PRADAN NSO and OLM: Rolling Out the SRI Programme

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Engaging closely for the first time with the government to roll out the System of Rice Intensification programme in Odisha, despite some misgivings and apprehensions, has been very encouraging and valuable, both in terms of visible results in the field and in the learning process

Over the years, PRADAN has established its position as a pioneer in the field of rural development. Its direct grass-roots engagement has contributed significantly to the lives of hundreds of thousands of poor and vulnerable families in central India's poverty pockets. However, many supporters and well-wishers of PRADAN often criticize its inward focus and limited policy-influencing role even though it has extensive ground experience. Many believe that PRADAN needs to pro-actively engage in shaping various government-run poverty alleviation programmes and extend support to other non-profit development players in the field of rural development. By doing so, it could contribute immensely to the efficiency and effectiveness of various development programmes and also reach a larger number of poor families. Responding to the feedback and taking into account the opportunities, PRADAN has initiated a few institutional and programme partnerships with some NGOs in the last few years.

In August 2013, a dedicated wing of PRADAN called NSO (NRLM Support Organization) was established to extend support to the National Rural Livelihoods Mission (NRLM), a flagship programme of the Ministry of Rural Development, Government of India. In this connection, PRADAN-NSO has been engaged with the Odisha Livelihoods Mission (OLM) as a knowledge and capacity-building partner since 2014.

Following an extensive field assessment, it was decided to help OLM roll out its System of Rice Intensification (SRI) programme in the *kharif* season of 2014. This is probably the first time that PRADAN has been closely engaged in supporting the government in rolling out its programme. Contrary to many apprehensions, the outcome has been very encouraging, both in terms of visible results in the field and in the learning process of OLM.

To chalk out the engagement areas of PRADAN-NSO and OLM, a detailed TNA was conducted by a team comprising two senior persons from PRADAN and a senior person from OLM

OLM, under the World Bank-supported Targeted Rural Initiative for Poverty Termination and Infrastructure (TRIPTI) project, has been promoting paddy productivity enhancement measures since 2011. In the *kharif* season of 2013, approximately 61,061 farmers participated in this programme, spread over 23 blocks of 10 districts. The main objective of this programme is to enhance productivity of small and marginal farmers and, thereby, reduce food insufficiency of the poor and the Extremely Poor and Vulnerable Group (EPVG) category farmers, by adopting SRI principles.

The strategy was mainly to engage external agencies experienced in SRI to support the implementation of the programme by directly engaging with producer groups (PGs) and OLM's core staff at the state and the district level, As per the reports received on crop-cutting, productivity has been enhanced by 10–25 per cent, despite the damage caused by Phailin, the cyclonic storm experienced in large parts of the state during the project.

TRAINING NEEDS ASSESSMENT (TNA) EXERCISE AND FINDINGS

To chalk out the engagement areas of PRADAN-NSO and OLM, a detailed TNA was conducted by a team comprising two senior persons from PRADAN and a senior person from OLM. A week-long, extensive field visit to three districts, namely, Jagatsingpur, Nayagarh and Puri, was organized, which involved interaction with six SHGs, four gram *panchayat* level Federation (GPLF), three PGs, 10 Cluster Co-ordinators (CCs), nine Cluster Livelihoods Co-ordinators (CLCs), nine block staff and three District Project Managers. Many rounds of discussions were held among the staff from NRLM, OLM, World Bank and others.

Most women, especially from the poorer families, had been mobilized into SHGs, which were practising key norms such as regular weekly meetings, weekly savings, inter-lending and repayments, and transparent accounts maintenance (called the *panchasutra*). The resourceful staff members, such as the CC, the CLC, Block Livelihoods Co-ordinators (BLC), and the Block Team Leader (BLT), are extremely pro-active and have established a strong rapport with the community.

The farmers covered under SRI last year have shared that their productivity has improved although their understanding of SRI techniques, which are widely different and some are quite the opposite to the accepted principles of cultivation, is still limited. The SRI programme was implemented largely through PGs at the hamlet/village level.

However, the understanding about PGs (the why, what and how of this arrangement) is rather unclear among the community as well as the staff. The staff, such as CRPs, CCs and CLCs, engaged in primary mobilization of farmers had limited technical and conceptual understanding and practical experience of

SRI intervention and, thus, had little confidence about guiding others. Although SRI had been promoted for two years, the potential outcome or benefit has not yet been established through proper demonstrations.

During this period, the agriculture department of the Government of Odisha promoted a paddy line under Bringing the Green Revolution to Eastern India (BGREI) banner. There was considerable overlapping of this initiative with that of OLM's SRI promotion efforts. As a result, the packages promoted also overlapped and adoption of the full package of SRI was observed in very few areas.

Capacity-building of the staff and CRPs: In addition to helping OLM develop training plans for the staff, the CRPs and the community, training modules and training material were also prepared

ENGAGEMENT AREAS OF PRADAN-NSO

The broad frontiers that PRADAN-NSO was engaged in to strengthen this programme were:

Capacity-building of the staff and CRPs: In addition to helping OLM develop training plans for the staff, the CRPs and the community, training modules and training material were also prepared. Expert trainers, both from PRADAN and outside, were deployed to conduct a series of training programmes.

First of all, a two-day event was conducted on strategy preparation-cum-technical orientation programme for the District Project Manager, team leaders, Livelihoods Co-ordinators and State Livelihoods Anchors, to roll out the SRI programme. During this event, the participants were taught the basic principles of SRI. Experienced farmers and PRADAN professionals shared their experience and answered all queries. Sumant, a farmer from Bihar, who was the 2012 record-holder for the highest productivity through SRI in the country, also spoke to the farmers. All these processes helped develop confidence of the participants. Subsequently, goals were set, in terms of productivity and coverage, for each of the block units. An overall training and mobilization strategy was framed to implement this programme.

Looking at the time constraints, it was decided to focus on at least one block from each district, where the block team members evinced greater interest than those of other blocks. Of the 31 blocks covered in 10 districts, where the SRI programme was carried out, 11 blocks were strategically selected-one block in each district and two from Nayagarh district, for intense engagement.

Following the first central event, a series of training programmes was conducted on SRI, to develop the necessary conceptual and technical know-how competency of OLM staff such as the TL, LC, CLC, CC and the Master Community Resource Persons (MCRPs). In these 11 intensive blocks, training was conducted for TLs, LCs and CCs in three batches. They learned about SRI principles and the roll-out strategy, and witnessed a practical demonstration of seed treatment and seed-bed preparation processes.

In Sadar block of Anugul district, the trainees were asked to share about those experiences of crop production, in which the yield was significantly high, as per their own assessment. They were asked to identify the practices they had followed that, according to them, may have contributed to the high productivity. They shared about their potato, chilli, onion, paddy and sugarcane crops. Interestingly, analysis revealed that their practices were related

Anugul Block Training of CRPs in Uprooting and Transplanting Seedlings

to key SRI principles. This exercise helped participants understand the importance of the principles of SRI, and also that these were not just a set of random practices being promoted.

Following this, training programmes were conducted at the block level on seed-bed preparation, land preparation, transplantation, weeding and nutrient management. By this time, many of the MCRPs were identified and, thus, training was conducted for them as well, along with all the block OLM staff.

The third phase of training was conducted on plant protection measures. Emphasis was placed on various non-chemical measures. It was observed that as preventive measures, the farmers have adopted various Integrated Pest Management (IPM)measures.

The last training phase was on scientific crop-cutting technique, to systematically assess the yield data. This was mainly conducted by the OLM staff, with minimal involvement of PRADAN-NSO. Significantly, the rigour practised during training events was adopted in field practice as well.

In addition to these training events, about 30 CRPs from PRADAN's operational areas in Keonjhar and Mayurbhanj districts were deployed to mobilize local MCRPs. After the initial round of orientation, they were divided into small groups and spent about a week with the block staff, helping them mobilize the community, improving their knowledge and boosting the confidence of the staff. Although, initially, these CRPs were meant to provide hand-holding support also, this did not materialize. However, this arrangement was very effective in the initial mobilization.

To support OLM in farmer mobilization, a number of Information Education Communication (IEC) material was developed by NSO. User-friendly booklets, flip-charts for trainers, banners, large-sized flex banners, a movie on SRI and training manuals in Oriya, etc., were designed and printed. However, large-scale printing and use of these materials did not happen because of some procedural issues. Formal approvals of the finances for printing were required. The learning from this experience was that it is always advisable to get approvals for the whole range of things well in advance, instead of getting the approval one by one. Nevertheless, wherever this material could be used, it was very effective in communicating to and mobilizing people. Overall, almost 75,000 farmers were covered under this programme during the *kharif* season of 2014.

IMPACT ASSESSMENT EXERCISE

During a consultation event between PRADAN-NSO and OLM representatives, it was agreed that this experience be systematically captured and the lessons drawn from it be incorporated in the programme in the coming years. These insights, experience and achievements needed to be shared with the various stakeholders.

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Meanwhile, a concurrent study was being conducted to assess the impact of this intervention. The assessment was conducted in two phases. One was after the transplantation phase (during the second half of September 2014) and the second during the harvesting period (the second half of November). The study was conducted with guidance from and under the supervision of Professor Dr B.C. Barah, Agricultural Policy Expert and economist and formerly NABARD Chair Professor, Indian Agricultural Research Institute (IARI). A survey team comprising Mr. Amit Kumar from the Research Unit of PRADAN and five experienced surveyors from Keonjhar was engaged in making the assessment.

The stratified random sampling process was followed for selecting farmers for the assessment. Three blocks of Anugul, Badamba and Nimapada were identified for this purpose. Stratified Random sampling (SRS) process was done at various stages of cultivation. Due to constraints of manpower, PRADAN-NSO could not engage with all the blocks equally when extending support. Anugul district was selected because all the MCRPs were women and its terrain was relatively more suitable for adopting SRI principles and it was not so affected by floods. Also, substantial inputs had been given to this block. Badamba was selected from 10 intensive blocks and Nimapada was selected from 20 non-intensive blocks through a random selection process. Five PGs were selected randomly from each of these selected blocks and, further, 12–15 farmers were selected randomly from these selected PGs. In this way, 219 farmers in all were selected for the assessment purposes. In addition, direct information collection by the study team, could cover only 135 farmers in the crop-cutting exercise. The standard system of crop-cutting and yield assessment, as per the guidelines of the Agriculture department, was followed for the Impact Assessment Process.

Crop-cutting in a 5 x 5 m field (left) and measuring the SRI yield (right) for the Impact Study in Anugul block.

STUDY FINDINGS

Overall, 78 per cent of the farmers adopted SRI principles whereas 15 per cent adopted line sowing and seven per cent went for traditional practices. This figure varies widely across blocks. Whereas in Anugul and Badamba blocks (the intensive blocks), 96 per cent and 88 per cent, respectively, of the farmers adopted SRI principles, this is quite low in Nimapada block. One of the main reasons for the low adoption in Nimapada could be the floods affecting the area.

Approximately, 73 per cent of the farmers received training on the basic principles and practices of SRI and most of them attended the field training programmes, which PRADAN-NSO was very particular about when rolling out the training plans.

Table 1: Percentage of Respondents Who Received Various Training Programmes on SRI

Kind of Training	Classroom Training	Field Training
Seed selection	78	59
Seed treatment with bavistin/cow urine	85	69
Nursery preparation	83	76
Field preparation with drainage system	77	65
Use of marker/rope marker	85	79
Careful seedling uprooting with soil	79	72
Single seedling used per hill	88	78
Soil loosening and weed management	76	59
Drainage of main field	75	62
Use of chemical fertilizer	55	39
Use of organic manure, FYM, vermi-compost, *Jeevamrit*	88	68
Plant protection, chemical measures	46	30
Plant protection, IPM, organic measures	65	43
Overall	73	61

Table 2: Percentage of Respondents Who Adopted Various Principles of SRI

Principles		% of Households Adopted
Seed selection through brine water test		74
Seed treatment		88
Age of seedling used	12 days or less	40
	13 days to 18 days	35
Proper nursery raising	Largely	38
	Partly	44
Spacing 10 x 10″		75
Seedlings used per hill	Single	79
	Double	18
Use of weeder	1 time	15
	2 times or more	52

Productivity enhancement

The yield from the same plot in the previous two years along with the practices adopted, that is, SRI, line sowing or the conventional method was recorded. Because the area was affected by the Phailin cyclone in 2013 and by various other climatic factors every year, an attempt was made to map the perceived yield in the same plot in the current year assuming that the farmers had gone in for the conventional method of cultivation. There were 34 farmers each, in the surveyed farmer group, who had adopted conventional practices in 2012 and 2013 and SRI in 2014 in the same plot. A comparative yield-increase was assessed vis-a-vis conventional practices. Clearly, a significant yield gain was achieved in 2014, with the adoption of SRI. The yield increased by 144 per cent and 36 per cent, respectively, against the yield realized in 2013 and 2012. Table 3 captures the actual yield realized after adopting SRI in 2014. Simultaneously, the farmers were also asked to guess the yield from the same plot if they had gone for the traditional practices in 2014. Table 4 shows that a huge shift in production, in the range of about 100 per cent, was achieved by adopting SRI principles, except in Nimapada, where the conventional yield was much higher than in the other two blocks.

Table 5 captures the overall shift in SRI adoption and the increase in yield over the years. In all the blocks, more and more farmers have adopted SRI; the adoption rates in the intensive blocks, that is, Anugul and Badamba, are relatively high in comparison to Nimapada, the non-intensive block. Productivity under SRI has increased significantly over the previous two years in the intensive blocks in comparison to Nimapada.

Table 3: Paddy Productivity with Conventional and SRI Methods

Year	Method of Cultivation	No. of Farmers	Average Productivity in the Same Plot in Kg/Acre	% Increase in Productivity
2013	Conventional	31	992	
2014	SRI	31	2,417	144
2012	Conventional	34	1,737	
2014	SRI	34	2,367	36

Table 4: Percentage Shift in Yield through the SRI Technique as Compared to the Perceived Yield from Traditional Methods in the Same Plot

Block	N = 160	Yield under SRI 2014 in Kg/Acre	Perceived Yield in Kg/Acre under Conventional Methods in the Same Plot, 2014	% Shift in Yield under SRI over the Perceived Yield
All	97	2,251	1,152	95
Badamba	40	2,365	1,086	118
Anugul	49	2,241	1,121	100
Nimapada	8	2,228	1,648	35

Table 5: No. of Farmers Adopting SRI and Paddy Productivity in Select Blocks

Year	Total	Anugul	Badamba	Badamba
No. of farmers adopting SRI				
2014	108	57	43	8
2013	47	21	21	5
2012	24	7	14	3
Paddy Productivity under SRI Practice (Kg Per Acre)				
2014	2,283	2,236	2,356	2,228
2013	1,567	1,693	1,436	1,590
2012	1,354	1,247	1,368	1,539

FUTURE PLANS

Table 6 shows that 160 out of 170 SRI farmers and 32 out of 33 line-sowing farmers are willing to adopt SRI principles in the coming year and are also willing to increase the crop area by 40 per cent. This shows the impact of the current SRI intervention. However, almost all the farmers shared that they needed further training on SRI.

The highest yield realized among the farmers covered in the study was 35.2 qunitals per acre, both in Anugul and the Badamba blocks. The average productivity increased to 22.83 quintals per acre in 2014 from the average yield of 15.67 quintals per acre in 2013 and 13.54 quintals per acre in 2012.

LEARNING

This engagement has provided many lessons for us. The following are some of the distinct insights. Creating the necessary excitement and energy is more important than the precision of the intervention. Moreover, one also does not know which process is actually appropriate because the whole setting (community, staff as well as organizational system and process) is different. Thus, a good mix of the prior game-plan as well as being flexible to get things moving seems to be the more workable strategy. Nurturing a relationship is important because that will contribute to the overall effectiveness of the programme at a later stage. Always welcoming discussion, keeping an open mind and helping others gather some understanding in the journey are essential. OLM needs to go through the full learning cycle.

CRPs selected from PRADAN's direct field area, to provide training and hand-holding support in the TRIPTI area, were not found to be very effective. This shows that no matter how efficient CRPs are in their own area, they need to be provided with additional training to become equally efficient in other areas. Moreover, the expectation also differs and thus these CRPs, who have been groomed and engaged in the PRADAN setting for many years, need to be re-oriented and equipped to become efficient in different contexts. Usually, in a government setting, one needs to follow protocols and procedures, which take considerable time to get approval. PRADAN is moved more by the purpose and, often, the

Table 6: No. of Farmers Planning to Adopt SRI in 2015

Block	Method of Cultivation	No. of House-holds	Average Area (Acres)	No. of Households Planning for SRI in 2015	Average Planned Area (Acres)	% Area Increase
Anugul	SRI	70	1.02	65	1.49	46.1
	Line sowing	3	0.78	3	0.95	21.8
Badamba	SRI	66	1.64	61	2.08	26.8
	Line sowing	8	0.91	7	1.59	74.7
Nimapada	SRI	34	0.98	34	1.64	67.3
	Line sowing	22	1.23	22	1.75	42.3
Total		203	1.23	192	1.73	40.7
Overall				95%	140%	

professionals in PRADAN tend to overlook formalities. This is not possible in a government setting, as was evident in the failure to use the IEC material developed although so much time and effort had been spent in creating it.

Experience revealed that even though it is a Mission, different units function in an isolated manner. Unlike in the PRADAN team setting, where members often meet and talk formally and informally and learning is shared, the different units in OLM function in isolated manner. So to institutionalise any learning, a formal system is required.. A core group needs to be formed, to engage around this collaboration, meeting regularly, taking stock of the progress and consolidating the learning. In the absence of this formal arrangement, it is very difficult to institutionalize the experience.

CONCLUSION

Although PRADAN had initial reservations in helping OLM roll out its SRI programme, the end result has been very meaningful and encouraging. There was a significant paddy productivity enhancement, that is, 45.7 per cent increase over the past year. In addition, PRADAN succeeded in bringing about a few shifts at the OLM level. First is the quality and intensity to the livelihoods training programmes for its cutting-edge staff and CRPs by way of developing objective-based training modules, quality trainers and conducting these mostly in field settings with manageable group sizes. Even after the engagement was over, similar practices were adopted in the last *rabi* season. Second are some changes in the rolling out the strategy of the overall programme. Now, SRI is largely known as a set of principles rather than a set of practices. Training modules, material and IEC material are available now in Oriya for wider use.

The results were visible and drew attention and appreciation at many levels. This has helped develop confidence in the PRADAN team to expand such engagements with other state missions. This engagement fostered mutual appreciation between PRADAN and OLM, and both are looking forward to further intensify this collaboration in the coming years.