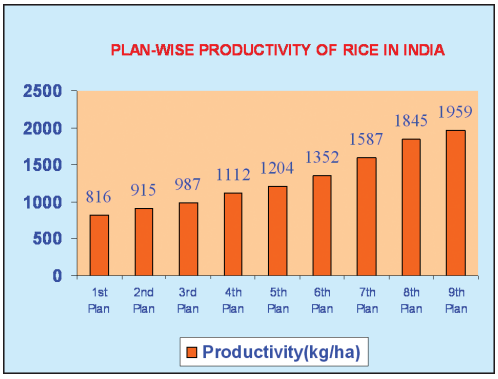
Technical Session - II

Experiences in SRI Promotion/Adoption

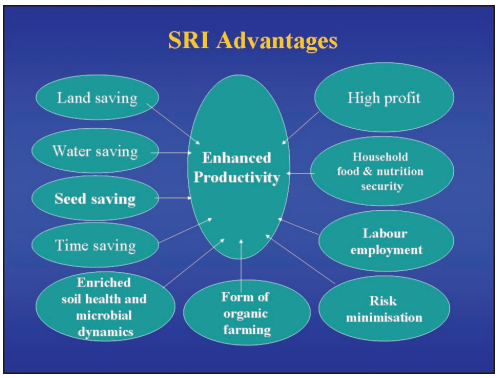
Chairman : Dr.M.P.Pandey, CRRI
Co-Chairman : Dr.G.Bheemaiah, ANGRAU
Rapporteurs : Dr.V. Shashi Bhushan, ANGRAU
Dr. P.Punna Rao,ANGRAU

Four speakers presented their experiences in SRI promotion.



Dr. M. C. Diwakar, Director, Rice Development Centre gave an overall scenario of rice area, productivity from 1st Plan to 9th Plan and stressed the need for increasing productivity from average 1959 kg/ha. He classified the different rice-growing states and districts into four categories, viz., high productivity, medium productivity, low productivity, and very low productivity. He also informed on the status of SRI adoption in Tamil Nadu and Andhra Pradesh in all districts while in other states, viz., Karnataka, Chattisgarh, Punjab, Uttar Pradesh, Uttarakhand, Tripura and Bihar in some selected districts for enhancing production. He stressed the need for creating awareness among the farmers; training and demonstrations are being organized at the farmers' fields under the macro management mode of agriculture. The house felt that the large-scale popularisation of SRI is needed, and that Government of India should take measures and give direction to all states.

Dr. B. C. Barah, Principal Scientist, National Centre for Agricultural Economics and Policy Research (NCAP) gave information and feedback on various categories of farmers and his experiences with them.



Concerns regarding the challenges in agriculture and enhancement of productivity are the main aspects. Sustainability for alternate cultivation aspects are important. SRI can lead to organic farming, increased production and quality, more labour employment, and food security for the poor. Research, development and extension are the need of the hour for SRI promotion. He also pointed out that the resource conservation should be integrated into productivity-enhancing technology, as the farmers prefer such property of technology.

Dr. P. Punna Rao, Deputy Director (Extension), ANGRAU reported on the overall scenario of SRI adoption in Andhra Pradesh from 2003 to 2006 and highlighted the six principles of SRI. The various programmes taken up by the university for popularising SRI, including Front Line Demonstrations (FLDs), on-farm demonstrations (OFDs), trainings, electronic and print media, and interaction meetings were highlighted, as part of WWF Dialogue project support. He also emphasized that there were some negative results also from SRI in certain locations. He pointed out that SRI has the advantage of cost-effectiveness and increased yields per unit area when compared to conventional transplanting. However, there were some dark areas, which need to be addressed by strong research findings for up-scaling SRI in the state.

WWF International ICRISAT and ANGRAU have jointly organized a dialogue on SRI with Hon'ble Chief Minister, politicians, scientists, farmers and media in November -05.

Dr. B. Majumdar, Senior Agronomist, State Agriculture Research Station, Tripura gave a detailed picture of SRI activities taken up in Tripura State from nursery preparation to water management and the concentrated efforts of the State Government in increasing the area under SRI to 52,000 users in *Boro* season in 2006-07. This is done keeping in view the food grain requirements of the state by 2010. The method of SRI became popular with rice farmers of the state due to high yields obtained by them under this method of rice cultivation.

The co-chairman, Dr. G. Bheemaiah, appreciated the overall picture given by the speakers and the policies, issues involved in the implementation of SRI. The gender, socio-economic factors, collective approaches, and the need for all stakeholders to show more interest were stressed.

The chairman, Dr. M.P. Pandey, desired all agencies to show more collective efforts for popularising SRI in order to enhance the productivity of the rice.

Technical Session - III

Farmers Experiences on SRI Method of Cultivation

Chairman : Dr. A. Satyanarayana, Nuziveedu Seeds
Co-Chairman : Dr. D. Jagannadha Raju, ANGRAU
Rapporteurs : Dr.B. Vijayabhinandana, ANGRAU
Dr. M. Venkata Ramana, ANGRAU

Dr. A. Satyanarayana, the chairman of the session, gave a brief introduction about SRI and its strengths and weaknesses, and he appealed to the farmers to give their experiences on SRI vis-à-vis normal practice.

The co-chairman, Dr. D. Jagannadha Raju also requested farmers to express their free and frank views on SRI and difficulties in large-scale adoption of SRI.

Six farmers from different states participated in the deliberations and presented their experiences on SRI. In addition, Dr. S.P. Das, ICAR scientist from Tripura also spoke. Sri Gurudayal Singh, Joint Director of Agriculture from Punjab, also supplemented information given by farmers from Punjab.

Sri K.V. Rao, a progressive farmer from Guntur district of Andhra Pradesh, narrated how he got interested in SRI, being a member of various water management committees. He made visits to Japan, Philippines, Sri Lanka and Thailand and enriched himself on various aspects of SRI cultivation. He shared his views on water management. Initially he adopted SRI method with green manure, farmyard manure, and chemicals alone, following all the principles of SRI. He reaped maximum yields (40 bags/ac) with green manure compared to that of FYM (36 bags/ac) and chemicals alone (32 bags/ac).

While sharing his experiences on weeding, he stated that the Japanese weeder was little heavy, and farmers should reduce its weight for better use. He also mentioned that the cono-weeder is not suitable in the Delta region because of higher clay content. Keeping this in mind, he modified his cono-weeder to suit the local conditions, and it became popular among the farming community.

The major conclusions from his presentation were that SRI can be practiced with less water, and it gives maximum benefits with the use of green manures. Samba Mahsuri (BPT 5204) did not lodge which cultivated under SRI method. Traditional knowledge from Vedas can also be incorporated into SRI for better yields. Having gained expertise in SRI, he is sharing his views with his fellow farmers and training other farmers and agricultural officers on various aspects on SRI.

Sri Thangamuthu, a farmer from Tamil Nadu, also practiced SRI with certain modifications and obtained 2 t/ha additional grain yields over normal cultivation. He also stated that there is no need to apply fertilizers as top dressing. Only basal application can meet the crop requirements.

Farmers from Punjab (Sri Harpal Singh and Sri Kapil Behal) also opined that System of Rice Intensification could be a better option for Punjab under the situations of very fast depletion of underground water and soil-related problems. They also indicated that Basmati could be grown under SRI method for getting good yields. They further felt that the effect of SRI on quality improvement might need to be probed.

Dr. Amrika Singh, Joint Director of Agriculture from Gurudaspur district of Punjab presented the results of on-farm demonstrations on SRI and highlighted the water saving to an extent of 50% under SRI.

While intervening, the Chairman emphasized the need for weeding between 10 to 12 days after transplanting of the crop for effective weed management.

In order to save more water, Dr. Norman Uphoff advised that if we allow the crop to produce more root growth during vegetative period by following standardized practices, there is no need to maintain thin film of water after panicle initiation stage.

Sri. Jacob from Chattisgarh working with tribal farmers expressed that indigenous rice varieties can be grown under SRI to get higher yields and also to maintain genetic diversity. Sri Sivananda Yadav from Bastar area of Chattisgarh State also emphasized that SRI is a useful technology for enhancement of rice production and quality seed production.

Sri. D. Narayana from Orissa stated that SRI cultivation was started in a small area initially but now he is extending the area under SRI with purely organic fertilization. He reported that he harvested 90 bags/ha under SRI compared to 60 bags under normal cultivation and sees lot of potential in SRI method.

Dr. S.P. Das, an ICAR scientist working in Tripura State, also shared his views and experiences. He mentioned that there was a reduction of duration to an extent of 10 days with BPT 5204 under SRI. During the deliberations, the entire house felt that the case studies of farmers should be documented and circulated among the farming community across the country.

Dr. Shukla, ADG (FFC), ICAR, suggested that scientists should conduct research on the effect of SRI on shortening of crop duration when compared to normal cultivation.

The chairman concluded with the remarks: (1) farmers are positive and convinced about SRI even though there are some minor problems that need to be addressed by scientists through conducting systematic experiments and showing documented evidence, and (2) documentation of farmers' experiences is very necessary.

Dr. L.V. Subba Rao, Senior Scientist from DRR, proposed the Vote of Thanks.

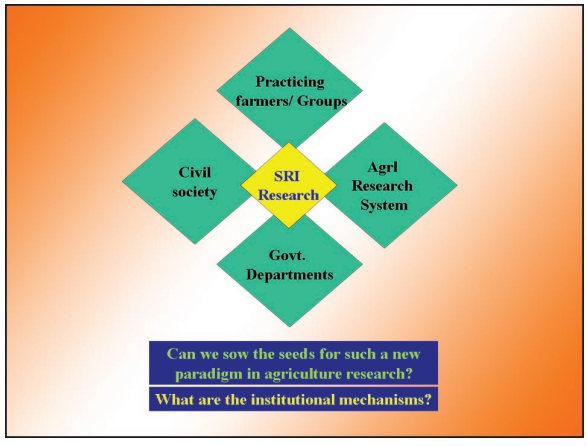
Technical Session - IV

Institutional and Policy Issues

Chairman : Dr.B.N.Singh, BAU, Ranchi
Co-Chairman : Dr.B.C.Barah,NCAP,New Delhi
Rapporteurs : Dr.M.Mallikarjun Reddy, ANGRAU
Dr.B.Sreedevi, DRR

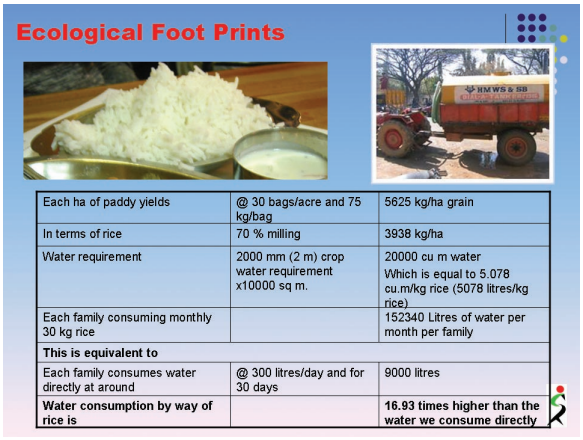
In his opening remarks, the chairman introduced topic of the session. The co-chairman stated that we had good deliberations in the morning session, and this session may be the most important session earmarked for discussing the institutional issues as well as policy issues regarding SRI. In the present-day context of declining rice productivity endangering food security, SRI is very much relevant.

Dr. A. Satyanarayana, former Director of Extension, ANGRAU, while speaking on the topic "System of Rice Intensification: Innovative method for sustainable rice production" shared his experience of how he was impressed with SRI during his study tour visit to Sri Lanka. He discussed various principles involved in SRI at length and highlighted the initiative taken by ANGRAU in popularising and implementing SRI. He emphasized the advantages of SRI over conventional method for getting higher yields such as large root system, profuse and sturdy tillers, non-lodging nature, big panicles with more number of filled grains/ panicle, higher grain weight, increased microbial activity, etc. While answering questions from Dr. Karim, Bangladesh, about spread of SRI and simplifying the technology, Dr. Satyanarayana stressed the need of conducting more demonstrations, with the support of Govt. & NGOs and also suitable modification to suit different locations.



While presenting his talk on institutional and policy issues, Sri A. Ravindra from a NGO Watershed Support Services and Activities Network (WASSAN) working in Andhra Pradesh discussed three issues, viz., research, extension, and policy support for popularising the SRI. He stressed the need for policy support for subsidies on inputs such as raising nurseries on community basis, and for labour, controlled irrigation system, and implements. He pointed out lack of any supporting systems in existence for SRI, as all private players from seed, fertilizer and pesticide industry, which are very active in conventional rice cultivation, are excluded in case of SRI. He suggested exploring beyond the conventional approaches in the areas of research, extension and policy support to harness the potential of the promise of SRI.

In this context, the chairman requested Project Director, DRR, to submit a project under NAIP covering on issues like technology development, refinement and adoption. In reply, Project Director, DRR stated that DRR has already submitted 3 or 4 projects to NAIP on related issues. Intervening in the discussions, Dr. Padma Raju suggested that NGOs could submit projects on SRI to NAIP under livelihood support systems component.



Each ha of paddy yields	@ 30 bags/acre and 75 kg/bag	5625 kg/ha grain
In terms of rice	70 % milling	3938 kg/ha
Water requirement	2000 mm (2 m) crop water requirement x10000 sq m.	20000 cu m water Which is equal to 5.078 cu.m/kg rice (5078 litres/kg rice)
Each family consuming monthly 30 kg rice		152340 Litres of water per month per family
This is equivalent to		
Each family consumes water directly at around	@ 300 litres/day and for 30 days	9000 litres
Water consumption by way of rice is		**16.93 times higher than the water we consume directly**

Dr. Ramanjaneyulu from Centre for Sustainable Agriculture (CSA), Andhra Pradesh also presented a talk on institutional and policy issues. He felt policies in India invariably either regulated certain things or provided incentives. He put forth policy options for SRI such as technology development and extension support, which are however dominated by political paradigms. Agriculture that is organic, small farms based and community managed is another emerging paradigm, which is not recognised adequately by the dominant paradigm of chemical intensive, highly mechanised, hybrids and Genetically Modified crops oriented. In this context, replication and scaling up of local innovations from the civil society, which are generally location-specific, has always been a challenge due to the lack of appropriate systems needed for them. He regretted non-appreciation of data from the farmers' fields belittling it as unscientific by the scientific community. He called for change of attitudes and acceptance of this knowledge also. He concluded his presentation with a slogan "Save water, Save farmer".

Mr. Ashok Kumar from PRADAN gave details about the activities of their organization which is spread over terrain-agro-climatic zone VII covering seven states with 110,000 farmers, of whom > 70% are tribal. In this zone the people have food security for 4-8 months only. Impressed by a talk given by Prof. Uphoff in 2002 to the state government, PRADAN took up the issue of popularising SRI among farmers. Initially in 2003, only 4 farm families adopted SRI; this has increased to 6,200 in 2006. He stated that yield increase in rice due to adoption of SRI is nearly double. This is achieved under rainfed conditions, without irrigation facilities. Building on the principles of SRI, they have developed a 'System of Madua Intensification' (SMI) for finger millet. He emphasized the need for support to mechanization, for constructing in situ moisture conservation structures, and generation of knowledge and tools to disseminate SRI. He also showed pictures of dry bed nursery adopted by farmers instead of wet bed nursery for SRI cultivation.

In this session, Dr. J. S. Bentur, presented a summary of the posters displayed on 2nd day of symposium. Of the 30 posters expected to be displayed, only 20 were presented, and two more additional posters were presented in the session, in which Andhra Pradesh dominated with 12 posters. He highlighted some of the following salient findings of the posters presented :

- 12-day seedlings with wider spacing of 40 x 40 cm produced more yield and better quality seeds.
- Field trials at Mandya showed 14% increased yield with SRI over conventional method.
- SRI methods build up useful soil micro-flora.
- Stem borer and leaf mite damage is more, but no difference in BPH and GLH incidence in SRI.
- SRI has no effect on seed quality.
- A power-operated hand-held weeder has been developed for use in SRI.
- An interactive multimedia module on SRI was developed.

While concluding the deliberations, the co-chairman expressed his gratitude to all speakers. He expressed doubt whether leaving a drainage channel as suggested by Dr. A. Satyanarayana is really practicable by small and marginal farmers. He agreed with the suggestions given by Mr. Ravindra that research on SRI should be flexible, and investment on research and development should be increased. He appreciated the commendable job done by PRADAN in spreading SRI method from 4 families in 2003 to 6200 families in 2006.

The session concluded with a vote of thanks by Dr. P. Punna Rao, Deputy Director of Extension, ANGRAU.