

## **Recommendations Emerging from the Round Table on SRI for 12<sup>th</sup>FYP organised by the National Consortium on SRI (NCS).**

This brief note draws from some of the discussions of the Jan 13<sup>th</sup> round table organised by the National Consortium on SRI (NCS) for the 12<sup>th</sup> Five Year Plan as well as earlier discussions of the Planning Commission's Sub Groups and NCS.

At a time when farmer distress has been quite high across the country, the rapid spread of an agricultural innovation like SRI with significant saving on inputs and increased yields in most of the rice growing regions is heartening. This spread is not only in terms of area (estimated to exceed 1 mill ha in rice), but also the number of farmers (estimated to be over 1.5 million), greater representation of research work on SRI in international fora, extension of SRI principles to other crops (wheat, sugarcane, ragi etc.) and the diversity of actors involved (departments of agriculture, rural development, livelihood missions, ICAR researchers, state universities, civil society and farmers organisations, donors, private sector entrepreneurs etc.). While some of this spread can be attributed to public policy initiatives such as NFSM, or due to a few state governments that have integrated SRI into existing schemes (Tamil Nadu and Tripura), the main thrust for SRI spread has emerged from outside the department of agriculture, especially by large number of CSOs operating in regions where agricultural innovations have either not reached or have been slow to spread. This has implications for designing suitable policies for extension.

An analysis of the experience in the 11th Plan bears out that consistent support to farmers over at least three cropping seasons (often three years), village level implementation by community based organisations with support from an experienced facilitating organisation are essential for a sustainable transition to agroecological innovations such as SRI. Such a transition involve changes in thinking and management practices, with new skills learned by labourers, farmers and common interest groups (SHGs or farmers groups), capacity building of master trainers and resource persons or subject matter specialists at the village level, and integration of efforts at the block or district levels and beyond. It has also been found that absence of this consistent support can lead to subsequent disadoption or poor utilization of SRI principles.

Agencies such as NABARD have since 2009 have supported investments both in implements (like earlier schemes) but also in institution development and capacity building of local level cadre of agricultural professionals and participating in and creating new inclusive innovation forums such as state level consortia and alliances (the AP SRI consortium, Jharkhand, Chattisgarh and Odisha are good examples of this). Livelihood missions of states such as Bihar (Jeevika), Madhya Pradesh, Odisha have seen the potential of sustainable agricultural livelihoods such as SRI for poverty reduction and have been, or are already working SRI scaling up plans. NABARD and NFSM sought to work together to support collaborative action through CSOs in 2011 the institutional mechanisms needs refinement though. Sufficient experience and ground is now available for a large scale expansion of SRI in the mainstream agriculture programs.

The National Consortium on SRI through a series of dialogues with NFSM, ICAR, IARI and the Planning Commission recommends the following for a pro-active policy that recognises the potential of innovations such as SRI for three policy pivots focused on (a) **food security** (at household and regional

levels with implications for poverty reduction), as (b) a much needed input and possible strategy for furthering **irrigation sector reforms** in canal and borewell irrigated areas experiencing high levels of water stress and conflicts; and (c) ensuring **sustainability** of stressed rice ecosystems with focus on ensuring sufficient soil biota to revive soil health. While these pivots have differing objectives, geographical locations, actors/ departments, programs to be converged and research needs, the extension requirements are common requiring knowledge, capacities and action that are location specific.

NCS recommends greater attention in the 12<sup>th</sup> FYP to fashioning an institutional architecture that can achieve these objectives rather than any particular scheme that could be applied uniformly across the country. Creating a policy framework that brings together different actors (Departments of Agriculture, Rural Development, Irrigation, etc., with other actors such as ICAR, SAUs, NABARD, donors and civil society organisations) to plan collaboration and regularly take up field level challenges is paramount. This requires several shifts summarized in the table below.

	<b>From(past efforts)</b>	<b>To (ideas for 12<sup>th</sup> Plan)</b>
<b>Research</b>	Evaluating spacing, viability etc	Explaining the science underlying SRI for better productive opportunities
	Single crop focus on rice	Principles and applicability for other crops, validation etc
	Varietal focus	Greater focus on soil and root systems Enhancing biodiversity through evaluation of SRI response of indigenous varieties
	On station multi-locational trials on rice	On farm evaluations and assessments long term rice based cropping systems and on various soil microbes with and without organic
	Single research centre or its network	Multi-actor collaborative research better linked to SRI researchers in India and internationally, and with farmers involvement
	In standard technical journals	Wider sharing of results in consortia meetings and with partners apart from quality journal publications
	No clear budgets, utilising existing funds	Separate research funding linked and if necessary in a challenge mode and in consortia. Increasing the critical mass of the research network on SRI
<b>Extension</b>	Scattered demonstrations	Compact area in a contiguous block
	Single year	Three to five years support
	FFS by external resource persons	FFS by experienced and practicing farmers
	Incentives to farmers alone	Investment in skills and knowledge of labour along with farmers and in their organisation into specific task groups with new skills.
	Inputs/ incentive led extension by the Department targeting individual farmers	Extension anchored in farmers/ community organisation led by experienced farmer resource persons
	Subsidies on weeders, markers, transplanters	Support structures and incentive mechanisms to enable labourers, co-sharing of implements, manufacture by local artisans or small enterprises etc
	Undifferentiated investments	Three year support with decreasing investments with enhanced learnings on sustainable transitions to newer management systems
	Inadequate support for monitoring and impact assessment	Need for monitoring and effective evaluation on a continual basis to enable learning and designing improved systems based on field experiences
<b>Policy</b>	Unclear and ad-hoc support, no guidelines from centre	Enabling forming of inclusive innovation forums/ consortia to regularly meet, share and discuss policies and involve academic institutions in monitoring and learning of programmes, creating architecture at the state levels for

A shift in science, practice and policy on SRI based on calculations of the NCS can enable the expansion of SRI to a modest outreach to 25 million farmers across 10 million hectares in rice in the 12<sup>th</sup>FYP with the following place for up scaling and mainstreaming. A well planned strategy can lead to an average productivity increase of 1 ton/ha that can be a substantial contribution to national food security with much lower use of costly (to the nation) agrochemical inputs and irrigated water.

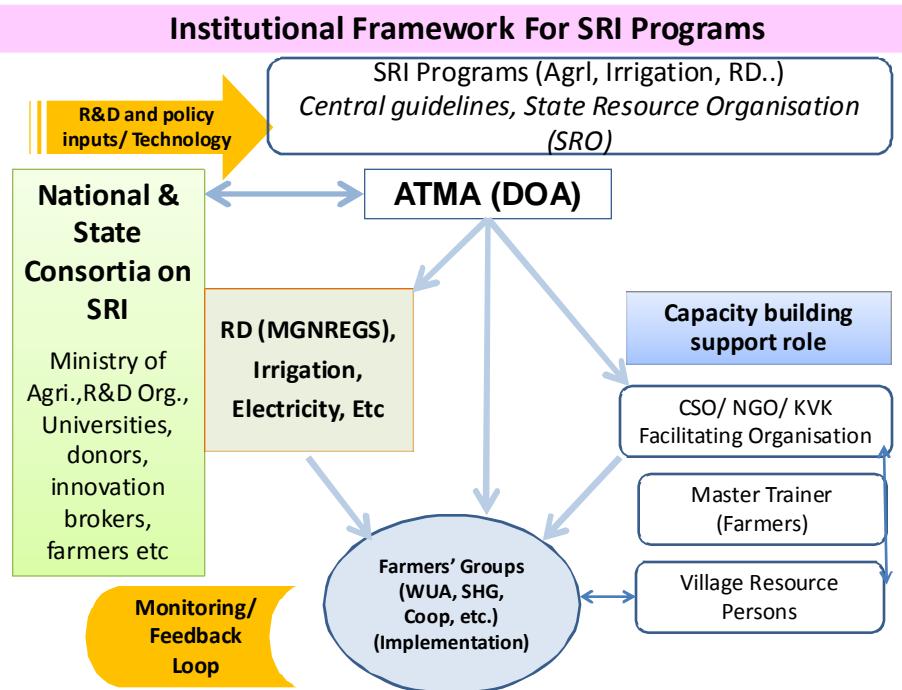
### **Scaling Up Mechanisms:**

Three strategic streams of expansion of SRI can be envisaged:

1. ***Fast-Track Stream:*** Where SRI has been widely accepted and sufficient ground exists for scaling up; using NFSM, RKVY and other mainstream programs.
2. ***Challenge Program Stream:*** Where acceptance is relatively lesser but potential of SRI has been fully explored; a challenge program based on competitive open bidding (in consortium mode) is opened up to scale up SRI in larger contiguous areas.
3. ***Research & Development Stream:*** Where SRI has been recently introduced or not yet introduced. In such areas intension effort may be made to carry out on-farm research by experienced NGOs and on-situation research by rice scientists for 3 years before upscaling successful experiences.

A subset of this R&D stream is ***Irrigation Systems Reforms Stream*** where potential of SRI is used to leverage reforms in irrigation systems to deliver regular but precise quantities of water in canal and groundwater based rice production.

But, the institutional framework needs to be common to all these streams of efforts i.e. implementation by a community based organisation, led by farmers resource persons supported by a facilitating organisation integrated into district and state level learning forums. (for details on changes required in extension refere to note in Annexure 1)



### Funding Mechanism:

There is a consensual reflection emerging from the experience in the 11<sup>th</sup> plan that there needs to be separate and clear guidelines for SRI promotional programs under NFSM. The NCS consultations also, brought out that the Central Government must play a pro-active role in catalysing State Governments owning and mainstreaming SRI. About 25 percent of the fund for promotion of SRI in 10 million hectares may be allocated at the national level with an understanding that it will be released where 75% additional fund will be integrated through convergence with RKVY, etc.

An **SRI Innovation Incentive Fund** (of about Rs. 5000 cr), may be constituted (as an additional allocation), that can be accessed if the state governments / districts prioritise and allocate budgets for SRI promotion in the above three streams in their plans. The same fund can also provide for applied on-farm research on furthering agro-ecological innovations.

It is important that SRI programs are taken up under various other programs of Water Resources, Panchayati Raj, Rural Development ministries such as Command Area Development Programs, Integrated Watershed Management Programs.

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## Annexure 1

### **Need for reforms in the delivery mechanism for promoting System of Rice Intensification (SRI)**

#### **Introduction**

- SRI requires a knowledge, skill as well as management centric approach
- The conventional delivery mechanism designed for input centric approach is not found to be relevant for promoting SRI
- The ongoing extension strategy based on scattered demonstrations with resource rich farmers does not lead to subsequent adoption and diffusion of SRI even in the same village
- Ownership of SRI approach by the larger community has also been low even in villages where it has been adopted by some farmers due to individual oriented approach rather than CBO (community based organization) centric approach

#### **Reforms in extension strategy – main features**

- Organization of compact block demonstrations rather than scattered demonstrations
- Continuation for atleast 3 years in the compact block rather than shifting the location every year
- Motivation of farmers through focused exposure visit to successful examples rather than subsidy on external inputs
- Initial implementation of SRI over a small area with each motivated farmer, which may gradually be increased during subsequent years
- Enhancement of skills of labourers in the village for two critical operations namely transplantation of one seedling of rice per hill at early age, and interculture through manual / mechanical weeder
- Improvement of microbial activity in soil (for better root development) through additional application of organic matter
- Efficient water management on group basis through additional field channels (in tank and canal irrigated areas) and through timely supply of electricity (in well, borewell, lift irrigated areas)

#### **CBO centric approach – main features**

- Promoting SRI through sustainable groups (namely women SHGs, farmer CIGs, etc) rather than individual farmers
- Direct funding to the CBOs (apex bodies of above groups) for development component as well as management component
- Handholding through community resource persons (CRPs) to be paid by the above CBOs
- Involvement of experienced farmers as resource persons for operating Farmer Field School at village level
- Facilitation by experienced agencies (under GO, NGO, CBO, etc) on a tapering basis

#### **Need for three streams of partnership**

- |                          |              |   |           |
|--------------------------|--------------|---|-----------|
| <input type="checkbox"/> | Stream – I   | : | NGO alone |
| <input type="checkbox"/> | Stream – II  | : | GO + NGO  |
| <input type="checkbox"/> | Stream – III | : | GO alone  |

- These three streams may co-exist in each state for playing a complementary role
- At the field level, each of these streams may work in partnership with a sustainable CBO

#### **Stream – I (NGO alone)**

- It may preferably be funded by an autonomous organization which has experience of working with NGOs, such as NABARD, para-statal organization, cooperative society, cooperate bodies, foreign funded organization, etc

- Its main objectives may be as follows
  1. Carrying out R&D in new villages
  2. Generating successful experiences
  3. Providing working experience to new NGOs
  4. Developing a cadre of successful farmers and CRPs
  5. Upscaling SRI to a limited extent
  6. Providing feedback for modification of guidelines of the government funded schemes on SRI

#### **Stream – II (GO + NGO)**

- It may be organized on a pilot basis as an integral part of the existing SRI scheme under the national / state government
- The existing guidelines of the above SRI scheme may be modified (for testing in the pilot area) based upon learning under stream – I
- Additional fund for adoption of modified guidelines (in the pilot area) may be provided either by state govt. (through convergence with RKVY or other schemes) or through collaborative project with NABARD, PSO, etc
- The above pilot project may be implemented through the CBO centric approach indicated earlier
- Its progress may be regularly reviewed by the same state level review committee which has been constituted for SRI under stream – III
- A state level consortium of resource organizations may be formed for supporting the pilot project under stream – II. This consortium may consist of representatives from ICAR, SAU, DoA, NABARD, WALAMTARI, NGO, etc. Its secretariat may be managed by an experienced NGO for the initial period of two years
- The field experience under stream – II may be concurrently evaluated / studied by an inter-institutional team constituted by the state level review committee for stream - III

#### **Stream – III (GO alone)**

- Based upon the learning under stream – II, the guidelines may be modified and institutionalized under stream – III in a phased manner
- It is critical to adopt the modified approach (under stream – III) with respect to extension component as well as CBO component (as indicated earlier)
- Adequate provision may be created to involve experienced farmers and CRPs to support stream - III

#### **Decentralization of open bidding system for involvement for experienced partners**

- The open bidding system currently being adopted (at national / state level) by ICAR (under NAIP, NICRA, etc) by Department of rural development (under NFSM, etc) by foreign funded projects (under OTELP, RRA, etc) has been found to be successful for involving multiple agencies for implementation of innovative projects
- Adoption of similar approach may be considered by the department of agriculture to promote SRI. Its efficiency may be further enhanced by decentralizing the bidding system at district level through an autonomous organization like ATMA

#### **Large scale promotion of SRI through situation specific approach**

##### **SITUATION - I**

- Where sufficient adoption of SRI has already taken place in farmers' field

- In such areas ‘fast track approach’ may be adopted for promoting SRI as a part of the govt. funded programme through partnership with experienced NGO, CRPs, successful farmers, CBO, etc

#### **SITUATION - II**

- Where existing area under SRI is limited but it has sufficient evidence from R&D work carried out for at atleast 3-4 years
- In such areas SRI may be promoted through a ‘challenge fund’ to be provided to motivated organizations under GO, NGO, PSO, etc

#### **SITUATION – III**

- Where adoption of SRI in farmers’ field is negligible and no concerted effort has been made to carry out systematic R&D
- In such areas intensive effort may be made for atleast 3-4 years to carry out on-farm research (through involvement of motivated NGOs) and on-station research (through involvement of motivated scientists associated with rice)
- Afterwards, based upon learning, promotion of SRI may be attempted in suitable locations preferably through a ‘challenge friend’ approach

#### **Catalytic role may be considered at national level during XII plan**

- Developmental approach as well as technical content of SRI may vary from state to state due to inherent variation in the situations
- Hence flexible approach may be adopted which may consist of the followings
  - A strategic framework as well as flexible guidelines may be formulated at national level for promotion of SRI
- **Flexible approach (contd.)**
  - An approximate area may be indicated for promotion of SRI in each state based upon the existing situation / status of SRI and in consultation with the concerned states
  - Approximate budget may be indicated for covering the above area with a unit cost for programme component and management component
  - As a part of SRI scheme only 25 percent of the indicative budget may be allocated at the national level. The states may be encouraged to formulate proposals to arrange the remaining 75% of the budget through convergence with RKVY, other untied fund, etc)
- Based upon the field experiences, each state govt. may have flexibility to work out their own operational guidelines within the overall framework evolved in the national guidelines
- At the national level 30% of its fund may be reserved for supporting R&D in new areas through experienced NGOs and also encouraging ‘challenge fund’ based development in consultation with the respective state governments