

Report on SRI in Purulia District, West Bengal, Kharif season 2007

The **PRADAN Purulia** team works with a focus on enabling self-help groups (SHGs) to sustainably improve the livelihoods of poor families through diversifying resource use and through productivity enhancement to ensure year-round food security.

Reassessing the Adoption and Extension of SRI Paddy Production

The Purulia Team having had the experience of promoting SRI for the last 5 years was concerned that the rate of growth as regards the number of farmers in our operational area was still not meeting the large and urgent need. So before the start of the season, the Team decided to have a re-look at our strategy and at ways of engaging with the community (farmers). The major issues that emerged from this exercise were:

- Although every year more new farmers are adopting SRI, also a sizeable number are dropping out, some reporting a drop in yields, but mainly because they are not able to manage their labour operations.
- The spread across villages is thin. Thus, its effect was still limited to experimentation rather than of large-scale adoption, although farmers have been doing SRI for many years.
- As the government and the local elected bodies (at block & panchayat level) were not becoming involved, adoption was being limited only to those villages where PRADAN is working, with some farmer-to-farmer diffusion, of course, taking place. To reach a critical mass whereby adoption takes place because of the momentum generated, we also had to look beyond our own strengths.
- Extension was too much dependent on PRADAN staff, which was anyway always short in strength. Thus, new approaches had to be explored.
- Instead of focusing on small amounts of growth with large hardware support and system setting, we thought that we would have to go for 'a kangaroo jump' in the 1st year itself, and then gradually we could focus on system setting and mechanization.

Keeping these above issues in mind, we developed a two-pronged strategy:

- Direct approach
- Indirect approach

Direct Approach

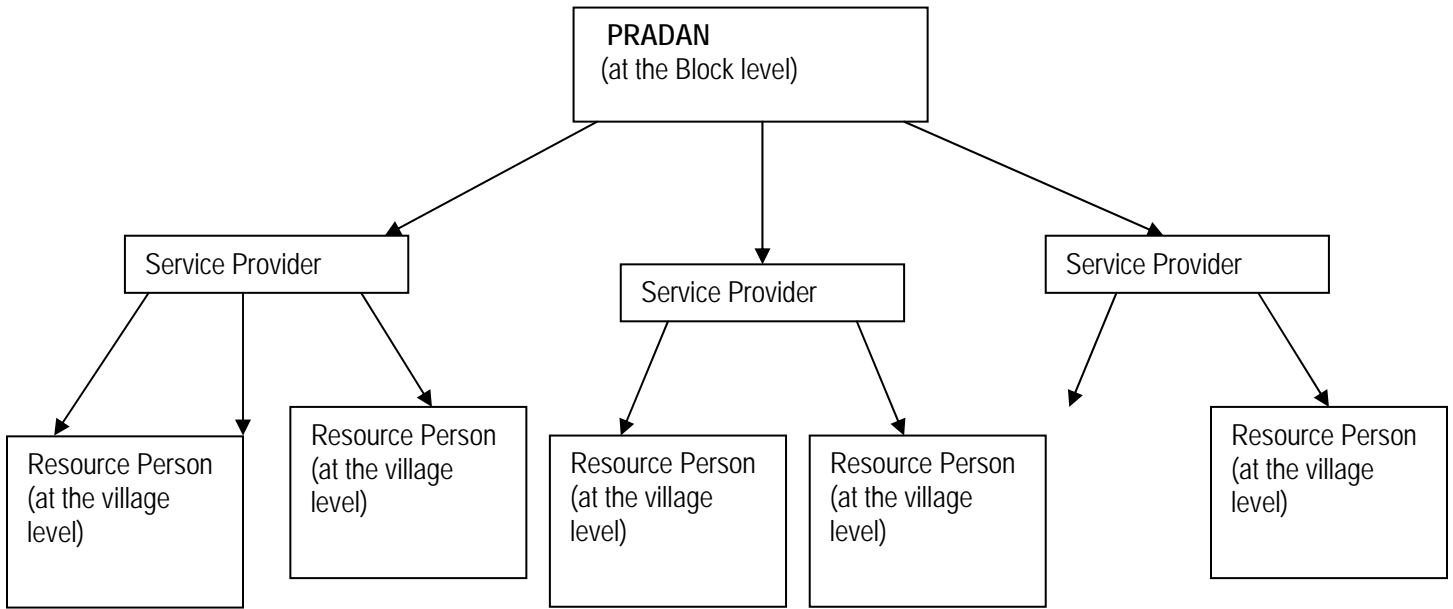
In this mode, we planned to work in our present villages with the Self-Help Groups promoted by us. This involves an integrated approach whereby we look into the entire agricultural 'basket' of the family for both cropping seasons, and work with farmers not only on their staple crop -- paddy (SRI) -- but also with their cash crops, like vegetables. For this we help them to raise credit from the banks and make other backward linkages in terms of inputs like quality seeds & fertilizer, but assisting them with access, not making grants.

Indirect Approach

This we planned to be our major thrust for extension of SRI into areas where we have not been working, still within the 5 blocks of our operations but moving into new villages. As these villages were new to us, we had to strategize appropriate means of reaching farmers there. As SRI involves radical change in practices involving their staple crop -- paddy -- farmers are generally reluctant to adopt such changes. Added to this is the fact that PRADAN did not enjoy the same credibility in these villages as in villages where it has worked.

To sensitize the administration at block and panchayat levels, we organized SRI Inception Workshops in the two major blocks where we are working, namely Barabazar and Jhalda. In those workshops we presented SRI as a way to meet the food-grain deficits of the population, and we sought the support of the administration in extension.

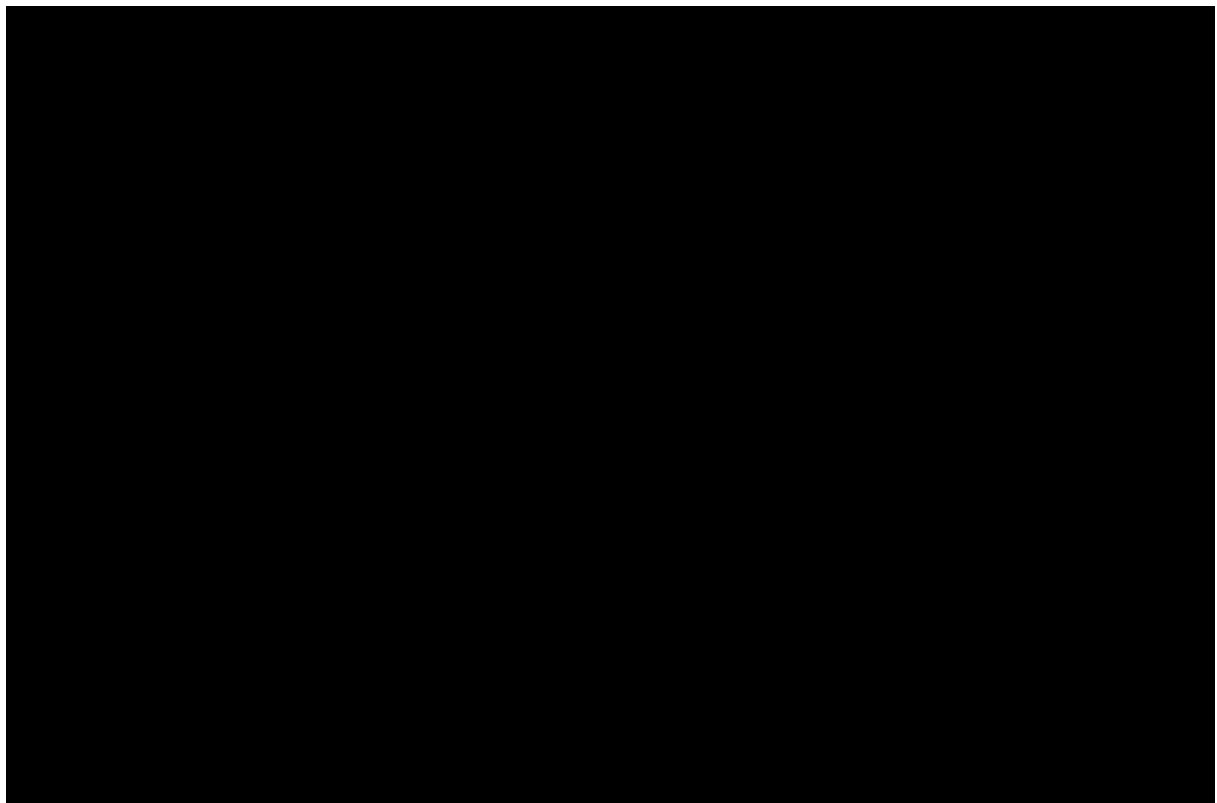
A similar exercise was conducted in 17 panchayats where we invited the elected representatives from the respective villages under each panchayat and also influential farmers. Older and experienced SRI farmers who are now playing the role of Service Providers (SPs) identified a Resource Person (RP) for every village. Then, a set of villages was assigned to each SP, and it was his responsibility to enlist farmers from those villages. This meant that for any set of villages, we had a SP and a RP in each village. In this manner, an individual PRADAN professional with his team of SPs and RPs could reach up to 30 new villages.



Achievements at a Glance

- No. of farmers = 3,793 (old: 1,370; new :2,423)
- Area = 528 hectares
- No. of Service Providers groomed = 31
- No. of Resource Persons groomed = 71
- No. of video shows conducted = 123
- No. of participants in these video shows = 4,864
- No. of villages where video shows were conducted = 123
- No. of villages where farmers have adopted SRI =124 (old villages: 38; new villages : 86)

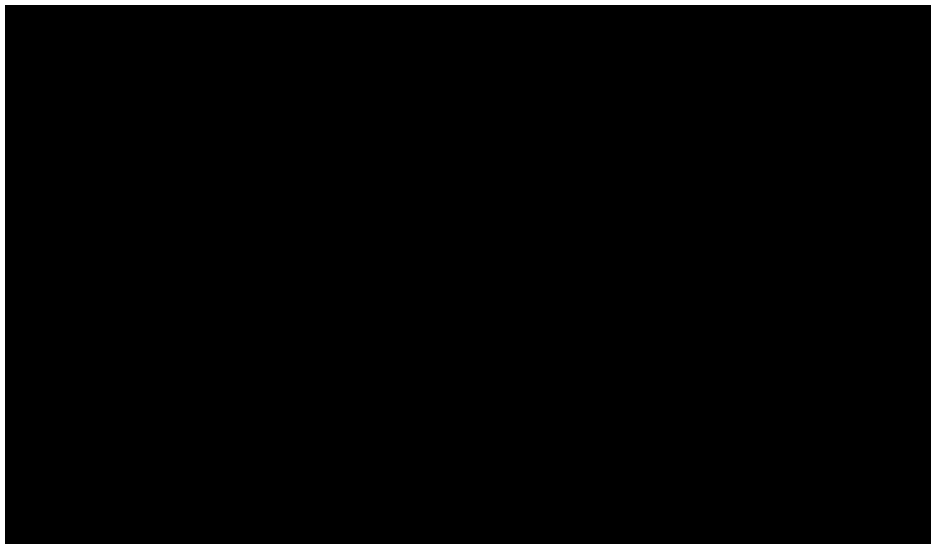
For an evaluation of results, we collected data on SRI and conventional yields from 786 farmers, a 20% random sample. The results are shown below:



On doing a comparative year-to-year yield analysis,, the data show that approximately **54% of the farmers** have attained yields with SRI in the **range of 6-8 tons/hac**. This is a major achievement as the movement vis-à-vis last year is an increase of 15.3%. This indicates that the technology of SRI under rainfed conditions has been fairly standardized. Also, although we **increased the number of farmers by 142%** and the **area coverage by 123%**, the technology has been sufficiently simplified for adaptation to local conditions and also the extension and technology-delivery mechanism have been made very robust, so that we could enable even the new farmers to get such high yields. Thus such yields are attainable by most of our resource-poor farmers. The % of farmers achieving yields **beyond 8 tons/ha is more or less constant at around 28%**.

Yield Variation over the Years

A major concern that was emerging was the report that yields were dropping for the old farmers -- an apprehension that surfaced in some village meetings. On tracking the yields for older farmers practicing SRI and comparing these with yield of newer farmers, we find that **the movement is fairly consistently within the band of 6.5 tons/ha to 8.5 tons/ha**. Indeed, if there is any trend, it is for yields to go up over time. So there is no evident reason for concern about a sharp drop in yields. However, there is also good reason to **work on introducing green manuring to ensure maintained soil fertility**. This year, we grew *dhaincha*, most of it was for seed multiplication, but this effort was not very successful as the crop was destroyed due to heavy showers.



Overall Performance of Rice Production Systems

A major achievement of our work on Kharif paddy for ensuring food security is that there is an **increase in the yields** from conventional practice as well as with SRI methods. For the district as a whole, the average yield is **2.5 tons/ha**, whereas the farmers working with PRADAN when using conventional methods are producing **around 5.4 tons/ha**. This yield is more or less constant both for the new and old farmers, which reflects the diffusion of components of SRI methodology into farmers' conventional practices. The average yield of cooperating farmers using recommended SRI methods is **7.1 tons/ha**.

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| Average SRI yield (in tons/ha) | 7.14 |
| Average conventional yield (for SRI farmers) (in tons/ha) | 5.43 |
| District average yield (in tons/ha) | 2.5 |

Implications for Food Security

The following table reflects the incremental changes at the family level:

| Farmers adopting SRI (N=3,793) [Area extent = 528 hectares] | Increase in grain supply (tons of paddy) | Increase in cash received (Rs. lakhs) | Increase in food grain available (kg) per family | Incremental food sufficiency (in months) |
|--|---|--|---|---|
| Incremental yield over conventional | 902.88 | 58.69 | 143 | 1.2 |
| Incremental yield over district average | 2,449.92 | 159.24 | 388 | 3.2 |

Cash Income through Kharif Vegetable Production

In the agriculture planning meeting with SHG members, we could motivate **233 families** to take up Kharif vegetables on 13 hectares. To ensure crop diversification for risk mitigation, we developed and identified crops with low, medium and high risks and investment. Every family was motivated to have a crop mix between low and high risk. The Service Providers were involved in providing technical support to the families involved in growing kharif vegetables. The yield data are given below:

| | Crops | Investment per 10 dec. (in Rs.) | Lowest income (in Rs) | Highest income (in Rs) | Average income (in Rs) | Average profit (in Rs) |
|---------------------------------|--|---------------------------------|-----------------------|------------------------|------------------------|------------------------|
| Low Investment + Low Risk | Radish, cowpea | 180 | 400 | 4,019 | 2,196 | 1,994 |
| Medium Investment + Medium Risk | Beans, chilli, bottlegourd, bitter gourd | 300 - 450 | 600 | 12,182 | 3,536 | 2,844 |
| High Investment + High Risk | Tomato, ladies finger, cucumber | 580 - 650 | 455 | 15,766 | 4,197 | 3,335 |

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| Average investment per family (in Rs.) | 608 |
| Average income per family (in Rs.) | 3,354 |
| Average profit per family (in Rs.) | 2,657 |

Enabling SHGs to Sustainably Improve the Livelihoods of Families

To address issues of labour and draft power, which appear to be constraints to SRI promotion, we have **introduced 10 power tillers**, which has given a boost to overall agriculture in the area. As a result of these, farmers were able to plough their land within a shorter span of time and with quality tilth. This has resulted in a high demand for power tillers in this area. Now there is scope for more number of power tillers.

Funding of **Rs. 12.6 lakhs** was received from the District Administration (Rs. 10.2 lakhs) and from a private donor (Mr. Dave Galloway). This has been leveraged in a way so that **by the end of 3 years, each cluster should have access to these services**. Of the 10 power tillers, **3 were funded partially** by the private funds received, and these were given to 3 local entrepreneurs selected by SHG members. They will operate and maintain the tillers, charging a reasonable fee for services.

Of the total cost of Rs. 125,000 per power tiller, Rs 80,000 was from project funds and Rs. 45,000 from District Agriculture Department funds. Of this amount, Rs. 40,000 is refundable to the SHG Cluster Institution over a period of 5 years in quarterly installments. The community can utilize these funds to purchase more such machines in the coming years. For the coming year 2008-2009, we plan to continue working with the 3,793 farmers already involved and also to add another 750 new farmers as proposed in the 5-year project proposal.