

SRI in the 12th Five Year Plan

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The crisis points that Policies related to Rice production systems must take into consideration:

1. Stagnation of productivity in the green revolution areas and falling per capita availability of food grains.
2. Surface water irrigation systems in serious disarray
3. Shift in rice production to groundwater base – though temporarily increases productivity and area but will result into serious damage to groundwater and land resources.
4. Increasing soil quality loss and ‘soil fatigue’
5. High and increasing subsidies for chemical fertilisers
6. Possibility of food grain deficits
7. Wide spread hunger amidst the overflowing buffer stocks

National initiatives on Rice so far:

1. Main initiative is National Food Security Mission targeting increase in rice production by about 10 million tons by the year.??.
2. It has an allocation of Rs. Specially targeting xx number of districts out of the total 534 rice producing districts in the country.
3. Hybrid rice is a major plank in the strategy in addition to??. SRI did find a place in the NFSM strategy but the total expenditure on the promotion of SRI is minimal... as it the area achieved.
4. The focus is much on the high rice productivity regions , many of them being the former Intensive Agriculture Development Program districts.
5. The present rice development programs are to achieve national level food security by increasing the food grain production in favorable regions. With the exhaustion of soils, increasing ‘fatigue of green revolution’ and a serious ecological crisis threatening the former green revolution districts, the focus is now shifting towards the so called ‘water rich’ eastern regions for the same objective of achieving national food grain self-sufficiency.

The Needed Correction:

1. The National Consortium on SRI reiterates the need for local level food access by the larger number of poor and near poor as articulated by the Right to Food Campaign.
2. It must be recognized that Rice is a staple grain for large masses of population in the poorer regions in the predominantly rainfed areas of the country with relatively higher rainfall. Many of these people are small, marginal and medium farmers for whom the farm produced rice provides food security for their families.
3. Rice productivity in these areas is also very low to medium levels (i.e. <1000 kg/ ha to <1500 kg/ ha) while the national average is around 2200 kg/ha.
4. Improving rice productivity in these regions holds a substantial promise to improve food security among large numbers of small and marginal farmers in addition to creating enhanced local food security.
5. The districts having <2000 kg/ ha productivity contributes to about 55.8% of the total rice area and about 37 per cent of the total rice production. If one includes the

medium productive districts (i.e. <2500 kg/ ha) the share increases to 73% area and 57% production in the country. (see Table 1)

6. The 12th Five Year Plan must seriously consider this objective of increasing the productivity of the low productive rice areas as a measure of achieving food security of the people living in these regions plagued with chronic hunger and food insecurities. Achieving **local** food security must form a basis for a major program within the ‘national food security’ concerns.

Potential of SRI:

1. Producing ‘More with less’ SRI – has shown a promise of yield increases ranging from 15 to 40% depending on the base line productivity. (i.e. lower is the base productivity higher is the percentage increase in yield with SRI). These figures are confirmed by various scientific studies.
2. SRI has shown consistent and remarkable results reported in reducing the irrigation water application by about 30 to 50 per cent.
3. The reduction in chemical fertilizers and pesticides is also observed across the country – reducing the cost of cultivation and increasing the profitability
4. SRI has passed the test of times, crossing the initial skepticism related to its labor intensive nature it has now spread to almost all parts of the country through mainly civil society initiatives. It has been taken up in a large scale particularly in Tamil Nadu and Tripura through government efforts. It is now realized that remodeling the extension system in the framework of strengthening ‘innovation systems’ will promote SRI.

National Program on SRI:

1. There is immense experience within the National Consortium on SRI represented by several civil society organizations across the country, researchers and farmers.
2. The summary of these experiences in promoting SRI shows that the following shifts from the conventional agriculture extension system are necessary:
 - a. SRI can not be promoted through a package of subsidies on chemical inputs and weeders (alone) as envisaged in the NFSM guidelines.
 - b. Being a knowledge and management intensive innovation, SRI would not spread on its own. Intensive efforts are needed to root SRI in a given area.
 - c. In place of subsidies on chemical inputs, SRI needs support in the form of
 - i. grass-roots extension system for knowledge and skill transfer, preferably in the back ground setting of a Gram Panchayat or a community based organisation. Dedicated field level functionaries to hand-hold the system for about 3 years is a necessity.
 - ii. Intensive initial efforts in knowledge and skill building of agriculture labor, small and marginal farmers
 - iii. Pool of SRI quality implements (markers and weeders) in adequate number available at the village level for labor and farmers.
 - iv. Incentives for farmers to cushion the initial three years of personal experimentation and shift to SRI, and also, to get large numbers of farmers into SRI on an area approach (converting a given area into SRI in total).
 - v. As SRI responds well to manure and other such organic inputs, application of organic inputs into SRI can be incentivized.
 - vi. Dis-adoption trends in SRI are common, particularly in areas where the promoters have just depended on field demonstrations. It is important

- to work in a given area for at least three years focusedly so as to build necessary systems innovation capacities to enable a smooth shift towards SRI.
- vii. The surface irrigation systems are too anarchical to enable any water management by farmers at the field level. SRI, when integrated with the irrigation system reforms, can give fantastic (irrigation) system level results in a limited time besides enhancing productivity.
 - d. It is important that the individual farmer centric extension approaches must lend their way to area and group based approaches (such as watershed development programs).
 - e. The twin issues of **adequate / complete investments, appropriate strategy and intensive handholding** at the village level are crucial for SRI promotion.
3. Government of India must seriously consider two major programs for vigorous promotion of SRI at the national level :
- a. ***A sub program within the NFSM*** on promotion of SRI with budget lines clearly allocated and the guidelines suitably modified keeping in view the above points.
 - b. As several of the medium and low productivity level districts fall outside the scope of NFSM program, the Govt of India must take up a larger **program on “Local Food Security”** with a clear focus on promotion of SRI and millets. SRI is the best bet for these regions.

What would the nation Gain by promoting SRI :

1. The investments on SRI if substantial in the districts with to medium and below productivity levels can potentially add 10 million tons of rice every year. (see Table 2). Even if 50% of this area is covered under SRI, it can potentially contribute an additional 5 million tons of rice every year.
2. More than 50% of rice areas has now shifted to groundwater based. In addition to the fertilizer and price subsidies, the electricity subsidies on Rice has reached untenable levels. It is estimated that SRI will reduce about 845 pumping hours amounting to 3151 kwh of electricity and about 12,607 rupees per ha on subsidies (see Ravindra and Bhagyalaxmi, 2010).
3. SRI may perhaps, help substantially in reducing the embedded subsidies in every grain of rice.
4. Yield increase of 15 to 40% can enhance food grain availability in large numbers of household.

The **national consortium on SRI** on behalf of all its members spread across the country representing civil society organizations, concerned scientists from various government research institutions would like to place in earnest the following two main demands:

1. A separate program under NFSM be initiated with clearly earmarked budgets and a modified strategy as mentioned above.
2. Consider a longer term intensive program on promoting SRI in partnership with civil society organisations with adequate budgets.

Notes and references:

Table 1 : Triennium Average (1998-1999 to 2000-2001) of Area, Production and Productivity along with number of districts under different

L	States/Union Territories	Number of Districts	Area (Million Ha.)	Percent of All India Rice Area	Production in Million Tonnes	Percent of All India Production	Productivity (Kg/Ha.)
1	Andhra Pradesh, Karnataka, Kerala, Tamil Nadu, A&N Islands, and Pondicherry	96	8.21	18.3%	23.82	27.2%	2,901
2	Haryana, Himachal Pradesh, Jammu & Kashmir, Punjab and Uttranchal	70	4.31	9.6%	12.47	14.3%	2,893
3	Goa, Maharashtra, Rajasthan and Gujrat	66	2.39	5.3%	3.46	4.0%	1,448
4	Bihar, Jharkhand, Madhya Pradesh, Orissa, Chhattisgarh, Uttar Pradesh and West Bengal	230	26.52	59.1%	42.37	48.5%	1,598
5	Assam, Arunachal Pradesh, Manipur, Tripura, Meghalaya, Mizoram, Nagaland and Sikkim	72	3.45	7.7%	5.25	6.0%	1,522
	TOTAL	534	44.88	100.0%	87.37	100.0%	1,947

<http://drdpat.bih.nic.in/Productivity%20Analysis%20-%202002.htm>

Table 2 : Treinniam average 1998-99 to 2000-2001 on area, production and productivity of Rice.

Productivity level	Potential Yield increase with SRI	Area under Paddy	Productivity conventional	Productivity SRI	Total Production original	Potential production with SRI	Incremental potential contribution of SRI
Units	%	Mill. ha	Kg per ha	Kg / ha	Mill. tons	Mill. tons	Mill. tons
High (> 2,500 Kg/Ha)	0	12.06	3103	3103	37.42	37.42	0.00
Medium (> 2,000-2,500 Kg/Ha)	15	7.77	2246	2583	17.45	20.07	2.62
Medium-Low (> 1,500-2,000 Kg/Ha)	20	7.54	1775	2130	13.38	16.06	2.68
Low (1,000-1,500 Kg/Ha)	25	11.58	1228	1535	14.22	17.78	3.56
Very-Low (< 1,000 Kg/Ha)	25	5.93	826	1033	4.9	6.12	1.22
Total		44.88	1947		87.37	97.45	10.08

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