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Learnings from SRI Upscaling Experience in Bihar, Tripura and Odisha

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Abstract

Despite showing positive results over a decade by millions of farmers across India, System of Rice Intensification (SRI) and now called as System of Crop Intensification (SCI) has not received adequate appreciation through upscaling and investments policy. SRI however, was featured as an innovation to be up scaled in the 12th Five Year Plan. Recently, It has been considered as one of the technologies to increase the production under Niti Ayog's policy paper (2017) on doubling farmers income. The schemes like SAGY, NFSM, NRLM, etc. also promote SRI as one of the agriculture based livelihood enhancement techniques. Some of the states have been on forefront to adopt SRI in their government schemes and diverted the funds from existing schemes for SRI demonstration, promotions, training, upscaling, etc. The strategy in each state differs in the way civil societies, research institutes, academics, etc. played a role in promotion of SRI. Based on the differential approaches used by states, rainfed conditions and experience of promotion for almost a decade, three case study states, Bihar, Odisha and Tripura were chosen for this analysis. The learning from each state has been drawn to understand - factors instrumental in upscaling and success, reasons of de-adaptation and accordingly recommendation are drawn. .

Keywords: Policy analysis, System of Rice Intensification, Government schemes

Introduction

The rainfed and smallholder farmers are more vulnerable to climatic vagaries, low productivity and volatile markets putting the household food security at stake. Public interventions by way of capital investment, research, and extension in agriculture in India have largely been guided by the concerns of aggregate food sufficiency. But lack of appropriate policy interventions in the context of rainfed and smallholder farmers has affected the production system adversely. To address this complex crisis, agroecological innovations such as the System of Rice Intensification (SRI) has already shown great potential at being a climate-smart method to produce more grain, while reducing water, seed and agrochemical use and more useful for small and marginal farmers. Despite showing positive results over a decade by millions of farmers across India, SRI (now called as SCI) has not received adequate appreciation through upscaling and investments policy. SRI however, was featured as an innovation to be upscaled in the 12th Five Year Plan. It has also found its place, recently, in SAGY, NFSM, NRLM, Niti Ayog's policy paper on doubling farmers' income as one of the techniques to improve crop production. But adaptation under these schemes is to a limited scale particularly in the rainfed regions of the country. In this paper we try to understand the various drivers and hinderances to upscaling of SRI through government schemes. The cases of three states were studied to understand how SRI scaling up efforts were carried out in these sampled states in last decade.

Methodology

Based on literature review and discussions with local organizations, the three states – Tripura, Bihar and Odisha were chosen based on the criteria – (a) Agro-climatic zone (b) Rainfed area and social demographic profile (c) Who led the strategy (government, civil society organizations, academia, research institute etc.) (d) main schemes under which SCI/SRI was promoted (e) If differential strategies adopted by implementor. Tripura represents the case of scaling up of SRI through government-led efforts, Bihar represent the case of CSO-led efforts whereas in Odisha mainly research institutes and academia was instrumental in introducing SRI in the state.

Quantitative data collection

a) Secondary data collected from State wide MIS systems on year-wise budget, coverage, allocations for various components, etc.

b) CSO level data on expenditure, coverage, cost-benefit analysis etc.

Quantitative data collection

a) Desk review of policy documents, scholarly articles, case studies by CSO etc.

b) Structured and semi-structured interviews from Macro level (State level) to micro level (community) – 9 interviews from state level actors, 13 from district/block level and 9 interviews with community level workers

c) Focus group discussion in 8 village/communities

Key highlights of Results and finding

	Tripura	Bihar	Odisha
History	• Initiated in 2002-03 with 44 demonstration @0.2ha by SARI • 2008-09- area under SRI 50000 ha (250,000 farmers) • Initiated under State Perspective Plan (2001-10) to address food grain shortfall • Two pronged strategy - SRI and Hybrid rice	• 2002 PRADAN initiated, 2007 - PRADAN undertook 128 demonstrations under JEEVIKA • District, State level consultation, CM, Krishi Mantri got interested • 2009-10: 5 farmers per district under ATMA, • 2011 SRI year declaration by CM • 2011 PRAN constituted Climate-Resilient Agricultural Training Center	• XIMB, OUAT, DWM and CSOs initiated • State level dialogue in 2007, SRI learning alliance 2007 • RKVY, SRI village programme under RKVY in 2008-09, inclusion in BGREI • MKSP shaped by PRADAN
Strategy	• Extensive training of government officials during 2010-2014 • Farmers training, exposure, farmers' schools, community nurseries • Village level workers (VLW) & PRIs were backbone • Incentivizing farmers for demonstration, handholding till 3 years	• JEEVIKA - Trained VLRPs, SEWs (VLRPs as resource person to UP_NRLM l incentive based model) (women on forefront) • Handholding by CSOs (PRAN in 38 districts) • Other than Rice - introduction of machines for improving line sowing	• Initial years from 2007-2010, SRI demonstration promoted by incentivizing farmers • SRI Village in partnership with CSOs • Later Line transplanting was introduced and promoted largely and now DSR, stress tolerant variety • Extension system of existing RKVY/BGREI was instrumental • VAW and Krishi Sathi's played role of farmers' training etc
Major Schemes	• NFSM: 30% of budget is for demonstration under SRI, Rs. 9000/ha (include input cost like seed, fertilizer, IEC material) • RKVY: HYV, Hybrid seeds. • ATMA: Trainings • Farm mechanization : Seeders, weeders, Power weeders	• JEEVIKA-BRLSP programme of State Rural Livelihood Mission (2006-2017) Major investment on VLRPs and capacity building (40%) • RKVY plan 2011-17 (Rs. 1274 crore on SRI) & BGREI - Incentivize farmers Rs. 3000/acre for setting up demonstration.	• RKVY SRI village 3.23 lakhs per village (30 villages) (Total outlay of Rs. 100 lakhs, 1500 acres) • RKVY/BGREI (2010-11) - Rs. 1300/acr ~ Rs. 8.2 corers • BGREI only 3% of outlay under Crop Production system • NFSM (2016-18) Rs. 2.7 corers/ year

	Tripura	Bihar	Odisha
Coverage	• 2006-2014, % share of SRI area and production has increased from 7% to 41% • 2015-19: average 100,000 ha under SRI (out of average 270,000 ha area under Paddy) (35%) but trends are decreasing with 25% steep from 2015-16 to 2018-19 • Adaptation - Transplantation, spacing and weeding	• 2011-12 - SRI year with coverage of 3.5 lakh hectares • JEEVIKA - 250,214 (SRI), 272,317 (SWI) • RKVY/BGREI - 366,000 Ha total from 2011-19 (But more de-adaptation in RKVY/BGREI • Adaptation - Spacing, Weeding. Now more focus is on DSR)	• RKVY 2007-08 - 1557 acres, SRI village 2008-09 - 1500 acres • RKVY/BGREI - 2010-11~18000 ha • BGREI (LT) 2015-16 ~ 100,000 ha • NFMS (2016-2018) ~ 3000 ha per year • Adaptation-Line transplantation takes over the SRI after 2011-12.

Conclusion

Policy and Practice changes

(a) Investment on Community based para-workers like in case of extension support system in the form of VLW (Tripura) and VLRP (JEEVIKA-BRLSP)

(b) Investment on capacity building programme – creation of knowledge extension system, extensive training of government officials (as in case of Tripura), Training of VLW (as in case of Tripura) and VLRPs (as in case of Bihar), extensive training of farmers through VLRPs, etc.

Research

(a) Revisit package of practices, typology specific changes, and improved SRI adaptation, consideration for farmer's adaptability

(b) Farm mechanization as per the suitability of economic condition of farmers, local conditions, soil parameter, water parameter, etc. need to be developed.

Policy vision

(a) SCI works for small and marginal farmers who have family labour to invest and are not migrating (seasonally) from the region.

(b) It is very important that the lessons learnt from farmers' field, farmers' innovation coupled with scientific support, systemic changes at several levels of policy implementation and community-based extension/ knowledge system has to be incorporated into the new vision for policies. There is a sufficient knowledge and empirical evidence to rework the strategy of SRI/SCI promotion. The policy adaptation of SRI/SCI requires considerable change in extension systems and approaches deviating from target driven strategies.