropriate to adopt the 'intensive' model of farmer field school for education in the first year followed by 'extensive' model of farmer field school in subsequent years
- (iii) Handholding of participating farmers through a local agriculture worker for each unit of 100 ha for providing confidence to the farmers and to liaison with agriculture department or facilitating organization
- (iv) Motivation of farmers through focused exposure visit to successful experiences under the similar farming situation (type of soil, source of irrigation, etc) where the upscaling is to be carried out
- (v) Organization of farmers into sustainable groups (through credit and thrift activity) and then forming SRI groups (by drawing members out of the above groups)
- (vi) Capacity building of not only farmers (CBOs) but also of labourers (including women and men) for critical operations like raising of nursery, transplanting of young seedling, inter culture operation through manual weeder, water management, etc. For this purpose, the experienced facilitating agency may carry out not only off-campus training courses but also facilitate village based FFS with the help of community resource persons (who are usually practicing SRI farmers)
- (vii) Provision of financial incentives to practicing farmers towards equipment (like row marker, weeder, etc) and also towards new type of crop management inputs (organic manure, non-pesticidal inputs for pest management, partial cost of additional labour for transplanting, weeding and inter-cultivation, etc)
- (viii) The financial incentives for equipment may be given to either individual farmers or to a SHG group for operating it on a custom hire basis. The incentive for crop management inputs could be provided to all SRI farmers on tapering basis during the three years period.

Institutional Framework for Integrated SRI:

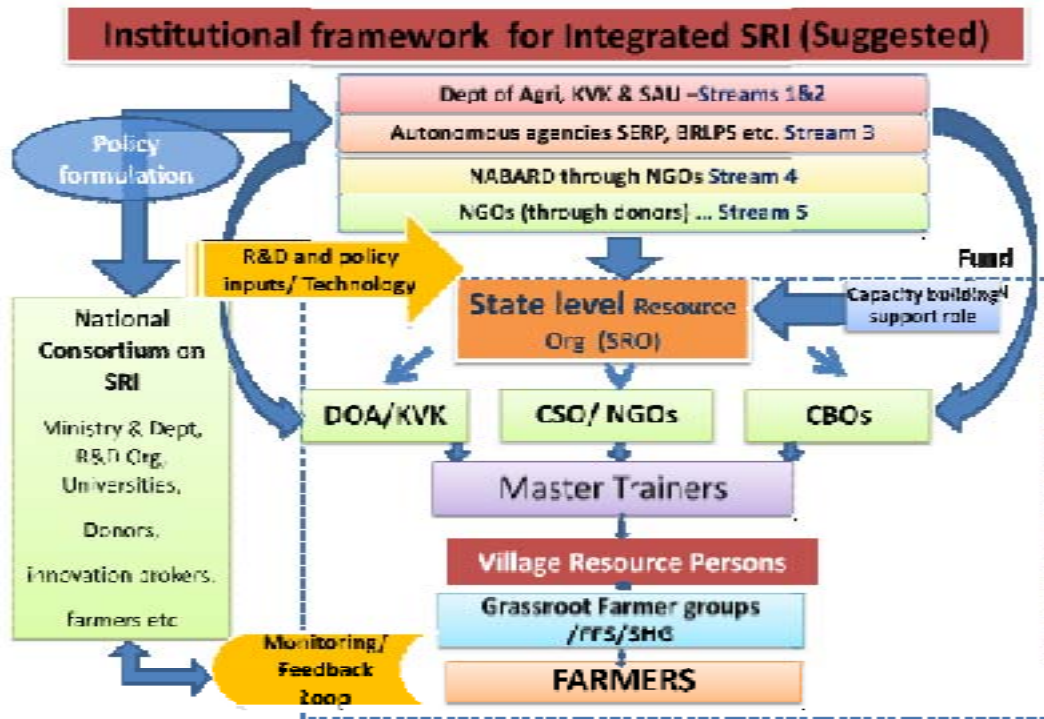


Fig 4: Suggested Institutional Architecture for upscaling innovation

Financial modality and institutional streams for up scaling SRI in different categories of states

Sl. No.	Category of state *	Proposed strategy for up scaling SRI	Financial modality	Institutional streams
1.	A	Horizontal expansion on a large scale	Redesigned fund under NFSM, RKVY, etc	State department of agriculture
2.	B	Selective up scaling in suitable areas	Challenge fund through competitive process	Farmers commission at state level or multi-agency State Consortia Experienced NGOs, CBOs Autonomous organizations with state government NABARD Etc
3.	C	Intensive R&D in difficult situations	Special fund (on consortium basis)	ICAR / SAU (KVKs) NGOs CBOs
4.	D	SRI integrated with Reforms in Irrigation systems	Special irrigation reforms program under two situations a) Canal irrigation b) Groundwater based	CADA, Electricity Distribution units, Water Users' Associations NGOs

*

A = Where SRI has been widely accepted

B = Where acceptance of SRI is relatively lesser but its potential has not been fully explored

C = Where SRI has been recently introduced / not yet introduced

D = where reforms in irrigation systems are needed to deliver small but regular and precise quantities of irrigation water.

Integrate MGNREGS in all the streams above for :

1. land levelling
2. addition of organic matter (soil productivity enhancement & reclamation of problem soils), including raising of biomass such as Glyricidia and Pongamia.
3. Farm ponds in rainfed areas
4. improving drainage and irrigation channels

Overall area for up scaling of SRI and its phasing

Proposed area (and its phasing) for upscaling SRI in different categories

Sl.No	Category of States *	Total units of SRI *	No. Of units during different years of XII plan (000 ha)				
			I yr	II yr	III yr	IV yr	V yr
1	A	2477	247.7	495.4	743.1	495.4	495.4
2	B	1862	186.2	372.4	558.6	372.4	372.4
3	C	1276	127.6	255.2	382.8	255.2	255.2
	Total	5615	561.5	1123	1684.5	1123	1123
4	D						To be worked out

* Proposed for upscaling during XII plan. Each unit is 1000 ha

Overall Budget Estimate for Scaling Up SRI

Tentative budget estimate for upscaling SRI in three categorising of states

Sl. No.	Category of states *	Total units SRI **	Unit cost (Rs/ha)	Total cost (Rs in crores)
1	A	2477	7520	1862
2	B	1862	7137	1329
3	C	1276	5193	663
4	D	To be estimated		
	Total	5615	19850	3854
	Infrastructure and Institutional charges (15%)			578
	National consortium(1) and state SRI secretaries (18)			40
	Incentives (Awards)			28
	Grand Total			4500

State wise Potential areas for SRI Promotion in Irrigated rice (000 ha)

State	Potential area for SRI under different sources (000 ha)						
	Rice area	Irrigated condition			Total in IR	Rainfed	Potential SRI Area
		Canals	Tanks	Wells / lifts			
Andhra Pradesh	4387	417.25	324	1440.63	2181.88	12	2193.88
Assam	2324	3.3	0.75	41.94	45.99	175	220.99
Bihar	3496	97.1	38.75	650.04	785.89	124	909.89
Chattisgarh	3734	88.7	12.75	217.86	319.31	253	572.31
Gujarat	747	27.62	8	90.47	126.09	32	158.09
Haryana	1020	318.5	-	142.19	460.69	95	555.69
Jharkhand	1684	0.8	5.25	48.96	55.01	154	209.01
JK	258	17.28	1	43.08	61.36	23	84.36
Karnataka	1514	84.88	41.2	76.66	202.74	38	240.74
Madhya Pradesh	1682	10.66	26	36.36	73.02	141	214.02
Maharashtra	1522	30.06	0	75.91	105.97	113	218.97
Orissa	4455	141.8	0	486.74	628.54	235	863.54
Punjab	2735	278	-	1204.94	1482.94	3	1485.94
Tamil Nadu	1932	191.5	270	363.58	825.08	8	833.08
Tripura	243	1.5	0.5	62.75	64.75	21	85.75
Uttar Pradesh	6034	589.5	52.5	1646.44	2288.44	126	2414.44
Uttarakhand	296	9.6	0.25	71.41	81.26	23	104.26
West Bengal	5936	68.4	73.5	1421.16	1563.06	279	1842.06
All India	45747	2471.53	905.65	8209.73	11586.9	1855	13441.91

Budget estimate for Scaling UP SRI (Example of Dept of Agrl, AP under NFSM):

Example of Joint Action Initiative Program on SRI (JAI-SRI) by Department of Agriculture, Andhra Pradesh - under NFSM with additional support from NABARD for facilitation.

Part – 1: Components to be funded by Department of Agriculture

S.N O	Particulars	Qty	Unit	Rate	Year 1 (2010-11)	Year 2 (2011-12)	Year 3 (2012-13)	Total cost	Source of funds
	Block/ unit size	100	Ha		30	60	100	100	
A	Inputs								
1	Use of Organic manures and micro nutrients (50%)	(30+30+40)*	Ha	1200	36000	72000	84000	192000	NFSM / RKVY
B	Equipment(50% subsidy to SRI farmers)								
1	Weeder cost (1/3ha)	(10+10+10)		1000	10000	10000	10000	30000	NFSM / RKVY
2	marker cost (1/ 4 ha)	(7+7+7)		650	4550	4550	4550	13650	NFSM / RKVY
C	Capacity building								
1	Orientation to farmers	(40+40+40)		100	4000	4000	4000	12000	ATMA
2	Exposure visits	35		200	7000	7000	7000	21000	ATMA
3	Field days	1	100	100	10000	10000	0	20000	
	Total cost per block				71550	107550	109550	288650	

	Total cost per district (10 blocks)	10			715500	1075500	1095500	2886500
	Cost per hectare (Rs)				715	1076	1096	2887

Part – 2: Components to be funded by NABARD

S.No	Particulars	Qty	Unit	Rate	Year 1 (2010-11)	Year 2 (2011-12)	Year 3 (2012-13)	Total cost
	Block/ unit size	1000	Ha		300	600	1000	1000
	A Inputs							
1	Labour incentives (50% cost) for one weeding/ Ha/ Yr	(300+300+400)	Ha	1250	375000	750000	875000	
	Sub total				375000	750000	875000	2000000
	B Capacity building							
1	Training to labourers / block	(350+350+350)		150	52500	52500	52500	157650
2	Trainers training to facilitators	(20+20)		800	32000	32000	32000	96000
	Sub total				84500	84500	84500	253650
	C Facilitation costs							
	C1 For Implementing Agency							
1	Activist at the rate of (Ten / District for 12 months)	10	12	1800	216000	216000	216000	648000
2	Cluster coordinators (5 / district for 12 months)	5	12	8000	480000	480000	480000	1440000

S.No	Particulars	Qty	Unit	Rate	Year 1 (2010-11)	Year 2 (2011-12)	Year 3 (2012-13)	Total cost
3	Review and Planning meetings		10	3000	30000	30000	30000	90000
4	Communication support for cluster coordinators	5	12	250	15000	15000	15000	45000
5	Over heads for implementing agencies	5	12	1000	60000	60000	60000	180000
	Sub total				801000	801000	801000	2403000
C	Mechanization							
1	Balance cost of weeders and markers (net 50% subsidy)				76250	76250	110000	262500
	sub total				76250	76250	110000	262500
	Cost per district				1336750	1711750	1870500	4919150
	Cost per Ha				4456	2853	2672	9575800
	Cost for 4 districts				5347000	6847000	7482000	19676000
D	For State level support							
1	State level coordinator- (one per 4 district for 12 months)	1	12	12000	144000	144000	144000	432000
2	Communication support		12	625	7500	7500	7500	22500
3	Travel support		12	5000	60000	60000	60000	180000
4	Over heads/review & planning		12	5000	60000	60000	60000	180000
	Sub total				271500	271500	271500	814500
	Grand Total				5618500	7118500	7753500	20490500
	Cost per district				1404625	1779625	1938375	5122625
	Cost per Ha (from				4682	2966	2769	5123

S.No	Particulars	Qty	Unit Rate	Year 1 (2010-11)	Year 2 (2011-12)	Year 3 (2012-13)	Total cost
	NABARD)						
	GOAP contribution			2054	1627	1540	3133
	Total cost per Ha			6736	4593	4309	8256

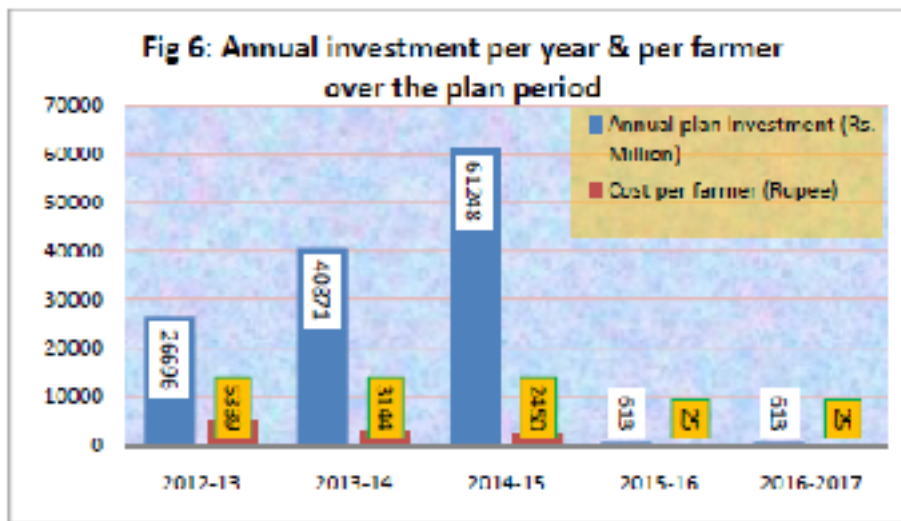
Part – III: Summary

Sl.No.	Particulars	Year 1 (2010-11)	Year 2 (2011-12)	Year 3 (2012-13)	Total cost
1	Part - 1 (Department of Agri)				
A	Total cost per block (100 ha)	71550	107550	109550	288650
B	Total cost per district (10 blocks)	715500	1075500	1095500	2886500
C	Total cost per 4 districts	2862000	4302000	4382000	11546000
D	Cost per hectare	716	1076	1096	2887
2	Part -2 (NABARD)				
E	Cost per block	140462.5	177962.5	193837.5	512262.5
F	Total cost per district (10 blocks)	1404625	1779625	1938375	5122625
G	Total cost per 4 districts	5618500	7118500	7753500	20490500
H	Cost per hectare	4682	2966	2769	5123

SRI SCALING BUDGETS FROM SUB-GROUP ON UPSCALING INNOVATIVE TECHNOLOGIES

Table 5: Estimated Fund requirement for the XII five year plan

	XII five year plan Physical target & Financial Outlay (Rs. Million)					Total Amount (Rs Million)
	2012-13	2013-14	2014-15	2015-16	2016-2017	
Total plan fund (Rs. Million) for 62500 units across the states	26696	40871	61248	613	613	130043
Total area (000ha) @425 ha per unit	200	720	1920	3040	4000	9880
Target farmers (million) @1000 farmer per unit	5	13	25	25	25	25
Cost Incentive/farmer (Rs.)	5339	3144	2450	25	25	10982
Direct incentive cost (input)	2240	1470	1105	250		5002
Capacity building & handholding	3099	1673	1344			



- A: Where SRI has been widely accepted and hence ready for horizontal expansion on a large scale through mainstreaming agencies
- B - Where acceptance of SRI is relatively lesser but its potential has not been fully explored and hence it is ready for selective upscaling in suitable areas through challenge fund and competitive process
- C - Where SRI has been recently introduced / not yet introduced and hence it requires intensive R&D in different situations through special fund