SRI Newsletter

System of Rice Intensification

Sir Dorabji Tata Trust SDTT ICRISAT WWF

Issue II October 2008

Dear All,

Thank you for the valuable feedback and suggestions on the first issue of the SRI Newsletter. This forum is for one and all to exchange information and learn from each other, including those who view SRI critically.

SRI is now globally established. The evidence from the field is convincing; and people and institutions earlier critical are now satisfied that this is working with the farmers. Heretofore, any intervention in the agriculture sector has had to be judged and approved by scientists. In case of SRI however, it has been the reverse; farmers have approved it first, and others are following. This does not mean there are no problems and issues concerning SRI. These are what we need to work on together.

News on SRI from Tamil Nadu is quite impressive; reports say that average rice yields in the state have jumped from 5.4 t/ha to 7.5 t/ha. Some individual farmers have even reported yield of 14t/ha. The story emerging from Punjab, though with a small number of farmers, is similar, with yields of 13.75 t/ha reported in this issue.

While such reports are encouraging, there is need to get them independently verified. Sustainability of yields and continuation of SRI adoption by farmers is an issue that we need to focus on. 'The 3rd national conference on System of Rice Intensification (SRI) in India: Policies, Institutions and Strategies for Scaling Up' planned from 1st – 3rd December 2008 at Coimbatore is going to do that.

The next SRI Newsletter will be special issue. We invite you to send in articles dealing with issues related to SRI. We particularly encourage critical observations of SRI and its limitations.

We have come to believe that SRI is a proven method to improve food security and at the same time redress the water crisis if adopted in at least 20% of the area cultivated with rice. Until now, the focus has been on improving productivity at farm level while reducing external inputs, but these gains need to be translated at national and ecosystem levels.

This newsletter is a modest effort to forge partnerships among all the various stakeholders to that SRI can reach that target.

Dr. Biksham Gujja

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Cover Story

SRI in India

Dr. Biksham Gujja and Dr. T.M. Thiyagarajan

Agriculture in India is in big crisis due to various reasons such as declining yields, non-availability of agricultural labour, water scarcity, seed quality, lack of proper extension, declining soil fertility due to excessive application of fertilizers, inadequate market intelligence, escalating cost of cultivation, low profitability, urbanization, migration to urban areas.

Lack of a long-term approach, of political will, and inability of institutions to understand the new situation further aggravate the problem. Farming is still and perhaps will continue to be the greatest employer of people in India. There are many articles and analyses describing the crisis. But the question is: What is the way out? Any intervention in improving the agriculture productivity in India should take into account the following needs:

- Increased factor productivity of water, nutrients, labour and land by adopting Integrated Soil and Crop Management (ISCM)
- Building up soil organic matter
- Economically viable, socially acceptable and environment-friendly technologies

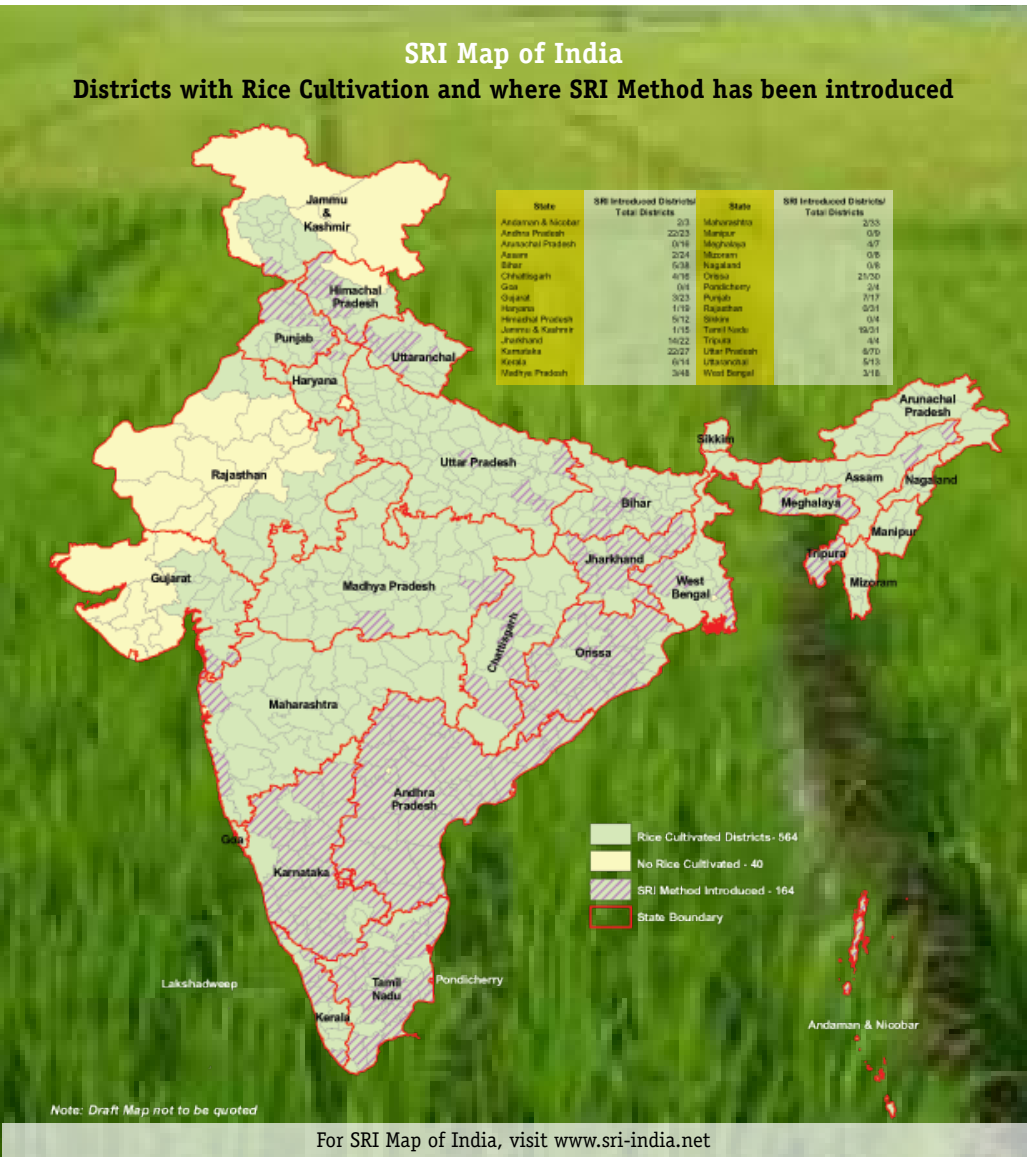
- Sustained technology improvement
- Setting up agro-industries in villages
- Community agriculture; building up and sharing resources; establishing model villages
- Strengthening knowledge dispensers
- Establishing agri-tech cafes to expand access to information

The global food crisis surfacing again, even after a Green Revolution in agriculture, calls for somewhat different approaches to addressing the issue. The global food crisis is an opportunity to invest in better types of methods and approaches to improve agriculture productivity without contributing to further degradation of resources and ecosystems.

In this context, we need to revisit farming system-based approaches, which have been largely ignored in favour of seed-centric approaches. Farm-based systems provide options to farmers and society and improve employment opportunities at the same time, while reducing the human footprint on the planet. Still, mainstream agricultural institutions, including some of the leading international institutions, do not take these approaches seriously.

The System of Rice Intensification (SRI) developed in 1980s by a French Jesuit priest Father Henri de Laulanié, based on his observation and pursuit to help the resource-poor farmers of Madagascar, offers great scope, although it is not a panacea, to overcome the food crisis and enhance the livelihoods of rice-dependent households. In the decade since SRI became known outside Madagsacar, its methods have been adopted, with appropriate adaptations and innovations, in the major rice-producing countries. SRI is a success story of partnership between farmers and civil society.

SRI is a simple but every effective approach to the current food crisis. Almost half of humanity depends on rice for their daily existence. It is the 'fuel' for Asia, and it is expanding to Africa and other countries. Rice cultivation as currently practiced requires massive amounts of water. In many countries, rice cultivation is responsible for more than half of the total water withdrawals and it is increasing. SRI drastically reduces the water requirements for rice cultivation while improving productivity. Rice plants exposed to SRI principles express their genetic potential, hitherto not experienced



For SRI Map of India, visit www.sri-india.net

with the present-day modern package of practices. SRI plants have profuse root growth which is reflected in higher tillering (up to 100 per hill) and vegetative growth. The number of panicles (up to 90 per hill) and number of grains per panicle (up to 360) and minimum sterility add up to the higher yield levels,up to 14 t ha^{-1}.

The overall benefit of SRI to practicing farmers would be higher profits. For the country, there would be 70% saving of seeds. Indeed, the seeds saved on 1 acre can be 25 kg, enough to feed a family for a month; imagine these savings added up for a village, district, state and country!). Saving of irrigation water can be 30-40% (8,419 m^3 ha^{-1} instead of 16,634 m^3 ha^{-1} -- imagine the water that can be saved in a region!). SRI revamps mechanization efforts in rice cultivation. Use of markers and weeders is already becoming popular; efforts are underway to develop motorized weeders and convert transplanting machines to suit SRI principles of single seedling and wider spacing.

SRI offers less opportunity for certain agri-based industries (producing seeds, weedicides, fertilizers) and thus does not attract their patronage. That SRI requires more commitment and involvement of the farmers and extension personnel than does conventional cultivation is one of the factors for slow spread or non-adoption. "Seeing is believing" is true particularly for SRI, however, and persons

(including scientists) who do not see the principles being adopted and the crops' response are unlikely to accept the benefits of it. It is true that each of the SRI principles has been on the research agenda for a long time, but they have not been evaluate in combinations.

Initially SRI looks to be more labour-intensive but recent interactions with practicing farmers show that there can be overall saving in labour costs. (A TNAU evaluation in 2004 showed an 8% reduction in labor needed per acre.) On-field training, exposure visits to successful farmers' fields, and constant publicity are essential. Community SRI will offer scope for sharing trained manpower and implements.
One clear advantage with SRI is that, because only 3 kg of seed is required per acre, farmers can hand-pick good panicles from their fields and thus get a yield boost just from good seed selection.

It is gratifying that many farmers take up their own research on SRI, modifying the techniques and tools to suit their conditions. At the same time, we see a good number of NGOs embracing SRI across the country. In India, research organizations and many state-level agriculture universities are increasingly positive about SRI. Many young researchers are planning to do research on SRI.

SRI is popular in the states of Tamil Nadu, Tripura, Andhra Pradesh, Karnataka and Kerala as well as in the east and north and is being promoted now in 33 countries across three continents including China, Indonesia, Cambodia and Vietnam. The Government of Tamil Nadu is making special efforts to promote SRI in 7.5 lakh hectares in that state.

While more and more farmers are getting interested in SRI in India, there are several issues in the adoption and scaling up of SRI:

At farmers' level:

- Some are mentally unable to accept the drastic changes in

agronomic practices and the reported benefits of SRI; this disbelief is eliminated only when they can see results for themselves.

- Most are easily convinced when they see the success of other farmers
- The key SRI practice of using soil-aerating weeders appears to be a major hurdle because of the required skill and energy to operate continuously; a motorized weeder will solve this problem.
- Contract labourers initially resist SRI planting because of the younger age of seedlings and the need for square planting, which they are not used to; training of these labourers appears essential; possibly also a higher wage recognizing the greater skill requires, which will share with them the productivity gains of SRI practices.
- Proper leveling and provision of drainage is a pre-requisite for SRI planting which is usually ignored; if improperly done, seedling mortality may kill the interest of farmers.
- Farmers who cannot control the water management may feel that SRI is not suitable for them; but they do not realize they can adopt other SRI principles with substantial benefit, and they can take steps to improve their water management, e.g., through raised beds or in-field drainage channels.

At researchers' level:

- Like farmers, many scientists too do not believe that SRI principles can modify the growth potential of rice unless they take up research with an OPEN MIND.
- What really happens in the rice rhizosphere with SRI management needs to be studied in terms of soil chemistry, microbiology, and soil physics.
- The impact of SRI principles on the physiology and photochemistry of the crop as well as soil nutrient dynamics are still not very well understood.
- Nutrient budgeting under SRI should be studied to see whether SRI crop will deplete soil nutrients. So far increases are more often seen than decreases in yield. But if there is depletion, how can develop suitable nutrient management / cropping system strategies be developed to overcome that.
- How important is each of the SRI principles toward optimizing benefit:cost ratios?
- How to explain pest/disease interactions in SRI?

At policy level:

- Making SRI implements easily available to the farmers; facilitation of large-scale manufacture and distribution.
- Facilitate laser-leveling for large fields by providing hiring facilities.
- Promote community SRI, including sharing resources and trained manpower.
- Setting up a monitoring mechanisms on the implementation and adoption of SRI in each state, with an apex body nationally to share information.
- Educating PWD officials on the need for regional water regulation such that states can benefit by adopting SRI.
- Making national institutions more responsible for considering SRI contributions to national food security.

SRI is recognized to benefit the farmers in terms of reducing the cost of cultivation and increasing total income and net profit. At the same time, it requires more attention and involvement of the farmer. SRI promotion across the country is highly variable: it is active in states like Tamil Nadu and yet to take off in some states. At the moment, SRI area in the country could not be much more than 1% of the total rice area of 43 million hectares. The attitude of all stakeholders in rice production requires a drastic change if majority of rice farmers have to change over to SRI. For sure, SRI is an answer to food security in India besides reducing the water consumption in rice cultivation.

Dr. Biksham Gujja is Senior Policy Advisor, Freshwater Programme, WWF-International, and Project Leader, WWF-ICRISAT Project on Water Productivity.

Dr. T.M. Thiyagarajan is Consultant, ICRISAT-WWF Project, and former Dean/Director, Tamil Nadu Agriculture University, Coimbatore.

'I learnt about SRI in *Doordarshan*, and practised successfully without any support.'

Interest to change for better – of yields and life – is essential for farmers. Manisha Agarwal interviews Aalti Nagaraju, a farmer in West Godavari district, who has learnt about SRI through various media sources and helplines and has tasted success with little effort.

Aalti Nagaraju, can you brief us about your journey into SRI practices?

I come from a small village of Gundugolanu, Bheemadolu Mandal, West Godavari district of Andhra Pradesh. With a population of 20,000 people in the village, and with sufficient water resources available in the area, paddy is the most widely cultivated crop, on around 1.5 lakh acres. Agriculture is the main occupation for nearly 1,500 people and also aquaculture is the other major industry of the region.

It is only from the year 2002, after my father's demise, that I have actually engaged in full-fledged agriculture in 3 acres of tenanted land. Like other farmers of this region, I started cultivation with traditional methods.

I always had special interest in watching agriculture-related programs on *Doordarshan*. It was during one of the programs that I learnt about SRI and its potential to increase yields with less seed, less water, and less fertilisers. Encouraged by the offered benefits of SRI practices, I started implementation, and it has been 4 years now that I am practising.

How easy was it for you to start SRI? Did you not get any resistance from other farmers?

I believe that any new attempt to change always comes with resistance. But I was totally convinced that through SRI there would come a great change in my life.

Even before me, another farmer, Rambabu, had attempted SRI in his fields. He had received support from the Agriculture Department officials, in the form of weeder and marker. But he could only produce less than with traditional methods. This discouraged almost everyone in our village, including the officials, from practicing SRI.

I knew deep in my heart that SRI was an answer to produce higher yields, and I continued my efforts.

I was also aware that Rambabu had not leveled the field properly and did not follow the weeding process. This resulted in extensive weed growth leading to less yields.

When I went to local officials for subsidy, the concerned people discouraged me, quoting Rambabu's experience and offered me very less subsidy. I was very strong in my commitment, however, and I went on to buy the weeder and marker.

There are a lot of assumptions among many farmers about weeding and other practices in SRI. How effective and comfortable did you find the SRI practices?

When I first started with my conoweeder, I faced a few problems. I knew that these problems were minor, and with little modifications to the weeder, it was simple to use. To remove the notion that using weeder for strenuous, I took my relative to the field and asked him to operate the weeder. He was completely shocked at the ease and effectiveness of using the weeder.

Also, usage of seeds is less in SRI, and application of organic manure is such a good indicator for maintaining soil fertility and also for the crop.

(Contd on page 9)

Punjab celebrates SRI Harvest Day!

Dr. Amrik Singh

The atmosphere at Gurdaspur, Punjab was of jubilance and colourful celebrations: "Farmers who want to adopt SRI method of rice cultivation will be provided conoweeder, marker and seed free of cost by the Agricultural Technology Management Agency under CSS Support to state extension programme for extension reforms, particularly in Gurdaspur District." This was announced by the Agriculture Minister of Punjab, Shri S. Sucha Singh Langah, when addressing the farmers gathered on the occasion of District-Level Exhibition cum Farmer Mela on SRI on the harvest day at Mill Ground Dhariwal on the 27th of September 2008.

More than 3,000 farmers from different blocks of the district participated. Photographs on all stages of SRI, from selection of seed to harvest of crop, were displayed. Shri S. Lakhbir Singh, Lodhi Nangal MLA; Dr Harwinder Singh Bhatti, Joint Director of Agriculture, Punjab; Dr. Baldev Singh Kahlon, Chief Agriculture Officer, Gurdaspur; and Shri Sukhdev Singh Sandhu, Chief Agriculture Officer, Amritsar, took active part in the celebrations organised by Dr. Amrik Singh, Dy. Project Director, ATMA cum ADO and his team members.

Shri S. Sucha Singh Langah, the Agriculture Minister, said that the scarcity of water for agriculture and the depletion of natural resources is becoming a major problem in the state, and the future looks even bleaker. This makes water-saving a high priority for the state government to save agriculture, which is the backbone of Punjab economy. He said that System of Rice Intensification has potential to increase rice yield per acre with less water, less seed, less fertilizer, and less pesticides. Earlier farmers in Punjab transplanted rice too early, even in the first week of May, which resulted in depletion of underground water table. Keeping this in view the Punjab government has issued an ordinance to stop the farmers from transplanting rice before 10th of June. This decision will facilitate a saving of crores of rupees by farmers which can further be used on diesel for generators, pesticide and electricity.

The Minister also announced that 10-12 SRI farmers will be sent to Tamil Nadu state to interact with farmers of Tamil Nadu in the first week of December who are adopting SRI in big way. He said that productivity of rice has reached a plateau under the conventional system of rice cultivation under flooded field conditions. "Because of this, we are unable to increase the rice yield while conserving natural resources. Therefore, there is an urgent need to look for alternative to conventional method of rice cultivation, and SRI is part of the solution."

Dr. Harwinder Singh Bhatti, Joint Director of Agriculture, Punjab,

inaugurated the harvesting of SRI crop from the field of Mr. Kapil Behal in village Hayat Nagar. The result from this SRI demo plot was 1375 grams per square meter (averaged from 10 sampled locations) which indicates a yield of 13.75 tons ha^{-1}.

Number of grains per panicle was 393 as against 286 in the control plot. Shri B.S. Kahlon said that in District Gurdaspur, 150 demo plots have been organized in farmers' fields with different varieties to see their performance by providing conoweeder and markers. On the occasion, Dr. Amrik Singh shared the experience of SRI techniques.

Dr. Amrik Singh is Deputy Project Director, ATMA and ADO Gurdaspur

Thumbal

A Model Village in SRI Cultivation

Dr. T.M. Thiyagarajan and P. Bhaskaran

In Tamil Nadu, the Irrigated Agriculture Modernization and Water bodies Restoration and Maintenance (IAMWARM) project is being implemented in 63 river basins since 2006 with assistance from World Bank and with active involvement of Tamil Nadu Agricultural University. In this project, SRI is one of the major thrust areas, planned for 250,000 hectares.

Thumbal village in Salem District in Upper Vellar basin was introduced to SRI in 2007. In the first year, SRI was taken up in 125 acres. One of the leading farmers in the village, Thiru Bhaskaran, who was already aware of SRI through an article in LEISA journal, was further motivated by the trainings given by project staff, and he became instrumental in bringing many farmers of the village to practice SRI.

SRI yields were up to 45 bags per acre (8,762 kg/ha) while in the past, yields were only up to 25 bags (4,812 kg/ha). In the first year itself, some of the farmers had tried to modify the rotary weeder for easier operation and also started to try different spacings. Farmers adopted SRI for their next crop in 80 acres even though there was no project support.

Farmers had adopted SRI for their next crop in 80 acres even though there was no project support

Thumbal village has become a model for SRI cultivation and has had nearly 2,500 farmers visit due to the publicity resulting from a visit of the State Minister for Agriculture and other Government high officials to the SRI fields.

Now, an SRI Farmers Association, a first of its kind in Tamil Nadu, has been initiated by the farmers of the village with the aim of helping other farmers to adopt SRI and join TNAU in its efforts to promote SRI and also participate in SRI research activities.

P. Bhaskaran is President of Farmer's Association, Thumbal.

'SRI interest and knowledge is spreading'

Rebecca May

WWF started the EC-funded Thirsty Crops project in India in April 2007. It is a four-year project, working with cotton, sugarcane and rice farmers to reduce their impacts through reducing water, chemical fertiliser and pesticide use, and to increase the socio-economic status of these farmers. The project works to train farmers in better management practices so as to achieve these results.

Under this project, work with rice farmers started at the end of 2007 in villages near Jangoan, 2 hours drive from Hyderabad. WWF is working with a local organisation called 'CROPS' in these villages. Farmers are discovering the benefits of growing rice under the System for Rice Intensification (SRI), seeing the results for themselves. This is attracting other farmers, and SRI interest and knowledge is spreading.

In September 2008, I visited this area and met a few farmers, to hear their stories, and also to see the difference for myself. The results were surprisingly clear.

Farmer Pochiah in Katkuru Village

Farmer Pochaiah is growing SRI rice for the first time this season. Last season he saw his neighbour growing SRI, and this year he decided to do this within 1 acre of his farm. The SRI field is adjacent

The number of tillers in the conventional plant is just 17, whereas for SRI it was 35. Also, the tillers are thicker, stronger and greener from the SRI plant.

to the rice grown under conventional methods, and the differences are evident even at first glance. The SRI field is greener, fuller and slightly taller.

The farmer told us that he is witnessing many differences himself. He used less seed; he has had to do less weeding; the crop has involved less labour; and he has had fewer pest problems in the SRI field.

Farmer Pochaiah established a metre-square area in each field for comparison. The number of stems (tillers) and number of panicles which contain the rice are counted in each plot, and the difference is significant.

Next season, farmer Pochaiah intends to convert all 3 acres of his paddy to SRI.

Farmer Ravi in Katkuru Village

Farmer Ravi planted his SRI field a month later than Pochaiah. The panicles were just forming, and the field had a small amount of water on the soil. Once the rice grains start to form in the panicles, the field is no longer irrigated in order to allow the rice grain to develop.

This is Ravi's second season for growing SRI rice. This season an additional 20 neighbouring farmers are also growing SRI after seeing Ravi's field last year.

Again Ravi has been able to see differences between the SRI field and the conventional field. He is surprised at how green and strong the plants are, with many tillers just from one plant. Ravi showed us a plant from the conventional rice field and one from the SRI rice field that he had pulled up 2 days before to show the EC project monitoring consultants.

The number of tillers in the conventional plant is just 17, whereas for SRI it was 35. Also, the tillers are thicker, stronger and greener from the SRI plant. The surprising thing is that in SRI, only one seedling is planted in one place, but in conventional paddy, a

cluster is planted, and even then, the growth from that one plant is greater and healthier than from the several plants that were planted in the conventional field. In the conventional field, the practice of flooding the fields increases the fungal problems, and the plants overall look less healthy.

When comparing these 2 plants, the roots of the plant were hugely different. The roots from the SRI plant were longer and stronger, which contributes to the health of the plant.

Ravi used to have a problem with rats in his field, but the project staff advised him to place bird perches in his field. Now he sees very few rats, because at night owls perch on these structures, and feed on or scare away the rats. Pheromone traps were also placed through the field. These contain a chemical from the female of a pest species, which attracts the males and traps them. This not only reduces the number of pests, but it is also an indicator of the scale of the pest problem in that field. The farmer can then decide if more action to reduce pests is required.

One noticeable emotion was the sense of pride shown by the farmers. They wanted to share their knowledge and experience. They enjoyed telling others about what they are discovering, and of course they are looking forward to a better income from their SRI rice. It's no wonder that the farmers had smiles on their faces, and were proud to tell their story and pose for the camera.

Rebecca May,Programme Officer, WWF-UK is coordinating Water Thirsty Crops Initiative in India, supported by the European Commission.

I learnt about SRI...

(Contd. from page 5)

How have been the yields with SRI?

In traditional methods, farmers of our village normally produce on average 35 bags of paddy per acre. With SRI, for the first year, in half-acre I produced around 24 bags; earlier it was only 15 bags. This year, I expect at least 48 bags per acre. I have also been saving on seeds, fertilisers, water and labour.

It is really good to know that with SRI there has been such an improvement.

Yes, there has been a drastic improvement and even better than I expected.
My interest and risk has paid off.

You are a great role model for many farmers cultivating paddy. But there seems to be not much enthusiasm for replication by other farmers after knowing and seeing such wonderful experiences such as yours.

True. Despite my success with SRI and many farmers visiting my fields and knowing about the practices and their benefits, there are not many who are actually replicating in their fields.

Frankly speaking, all that is required in SRI is adaptability of farmers. In traditional methods, there is plenty of 'free-time' for farmers and laborers, but with SRI, farmers have to be active. It is an interactive approach with SRI. Farmers need to have kind of an 'intimate relationship with the soil and the crop'.

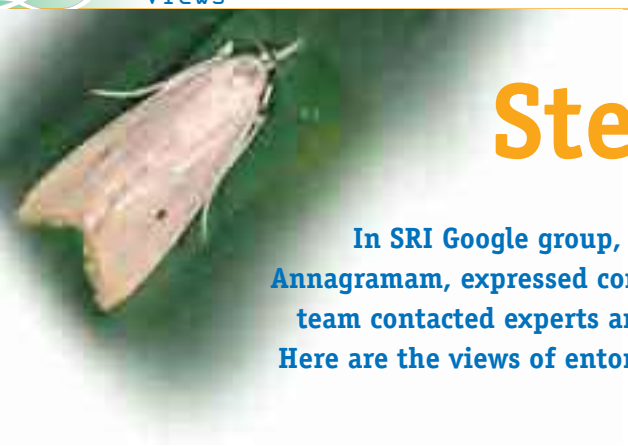
What other media do you think have a key role to play in promoting SRI?

Agriculture programs in Doordarshan have been at the core in my attempts. Also, *Annadata* diary helped. It is only prudent here to mention that the helpline number, earlier 1551 and now 1100, has supported me whenever I had any doubts.

What else do you think is required to promote SRI?

Clearly, agriculture department has the most important role to play in promoting good practices such as SRI. Instead of spending time and effort in promoting fertilisers, they should concentrate on SRI for the welfare of farmers, particularly the small and medium farmers.

Manisha Agarwal is the Communication Officer for ICRISAT-WWF project.



Stem Borer in SRI?

In SRI Google group, when Mr. R. Sambath Kumar, Assistant Director of Agriculture, Annagramam, expressed concern about incidence of stem borer in SRI, the ICRISAT-WWF project team contacted experts and entomologists to get their opinions on stem borer attack in SRI. Here are the views of entomologists, farmers and experts in their own words, starting with the query that started the dialogue.

In most SRI fields, I have witnessed heavy infestation of stem borer in the early 20-30 days crop. It is yellow stem borer. One of the reasons for heavy attack may be that the field I am mentioning was the only field in the surrounding area in which rice crop is raised using bore water. The variety is CR 1009. The field is in the delta area near Bhuvanagri. In the adjoining area, only now has planting commenced. The crop is 55 days old.

One of the farmers has used *T. Chilonis*, 2cc per acre, at the right time and also set a light trap. Lot of moths collected in the trap. But in the next cycle a minimum of 2 dead hearts per hill is noticed. In traditional planting I have not come across this kind of heavy attack.

R. Sambath Kumar
Assistant Director of Agriculture, Annagramam.

Dr. V. Vinod Goud
Project Coordinator,
ICRISAT-WWF project, ICRISAT,
Patancheru, Hyderabad.

Your observation on stem borer attack is interesting and contrary to what I saw and heard from a few SRI farmers in Jangoan area of Warangal district in AP a couple of days ago.
Now stem borer attack is rampant in paddy fields in this area. But all the SRI farmers with whom I interacted unanimously said that stem borer attack was more in the conventional fields than in the neigbouring SRI fields. They showed me more larvae feeding inside the stems of tillers in the former by plucking out tillers easily from different parts of the non-SRI fields. Interestingly,
I found very few tillers affected sporadically by stem borer in the SRI fields.

The reason they gave for the lesser incidence of stem borer attack in SRI fields was wider transplanting which allowed more free air circulation among the hills and more sunlight reaching to the ground most of the day. These together made a less congenial environment for proliferation of stem borer in SRI fields.

I do not know whether the entomologists would agree with these reasons given by farmers, but they appeared logical to me. Stem borer being one of the main pests of paddy, it would be useful to conduct a systematic study to understand the behaviour of stem borer insects in the conventional as well as SRI environments under different field conditions.

If any entomologist has already done such a study in any part of the country, I would request he or she to share scientific observations for the benefit of all.

Dr. G. Ravi
Associate Professor (Entomology)
Tamil Nadu Rice Research Institute
TNAU), Aduthurai.

In our experience, rice yellow stem borer is usually less dominant in SRI fields than conventional planting. Planting young seedlings with wide spacing and practicing alternate wet and dry irrigation in SRI facilitates higher light penetration in the field and creates an unfavorable environment (microclimate) for insects like stem borer, whorl maggot and BPH. It is good when the population is brought under control using egg parasitoid. *T. Japonicum* is the best choice over *T. Chilonis* in stem borer management.

Dr. Ch. Padmavathi
Senior Scientist (Entomology),
Directorate of Rice Research,
Rajendranagar, Hyderabad.

This is a stray incidence which could be mainly due to the coincidence of brood emergence at the susceptible stage. Also, *Savithri* is a long-duration variety (about 165 days). The absence of any crop around could also be a cause for more incidence. To say that SRI involves more damage, a comparative analysis of a field sown with same variety in conventional method in the same area is needed. Based on reports in both the SRI symposia, stem borer damage is lower in SRI in many areas.

Dr. Shashi Bhushan
Principal Scientist (Entomology)
& Officer in Charge,
Agricultural Research Station,
Basanthpur, Andhra Pradesh.

During our on-farm demonstrations and observation plots visits, I found fewer incidences of all pests in SRI. However during 2005 kharif, one of the farmers complained that because of SRI, he got less yields. On our visit and taking more details, we understood the following. Stem borer incidence was observed in both SRI and conventional rice cultivation. Since the SRI plot had only 16 hills/ sq. meter and the non-SRI plot had more plants, the impact of dead hearts due to stem borer was visible in the small plot he had. Based on that experience itself it is not possible to say that SRI had more borer damage. This needs detailed study by entomologists and also checking the varieties in SRI and non-SRI under artificial release and

Stem borer damage is low in SRI

then we may arrive at some specific conclusions. We have also noticed false smut and BPH in certain plots in 2005, but not on a constant basis over seasons. My experience is that rice yellow stem borer is usually less dominant in SRI fields than conventional planting.

R. Selvam
Farmer, Tamil Nadu.

It is important to compare the infestation level with SRI and non-SRI paddy fields. Three years ago there was heavy stem borer infestation with *Seeraga samba* (a traditional variety known for its fragrance - Basmati of Tamil Nadu.

Interesting fact is that not even a single infection was found in the very adjoining field of the same variety where water management was good. The same effect was observed in the next season also. On enquiring, the farmers who are still cultivating this variety for so long confirmed my belief that if there is standing water for longer period, stem borer attack will occur.

A. Ravindra
Director, WASSAN,
Secunderabad, Andhra Pradesh

We find that application of *Palakodise* (Telugu name) leaves is very effective on stem borer. Its scientific name is *Holarrhena Pubescens*. I think its Tamil names are: kutasappalai, veppalai, erukkalai-palai, karupalai, godachali, kodappalai, veppalei (from frlht website).

Take 20 kg of the leaves and chop them up and keep them in the paddy field (putting a little soil on it) and then hold water in the field for two days without draining. Water turns to a different color.

This method seems to be very effective in practice. If you try it, please send us your observations.

V.K.V. Ravichandran
Farmer, Nannilam.

I have been practicing SRI for the past 5 yrs. So far I have not come across stem borer in SRI fields, although leaf rollers are more prevalent than in the conventional ones. However, to my surprise, this year there is heavy infestation of stem borers in SRI too in kuruvai season with variety TKM 9. I also noticed that stem borer infestation was heavy in the non-SRI paddy raised by my fellow farmer friends. The stem borer moths were seen in large numbers during August. Perhaps the dry weather without any spell of rain might have triggered it. Strangely we came across mites as well which was a minor pest until recently.

M. Murari Chowdary
Executive Director, NEEDS, Jharkhand.

Split doses of potassium [applied 5 times] during lifetime of paddy can give control. Starting first dose on 20th day gives complete safeguard from stem borer. We have experienced this over last 4 years of SRI practice.

NABARD's SRI Initiative

Dr. B.K. Samal

System of Rice Intensification (SRI) is extension-driven, and farmers, extension workers, and NGOs have done extensive work for success of SRI. Systematic research, large-scale demonstrations, multi-location trials, and skill-up gradation of farmers are needed to substantiate the claims made on the advantages of SRI. Keeping the above objectives in view, NABARD is providing financial support to various institutions and agencies on selective basis for wider adoption of SRI. Some of the programmes supported by NABARD in the past are:

- 1-day workshop on SRI organised by VAANGAI, Uzhavar Mandaram, Nagapattinam, Tamil Nadu in 2007.
- Co-sponsorship of Second National Symposium on SRI at Tripura in 2007.
- Financial assistance from NABARD's Farm Innovation and Promotion Fund (FIPF) for promotion of SRI technology by Prathama Gramin Bank, through demonstrations to farmers of Prathama Krishak Club, Taharpur village, Moradabad district, Uttar Pradesh. The objectives of the programme include: sensitization and technical guidance to farmers by experts, crop cutting and assessment of yield, documentation, and comparison of yield. About 1000 farmers from 20-25 farmer clubs are expected to benefit through the programme.
- People's Science Institute (PSI), Dehradun, Uttarakhand, was provided grant assistance under FIPF. The implementation of that project will lead to:
  (a) Creation of a cadre of 550 trained farmers and about 14 volunteers as master trainers through 7 volunteer organizations in Uttarakhand who will facilitate the process of promoting and extending SRI method of food grain production in the State.
  (b) Evolve appropriate procedures for application of SRI techniques with finger millets and pulses through research and demonstration.
  (c) Influence state policy through demonstration of SRI in about 25 ha of farm lands in Uttarakhand. The Institute was further granted assistance of Rs.20,000/- for publication of an SRI manual in Hindi.
- Information on principles and package of practices along with unit cost of cultivation of SRI were compiled and circulated among various Regional Offices (ROs) of NABARD for wider use. Some of the ROs like in Sikkim have taken further lead and translated the guidelines into regional languages and circulated them to Agriculture Department/Extension Department for the benefit of farmers.

Exposure Visit of Community-level Facilitators to Andhra Pradesh on SRI

CWS has initiated a project on 'Up-scaling SRI in Orissa' in 6 districts of the state with funding support from Sir Dorabji Tata Trust, Mumbai. For implementing the project, CWS has built partnership with 6 lead NGOs in 6 districts and 22 other community-based organisations in respective districts of the state. For 3-year project duration in initial phase, it has been planned to cover more than 7,000 farmers, bringing more than 3,000 acres of rice fields under SRI. For facilitating the process of acceptance of SRI by farmers at field level, there is need to build up capacity of the community-level facilitators for which an exposure visit of around 25 facilitators to Andhra Pradesh for 3 days has been planned during 3rd week of October 2008. All the facilitators are currently acting as trainers for farmers in SRI, but there is need to enhance their knowledge and skill on various aspects of SRI. During the visit they will be going to Mr. Kishan Rao's village Khamam; to NPM villages of SECURE, a CWS partner organisation in AP; and to Mr. Nagaratnam Naidu's agriculture farm in the outskirt of Secunderabad.

Dr B.K Samal is the Deputy General Manager, NABARD

Action Research Project on GHG Emission in SRI

Ronali Pradhan

Rice cultivated under submerged soil conditions is an important source of methane (CH_4), an important greenhouse gas (GHG) contributing to global warming. At the same time it is important to consider the impact of another GHG, nitrous oxide (N_2O) as this is also contributor to warming. The greatest negative impact comes from carbon dioxide (CO_2) because it comes from so many sources and is so abundant in the atmosphere, but methane and nitrous oxide are many times more potent, at the molecular level. So both need to be considered in attempt to reverse the build-up of GHGs which are a major force driving climate change, which is threatening the long-term maintenance of life and living systems on the earth.

As rice is conventionally grown under continuously flooded condition, the soil it grows in, lacking oxygen, is a suitable environment for microorganisms (methanogens) that convert nitrogen to CH_4 which gets released into the atmosphere. The more the soil is provided with synthetic nitrogen fertilizers, the more material is in the soil for conversion to methane. SRI methods for growing rice which switch from continuous flooding of the soil to alternate wetting and drying or just applying a minimum of water on a regular basis, and they rely on organic soil amendments (mulch or compost) rather than on chemical fertilizer. Such practices alter the environment for biological production of methane, which has positive consequences for environmental quality.

The principles followed in a farming system approach like System of Rice Intensification (SRI) should be able to reduce emission of greenhouse gases (GHGs) by changing from flooded to well-drained paddy soil.

Complicating this picture, however, the countervailing fact that nitrous oxide is generated by microorganisms that are mostly oxygen-dependent -- nutrifiers and other aerobic microbes – so they can become more numerous and active when fields are not continuously flooded. Producing rice on unflooded paddies could increase the amount of nitrous oxide produced through biological activity, and this gas has about 300 times more impact on global warming than carbon dioxide. Methane has about 20 times more impact than carbon dioxide, and has a much shorter lifetime in the atmosphere than does nitrous oxide, which is about 100 years. So, anyone concerned with global warming needs to take N20 into account even if it is, in terms of volume, a minor element.

The release of these gases depends upon various crop management practices in addition to water management -- type of manures or fertiliser used, age of seedlings transplanted, etc. Rice in India is cultivated on more than 44 million ha, so there is reason to give attention to various operations involved in the cultivation of rice so as to minimise emission of these gases. Since continuous submergence of rice fields is a major factor behind increased production of methane, there will be reductions in this GHG from SRI practice.

What is not known at present what happens to N_2O emissions. This will be very hard to make generalizations about because factors like soil structure (such as percent clay), temperature, and season of the year have an influence on production of N_2O. If rice is grown on moist but not saturated soil without large additions of nitrogen fertilizer, which creates an abundance of nitrate or ammonium in the soil that microorganisms can convert, there could be little or no increase in nitrous oxide emissions. But this remains to be determined by careful measurement, a very difficult task, and it would have to be done for a wide range of soil types and climatic conditions to get reliable estimates of how much the changes in crop, soil, water and nutrient management induced by SRI actually affect N_2O production in the soil, increasing or decreasing it.

(Contd. on page 15)

The 3rd National Symposium on SRI

Dr. V. Vinod Goud

This year, 1st to 3rd December 2008, Tamil Nadu Agricultural University (TNAU), Coimbatore is hosting the Third National Symposium on SRI, an important annual event for mainstreaming and up-scaling SRI in India.

Tamil Nadu that has been the locus of significant research and promotion of SRI practices in rice cultivation in India. The energetic commitment of farmers, scientists and field staff and strong political support has facilitated the fast spread of SRI in the state. SRI is a key technological intervention in the World Bank-funded IAMWARM project in Tamil Nadu.

The coming symposium will present an opportunity to see and learn about Tamil Nadu's estimable work and its contribution to the current debate on expansion of SRI in India.

The previous two symposiums have been successful in identifying and bringing together SRI practitioners, promoters and researchers from all across the country. At last year's symposium in Agartala, there were over 250 participants from 28 states or territories. These annual events have provided a platform to share the experiences, results, constraints and issues in adopting and scaling-up SRI for all agro-climatic conditions.

Today one can find large number of farmers, NGOs, research institutes, governments, donors and others adopting and promoting SRI. Benefiting from the wide-scale experiences, achievements and convergence of lessons and ideas of the last two symposiums, this year the 3rd national symposium focuses on the policies, institutions and strategies required for scaling-up SRI in order to mainstream it nationally as part of a broad strategy for achieving food security while reducing water conflicts and demand.

Specific objectives of the session/ themes for the symposium are:

Experience–Sharing and Learning

This session will be devoted to the actual experiences and lessons, both good and bad, from the field to be presented by SRI practitioners, promoters, farmers, researchers, state governments and others focusing on the:
a) Diversity of approaches and extension methodologies used; b) Difficulties, constraints and deficiencies in promotion and scaling-up; c) New or improved implements, e.g., markers and weeders; d) Innovations in crop establishment and crop management; e) SRI in organic farming; and f) Identification of the constraints in the field. This session will have one or two key papers on each focus to promote discussion. There may also be regional sessions to take account of variations within India.

Understanding Constraints and Opportunities

Based on the field-level presentations, key constraints and opportunities will be identified. To address these issues, research and other concerned papers will be invited on research results concerning SRI:
a) Theoretical and conceptual

issues in SRI, e.g., roles of soil biology/ microbiology;
b) Modifications being introduced in water, soil, nutrient and weed management;
c) Quality of grain & straw as affected by SRI methods;
d) Varietal responses, according to different soils, field conditions, varieties, etc.;
e) Innovations in implements, mechanization, etc.; and
f) Economic and impact assessments of SRI system, etc.

Scaling-Up of SRI: Panel discussion on Policy, Research and Extension Support for SRI

A set of specific queries concerning issues of policy, strategies, institutional mechanisms, financial issues and so on will be responded to by a high-level panel that consists of Central Government officials, eminent scientists, officials from IARI, ICAR, agricultural universities, researchers, farmers, civil society leaders, donor/funding agencies and others.

The Symposium will have invited papers, poster presentations, farmers' experiences, and panel discussions. The presentations will address present status, progress, research results and current debates on SRI adoption and its impact in enhancing water-saving, input-use efficiency, and production and productivity of rice. Panel discussions will address issues like policy implications of scaling-up SRI method in India for various agro-climatic conditions. Poster presentation will parallel the session themes. A one-day field visit to SRI fields in Tamil Nadu is planned as part of the three-day event.

So far the response for the 3rd National symposium has been overwhelming. Those who have not sent in their 'intent of participation' form may please do so at the earliest. Those who wish to present papers or posters may please contact immediately: Dr. Natarajan, Director, Centre for Soil and Crop Management Studies (SCMS), TNAU. SCMS, TNAU. Although the deadlines are past, deserving papers may still get an opportunity for submission even now. Please hurry up!

For brochure and more information on the symposium visit websites www.tnau.ac.in and www.sri-india.net

Dr. V. Vinod Goud is Project Coordinator, ICRISAT-WWF Project, ICRISAT, Patancheru, Hyderabad.

Action Research...

(Contd. from page 13)

In this context, there is need to carry out research initiatives that can produce reasonably clear and incontrovertible results. We think that on balance SRI practices will reduce the net contribution of the rice sector to GHG levels, but this remains to be documented. Some of this could be done in as action research, with farmers and on farmer fields, since assessments should be done under the actual conditions under which rice is produced. However, much of the research, for the sake of precise and replicable measurements that gain solid acceptance within scientific and policy-making circles, will need to be done under controlled conditions that represent, for example, a full range of soil types from which generalizations can be made about GHG impacts on a sector-wide basis.

This is no easy task. Researchers in Japan and Indonesia are already undertaking some of these measurements. Centre for World Solidarity (CWS), a public trust working in 5 states of the country with one of its regional offices in Bhubaneswar, is conducting research on this subject in Cuttack District of Orissa state in collaboration with the Central Rice Research Institute (CRRI) based in Cuttack. The major objective is to make a systematic analysis of quantities of CH_4 and N_2O emission associated with conventional rice cultivation and SRI practice. This initiative will enumerate various crop management factors that influence the emission of CH_4 and N_2O in rice cultivation and also suggest corrective cultural measures for addressing the issue of mitigating emission of these gases which can be easily adopted by small and marginal farmers.

Ms. Ronali Pradhan is Programme Officer - NRM/SA, Centre for World Solidarity, Bhubaneswar

Challenges in Scaling-up SRI

Dr. Om P. Rupela

Research-station and on-farm studies have demonstrated that SRI practices have clear advantages over normal flooded rice cultivation in producing higher yields and also for maintaining ecological balance. Capacity building of farmers together with research on soil-plant relationships in SRI, particularly on roots and on the activity of agriculturally-beneficial microorganisms in the rhizosphere, should be taken up to promote SRI across the country.

Benefits of SRI in increasing yields and addressing other issues of environment sustainability and also contributing to farmers' welfare have been proved across different states of India and indeed across the globe. However, scaling-up SRI is an issue that the various sections of SRI supporters and practitioners are trying to come to terms with.

This brief note outlines my views and perspectives on the challenges in scaling-up SRI as an agricultural scientist largely working with upland crops for about four decades, focusing on soil microbiological, biological, and chemical properties, and on plant physiology and agronomic relationships. These views reflect my experience with on-farm and research-station studies on SRI beginning in the post-rainy season 2004-05 and also interactions with rice scientists who greatly helped in sharpening and firming up these views.

The following views are based on six seasons of experience (3 years x 2 seasons) with comparative studies both on-farm and at the ICRISAT research station. The on-farm study compared SRI methods of rice cultivation with normal flooded rice as the control. The research station studies involved a multi-disciplinary team of at least ten rice scientists from the Directorate of Rice Research (DRR) and Acharya N.G. Ranga Agricultural University (ANGRAU), Hyderabad. The research continued through the rainy season 2006.

Information and data collected from the on-farm study have been published as part of the proceedings of the First National SRI Symposium, and the data from the research station study are available with scientists at DRR.

Lessons Learnt

Yield with SRI was generally significantly higher than control (flooded rice) when all protocols of SRI were put in place (10-day young seedlings, no standing water except for a few days at transplanting, use of compost as source of beneficial microorganisms as well as nutrients, reduced use of synthetic fertilizers, timely weeding and soil aeration by using cono-weeder). There were bigger issues of putting all the components of SRI protocol in place at research station than on-farm, we discovered.

Timely weeding was noted as the single most important issue on-farm, but it was not a problem for motivated farmers. Populations of cultureable microorganisms (bacteria, fungi, P-solubilizers, Pseudomonas fluorescence, and siderophore producers) in the soil were similar in the plots with the two treatments, while number of N_2-fixers was significantly higher in the SRI plots.

Data values for the three soil biology parameters that were measured (dehydrogenase, microbial biomass nitrogen [MBN] and microbial biomass carbon [MBC]) reflected that both cultureable and non-cultureable microorganisms were generally higher in plots of SRI than those of flooded rice. The main root parameters (root mass, root length density, and root volume) were substantially and/or significantly greater in SRI plots than those of flooded rice(control).

Roots of the plants from SRI plots were always longer, larger and deeper than those of flood rice, and the roots of plants from flooded plots were almost always brown to dark brown while those of SRI were generally whitish to brown. Also, the dark brown roots were always associated with sewage smell (weak to intense). Interestingly, this association was more common on the research station than on the fields of partner farmers in the on-farm study. This is likely due to the fact that nutrient concentrations (at least of nitrogen and phosphorus) at the research station fields were generally higher at the research station than on farmer's fields.

It should noted that I am talking of total N and total P concentration, and not of 'available' forms alone. Several groups of microorganisms can use the non-available forms, which are included in total amounts, and grow into niches that range from fully anaerobic to microaerophilic. This results in the sewage smell and in the brown to dark brown color of roots.

Another more common thing noted on research-station fields was the growth of algae whenever SRI plots had pools of shallow water (one cm high) for about a week, in heavy soils. This was generally associated with poor drainage. The noted offensive smell may likely be due to anaerobic to microaerophilic soil conditions while SRI roots grow best under aerobic to microaerophilic conditions.

Dr. Om P. Rupela (center), Dr. V. Vinod Goud, Project Coordinator, ICRISAT-WWF project and Dr. R. Mahender Kumar, Senior Scientist (Agronomy), Directorate of Rice Research in a discussion on the SRI plots at ICRISAT

Way Forward in Scaling-Up

It is important to take on skeptical scientists and policy makers head-on regarding SRI. Along with targeting more areas to be brought under SRI use, scientists, NGOs and investors who have enough evidence not to contest SRI's merits should focus on long-term experiments comparing SRI with flooded rice, both at research stations and on farmers' fields. This should be done at several locations covering different climatic regions, soil types, and seasons.

Measurements in such evaluations should focus on selected soil properties: microbial biomass carbon, microbial biomass nitrogen, organic carbon (%), total and available N and P, root dry mass at harvest per unit volume of soil (not just per plant), number of tillers per hill per unit area, above-ground biomass per unit area, and grain mass per unit area at harvest. Of the suggested parameters, microbial properties would be the most expensive and difficult to measure by field teams as these require access to specific microbiology laboratory facilities. But this should not deter moving forward as these factors are the most promising for understanding high yield. Regularly showing farmers the high yield and economic returns over a long period should increase the number of SRI farmers that should eventually force to policy makers to put appropriate policy supports in place.

It is likely that high yield with SRI is not possible in all rice-growing environments, even when all provisions of SRI are followed. Such situations, areas and soil types need to be mapped, and this will be an important contribution from the research institutions once it is better understood what are the limitations of SRI methodology. Addressing farmers' concerns on weeding should be given highest priority. Training farmers on the apparently new agronomy of SRI will be a good investment.

Most important, to contribute to sustainable agriculture in a country where water shortages are becoming more acute, it would be a good idea to take a step into the future and to think of rice as based on a saturated soil culture where no flooding is needed, even at transplanting, and the soil surface is never allowed to dry out because of using surface mulch. This should allow growing other crops such as legumes along with rice without affecting productivity as measured on per unit area basis.

Dr. Om P. Rupela is Principal Scientist (Microbiology), ICRISAT

Here's more reading and video links on SRI:

1. Average yield in delta likely to be 6 tonnes a hectare
http://www.hindu.com/thehindu/holnus/015200808270921.htm

2. Get More from Less with System of Rice Intensification (SRI)
http://web.worldbank.org/WBSITE/EXTERNAL/WBI/WBIPROGRAMS/WBIWATER/0,,contentMDK:21810464~pagePK:64156158~piPK:64152884~theSitePK:443986,00.html

4. Neighbors Survey 'Rice Intensification' Gains
http://voanews.com/khmer/2008-09-17-voa5.cfm

5. Study to assess impact of climate change on rice cultivation
http://www.thehindu.com/2008/10/08/stories/2008100854160600.htm


कम बीज कम कीटनाशक, मुनाफा बेशुमार

Story on SRI published in Dainik Jagran newspaper dated 26/8/2008

6. Various aspects of the System of Rice Intensification (SRI) technology done by Mithranikethan, Vellanad, Trivandrum
http://in.youtube.com/profile_videos?user=kissankerala
http://in.youtube.com/watch?v=rHLRpb5XUPU

7. Mettur storage insufficient for samba cultivation
http://www.thehindu.

Network Mapping of the SRI e-group

A study on SRI India e-group is being undertaken by Ms. Shravani Roy and Ms. Shivani Agnihotri under the guidance of Dr. Shambu Prasad, Xavier Institute of Management, Bhubaneswar, to help in identifying how the various actors in the community are adapting, innovating and redefining boundaries in SRI through their everyday practice, and what might enable faster learning within the group. This will aid in understanding if the e-group has provided the strategic and operational benefits by enabling members to collaborate effectively and allowed the exchange of resources that include cultivation related information inputs, such as methodology advice and strategic information, and transmission of social identities (norms) and social support for taking up SRI between farmers, researchers, social scientists and various organizations. The findings of the study will lead to an understanding of the group dynamics and thus decipher ways of improving participation in the SRI India Google group for the benefit of the SRI community.

com/2008/09/25/
stories/2008092556830400.htm

8. Management of false smut infestation in paddy
http://www.hindu.com/
seta/2008/09/25/
stories/2008092551571500.htm

9. SRI method will improve paddy yield
http://www.thehindu.
com/2008/09/19/
stories/2008091951970300.htm

10. Many ryots adopt System of Rice Intensification
http://www.thehindu.
com/2008/09/23/
stories/2008092358610300.htm

11. System of Rice Intensification area likely to double in Kangeyam
http://www.hindu.
com/2008/09/21/
stories/2008092152660300.htm

12. Could Rice be the Northeast's Newest Grain Crop?
http://www.mofga.org/
Publications/
MaineOrganicFarmerGardener/
Fall2008/Rice/tabid/983/Default.
aspx

13. SRI Motorized Single-Row Weeder
http://in.youtube.com/
watch?v=tLF1kmEEH0o
www.youtube.com/ power weeder
Publications/

14. Adopt latest technology
http://www.thehindu.
com/2008/09/07/
stories/2008090756630200.htm

CWS Paper Clipping in Telegu

The article covers the SRI promotion intervention of CWS, Hyderabad as a part of National Agricultural Innovations Project (NAIP). The project is supported by ICAR and lead by CRIDA in Andhra Pradesh.

SRI is being promoted among few tribal farmers in remote rainfed paddy areas in Khammam district in Kharif 2008 season. Mr. Nagaratnam Naidu, a progressive SRI farmer, has been providing training and technical inputs to this effort. CWS is aiming to scale-up this initiative in next year to large areas around.

SRI is Endorsed in U.N. General Assembly by Madagascar President

The President of Madagascar, Marc Ravalomanana, in his address to the U.N. General Assembly as part of its debate on the global food crisis, September 23, said: "We are promoting the widespread use of the System of Rice Intensification (SRI), an eco-friendly and pro-people method developed in Madagascar in the 1980s. SRI promotion is an important part of Madagascar's recently launched 'natural revolution'." This is part of the President's Madagascar Action Plan (MAP) which has adopted the motto: Madagascar, naturally. The speech can be downloaded as a video (French or English) or as a pdf in English.

http://ciifad.cornell.edu/SRI/countries/madagascar/index.
html#progress

Punjab State Govt. Requests Assistance in Introducing SRI

The National Food Security Mission (NFSM) of the Government of India has made SRI demonstration and extension part of its rice sector program, with demonstrations planned in 136 districts across 14 targeted states during 2008, according to the Ministry of Agriculture's Directorate of Rice Development. The Chief Minister of Punjab state has asked that his state be included in this program, in part to have support in introducing SRI.

http://www.financialexpress.com/news/Badal-asks-Centre-to-include-state-in-food-security-mission/310836/

Feedback

This is a wonderful production. I was overwhelmed as I scrolled through the newsletter.

Norman Uphoff
Program Leader for Sustainable Rice Systems, Cornell International Institute for Food, Agriculture and Development (CIIFAD)

Congratulations on bringing out the first newsletter. It looks good and I am sure there would be more stories to follow in the days to come for future newsletters. We need to use the newsletters as 'open space' without making it too official.

Dr. C. Shambu Prasad
Associate Professor, XIMP

It has come up very nicely. Hearty Congrats!

Dr. R. Mahender Kumar
Senior Scientist, DRR

Many congratulations for delivering the first baby! We are aware how much work goes into bringing out such a newsletter, and it is now a regular commitment. The team responsible for this venture deserves appreciation and support.

Arun Balamati
AMEF

The publication of the SRI Newsletter is of great value to all of us.

Nemani Chandrasekar, *WASSAN*

It's an excellent and wonderful job.

B.P. Singh
G.M.-Seeds ASA

Congratulation. I am delighted that we have a newsletter on SRI which will help in reaching and convincing scientist on the method of SRI.

Dr. M. Diwakar
Director, Directorate of Rice Development

The SRI Newsletter is indeed very useful and excellent in all respects. You have comprehensively covered the SRI events that are taking place throughout the country. I could imagine the amount of strain required to gather such information. I thank you on behalf of the farming communities for you great efforts. In the article titled "Experiences and Learnings at Sambhav" by Shri C. Shambhu Prasad, he has mentioned that Sambhav is attempting to document the whole SRI process in video CDs. This has been the dream of farmers like me; as visuals speak louder than words. Such video CDs must be released in the regional languages too. I wish it would be released during the National Symposium at Coimbatore. Besides the regular features, the Newsletter may carry related websites and SRI happenings in other parts of the globe. You may consider incorporating a section on FAQs in SRI. Farmers like me will be immensely benefited if "Farmer - Scientist Interactions" are arranged and reported in the Newsletter. You may consider adding a column titled "suggestion corner" for fine-tuning the SRI practice. We also request more technical matter and more visuals in the SRI Newsletter.

V.K.V. Ravichandran
Farmer, Nannilam

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