

## **SRI paddy development in Chattishgarh, 2009-10 – PRADAN team**

PRADAN has undertaken, starting two years ago, the dissemination of SRI methods for paddy production in Chattishgarh, both directly through its own staff and indirectly by working with 10 partner NGOs. The state is noted for having large populations of social and economically disadvantaged groups, and also for being an important rice-producing state. The SRI work has been undertaken through a partnership approach with other NGOs, having financial assistance from the Sir Dorabji Tata Trust (SDTT), Mumbai.

PRADAN is a nodal as well as implementing agency. For 2009-10, the target was to reach 5,000 families. We were able to reach 4,445 households in the kharif (monsoon) season of 2010. SRI paddy was cultivated on 750.15 ha, of which 90-95% was rainfed land, with the rest partially irrigated, i.e., where borewells, canals or ponds were available as a water source.

Another 1,265 families used SRI methods with other crops on 227.7 ha in the rabi (winter) season, applying them particularly with wheat and mustard (rapeseed). Data from this second season have not been accumulated and analyzed yet, so the results reported here are for the kharif season. The SRI consortium in Chattishgarh is planning to begin cultivating ragi (millet) in SRI mode in the coming year.

The program is carried out in three districts directly: *Raigarh*, through our Raigarh team; *Kanker*, through our Dhamtari team, and *Jagdalpur*, through our Bastar team. Work is conducted also in six other districts through partner NGOs: *Sarguja*, *Jashpur*, *Bilaspur*, *Korba*, *Raipur*, and *Bastar*. A total of 10 partner NGOs are involved in this activity.

Production data for kharif crops of 2010 have come in and can be reported. We have taken the data from a randomly selected sample of participating farmers, measuring the yield in a 5m x 5m square grid from the fields of these farmers. These results are supplemented by data from the program's management information system (MIS) which cover 100% of the participating farmers. This MIS was developed by SDTT's SRI Secretariat to ensure comparability and completeness of data from across all of the programs assisted by SDTT.

The data have been collected by the respective local Community Resource Persons (CRPs), and somewhere by women Self-Help Group (SHG) members/leaders. PRADAN organised individual partner-level as well as CRP/SHG-level training for this data collection process. Already we have collected and analysed 1,410 sampled data sets, representing a 31.7% sample of participating farmers.

We have received some excellent yield data from different districts: Sarguja, Raigarh, Bastar, and Bilaspur. One farmer of Sarguja received a 10 Mt/ha yield with his traditional paddy variety (Gangabalu). In Bastar district, 2 farmers have received 10.4 Mt/ha yields (one with the traditional variety Kanchan, and the other with IR-64), and one farmer has received a 11.2 Mt/ha yield (with the traditional Kanchan variety). These yields were certified by the respective Deputy Directors of Agriculture of these districts. Until now today the highest yield achieved in the state has come from Raigarh district: 12.05 Mt/ha using high-yielding variety (HYV) seeds.

Table 1: Analysis of Productivity

Productivity range (Mt/ha)	Number of sampled families	% of families
<b>10 to 18</b>	23	<b>1.6</b>
<b>8 to 10</b>	150	<b>10.6</b>
<b>6 to 8</b>	381	<b>27.0</b>
<b>4 to 6</b>	614	<b>43.6</b>
<b>2 to 4</b>	240	<b>17.0</b>
<b>&lt; 2</b>	2	<b>0.14</b>
<b>Total</b>	<b>1,410</b>	<b>100.00</b>

From the above data, we can see that 83% families who adopted SRI principles in their fields have achieved yields  $\geq 4$  Mt/ ha, which is about double of traditional yield. The average yield for the families measured so far (almost one-third of the 4,445 participating households) is 5.84 Mt/ha. This is much higher than the average state yield of 2.2 Mt/ha when traditional practices are used. The average paddy yield for the farmers in our sample was 2.1 Mt/ha when they used traditional paddy practices on their farms. The same techniques were used for measuring both sets of yield. Thus, it was seen that SRI yields, on the same farms for the same farmers, were more than doubled and almost tripled compared to usual rice-growing practices.

Table 2: Analysis of Sample Results According to Nutrient Management Practices

Productivity (Mt/ha)	Organic	Inorganic	Mixed
<b>10 to 18</b>	2 (0.4%)	1 (0.9%)	20 (2.5%)
<b>8 to 10</b>	46 (9.5%)	25 (23.2%)	79 (9.7%)
<b>6 to 8</b>	191 (39.3%)	54 (50.0%)	136 (16.6%)
<b>4 to 6</b>	136 (28.0%)	21 (19.4%)	457 (56.0%)
<b>2 to 4</b>	109 (22.4%)	7 (6.5%)	124 (15.2%)
<b>&lt; 2</b>	2 (0.4%)	0 (0.0%)	0 (0.0%)
<b>Total</b>	<b>486 (34.4%)</b>	<b>108 (7.7%)</b>	<b>816 (57.9%)</b>

## For dissemination of knowledge and creating future pathways

All partners along with PRADAN's own team have already organised exposure visits in good fields for the next season and are now going to organise SRI *adhivesan* in ongoing rabi fields to create sensitisation to the new and old farmers. As a nodal agency, PRADAN is doing an across-the-district survey with early adopters, late adopters, successful farmers, partial adopters of principles, and dropouts for all stages, collecting ideas and suggestions from farmers.

In *adhivesans*, the farmers also are sharing their understanding about the technology in front of the all participants. We are thinking that it will help us to recollect the strong as well as weak points of our technology, and also it will help us to make the technology's non-negotiables more farmer-friendly.

### Food grain sufficiency from SRI:

To analyse the food-sufficiency impacts, we have done some analysis from our sample data. We found that average per-family land holding under SRI is 0.17 ha (from sample data sheet) and the average number of members in a family is about 5 (also from sample data sheet). They consume 3 kg of rice per day (from random survey). We consider that 1 kg of paddy gives 0.66 kg of polished rice after threshing and drying (reference from SDTT MIS).

Table 3: Food grain sufficiency calculation

	SRI practice	Traditional practice
Members/family (no.)	5 (4.85)	5 (4.85)
Average landholding (ha)	0.17	0.17
Daily rice consumption per household (kg)	3	3
Average production (Mt/ha)	5.84	2.1
Food grain sufficiency from landholding (months)	7.5 (7.28)	3 (2.62)

From the above table, we see that from a landholding of 0.17 ha, in this year with SRI management a farm household could increase its sufficiency of food grain by approximately 4.5 months compared to its output with traditional practices.

### Photographs of the SRI process at various stages:

Seed treatment



Standing crop



Nursery bed



Follow-up support at field level



Use of marker



Training of NGO partners



Use of weeder



Harvest data collection



Speaker of State Assembly, GoC, visiting SRI stall



Newspaper publication on SRI

**Yield verification certificates signed by Deputy Directors of Agriculture,  
Govt. of Chattishgarh**

