

# Partnering with Civil Societies: Enhancing Food Security of Farmers in Chhattisgarh

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*Introducing the SRI method of crop cultivation in some regions of Chhattisgarh, PRADAN, in partnership with other NGOs and the support of Sir Dorabji Tata Trust, has been successful in extending the technology to thousands of families, to ensure year-round food sufficiency and increase soil health and fertility*

## BACKGROUND

Small-holder farmers are crucial for India's rural economy. They constitute about 78 per cent of the country's farmers (according to the Agricultural Census 1990–91). About three-fifth of the holdings was marginal or sub-marginal, and about one-fifth were small. However, the sub-marginal holdings—comprising 40 per cent of all holdings—commanded only 9.8 per cent of the total agricultural land area. Between 1971 and 1991, the percentage of holdings, smaller than 1 ha, increased from 51 to 62 per cent.

These households do not follow a systematic approach and do not have an appropriate land-use plan to make each piece of land productive. The pressure of food insecurity forces the farmers to grow paddy on all kinds of lands, including the upper reaches, in spite of the very limited water holding capacity of such lands. These lands can provide more sustainable returns through horticulture and other activities. The challenge, thus, is to produce more paddy from the low and mid low-lands, ensuring year-round food security and to help farmers gain confidence about diversifying into horticulture in the upper reaches. Diversification in farming is necessary to be able to cope with the adversities of climate change.

The System of Rice Intensification (SRI) has emerged as a potential tool to address this challenge. SRI is not a standardized, fixed, technological method. It is a set of principles by which to approach cultivation.

Small-holder rice farmers, who apply SRI techniques, benefit from a more stable rice production system with reduced inputs; they earn higher incomes because of improved market opportunities thereby reducing the risk of households falling back into poverty, and, at the same time, increase food security and resilience to the impact of climate change.

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With the SRI methodology, setting a target of producing an average of 4,000–6,000 kg of rice from a hectare of land is realistic whereas the national average paddy yield is less than 2,500 kg per ha. A family, therefore, that has four months' worth of food security from their own farm can reach year-round food security using SRI methods. Families that are at a higher level of food security can comfortably move to high value crops to earn more.

In Chhattisgarh, where the Hunger Index in 2008 was 26.63, (it was 14<sup>th</sup> of 17 states), rice is the principal food crop (62 per cent gross cropped area). Augmenting the status of paddy production can go a long way in ensuring food security for families.

In this context, PRADAN is collaborating with other NGO partners (the state consortium called the SRI-Manch) to introduce the SRI method of paddy cultivation in some regions of Chhattisgarh, with support from Sir Dorabji Tata Trust (SDTT). The purpose of the collaboration was to demonstrate SRI techniques in the poor pockets of the region and prepare the villagers for large-scale replication, following the pilot.

In the Consortium, initially, PRADAN's role was that of an R-NGO (Resource NGO), to promote SRI on a large scale with small and marginal farmers throughout the state. At

present, PRADAN is not the only resource agency; there are other partners facilitating as resource organizations in various fields such as sustainable organic farming and MGNREGA. Mutual learning among partners has been envisaged. Over the last one or two years, the State Consortium has been involved with all the partners for

organizational development. Earlier, the stance of the partnership was very activity-specific; now it is gradually developing into a mutual trust-based relationship that has grown over the years. The following shows how this was built up.

- ◆ **2008–09:** First state-level workshop; 800 families in SRI paddy;
- ◆ **2009–10:** Second state-level workshop; 4,000 families in SRI-paddy; training on SRI paddy, millets and vegetables in Ganiyari, Bilaspur; initiation of the Chhattisgarh SRI Manch
- ◆ **2010–11:** Initiation of the second phase of the project; 5,455 families in SRI paddy and other crops; *gram panchayat*-level *kisan mela* started; third state-level workshop
- ◆ **2011–12:** Initiation of district workshops; training in finance, MIS and accounts; 11,570 families in SRI paddy and other crops
- ◆ **2012–13:** Convergence with MGNREGA started; 18,975 families in SRI paddy and other crops; training on livelihoods and village-level planning conducted; involvement with partners to help build or rework financial and management system.
- ◆ **2013–14:** Initiation of the third phase of the project; 21,402 families were

covered under SRI crops on a year-round basis; focus on family based, year-round planning; initiation of the formation and working with collectives and organizing trainings on group development and dynamics; involvement with partners to seek help from others to update all legalities and build robust financial and management systems; events on organizational systems and process development; formation of a Selection Committee for the new NGO selection from Northern Chhattisgarh.

- ◆ **2014 onwards:** Increasingly decentralized relationship with the project team and partners based nearby has been visualized; a mutually dependent relationship for activities and organization has taken place in the southern parts of the state; expected to cover 23,000 families in 12 districts.

The SRI *Manch* is now in its third phase (from 2013–16), focussing on the extension of SRI to 30,000 small and marginal farmers in about 600 villages in 12 districts of Chhattisgarh through partnerships with NGOs. It also aims at broadening the engagement through a farmer-centric approach (especially with women) in select districts of Chhattisgarh.

The third phase started in October 2013. The objectives of the project in this phase are:

- ◆ Ensuring year-round food sufficiency for participant families
- ◆ Increasing soil health and fertility to sustain agriculture-based livelihoods
- ◆ Creating a knowledge platform to raise awareness
- ◆ Sharing the lessons learnt from the project by networking among stakeholders

**Figure 1: Partner NGOs and their Areas of Operations**

Partner NGO	Districts Covered
AASHA	Surguja, Surajpur
APSSS	Surguja, Surajpur, Balarampur
SGVSS	Surguja, Raigarh, Jashpur
CGVSS	Surguja, Surajpur
KARMA	Surguja
GVK	Jashpur
CARMDAKSH	Bilaspur, Korba
ASORD	Gariabandh, Bilaspur
SSSS	Kanker, Kondagaon
DHS	Kondagaon, Bastar
BSM	Bastar, Kondagaon, Kanker
PRADAN	Raigarh, Kanker, Dhamtari, Bastar

The intervention area comprises two main Clusters: the northern hills of Chhattisgarh and the southern Bastar plateau. Both are among the poorest pockets of Central India. The tribal population is more than 50 per cent and those below the poverty line (BPL) are 70 per cent. The agro-climatic conditions and the topography are extremely challenging because the lands are scattered and fragmented, with high to medium slopes, and receive more than 1,000 mm of rainfall within 35–50 days. Approximately, 28 per cent of the rural families are dependent on forests and almost 50 per cent of the food grains are available from their own land-holdings. In both the Clusters, institutional linkages are extremely weak. The districts covered under the collaboration were Surguja, Surajpur, Balarampur, Jashpur, Raigarh, Bilaspur, Korba, Gariabandh, Dhamtari, Kanker, Kondagaon and Bastar.

### PRADAN's Intervention

- ◆ Building capacities of all participating families, especially women, in adopting skills related to locally suitable PoPs
- ◆ Promoting soil health improvement practices, including green manuring, vermi-composting and other composting techniques
- ◆ Promoting the adoption of small mechanization for weeding and post-harvest technologies to reduce drudgery
- ◆ Building a pool of NGO staff and skilled extension workers, who can work with an overall perspective on resources
- ◆ Facilitating networks of organizations to share learning, and influence other stakeholders
- ◆ Focussing on the saturation of whole villages, inclusion of left-out families

#### APPROACH

The approach adopted for implementation of the programme is an amalgamation of the practices of various partner organizations. PRADAN, with the other stakeholders, works towards effective capacity building of the community. The following steps have been taken.

#### Women-centric farming system

Development of regionally suitable, women-centric, socio-technical-institutional models for agricultural evolution and farm-allied activities has been a major step. The emphasis is on helping women gain knowledge and skills related to a locally suitable Package of Practices (PoP), to improve productivity of staple food crops, that is, paddy, maize, millets and pulses, and to diversify into commercial crops such as vegetables and oilseeds.

#### Training for partners

Focussed training events are conducted by PRADAN for the field staff of the NGOs involved. The staff members have been provided with hands-on training to carry out each critical step. NGO personnel, trained

by PRADAN, are responsible for instructing trainers and farmers. PRADAN and other NGOs provide the necessary on-field support during the implementation.

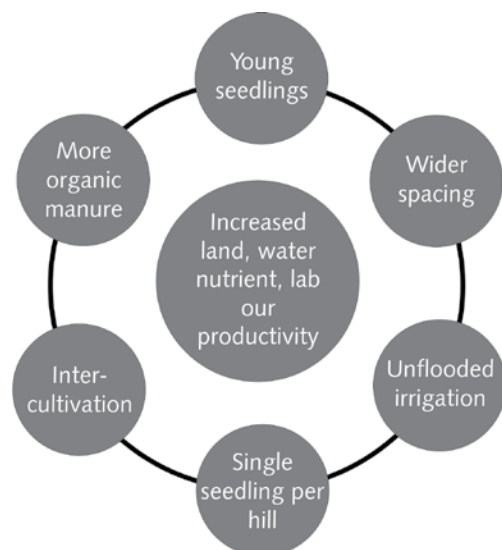
A group of Community Resource Persons—CRPs—(one for 50 families), identified by the people, were trained and engaged to guide the community and ensure proper practices in every farmer's field.

Regular refresher training courses have also been conducted for resource persons involved in the earlier phases. Also, new approaches and themes such as risk mitigation strategies in agriculture and group facilitation processes have been discussed.

#### Village-level farming support

Training on SRI, exposure visits to areas where SRI has been successfully implemented and resource management have been conducted at the community level. Initially, this was done by PRADAN for partner organizations which, in turn, trained their own staff. Sometimes, PRADAN helped them in the field as well. However, at present, some resource persons from partner organizations support other

Figure 1: SRI Hexagon



partners and even the PRADAN team. The focus has not only been on strengthening the practices for SRI paddy but also on introducing better practices for vegetables, millets, oil seeds, etc., with at least 25 per cent of the families of the selected area.

### Adoption of Safe Practices

Agronomic practices proposed in the SRI technology require the farmers to shift from their traditional practices. Very often, the fear of downside risks is a deterrent to the adoption of the technology, particularly with subsistence farmers. Figure 1 shows the SRI hexagon in relation to agronomic, environmental and social contexts.

To moderate the risk, financial assistance under the project has been provided to the families involved in SRI cultivation in 50 decimals per family. A sum of Rs 800 per family is provided as a one-time assistance to SRI paddy-participant families and Rs 150 each to SRI other crop-participant families.

## SUSTAINABILITY AND CAPACITY BUILDING

To ensure the sustainability of the action, the focus has been on the following operations.

**Social and cultural sensitivity and inclusiveness:** Participation of women of disadvantaged, poor and diverse ethnic groups have been taken into account. Stakeholders have been linked and associated within the project, to promote inclusive partnerships that ensure that small-holder producers benefit.

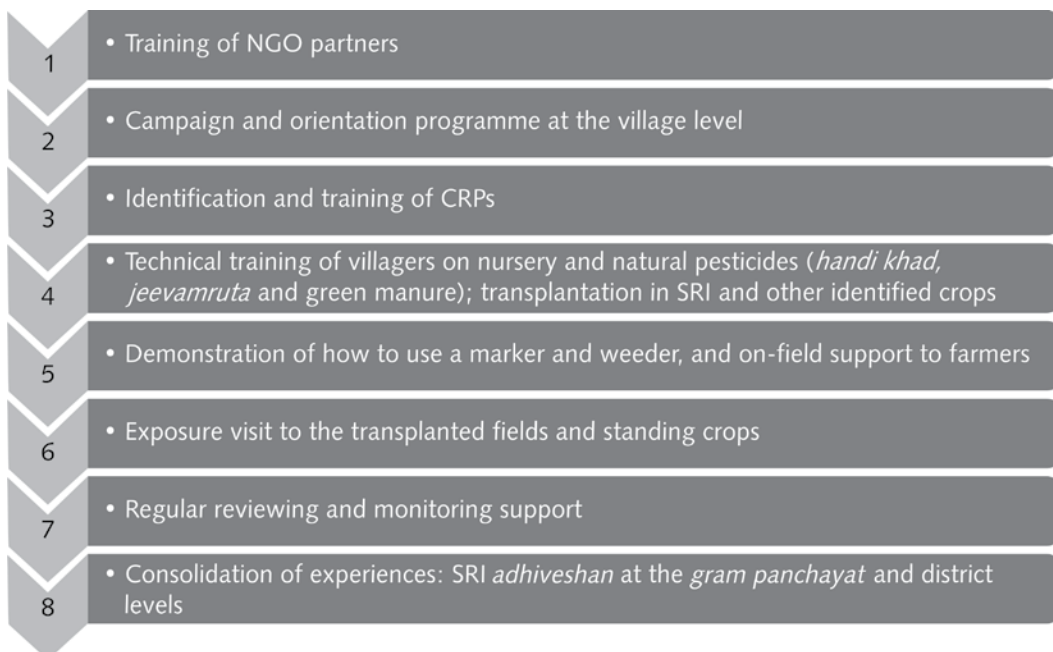
**Economic viability:** The SRI system has economic benefits. It can reduce input costs and increase yields, which, in turn, increase the income of the farmers. The cost-benefit analyses of SRI paddy and millet depict significant income increase and input cost deduction during the last phases of the project.

**Exchange programme:** To encourage cross-learning and exchange of ideas in various areas of the project, several cross-visits were organized. Numerous events were held on the dissemination of knowledge in *gram panchayat adhivesans* (meetings), district workshops, etc., which have been organized regularly. Most of these events have been co-partnered with the Department of Agriculture, Government of Chhattisgarh.

**Linkage with institutional settings:** The thrust has been on channellizing existing institutional structures so that the new technologies required for SRI production system can be leveraged from the agriculture support services. Also, capacity building of the institutional structures was carried out in order to ensure that the support remains, even after the project's intervention is complete.

**Governance:** The project and partners have been practising inclusiveness, participation,

**Figure 2: Process Followed for the Extension of SRI**



accountability and transparency to ensure ownership of the community and equitability, in general.

### EXPERIENCE SO FAR

During 2013–14, the SRI *Manch* reached 21,402 families, spread over 488 villages in 12 districts, with a coverage area of 7,510 ha. It was also found that 85 per cent of the families were continuing with SRI for the second crop.

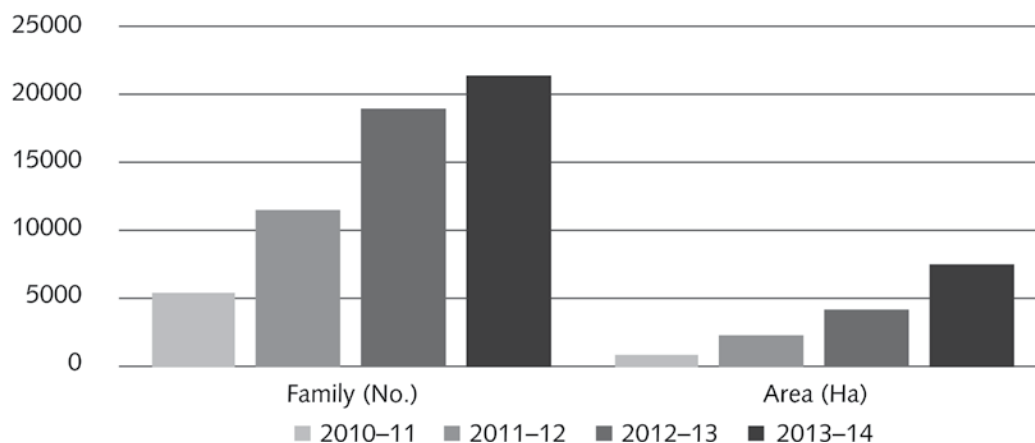
Mainly, SRI *Manch* has worked with paddy, mustard, millets, wheat, sugarcane and vegetables on a year-round basis. Across the year, productivity has increased to 6.37 MT/ha (yield analysis of 13 per cent of the total number of families), with a significant increase of 109 per cent, per family coverage. This is much higher than the average state yield of 2.2 MT/ha and 1 MT/ha when traditional practices are used for paddy and millet, respectively. The average yield of the SRI millet is 3.06MT/ha (yield analysis of 10 per cent of

the total number of families).

Along with this, the Consortium has devoted time to influence the government in adopting SRI through field visits, yield certification, workshops, etc. In the *rabi* season, the crop coverage was 1,363 families in paddy and 1,737 families in other vegetables, pulses and millets.

From Tables 1 and 2, it can be interpreted that 91 per cent of the families achieved a yield of more than 4 MT/ha (the state productivity average of traditional paddy is 2.3 MT/ha). The average productivity for the SRI paddy is 6.37 MT/ha.

With SRI millet, 79 per cent of the families of the sample study achieved more than 2 MT/ha (the state average of millets in traditional practice is 1 MT/ha). The average productivity of SRI millet is 3.06 MT/ha. The highest productivity reported is 11.20 MT/ha for SRI paddy and 3.9 MT/ha for SRI millet.

**Figure 3: Year-wise Comparison of Coverage (Families and Area)****Table 1: Analysis of Production Data of SRI Paddy in the *Kharif* Season 2013-14\***

Productivity Range (MT/ha)	Number of Families	Total Per cent of the Sample Families
10-12	25	1.0
08-10	322	12.5
06-08	1,001	38.9
04-06	998	38.8
02-04	219	8.5
00-02	6	0.3
Total	2,571	100.0

\*Based on a sample of 2,571 families; which is 13 per cent of the total number of families.

**Table 2: Analysis of Production Data of SRI Millet in the *Kharif* Season (2013-14)\***

Productivity Range (MT/ha)	Number of Families	Total Per cent of the Sample Families
5-6	4	1.3
4-5	54	17.4
3-4	112	36.1
2-3	74	23.9
0-2	66	21.3
Total	310	100.0

\*Based on a sample of 310 families, which is 33 per cent of the total number of families.



*Farmer demonstrates weeding in SRI millet plot using wheel hoe in Mundagaon village, Bastar*

#### **OTHER INITIATIVES OF SRI MANCH**

##### ♦ **Initiation of Organic Practices in Farming**

One key variable for success in the SRI technique is the humus content of the soil, which allows for beneficial microbial action in the root zone. Using organic manure, as part of the project design, led to at least 53 per cent of the families adopting the technique completely. *Sesbaniaaculiata* (*dhaincha*) or other leguminous green manure crops, which are available locally, are used in some areas to reduce the cost of cultivation and improve land husbandry, including its nitrogen content and moisture-holding capacity. Vermicomposting, liquid fertilizer application (*jeevamruta*, etc.), leaf-composting and organic repellent application have also been used to revive soil health and increase the organic carbon content across the project area.

##### ♦ **Convergence with MGNREGA**

For year-round, agricultural, farm-based development, irrigation during the critical phases of crop development is crucial. Convergence with MGNREGA for land and water development was tried on a pilot basis. For this, PRADAN extended help to partner NGOs to facilitate a comprehensive planning process in the villages, in the presence of the *panchayati raj* institution (PRI) staff and government officials. As much as Rs 2.79 crores was sanctioned for 518 families in 33 villages of eight districts from Land and water development. The plans were implemented through the respective *gram panchayats*; the convergence of various developmental interventions at the *gram panchayat* level is the major focus. The NGOs facilitate this initiative on a voluntary basis. Each NGO has selected a small Cluster within the SRI project area to work on, in an integrated manner.



- ♦ **Community Mobilization**

In the current phase, another component of involvement is helping the partners in community mobilization. In the quarterly meetings, all the partners said that they needed to focus more on this aspect. An integrated training for all the staff was, therefore, conducted and the partners have now started promoting women's Self Help Groups (SHGs) in their project areas.

- ♦ **Organizational Development**

PRADAN and other partner organizations are engaged in organizational development also. Mainly, there is cross-learning from and influencing of other NGOs, to build a robust system of accounts, finance and administration. For this, training in accounts and finance was conducted in three phases. At present, partners are being influenced to prepare a financial manual in their own organizations and to take help from other partners, who have financial manuals (CGVSS, CARMDAKSH, PRADAN, etc). PRADAN and other NGO partners have engaged with each other to move towards more decentralized decision-making in the NGO administration.

## **WAY AHEAD**

PRADAN and partner NGOs use the SRI *Manch* to share the lessons learned, facilitate other initiatives (community mobilization, convergence through MGNREGA, Community Forest Right etc.), and to influence the government to spread a community-based developmental cluster model throughout the state. This forum also facilitates the emergence of leadership. It usually meets once every three months to review the engagement of the last quarter and draw up the plan for the next three months. The focus of the facilitator from PRADAN, in these meetings, is to promote group functioning norms and values, and to ensure that PRADAN does not occupy the dominant space.

Although partnership in Chhattisgarh started with a specific goal of SRI promotion. Gradually with the development of network among the partners, common agendas have emerged keeping in view the need of the area and demand of the community. The future engagement of the state-level forum is to develop a mutual learning-based network and an enabling environment in the state for the growth and betterment of the human condition of the poor and the marginalized people of Chhattisgarh.