

RRA-Comprehensive Pilot Program, Daulatabad Mandal

Anchored by WASSAN in Partnership with the Farmers' Cooperative and MMS, Daulatabad.

SUSTAINABLE DEVELOPMENT OF RICE BASED PRODUCTION SYSTEMS THROUGH SYSTEM OF RICE INTENSIFICATION

Purpose:

Rice has now become a most preferred crop for farmers with irrigation and is extended to even light soils with high percolation. Groundwater shortages, high demand on electricity and fertilisers are the crises this expansion is resulting into.

RRA-CP program intends to promote a package of measures in soil fertility enhancement, introducing quality seed, pest management without using pest management, crop rotations, etc., integrated into the promotion of System of Rice Intensification.

This is expected to result in reducing water consumption for rice, reduction in costs, better soil conditions, reduced costs and higher productivity resulting into enhanced farmer incomes.

Target:

Daulatabad Mandal has 4300 acres of rice area. The proposed program intends to convert 500 acres of conventional rice area into SRI in three years i.e. target of xx% of the total rice area in the Mandal.

Approach:

The conventional extension approach based on demonstration or even incentives has failed to effect transition of rice farming to SRI substantially. WASSAN and MMS's efforts over the last four years has resulted into wider appreciation, knowledge and skills of SRI. The yield enhancing, water saving and labour reducing impacts of SRI are well known.

The difficulty that farmers' expressed is with respect to availability of labour skilled in SRI on a regular basis. The wage rates for SRI tasks transplantation and weeding also were not established.

The present program works on this aspect i.e. making labour in the regular labour markets available for SRI work on contractual basis; this is in addition to promoting other measures of making rice farming sustainable. Several preliminary meetings with farmers and labour were conducted to arrive at the program approach detailed below.

RRA-CP will open up the following package to the farmers:

a) SRI VariShramaShakthiSanghalu (SRI SSS)

SRI Transplantation and Weeding:

- Intensive training programs will be organised to develop labour teams/ groups with skills in SRI transplantation and weeding. These groups will be certified and agreements will be

made with them to provide transplantation and weeding services on contractual basis. These groups will be tied to a "SRI CELL" to be established for the initial crop period by the Farmers' Cooperative on behalf of the Department of Agriculture.

- Each group will have 8 members and they may co-opt others as per need.
- Each group is expected to do 20 acres in a season and 25 such labour groups will be formed in the Mandal.
- Existing Shrama Shakti Sanghalu (SSS) established as a part of the MGNREGS will be explored for the purpose, i.e. if they can take up this package.

b) Farmer Contracts with SRI SSS:

- These SRI labours will be available on contractual basis. Farmers to pay Rs.3, 800 per acre in two instalments (Rs.2000 and Rs.1800) to the farmers' group. Rs.2000 to be paid before transplantation and Rs. 1800 after the first weeding. These amounts are arrived at after a base line study of costs and returns. These contractual rates will provide about 150 to 180 Rs. per day wage rate to women and men on an average and will give them an incentive for them to work in SRI.
- Farmer intimates the date of nursery raising to the SRI CELL in the Farmers' Cooperative (a designated desk with phone).
- A Labour group trained and certified in SRI operations will do the transplanting after 10-12 days and carry out weeding 10 and 20 days after transplantation as per the schedule (developed at the SRI Cell).
- The Farmers Group will pay to labour after completion of the transplantation and after the second weeding
- The entire exercise will be coordinated by a special SRI CELL at the farmers' cooperative. The above arrangements are expected over time to establish the labor markets for SRI.

c) Labour payments and Incentive systems

Labour group will be paid wages on per acre basis in three instalments (by the farmers group) as follows:

- a) After transplantation - Rs. 1600
- b) After completion of 1st weeding - Rs.800
- c) Rs.1400 will be paid after 2nd weeding

Labour Incentives: Labour group will be given an incentive of Rs.250/ac after they complete transplantation and weeding in 10 acres i.e.Rs. 2500 for 10 acres; if they complete 50 acres they will be given a higher incentive of Rs. 300 per acre. These will be paid as incentives from out the project. A two members subcommittee will assess their performance and endorse the eligible names to Cooperative for incentives.

In addition, the leader of the labour group will be paid Rs. 500 per every 10 acres of SRI transplantation and weeding completed. S/he will take responsibility of mobilising other members of the labour group and liaison with the SRI Cell in the Mandal.

d) Other Sustainable Agriculture Inputs:

- a) Green manure seed will be provided to the farmers taking to SRI at subsidised rates through the agriculture department
- b) Quality (certified/ truthfully labelled) seeds of some varieties will be available at cost from the seed bank.
- c) Biomass chipper will be made available on custom hire basis for pulverising and incorporation of Pongamia leaves (green leaf manuring)
- d) Pipes for monitoring water levels under Alternate Wetting and Drying (AWD) will be made available at cost.
- e) Training on pest and disease control measures using local non-chemical inputs
- f) Availability of various NPM concoctions at door step at cost basis from the Agri-business centre along with advice on pest management.
- g) RRA-CP is exploring if credit can also be dovetailed into the program to the extent of coverage of transplantation and weeding costs.

PROCESS STEPS IN OPERATIONALISATION:

1. Establishing SRI CELL: This will be established in collaboration with the Department of Agriculture. The package of SRI Promotion will be announced by the Department on the day of establishing this cell. The Cell will have a coordinator that RRA-CP will deploy with a Mobile number for ready access.
2. Communication Campaign on the package : a simple illustrated communication material will be prepared and distributed by the RRA-CP team in the meetings of the farmers' groups.
3. Registration of SRI farmers: The SRI cell registers the farmers who have expressed interest in the package. Farmers can call the SRI Cell or send SMS or they can register through their groups.
4. Advance Payment mobilisation. As mentioned earlier, registered farmers have to deposit Rs.1600 per acre as advance payment deposited into their own farmers group account.
5. Formation of SRI SSS : Discussions with SSS of MGNREGS to see if they can also take up SRI under the system and forming new groups. Group leaders will be identified first and oriented on the entire package and required communication material is to be given to them to explain to other members. They will be linked to the SRI Cell. The entire package of labor incentives will be explained.
6. Orientation program for the registered farmers: This will be organised in batches by the SRI cell.
7. Labour training: the labour will be trained in transplantation and weeding hands-on by already practicing labor in the Mandal. All the members of the SRI SSS will be trained in the new skills. Required number of weeders and markers will be made available through the custom hiring center of the Agri-Business center.
8. Firming up the labour contracts with farmers: The farmers will be assigned the groups. SRI Cell links the farmer and the labor group leader.
9. SMS based system will be established (a software prepared by IIIT and WASSAN) to register the dates of seed beds, transplantation, weeding and farmers satisfaction. This will be done online and is compiled into a Mandal level database.
10. Farmer groups will pay the labour. The SRI CELL arbitrates on any conflicts arising.
11. The Mandal database will be used to make the payments related to incentives from the project by a/c transfer to the labour group.

Summery Budget:

S.No.	Particulars	Rate (per acre)	Quantity	Amount	Source of the budget
A	SRI CELL				
1	Coordinator of the SRI Cell (rs. Per month)	5000	5	25000	JAISRI
2	Communication and travel costs	1000	5	5000	JAISRI
	Sub-total			30000	
B	Labour Incentives & Capacity building				
1	Additional wage incentives	275	500	137500	JAISRI
2	Facilitation costs / Wage incentives for the group leader	50	500	25000	RRA
3	Skill training for labour in transplantation and weeding (@rs.300 per labour - 200 labourers)	300	200	60000	ATMA, DoA
	Sub-total			222500	
C	Green manure				
1	Green manure seed (@ 70 rs per kg x 5 kg / ac)	350	200	70000	DoA
2	Transport of biomass chipper (@ 200 rs./ trip X 50 trips)	200	50	10000	Farmer
	Sub-total			80000	
D	Pan Pipes for AWD	25	500	12500	ATMA, DoA
E	SRI Implements (@ 4 per group x 25 groups)	1500	100	150000	DoA
	Sub-total			162500	
F	Program faciliatation costs				
1	Field level coordinators, travel, meetings, documentation etc.	25000	5	125000	RRA
	Sub-total			125000	
	TOTAL			620000	

	Per acre total costs			1240	
	per acre costs without infrastructure			915	

Budget for DoA:

S.No.	Particulars	Rate (per acre)	Quantity	Amount	Source of the budget
3	Skill training for labour in transplantaion and weeding (@rs.300 per labour - 200 labourers)	300	200	60000	ATMA, DoA
	Sub-total			60000	
C	Green manure				
1	Green manure seed (@ 70 rs per kg x 5 kg / ac)	350	200	70000	DoA
	Sub-total			70000	
D	Pan Pipes for AWD	25	500	12500	ATMA, DoA
E	SRI Implements (@ 4 per group x 25 groups)	1500	100	75000	DoA (50 % Subsidy)
	Sub-total			87500	
	TOTAL			217500	

Budget for RRA and JAISRI:

S.No.	Particulars	Rate (per acre)	Quantity	Amount	Source of the budget
A	SRI CELL				
1	Coordinator of the SRI Cell (rs. Per month)	5000	5	25000	JAISRI
2	Communication and travel costs	1000	5	5000	JAISRI
	Sub-total			30000	
B	Labour Incentives & Capacity building				
1	Additional wage incentives	275	500	137500	JAISRI
2	Facilitation costs / Wage incentives for the group leader	50	500	25000	RRA
	Sub-total			162500	
E	SRI Implements (@ 4 per group x 25 groups)	1500	100	150000	JASRI (50% subsidy)
	Sub-total			75000	
F	Program faciliation costs				
1	Field level coordinators, travel, meetings, documentation etc.	25000	5	125000	RRA
	Sub-total			125000	
	TOTAL			392500	
	Per acre total costs			1240	
	per acre costs without infrastructure			915	

Estimated Benefits of the program:

					500	
	Particulars	Details		Rs. Per Acre	Rs. Per 500 ac	
1	No. of hours of electricity per day		7			
2	Average hp of the motors		5			
3	irrigation days per crop during the season		110			
4	Each bore irrigates about acres		3			
5	Number of total pumping hours per acre	hr/ acre	256.6667			
6	Water savings estimated	%	30%			
7	Savings in pumping hours	Hr	77			
8	Average discharge per pump (lts per hour)	lt / hr	15000			
9	Average discharge per pump (cu.m per hour)	cu.m / hr	15			
10	Saving of groundwater	cu.mt		1155	577500	
11	saving of electricity	kWh	302.61			
12	Subsidy on electricity saved	@ Rs. 4/ kwh		1210.44	605220	
13	Estimated (modest level) yield increase	qt / ac	2			
14	price of rice per qt	rs. / qt	1000			
15	value of additional yields			2000	1000000	
16	Savings in costs	Rs./ ac		1500	750000	
17	Net additional income to the farmer			3500	1750000	
	TOTAL			9365	4682720	
	Benefit cost ratio			7.55		

The program has a very high benefit cost ratio of about Rs. 7.55. The sharing of budgets between RRA-CP anchored by Department of Agriculture are also depicted in the above table.