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...and many more articles

In the next special issue of the SRI Newsletter, we will bring some 100-year-old findings and literature in Tamil language on the 'Single Seedling Planting and Gaja Planting in India and its Similarities to the Principles of SRI!'

Dear All,

Farmers of Tamil Nadu are taking SRI to new levels. Thumbal village in Salem district has set a landmark in agriculture by forming an SRI Farmers Association; the village has had 1,500 rice-growing farmers from various districts of TN visiting them in the last three months. This farmer-to-farmer exchange is a reflection of a whole lot of new enthusiasm generated by SRI among rice-growing farmers. Tamil Nadu's increase in average yield as discussed by Dr. B.J. Pandian in his article is reflective of TN's remarkable achievement and of how SRI can contribute both at farm-level improvements and increase in production at the national level. But still, the up-scaling of SRI in India is an uphill task. Following the 3rd SRI symposium in Coimbatore, a core group met in February at ICRISAT to discuss strategies and to collaborate in an effort to convince governments at both state and national levels to use more effectively the resources allocation under NFSM for scaling up SRI in India by establishing a special SRI mission. This issue includes a brief report of the meeting

Olivia's article on Lotus Foods introducing SRI-grown rice to U.S. food trade and consumers shows how both international and local markets can play an important role in promoting SRI by creating more and more remunerative demand for higher-quality rice; this benefits farmers but also consumers who want to consume healthy rice. SRI is about people; this issue features Lucy and Nemani who are behind-the-scenes contributors to the movement of SRI knowledge through web and emails. Finally, SRI champions like Baharul are getting recognition from the scientific community. Congratulations! Baharul.

Many more facets on the spread of SRI are covered in this issue. What we need from you is your valuable feedback, critical inputs and contributions to further improve this newsletter to make it more effective. Before we close, watch out for the next issue – a special one – as we trace some 100-year-old innovations. These findings which were announced during the SRI Symposium in Coimbatore, we are planning to share with you.

Biksham Gujja

## Cover Story

# Stretching Out SRI in Tamil Nadu

Dr. B.J. Pandian

The popularity of rice as a staple food has increased in a number of countries in Africa, Latin America and elsewhere, where it is not traditionally a major food crop. About 150 million ha (9 per cent) of the world's cultivated area are devoted to the production of rice, the staple food of about half of the world's population. The total

**SRI roots are now entrenched in the state of Tamil Nadu in India. Thanks to the strong support of the State Government, SRI widespread adoption has created a remarkable consciousness among the rice growers of Tamil Nadu.**

annual rice production of 620 million tones supplies about 20 per cent of the global population's caloric needs.

India is one of the largest producers of rice in the world. Rice is cultivated round the year in one or another part of the country, in diverse ecologies



spread over 44.6 M ha, producing 132 MT of rice with an average productivity of 2.96 t ha<sup>-1</sup>. However, rice cultivation in recent times has been constrained by from several inter-related problems. Increased yields achieved during the Green Revolution through input- intensive methods of high water and fertilizer applications in well-endowed regions are showing signs of stagnation. In some regions, there have been social conflicts among water users in canal-irrigated areas due to the water-intensive nature of the crop.

Water in irrigated rice production has been taken for granted for centuries, but the 'looming water crisis' may change the way that rice is produced in the future. Water-saving irrigation technologies that were investigated in the early 1970s, such as saturated soil culture and alternate wetting and drying are receiving renewed attention from researchers. The intensified efforts to improve both crop and water productivity and subsequently to enhance farmers' incomes have resulted in many efficient water management practices in wetland rice. The System Rice Intensification (SRI) is one among the scientific management tools for utilizing irrigation water based on soil and climatic condition to achieve maximum crop production per unit of water applied over a unit area in unit time.

## System of Rice Intensification (SRI)

The System of Rice Intensification (SRI) is a holistic agro-ecological crop management technique seeking alternatives to the conventional high-input oriented agriculture, through effective integration of crop, soil, water and nutrient management. With the core principle of sustainable agriculture that seeks to make the best use of nature's goods and services as functional inputs, SRI works by integrating processes such as reduced plant population, transplanting single young seedling, wider square planting, mechanical weeding from 10 days after transplanting, and use of the Leaf Colour Chart (LCC) for better nitrogen management, converting these various practices synergistically into a higher yield production process.

The emergence of SRI in India was slower as compared to some other rice-growing countries. Pioneering steps to introduce SRI in India were taken by the scientists of Tamil Nadu Agricultural University, Coimbatore and Acharya N.G. Ranga Agricultural University, Hyderabad. Andhra Pradesh, Tripura and Tamil Nadu are the three pioneering states for popularizing SRI in India. The first experimental evaluation of SRI in Tamil Nadu Agricultural University started during 2000-01. Based on initial promising results, a package of practices

was developed and tested on farmers' fields in the Cauvery and Tamirabarani Command areas (a total of 100 ha each) during 2003-04 with financial support of Rs.50 lakhs from Govt. of Tamil Nadu. Subsequently at Hanumanadhi sub-basin, Adaptive Research Trials (ART) were conducted with World Bank financial assistance during 2004-05, emphasizing the reduction in water requirement and increased yield.

In Tamil Nadu, scientific adoption of System of Rice Intensification techniques has proved to get 10.0-13.38 MT of paddy per ha during 2007-08. SRI demonstrations were conducted over an area of 11,690 ha, and 58,450 farmers were trained on SRI technologies. During 2007-08, an area of 4.2 lakh ha has been covered under SRI cultivation with extensive publicity and press releases. Complete adoption of SRI techniques by the farmers led to achieve the highest productivity of 13.380 MT in Villupuram, 13.000 MT in Tirunelveli, 12.855 MT in Trichy, 11.400 MT in Theni, 11.000 MT in Vellore and 10.245 MT in Cuddalore districts of Tamil Nadu.

Continual visits by the Hon'ble Agricultural Minister, Members of Legislative Assembly, Secretaries to the Govt., Govt. officials, and the overwhelming positive responses from the farming community paved the way for



District Collectors from Tamil Nadu at the Workshop on SRI and National Agriculture Development Programme (NADP)



the announcement made in the State Budget for 2008-09, to bring 7.5 lakh ha under SRI cultivation in Tamil Nadu.

With the announcement of a goal of SRI adoption in 7.5 lakh ha area in Tamil Nadu, workshops were conducted at Coimbatore and Madurai to sensitize the District Collectors and officials for effective implementation of the SRI. It was planned to cover an area of 2.5 lakh ha during the first season, June-July, and the remaining 5.0 lakh ha during the ensuing seasons with an area of 4.66 lakh ha to have been completed by December 2009.

### Introduction of TN-IAMWARM

In spite of the finest initial results, the progression of SRI across the state is highly variable and rather constricted. There was full adoption of SRI principles by some of the farmers but only partial by others, which resulted in inconsistent and incongruous results from the farming community. There was evident lack of awareness among the farmers about the scientific reasoning behind the components of SRI. On the other hand, that improved yields and factor productivity were achieved with only partial use indicated that there was still scope for additional gains once and to the extent that the methods were more fully understood and utilized.

Achieving the objectives of sustained farm productivity as well as poverty alleviation will certainly require the mobilization of all sources of financing and increased investment in water-related infrastructure, research and development in order to create new opportunities for the sustainable development and integrated management of water resources. In this direction, Tamil Nadu Irrigated Agriculture Modernization and Water Bodies Restoration and Management (TN-IAMWARM), a unique World Bank funded project introduced during 2007-08, provided a platform for



Wall painting on SRI

the large-scale demonstration with technical and financial assistance and awareness creation of SRI at Tamil Nadu.

### Events on awareness creation and up scaling measures

Studies on behavioural dynamics of SRI adoption reveal that the percentage of early adopters was negligible when compared to risk-aversers and ambiguity-aversers. The details of a benchmark survey in all the rice-growing areas revealed that the adoption of SRI is less than one per cent owing to the following reasons:

- Lack of awareness about the technology,
- Traditional mindset of the farmers,
- Lack of technical / institutional support,
- Non-availability of critical implements like markers and weeders, and
- Lack of co-operation from the transplanting labourers.

### Information, Education and Communication (IEC) activities

The basic objectives of IEC activities are:

- Changing the traditional mindset of the farmers,
- Educating the intended beneficiaries on the technical skills of SRI, and
- Imparting knowledge to the farmers through various extension techniques.

Awareness-creation was planned to be made through wall paintings and hoardings depicting the magnitude and importance of SRI, informal meetings with stakeholders,

distribution of folders/leaflets/booklets on SRI, and training of farmers as well as farm labours on the SRI production technologies.

### Measures taken for scaling up SRI adoption

- **SRI markers** - Though square planting can be a time-consuming operation, timely provision of SRI markers has eased this constraint for square planting. Markers have had a warm reception within the farming community. In many areas, even without marker, farmers are transplanting with the help of ropes marked at appropriate spacings. Farmer innovation has been an important part of SRI spread.
- **Rotary weeder** - Square planting at wider spacing eased the problem that existed with mechanical weeding. This principal component in SRI was encouraged with the timely availability of weeders since mechanical weeding should commence about 10 days after transplanting.
- **Rural artisan training** - Conoweeder/ rotary weeder and SRI markers are key implements which affect the spread of SRI in rural areas. On recognizing the importance of this, training was given to nearly 1,000 rural artisans on production and servicing of these key inputs which ensures their timely supply and availability.



Training was organised for 1000 rural artisans on SRI implements

## Innovations instigated

A few innovative steps were taken to expose SRI on a large scale in the State which resulted in promising results.

- **Exposure visits** - Farmers were taken to successful SRI farmers' fields as exposure visits are the most effective means to get first-hand information on SRI to farmers, even before the commencement of the season. On such visits they could be given training also. Interaction with the lead farmers helped the others to know the practical problems with SRI and ways to solve them.
- **Field days** - At various important stages of crop growth and cultural operations, viz., square transplanting using markers, mechanical weeding, harvesting, etc., field days were organized by gathering the neighbouring farmers together as a means to publicize the technology within the zone of influence.
- **SRI field flags** - In order to designate SRI fields, these have been uniquely flagged, following the example of SRI dissemination in Tripura State. This measure acted as a centre of attraction and motivated fellow farmers to adopt SRI.
- **Greetings** - In order to boost the self-confidence of farmers, greetings were sent with SRI messages to farmers using SRI methods on the occasion of Pongal (TamilarThirunal).
- **Advertisements** - In leading dailies, and in FM and All-India Radio (AIR), advertisements were given regarding SRI as a publicity measure.
- **Book & CD on SRI** - A comprehensive book on SRI in self-learning mode in regional language and a compact disc on SRI were prepared.
- **TN-IAMWARM on wheels** - Mobile campaigning had greater impact as a propaganda van with personnel from all the line departments was designed, and farmer's queries could be answered then and there on the spot. A short film on SRI was displayed during night meetings.
- **Community nursery** - It is determined that community nurseries could contribute to the success of SRI in the coming years, not only in bringing more area under SRI cultivation but also with still more reduction in cost of cultivation and to ease mechanized transplanting.

- **Gramasabha meetings** - The Gramasabha meetings conducted at village panchayats were utilized as a platform to propagate SRI technologies and as a medium to consult with farmers to upgrade their knowledge of the methodology.
- **Field days with VIP's participation** - The impact was greater if there was evidence support from administrators. Hence this distinctive technology was planned to draw the explicit attention of officials and political leaders. Accordingly, frequent field visits were arranged at the demonstration sites that convinced them positively and created solid affirmative imprints in their minds.

## Prospects of SRI introduction in Tamil Nadu

In spite of the initial skepticism from people all over the area, SRI has established its roots entrenched in Tamil Nadu. It is incredible that it has created such a remarkable consciousness among the rice growers of the State so quickly. The widespread adoption of SRI has put aside many unempirical queries about its adoption at field level. Above all, SRI has revived the interest of many rice growers in their profession, persons who had the intention of receding from rice cultivation earlier because of high costs not commensurate with production.

## SRI Farmers Association

The rice-growing farmers in Thumbal, a village 25 km away from Salem, set a landmark in agriculture by forming their own SRI Farmers Association. In 2007-08, nearly 200 beneficiaries of this village were given awareness and sequential training on SRI. Th. P. Baskaran, a post-graduate farmer in this village, took initiative to form an SRI Association to show the other farmers that SRI is their best option to get more income in rice cultivation. Thumbal Semmai Nel



Sagupadi Farmers Association was formed under his leadership and registered as a society. Nearly 1500 rice-growing farmers from various districts of Tamil Nadu have visited Thumal in the last three months to see the success of this community and to understand and experience SRI at field level.

Ponnaiyar sub-basin farmers of Pillekothur village, Krishnagiri district, have registered another association as a Water Saving Farmers' Association and started realizing the benefits of water-saving SRI. Such initiatives from below are adding momentum and farmer leadership to the SRI dissemination.

In All-India Radio (AIR), Trichy, a programme for farmers called 'Oru nellu Oru nathu' (Single seed, Single seedling) is being broadcast from January 2009 onwards for 13 weeks in Tamil (regional language). Satisfied SRI farmers share their experiences and views which enhance the morale neighbouring farmers. (more on 'Oru nellu Oru nathu' on page 16)

On average, a 71.8 per cent increase in rice productivity with SRI methods, compared to conventional practice, has been registered in the areas of SRI introduction during 2007-08. The trend continues during 2008-09 also. Tamil Nadu farmers who

"The state has achieved record average productivity of 7.7 tonnes per hectare in the kuruvai season with reports of individual farmers harvesting 9 to 12 tonnes per hectare"

"In the delta regions where rice cultivation is more, where productivity is normally around 5 to 6 tonnes per hectare, this time it is more than 8 tonnes in many places"

(The Hindu, November 19, 2008)

completed their season rice harvest in November 2008 had results that clearly indicated a quantum jump in productivity. Mr. A. Srinivasan, Pannaivayal, Agniyar sub-basin, recorded a yield of 8.05 t ha<sup>-1</sup> with SRI as against 5.04 t ha<sup>-1</sup> as conventional yield (a 60 per cent increase). One farmer in Thirumanur village of Ariyalur district has recorded 18.5 t ha<sup>-1</sup> with CO 43 variety in February 2009 (The Hindu, 13/02/09). Having realized good yields in various sub-basins, the confident voices of farmers are echoing everywhere. Taking into consideration the above facts, there is a scope for increasing rice production by 1.20 MT in Tamil Nadu.

In the quest to sustain farm profits, farmers

tend to seek technologies that improve the efficiency of input use. Also any intervention in improving the agricultural productivity should be integrative with soil and crop management, economically viable, socially acceptable and environmentally-friendly. The blooming of System of Rice Intensification (SRI) is a solid reflection of the above dealt principles and it is no wonder that SRI has grabbed the interests of the entire farming community in Tamil Nadu.

### Future policy

- Supply of seeds in 3 kg bags instead of 30 kg packs.
- Seed production / Demonstration plots should adopt 100 per cent SRI (The seed multiplication factor with SRI methods is many times higher than with conventional practice; also the grains themselves are larger and more vigorous for planting).
- Development of mechanical transplanter for SRI.
- Strengthening of extension staff at block level.
- SRI cells established at district level and at State level for effective implementation.
- Availability of weeders and markers.
- Authorization of dealerships at village level.
- Bank loans for rural artisans to expand production and to make hire-purchase arrangements for easy access to these implements.



Thumal SRI Farmers Association

Dr. B. J. Pandian,  
Professor (Agronomy), Water Technology  
Centre, Tamil Nadu Agricultural  
University, Coimbatore



Participants of SRI meeting at ICRISAT

## SRI Group Meets at ICRISAT on 'Scaling SRI: Future Directions'

ICRISAT-WWF hosted a 1-day meeting in February in Patancheru to deliberate on current concerns for SRI in India and on ways to promote this innovation at the national level.

ICRISAT-WWF project convened a high-level meeting on 'Scaling SRI: Future Directions' on 3<sup>rd</sup> February, 2009. The meeting was attended by more than 40 participants' from across the India; farmers, officials from the Govt. Agriculture Departments of Tamil Nadu and Andhra Pradesh, extension staff and professors from various agricultural universities, scientists from DRR and other research institutes, and SRI experts from various organizations and the NGO sector. The meeting was facilitated by Biksham Gujja. WWF's global initiative aims to reduce water requirements for agriculture for the benefit of people and the planet, and by doing so to mitigate conflicts between the agricultural sector and natural resource conservation.

During the meeting, the group deliberated on the current concerns for SRI in India and on ways to promote this rice production methodology at the national level. The 3<sup>rd</sup> National Symposium at Coimbatore and

several regional and state-level meetings on SRI have shown that substantial farmer experience has been generated across the country by civil society and governmental agencies. There is availability of a committed pool of resource persons for training other farmers, and many agencies and institutions are taking up SRI as a strategy to address concerns of food security, livelihood provision, and improving farmers' incomes. Hence, there is need to pool together the rich experiences on SRI and contribute to a national policy or resulting mission effort on SRI that engages many more stakeholders and actors.

The issues relating to SRI scaling up were circulated through a note in advance of the meeting, and a core group met and deliberated and then discussed in depth the concerns and issues on SRI with a wider forum on 3<sup>rd</sup> February.

Concerns and issues discussed under broad

themes were:

- Reframing the scope of SRI as practice,
- Constraints faced by farmers in adopting SRI principles,
- National, state and regional level interventions,
- Pro-active R&D backstopping support: Collaborative research towards a new paradigm for agriculture,
- SRI within other developmental programmes by the governments,
- Institutional mechanisms and policy advocacy to promote SRI at national level

The meeting stressed the need for clear allocations to support SRI under schemes such as NFSM that state governments and the governmental machinery can access. Utilisation of approved funds has been low to date because of lack of clear guidelines.

A national-level empowered SRI committee should be constituted that could not only provide such guidelines but plan and support the institutional architecture of the several sub-committees proposed at the meeting.

SRI should be seen and taken forward as a collaborative agenda rather than as several uncoordinated parallel initiatives and projects. The SRI steering committee could also work towards establishing an SRI national mission in the immediate future.

The group also deliberated on how to take these ideas to policymakers and communicate them. Specific suggestions included approaching the Planning Commission to co-host a workshop so that important key stakeholders – including policy planners and administrators in different states, NFSM functionaries, and other actors involved in strategic formulation – can interact with those who have the most experience and knowledge about SRI, including farmers, researchers and NGO personnel.

Detailed report will be made available soon.

# SRI-Grown Rice is Introduced to the US Food Trade and Consumers

Olivia Vent

Marketed under the label of “SRI: One-Seed Revolution,” Lotus Foods has introduced to the U.S. market, rice grown by SRI farmers from Cambodia, Madagascar and Indonesia. At a national trade show where the rices were launched, interest was high not only in the rice varieties themselves but on why SRI rice is better for people (farmers and consumers alike) and for the planet. This marks the culmination of an important collaboration among Lotus Foods, CIIFAD, and farmer-based organizations.

On March 6-8, after two very intense years of work and planning, Lotus Foods introduced to the U.S. market three rices grown by SRI farmers from Cambodia, Madagascar and Indonesia, at the Natural Expo West event in Anaheim, California. This is the most important natural foods trade show in the U.S., and despite a sluggish economy, more than 53,000 industry members attended and engaged in active business, up from last year’s record-breaking participation! Lotus Foods co-owner Caryl Levine reported that “Feedback from buyers and consumers alike was overwhelmingly positive. They liked the taste of each of the varieties as well as learning about the SRI method of growing rice and the social and environment impacts it provides the farmers and their land. Interest was high and we were able to identify partners who will not only buy the rice but help educate the consumer as to why SRI rice is better for people (farmers and consumers alike) and the planet.”

Lotus Foods is a small California-based company that became a pioneer in the U.S. food trade when, 12 years ago, it started importing traditional rice varieties grown on small family farms in countries like Bhutan, Bangladesh and China. In Bhutan their work with farmers has helped to keep local red rice production from being overwhelmed by imported varieties.

The March launch culminates two years of intense work and planning by Lotus Foods with the Cornell International Institute for



Ken and Caryl at the launch of the SRI rice

Food, Agriculture and Development (CIIFAD). Since 2004, CIIFAD has been working with farmer-based organizations in Cambodia and Madagascar but also Sri Lanka, Nepal, Philippines and Indonesia to resolve marketing issues related to SRI-produced rice. Although these partners began their SRI work by training farmers, as the number of SRI farmers expanded and surpluses accumulated, they have focused increasingly on marketing.

In most countries, SRI farmers are planting indigenous or locally-evolved traditional varieties. Most SRI rice is being grown organically, but it is not certified as organic. Certification is expensive for farmers and requires good record-keeping over a period of years. And in many countries there is still no local market for higher-priced organic

rice. As most SRI rice gives higher yields without chemical applications, SRI farmers are positioned to take advantage of the growth in the organic products sector, which is the fastest-growing segment of the U.S. food industry (20% annually). With the entrance of Wal-mart and other U.S. chain stores into organic trade, its status is no longer that of a niche market but is now mainstream.

If SRI use continues to spread as rapidly as over the last 10 years, there could be several million farmers using SRI and adaptations of SRI methods by 2010, with at least one-third of the area planted to distinctive local varieties, many with beneficial nutritional and medicinal properties. Unless there are marketing channels for unique rices, these will go into



"Introducing SRI - One Seed Revolution - The Healthiest Rice for People and for the Planet"

undifferentiated supply pools that garner no premium price for farmers. Connecting SRI farmers to both domestic and export markets thus presents an important and novel opportunity to have significant economic and environmental impacts on smallholder rice communities.

U.S. and European food markets are highly competitive and heavily regulated. Launching a new product into strongly established markets such as in the U.S. can take 5-10 years and requires large up-front investments. The failure rate is high. Smallholding farmers lack the funds and expertise needed to enter these markets. Their current volumes are not enough to interest large grocery chains in the U.S. and Europe. And smaller companies, like Lotus Foods, which operate on a narrow margin, cannot afford to risk their reputation and revenue on an unreliable supply chain. In the case of rice, there is also the constraint that consumers in the West are generally unfamiliar with the remarkable range of rice biodiversity.

In 2006-2007, in response to a Bill and Melinda Gates Foundation call for proposals on improving smallholder value chains, CIIFAD, Lotus Foods, the Center for Study and Development of Cambodian Agriculture (CEDAC) and the National Confederation of Koloharenas in Madagascar seized the

opportunity to collaborate on an ambitious proposal. The proposal sought to strengthen national production and marketing capacities, to conduct research to improve value-chain performance, and to consolidate and share knowledge to accelerate scaling-up of successful experience.

Another goal was to launch three SRI-grown rice products under the Lotus Foods



Pink rice that was grown by SRI farmers being milled and put into Lotus Foods bags destined for California.

brand in U.S. supermarkets and other classes of trade, selling a minimum of 1,000 tons of SRI rice in three to four years, and identifying new markets for SRI rice. CIIFAD had approached Lotus Foods because of shared values to conserve biodiversity, improve smallholder incomes, and protect the environment. When Lotus Foods co-owners Ken Lee and Caryl Levine learned about SRI, they also came to share the same commitment to SRI as CIIFAD.

Although the proposal was among the finalists, it was ultimately not funded. Undaunted, the partners set out to fulfill the plan to launch three SRI rices, though on a much reduced scale from that envisioned in the grant proposal. The challenges have been enormous, particularly in light of the global crises of 2008, which included temporary rice export bans in both Cambodia and Madagascar, record-high prices for rice and oil, the credit crisis, and eroded consumer and retail spending.

The three rices that were launched include a pink rice grown by members of the Koloharena cooperative located in Madagascar's breadbasket region, near a large inland lake called Lac Alaotra. The rice was milled to leave two-thirds of the bran on, which enhances nutritional value. The second rice is a local Cambodian jasmine variety grown on small rainfed plots by SRI farmers in Takeo Province. This rice is milled to leave all the bran on for improved nutritional content. And the third is an innovative blend of traditional white and red rices grown by SRI farmers in West Java. Marketed under the label of 'SRI: One-Seed Revolution,' the rices are being promoted for their healthful qualities, both for people and the planet.

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Norman Uphoff

## Chinese Experience with SRI

Researchers in China were the first to validate SRI methods outside Madagascar; SRI trials were done initially in 1999 at Nanjing Agricultural University. NAU researchers were not overly impressed by the yields that they obtained with the new methods – 9.2 to 10.5 tons/ha – because such yields could be attained with hybrid varieties and heavy inputs of fertilizer. However, these SRI yields were obtained by using only half as much water as usually applied, which gained respect and attention for SRI given China's growing water scarcity.

The China National Hybrid Rice Research and Development Center, under its famous director Prof. Yuan Long-ping (known as 'the father of hybrid rice'), began evaluating SRI methods in 2000. He found that these methods could add 1 to 3 tons/ha to the already-high yields being achieved with his hybrid varieties. The reduction in water requirements was also very welcome. However, a key consideration was SRI's reduction in seed requirements by 80-90%, since the high cost of hybrid seed has been one of the main constraints for farmers' adoption of hybrids. This made hybrid use more feasible and attractive. The China National Rice Research Institute (CNRRI) in Hangzhou also began evaluating SRI methods in 2000, as did the Sichuan Academy of Agricultural Sciences in Chengdu the next year.

### International conference

China thus became the first center of scientific interest in and understanding of SRI methods. However, since most of the researchers' results were published in Chinese language, their scientific work on SRI has had little impact and acceptance internationally. [new paragraph]

Prof. Yuan and his Center hosted the first international SRI conference at Sanya in 2002, an event co-sponsored by CNRRI, CIIFAD, and Association Tefy Saina. The international participants from 15 countries were outnumbered by participants from all over China.

Half a dozen Chinese research reports were published in the on-line conference

proceedings (<http://ciifad.cornell.edu/sri/proc1/index.html>). But little evident attention was paid to this research by many international scientists.

### Sichuan province

At the 2002 conference, Prof. Yuan reported that a yield of 16 tons/ha had been obtained with SRI methods the previous year on his Center's seed farm at Meishan in Sichuan province, using one of his best hybrid rice varieties ([http://ciifad.cornell.edu/sri/proc1/sri\\_06.pdf](http://ciifad.cornell.edu/sri/proc1/sri_06.pdf)). This remarkable performance benefited from an innovation in SRI crop establishment, known as 'the triangular method,' introduced by the Meishan farm manager, Mr. Liu Zhibin.

Liu used young seedlings three per hill, transplanting them in a triangular pattern with wide spacing (7-10 cm) between the plants set into each hill. Liu staggered the hills and reduced their number so that there were only half the usual number of hills per sq. meter compared to the standard SRI planting (single seedlings set out in a square pattern). Liu's strategy increased the plant population by 50% while still following the SRI principle of giving each plant more exposure to sunlight and air (<http://ciifad.cornell.edu/sri/countries/china/cntriang.pdf>).

Mr. Liu has continued to be an innovator with SRI concepts and methods. When I visited the Meishan seed farm in 2004, he showed me a field where he had used young seedlings, wide spacing, etc. with raised beds and zero tillage. He alternated his rice crop on raised beds with the

cultivation of potatoes. This seem to be a very good crop to grow in rotation with SRI rice as we have seen in Madagascar and also elsewhere in Sichuan.

A team from the Sichuan Provincial Department of Agriculture had done a crop-cutting of Liu's experimental plot just a few days before I visited the seed farm. The team had calculated the yield to be 13.4 tons/ha. Liu said that he expected he can get still a better yield in subsequent years if he continues this no-till cultivation because he knew that by not disturbing the soil structure, while continuing to add organic matter, he would enhance his soil's fertility.

Dr. Zheng Jiaguo of the Crop Research Institute of the Sichuan Academy of Agricultural Sciences has given leadership on SRI evaluation and dissemination in western China since 2001, along with colleagues in the Provincial Department of Agriculture and at Sichuan Agricultural University. Popularization of SRI began through municipality bureaus of agriculture in 2004.

Zheng and colleagues presented a poster on their SRI results for the 4th International Crop Science conference held in Australia in 2004 ([http://www.cropscience.org.au/icsc2004/poster/2/3/319\\_zhengjg.htm](http://www.cropsscience.org.au/icsc2004/poster/2/3/319_zhengjg.htm)). By 2008, the area under SRI management in Sichuan province had surpassed 200,000 ha (see table). Zheng has prepared a poster reporting further SRI results for the 5th International Crop Science conference being held in Korea in April.

	2004	2005	2006	2007	2008
SRI area (ha)	1,120	7,290	57,500	116,667	204,000
SRI yield (t/ha)	9.10	9.44	8.82*	8.99	9.41
Conv. yield (t/ha)	NA	NA	NA	7.50	7.71
SRI increment (t/ha)*	NA	NA	NA	1,489	1,698
SRI increase in yield (%)*				19.85	22.03
SRI additional net income (RMB/ha)*				1,574	1,956

\* 2006 was a drought year; SRI yields were relatively better than with conventional methods.

\*\* Comparison with the Sichuan provincial average for paddy yield and profitability (7 RMB = \$US 1).

Source: Data from Sichuan Provincial Department of Agriculture.

## Zhejiang province

CNRRI researchers led by Dr. Zhu Defeng and Dr. Lin Xianqing have conducted a number of systematic evaluations of SRI, and they have worked with the Zhejiang Provincial Department of Agriculture since 2004 to demonstrate and disseminate SRI methods in the eastern part of China.

For details on their activities and results, also on Sichuan province, see trip reports available on the SRI website (on 2005 observations: <http://ciifad.cornell.edu/sri/countries/china/cntrep705.pdf> ; on 2007 observations: <http://ciifad.cornell.edu/sri/countries/china/cnntutrep0807.pdf> )

The area under SRI methods in Zhejiang province in 2008 was probably over 130,000 ha, according to CNRRI colleagues. When I visited the township of Jia Xing in 2007, extension personnel said that 80% of the rice area there was under SRI management. They reported further that larger farmers were taking up SRI methods more quickly than smaller ones. Why? Because in addition to saving seeds, saving water and saving costs, SRI methods are enabling them to save *labor* as well. In this province, labor is the most limiting factor of production given many off-farm employment opportunities. This consideration challenges the stereotype often promoted that SRI is necessarily 'labor-intensive' and thus will be attractive only to subsistence farmers.

SRI farmers in Zhejiang have found that the methods make their crops more resistance to pests and diseases, with a 70% reduction in sheath blight, for example. Also, there is dramatic resistance to storm damage. Mr. Nie Fu-Qui in Bu Tong village, Tien Tai municipality, who in 2004 with SRI methods had the highest yield in Zhejiang province (12 t/ha), had his 2005 SRI crop hit by three storms during the August-September typhoon season. While most farmers suffered serious losses, Nie had a harvested yield of 11.15 t/ha. Given increasing abiotic as well as biotic pressures on rice scope, resistance to these stresses may prove to be a stronger reason for adopting SRI methods in some areas than their yield advantages.

## A North-China system for cold climate

It was a pleasant surprise to find in China a 'close relative' of SRI called 3-S. This was developed during the 1990s by the late Prof. Jin Xueyong at Northeast Agricultural University in Heilongjiang Province without any knowledge of SRI [ <http://ciifad.cornell.edu/sri/countries/china/cn3ssys.html> ]. Because Jin was working in the north of China near Manchuria, with cold temperatures, seedlings could not be transplanted as young as recommended for SRI. They had to be grown in greenhouse plastic shelters, starting seedlings when there is still a foot of snow on the ground.

3-S seedlings are transplanted into fields at 45 days, which is still younger than with usual rice practice in Heilongjiang. As with SRI, they are planted singly and in a square pattern. With 3-S, irrigation is reduced as with SRI, and use of organic matter is recommended. (Rice production in China relies heavily on chemical fertilizer.) Because of labor constraints, however, herbicides are used for weed control rather than using SRI-recommended soil-aerating practices. A presentation on 3-S prepared with pictures and data from a PowerPoint prepared by Prof. Jin in 2004 has been posted at: <http://ciifad.cornell.edu/sri/countries/china/china3Ssystem09.pdf>

## Chinese research on SRI

A large number of studies and evaluations have been done on SRI methods since 2001, when Prof. Yuan Long-ping published his first article on SRI in the journal *Hybrid Rice*. We have posted on the SRI website a fairly complete list of publications on SRI in China. Unfortunately for those of us who do not read Chinese, most are in that language – <http://ciifad.cornell.edu/sri/countries/china/chinaSRIPubs09.pdf>

A book on *The Theory and Practice of SRI* was published in 2006, edited by CNRRI senior scientist, Dr. Zhu Defeng (Chinese Publishing Company of Science and Technology, Beijing). Zhu has served since 2002 as a voluntary coordinator for SRI activities and communications in China. This volume contains the findings from various agronomic studies, reports from Sichuan, Zhejiang, Guizhou and other provinces, and also a socio-economic evaluation of SRI by researchers from the China Agricultural University.

This latter study assessed experience in a Sichuan village where SRI use went from 7 farmers in 2003 to 398 in 2004. Interviews and focus groups found that among the various reasons given for SRI adoption – such as higher yield, water saving, drought-



resistance, and greater economic returns – the highest-ranked reason was labor-saving. This report is as available in English on the SRI website at: <http://ciifad.cornell.edu/sri/countries/china/cnciadeng.pdf>

## System of Wheat-Rice Intensification

The Institute of Agroecology and Farming Systems operating under the aegis of the China Academy of Agricultural Sciences (CAAS) has been working with SRI concepts and methods to integrate them into the *wheat-rice rotational cropping system*. This is practiced very widely in China and also South Asia, covering a total of 22 million hectares. Trials and adaptations have been made over the past three years in Jiangsu province. The combined yields for the two crops together, in three different locations, have ranged from 13 to 17 t/ha. This is 30-70% more than usual combined yield of 10 t/ha. A brief report on this system is posted at: <http://ciifad.cornell.edu/sri/countries/china/chSWRIwheatriceCAAS08.pdf>

Raising yields and factor (especially water) productivity in wheat-rice farming systems is an area where useful exchanges might be undertaken between India and China. The wheat crop can benefit from growing the rice crop under SRI soil conditions since wheat will grow better with more aerobic soil. The SRI methods of course also enhance the rice yield. Also, to the extent that SRI practices shorten the rice crop cycle, this will permit farmers to plant their wheat crop earlier, which enhances that crop's productivity.

## Reflection

SRI dissemination got an earlier start in China than in India, but in recent years, the uptake of SRI methods has been more widespread and rapid in India. There is no country-wide survey of SRI use in China as there is for India (see SRI-India website), so no exact comparisons are possible. But the state of Tamil Nadu has probably twice as much area under SRI management as in all



Liu Zhibin, farm manager for China Hybrid Rice Center seed farm in Meishan, Sichuan province, on his raised-bed, zero-tillage plot where SRI methods were used, giving a yield of 13.4 tons/ha in 2004.

of China; and we know that SRI use has started in almost every state of India, whereas not all rice-growing provinces in China have taken up SRI evaluation and dissemination.

As seen above, there have been many significant innovations in SRI thinking and practice in China. In provinces where there has been leadership from researchers (Sichuan and Zhejiang), the spread of SRI use has been substantial. However, as of 2009, there is not as much momentum built up in China for making changes in rice-sector methods as can be seen in India. There has been no systematic analysis of this, so no objective conclusions can be offered, only impressions.

Perhaps the differences observed between the two countries can be attributed, at least in part, to differences in the extent, depth and energization of their respective civil societies. In China, the 'burden' of promoting SRI has been carried mostly by researchers, without the support of active NGOs or farmer organizations. In both countries, it

has taken time to mobilize government support, but in India, the articulation and activism of civil society has made politicians and administrators more attentive to the opportunities that SRI provides.

Both countries face growing water constraints that impinge on their agricultural sectors, on public welfare, and on the health of natural ecosystems. Increased production of rice is seen by policy makers in both countries as an imperative because of yield stagnation in the past decade. The urgency of finding water-saving ways to meet food needs may be the most persuasive consideration at national levels. For farmers, on the other hand, being able to produce more output with less inputs -- less seeds, less water, less cost, and even less labor -- with reduced vulnerability to biotic and abiotic hazards also -- will continue to be the major motivating force at the riceroots.

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

## Workshop on SRI in Jammu

Dr. Anuradha Saha



Impressive presentation by Dr. Biksham Gujja

A one-day workshop on System of Rice Intensification (SRI) was organized for the officers of the Department of Agriculture, Command Area Development, and NGOs as well as the scientists of SKUAST-J at Chatha in February 2009. The workshop is part of the project titled 'Scaling up the productivity of rice through SRI as an alternative option for sustainable natural resource management in Jammu' funded by ICRIAT-WWF project, Hyderabad.

The workshop was inaugurated by the Chief Guest Dr. B. Mishra, Hon'ble Vice Chancellor

of SKUAST-Jammu. The Guest of Honour was Mrs. Sonali Kumar, IAS, Principal Secretary of J&K (Agriculture Production) and the Special Guest was Dr. Biksham Gujja, Policy Advisor, WWF-International, Switzerland. The Director of Agriculture, Mrs. Vinod Bala Sharma also participated in the workshop. The other guests included Director Extension Education, Director Research, Assoc. Director Extension Education, Assoc. Director Research, DRI cum Dean PG, Registrar, Dean and other officers from SKUAST-J. All Heads of Departments, Associate and Assistant Professors from

SKUAST-J, officers and field functionaries from Department of Agriculture and Command Area Development, heads of different NGOs and media persons also participated in the programme.

In her address, Mrs. Sonali Kumar, IAS, Principal Secretary of J&K (Agriculture Production), commended the organization of such workshop and highlighted a few points such as the demonstration should be carried out in different places with different cultivars with the involvement of the State Agriculture Department. Similarly, Dr. B. Mishra, Hon'ble Vice Chancellor of SKUAST-J, said the SRI methodology is very beneficial, but in Jammu, the methodology should be standardized with more research through multi-location trials.

Dr. Biksham Gujja, Policy Advisor, WWF-International-Switzerland, delivered an impressive and effective presentation on SRI in India. He highlighted how SRI can be up scaled on a large scale in Jammu. He also pointed that SRI is not variety-specific, but rather a methodology which can be modified and fine-tuned according to each agro-climate zone.

Dr. Vijay Bharti, Scientist, Water Management Research Centre, SKUAST-J, presented results of SRI in Jammu, and beneficiary farmer S. Darshan Singh shared his experiences on SRI.

Besides this, a technical bulletin on SRI in Jammu and a folder on SRI method in Hindi were released during the workshop. After a small group discussion, Dr. A. S. Bali, Prof. and Head, Agronomy of SKUAST-J, concluded that collaboration with State Department of Agriculture and Command Area Development will help in scaling up of SRI in Jammu.



Dr. Anuradha Saha,  
Scientist (Agronomy), AICRIP (Rice),  
PBG, SKUAST-J, Jammu



## “Eating SRI rice is eating healthy rice”

**Dr. Amrik Singh**

The Deputy Project Director of ATMA, Gurdaspur, while discussing the SRI method at a 4-day ‘workshop held in Gurdaspur, stressed that farmers should cultivate rice under SRI method not only because it benefits them in terms of higher yields and saving of inputs costs, but also because “Eating SRI rice is eating healthy rice”.

The Agricultural Technology Management Agencies (ATMA) programme in the districts of Gurdaspur, Amritsar, Tarantaran, Kapurthala and Jalandhar in Punjab State organized a 4-day ‘Agriculture & Farmers Development Exhibition-cum-Workshop’ at New Market Dhariwal in Gurdaspur district from February 16-19, 2009. Inaugurated by Shri. S. Sucha Singh Langah, Minister of Agriculture, Punjab, the event was attended by more the 20, 000 farmer men and women from the five districts of Punjab where government and private agencies, banks and insurance companies, manufacturing machinery firms and many others displayed their activities. The fun-filled environment echoed with balle balle beats throughout the 4-days. The main highlight of the event was the System of Rice Intensification displayed by Department of Agriculture, Gurdaspur.

The Hon. Minister directed the officials of the Agriculture Department to organize a large number of demonstrations on farmers’ fields and declared that inputs including



machinery will be provided to farmers free of cost by ATMA, Gurdaspur. Dr. Baldev Singh Kahlon, Chief Agriculture Officer, presented various activities undertaken by ATMA at Gurdaspur. Dr. Amrik Singh, Deputy Project Director of ATMA, Gurdaspur, while explaining the benefits of the SRI techniques, said that the benefits are many: increased yield, coupled with savings in water, electricity, seeds; but the most important could be that ‘Eating SRI rice is eating healthy rice’.

In fact, there are some farmers who are specifically cultivating rice under SRI

method only for personal consumption at home, for children, elders and others because SRI rice besides having many other benefits to health is also easily digestible. He also stressed that use of agri-chemicals is poisoning the soil, the food, and drinking water. So it is important that Punjab once again regains its lost fertile land by giving common organisms (like earthworms, snails, crabs, frogs, etc.) essential for a healthy environment a chance to return to the farm without disturbing nature’s natural cycle.

*Dr. Amrik Singh, Deputy Project Director,  
ATMA at Gurdaspur*



## SPWD's appreciable efforts in Jharkhand

Society for Promotion of Wastelands Development (SPWD) organized a 2-day State level experience sharing workshop on SRI at Ranchi on the 4th and 5th of March, 2009. The participants included farmers and representatives from the partner organizations. With its partner NGOs, SPWD is currently working on the issue of food security through 'Promotion of SRI' in the State of Jharkhand. The productivity of paddy in the state ranges from 0.8 t/ha to 2.2 t/ha. The average yield in 2006-07 was 1.68 t/ha. The SPWD-SRI programme is being implemented in the 13 districts of Jharkhand (25 development blocks and 134 villages) through 18 partners.

Rice cultivation in the Jharkhand state of India is mostly rainfed and is grown by farmers' for their own consumption; if rain fails, livelihood is difficult. Farmers' show reluctance to adopt new technologies and



convincing them is indeed a difficult task. This was reported by the participating farmers and the NGOs during the workshop where group discussions were also held on:

- convergence of efforts on SRI,
- approach for expansion, and
- strategy to go organic.

The role played by ICRISAT-WWF project in the promotion and scaling of SRI in India was explained by Dr.T.M. Thiyagarajan besides making a presentation on SRI in Tamil Nadu.

As part of the workshop, a field visit was organized at the SRI fields of a tribal farmer from Hendebili village, Mahargu Bedia. His paddy field had a good population of azolla-like fern which were pinkish in colour. It was suggested to SPWD to seek help of the Birsa Agricultural University to find out more about the N-fixing characteristics of the fern.

The farmer was motivated when he visited a Kisan Mela organized nearby by the SPWD and started SRI in his 2.5 acres. For his undulating terrain, he uses spring water available in low-lying areas for (splash) irrigation.

To see a thriving SRI crop in such an environment was really a motivating experience, and the efforts of SPWD to help these farmers are quite appreciable.

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

## 'Everybody to field' in Kerala



A paddy festival themed 'EVERYBODY TO FIELD' was held at Thiruvananthapuram in Kerala State on February 11 – 12, 2009. The main motto behind the paddy festival was to motivate more number of farmers to go for paddy cultivation, especially encouraging them to convert their fallow lands to paddy fields.

During the event, presentations and discussions were made on problems that the

rice-growing farmers are facing due to non-availability of farm workers and mechanization support and the need for developing high-yielding varieties which can withstand the changing climatic conditions. Tamil Nadu agricultural University presented the success stories of SRI method and developments in hybrid rice varieties.

To promote farming which is part of our culture and society, school children from about 480 schools are being encouraged to take part in activities at the field.

*C. V. Shankar,  
RI farmer,  
Palakkad district in Kerala*





## Guwahati hosts a state-level symposium on SRI

A State-Level Symposium on SRI (System of Rice Intensification) was organized by Rashtriya Gramin Vikas Nidhi (RGVN) and sponsored by the Sir Dorabji Tata Trust, Mumbai, at the Indian Institute of Bank Management, Guwahati on February 19th, 2009. A total of forty organizations from different parts of Assam participated in the Symposium

While addressing the gathering, Agriculture Minister, Smt. Pramilarani Brahma said, that the Department of Agriculture, Assam has undertaken SRI as demonstration in 13 districts of Assam, and the results have been very encouraging. She also suggested that government alone cannot do anything rather both the Govt. and non-govt. agencies all have to join hands to scale up SRI in Assam.

Some of the concerns discussed at the

symposium are:

- In spite of encouraging results of the pilot projects in terms of boosting production by 2-3 times, most farmers think that cultivation under SRI in Sali (winter paddy) is difficult, because it is not an easy task to manage water in the regions like Assam where heavy rainfall occurs, and more than half of the total cultivable areas are flood-prone.
- Providing irrigation facilities to the SRI farmers is going to be a point of concern as with these facilities farmers will be able to go for SRI cultivation in boro (summer) and ahu (autumn) season. Necessary steps have to be taken by the stake holders and State government to make these facilities easily accessible to the farmers.

- Most of the farmers now understand the importance of bio fertilizer, bio pesticides and organic cultivation. But these things are not available to the farmers. There is a need to promote reliable sources of bio fertilizer, bio pesticides, organic manures for the use of farmers adopting SRI.
- Farmers need some incentives in terms of seeds, fertilizers, good quality weeders, manual sprayers for effective control of pest and diseases to be made available on time.

Five farmers from different districts of Assam were felicitated and awarded certificates in recognition of their SRI efforts.

*Ramani Kanta Sarma,  
Coordinator,  
RGVN-SRI Unit, Guwahati*

## Cuban Urban Agriculture Convenes Second SRI/SICA Workshop

The National Group of Cuban Urban Agriculture (UA) started promotion of SICA with a workshop in November, 2007. Now a second workshop has been held in February 2009 to discuss the results of its first year of trials and to plan future activities with respect to this new methodology. Ing. Salvador Sanchez of Cuba's Institute of Rice Research (IAA), also a member of the Urban Agriculture National Group, suggested that SICA has already changed, forever, the island's rice culture by: reducing the age of seedlings from 35-40 or older to 12-15 days; by reducing the time employed between pulling/transplanting from 12-24 hours

to 30 minutes; and by reducing the number of seedlings per hill, from between 3-5 to one. He also emphasized the saving in seeds and the possibility, in some cases, of tripling yield. Average yield with SICA methods – 5.55 t/ha – is already about double the national average of 2.5 to 3 t/ha.

Dr. Adolfo Rodriguez, director of Cuba's Urban Agriculture Program, presented the 'Preliminary results with SICA demonstrations by Urban Agriculture program in Cuba', and summarized the previous year's results in several provinces. The Group agreed on a SICA program for 2009,

including planting demonstration plots (a minimum of 0.5 hectares) in 140 of Cuba's 169 municipalities, i.e., in all rice-producing municipalities. The workshop concluded with a powerpoint presentation by Dra. Rena Perez reporting on an innovative application of SICA practices in Costa Rica by Sr. Oscar Montero based on a rice-transplanting machine adapted for SICA, with suitably wide planting distances and using single seedlings.

*Dr. Rena Perez,  
Volunteer SRI Coordinator,  
Cuba*

See <http://ciifad.cornell.edu/sri/countries/costarica/index.html> for more information on Sr. Montero's innovation and rice-transplanting machine

The spread of SRI around the world and within countries could not have been so quick and low-cost without the electronic assistance of web and email facilities. A number of websites on the internet, not only CIIFAD's and WASSAN's but those of country groups and Association Tefy Saina, have provided huge amounts of information and pictures instantaneously and free to anybody anywhere who wanted to know more about SRI. And the quick, personal communication possible through email has led to extensive flows of information and to solid networks of friendship that are truly marvelous. These facilities have blended the technical and the human elements of SRI in an unprecedented mobilization of talent, commitment and innovation that is still in its early stages of formation. I am glad to see Lucy and Nemani featured in the Newsletter as they have performed immeasurable services to accelerate the movement of SRI knowledge and practice globally.

Norman Uphoff, Cornell University

**Cornell SRI website and SRI Google group is playing a significant role in pooling and disseminating large amounts of information on a daily basis. Meet Ms. Lucy Fisher and Mr. Nemani Chandrasekhar, the two people responsible for management, sifting and churning out a whole lot of information on SRI to all of us.**



### Lucy Fisher

*SRI Group Virtual Outreach*

*Coordinator, CIIFAD,*

*Cornell University*

I began building the SRI website (<http://ciifad.cornell.edu/sri>) in 2002 with support from Olivia Vent, D.H. Goodall, and of course Norman Uphoff, who was then director of CIIFAD and had been involved with SRI in Madagascar since the early 1990's. From the outset, the site was a collaborative effort with Association Tefy Saina, an NGO in Madagascar who now has its own website (<http://www.tefysaina.org>).

At first, I received only a few pieces of information a week, much of it anecdotal. Now, in 2009, I spend two to five hours a day sifting through the mountains of information that arrive every day. I get information from people in 46 countries which is summarized and catalogued on CIIFAD's SRI website (see countries section at <http://ciifad.cornell.edu/sri/countries/>).

Norman passes on much material from his travels and direct correspondence, and I am in e-mail contact with individuals in many of the countries that we have web sections for. While I

occasionally get information from web searches, some of the best sources are the dedicated online SRI sites that I follow. These include eight state, national and regional SRI discussion groups (including SRI-India, which is the most active, and the Spanish-language SICA America Latina group, which is the newest), two African SRI blogs, and six SRI websites in Asia and Africa.

Among my favorite SRI knowledge-sharing resources are YouTube, Nemani's tireless SRI-India Google Group postings, the SRI Timbuktu Blog, WASSAN SRI's weeder section, and the ICRISAT-WWF project SRI India website, which has the SRI Symposium presentations and the wonderful SRI Newsletters (that I carry around hoping that I will eventually get to finish reading before they send the next one).

As for our future plans in the "virtual world", we plan to roll out a newer, more interactive, user-friendly website this coming April. We will continue to put out the SRI updates that Norman pens for our SRI-RICE-L and SRI-UPDATE-L lists. We would like to get more specific information on local practices associated with SRI, marketing resources, and perhaps a more complete research section for the new website.

In the near future, I hope we will be able to undertake collaborative web-based efforts with our current and emerging partners. And, I hope that personally I will soon be able to get better acquainted with others involved with SRI knowledge management efforts so that we can work together in finding information, sharing knowledge



and resources in the virtual world, and preventing knowledge from getting lost!

I think CIIFAD's SRI website at Cornell has played an important role in spreading SRI over the past 7 years, especially since we do not focus on any particular country, but on knowledge sharing between countries. Individuals as well as national and regional SRI groups have reported finding useful information on our site and have in turn contributed their own experiences to share with those in other countries.

While there are many more online SRI knowledge-sharing resources available now than when we started, there is a lot more going on globally with SRI now than there was in 2002! Recently I was wondering whether we have much impact compared with the amount of time and energy I put into managing the website. But then I read that the expansion of SRI work in Iraq was made possible by a Japanese donor who learned about the initiatives of Dr. Khidir and colleagues through our SRI website.... and I think... perhaps it's not too much work after all....



### Mr. Nemani Chandrasekhar

Program Associate, WASSAN

Recently, Mr. Nemani Chandrasekhar was honored with a certificate of appreciation at the Knowledge in Civil Society (KICS) general body meeting. This was to acknowledge his selfless sharing of information to both the KICS sustainable agriculture group and later the SRI India group. In the year since he has been with SRI India (by a strange coincidence the certificate was given to him on the 365th day of joining on Jan 7th!), he has shared a lot of information, videos and connected people through his postings.

For those of you who have never met Nemani this is one way of connecting with the person who through his special abilities (he has a speech disability) has been able to keep the group really vibrant and up to date.

Short Interview with Nemani...

*Q. Dear Nemani, how you were introduced to SRI and SRI Google Group?*

A. Initially, I was involved with posting of SRI Webpage on WASSAN website ([www.wassan.org/sri](http://www.wassan.org/sri)). I used to send regular mails on SRI, sustainable agriculture and related issues. I joined the SRI India

Google Group on January 8th, 2008 on getting a web invitation from Dr. C. Shambu Prasad. After that, I also joined the KICS Sustainable Agriculture Group on 30th October 2006. Now, I have joined the SRI Orissa Google Group on 3rd February 2009.

*Q. How you manage to churn so much info daily?*

A. On daily basis, I keep looking out for the latest news, reports and papers. Whenever I have time, I browse the internet and look out for information which is helpful and useful for SRI colleagues. In fact, my contacts with the group has helped me as I have received some latest books, DVDs and multimedia CD-ROMs from abroad and other sources like World Bank Institute, OXFAM-USA, CEDAC, etc. They are very kind and happily contribute these to me free of cost, which I in turn provide to colleagues of SRI who are interested. These materials are thus shared with SRI experts, consultants and farmers.

I have a very strong interest in browsing the internet for news/articles related to System of Rice Intensification (SRI) and regularly put up such articles for display in my office. I also post the interesting news / article items to the SRI India Google Groups.

I receive many requests from SRI farmers in various states regarding innovative ideas, farming equipment, farming contact information. I try to provide relevant information to them after contacting experts. I am pleased to share information with our SRI farmers and feel happy that I am helping them move forward.



## Reaching farmers through AIR Trichy!

**AIR Trichy, with its daily programs on SRI, is playing an important role in scaling up SRI in the districts of Thanjavur, Tiruvarur, Nagapattinam, Trichy, Ariyalur, Perambalur, Karur, Salem and others in Tamil Nadu.**

Listening to AIR Trichy's 'Farm Program' has become a part of my daily routine, as well as for many farmers of my region. We don't consider this just as an entertainment program but feel we are being educated on the latest farm technologies. After we listen to the program, we communicate our feelings, ideas and share our knowledge with other fellow farmers.

We would rather miss a cricket match or the daily popular soap operas but can never miss on the Farm Program. At this juncture, I would like to reflect on the gap in visual media as far as agriculture-related programs are concerned. Regarding the propagation of SRI, I am not exaggerating if I say that AIR Trichy is playing an excellent and a major role in bringing SRI technology to almost all the farmers of this region.

AIR Trichy is also hosting a weekly program on SRI, sponsored by IAMWARM for about 30 minutes every Monday, titled "Oru Nellu Oru Nathu" (Single Seed, Single Seedling).

Currently the program, of which some episodes are already over, brings success stories of SRI farmers, their innovations and adoption of the methodologies to suit their local conditions, etc. Three farmers are covered each week, and two weeks are devoted for each district.

The first two weeks were devoted for Perambalur District, the next 2 weeks for Salem, and the subsequent 2 weeks for Namakkal District. The rest of the districts would be eventually covered. Scientists from the relevant KVKs also participate in the program. Besides, farmers get to frequently interact with TNAU scientists over the phone through the AIR Trichy's phone-in-programs.

The participating farmers can not only get their doubts cleared but also improve their knowledge on technical issues through the questions posed by other farmers. Wherever the farm technical meetings are conducted, they are recorded and broadcast in the farm

programs in the subsequent weeks. We had one such program on SRI for 3 weeks, which was recorded at Tanjore recently.

AIR Trichy started popularizing SRI technologies ever since it was introduced in 2002. Perhaps this is the reason for SRI success in our state. In late 60s and early 70s, during the era of the first Green Revolution, AIR Trichy played a very crucial role in propagating the input-intensive farming. ADT 27 which is a Japonica Indica variety has become popular because of the extensive campaign by AIR Trichy, hence it was referred to as 'Radio Nell'.

Now we are marching towards the second Green Revolution which is going to be achieved through SRI. Again AIR Trichy has already started playing its crucial role in achieving the goal. I feel all the AIR stations through out the country must emulate the model of AIR Trichy in bringing the SRI technologies to the rice-growing farmers.

The person behind the success of the program is Mr. Saravanan, AIR Trichy. Thank you, Mr. Saravanan and AIR Trichy!

*Mr. V.K.V Ravichandran is a progressive SRI farmer from Nannilam, Tamil Nadu*

### World Bank institute releases multimedia toolkit on SRI

The Water Program of the World Bank Institute has produced a set of video and written materials for spreading knowledge of SRI and for assisting farmers to utilize the concepts and methods. Much of the material was provided by the National Irrigation Administration in the Philippines, but pictures and experience were also contributed from the SRI network based at CIIFAD. The materials, entitled SRI:

Achieving More with Less – A New Way of Rice Cultivation, are available in a hardcopy 'toolkit' with CD included, and also on line at: <http://info.worldbank.org/etools/WBIMM/SSIA/index.htm>

There are three components to the video/DVD: (a) a 12-minute overview of SRI, intended for policy makers and others; (b) a 16-minute training module for farmers and extension

personnel, introducing and showing the constituent practices of SRI; and (c) a series of interviews for different perspectives on SRI, starting with farmer responses, also with commentaries from Norman Uphoff, Amir Kassam, Shuichi Sato and Achim Dobermann of IRRI.

The toolkit can be also accessed from the Cornell SRI website <http://ciifad.cornell.edu/sri/>.

## 25 farmers benefit from SRI training organized by Ekoventure at Puducherry

A 2-day training session on SRI was organized by Ekoventure for farmers of Tamil Nadu in the 2nd week of February 2009, at Youth Hostel, Puducherry. Twenty-five farmers from various districts of Tamil Nadu: Thiruvarur, Cuddalore, Kanchipuram, Villupuram, Thirunelveli, Madurai and Thiruvannamalai participated in the training. During the first day of the training, theoretical aspects of SRI with video show were



covered, and on the second day, farmers had hands-on training on seed treatment, marker operations, transplanting single seedlings, and preparation of Amirthakaraisal, Bokashi and Effective Microorganism (EM). The programme was conducted under the aegis of S. Pushpalatha, Chairperson, Ekoventure. The farmers expressed great happiness for being part of the highly beneficial training.

### Useful tips for Kharif-2009

Mr. Bijayram from CWS, Orissa, has suggested some useful tips for SRI farmers for the month of Kharif – 2009 season through SRI Google group. We have uploaded his comments on the SRI-India website for convenience of those who do not have access to SRI Google group. So, login to [www.sri-india.net](http://www.sri-india.net) and read the useful tips and benefit from them.

### SRI launched in 5 districts of Maharashtra

Mr. Sachin M. Patwardhan from Bharat Agro-Industries Foundation (BAIF) has taken the lead in training a first batch of NGO personnel (24) from various parts of Maharashtra recently for launching SRI in 5 districts of the state. The training was based on BAIF's Dangs district experience in Gujarat state. Another partner of SDTT, PRASARI, was also a resource agency for the training.

In Maharashtra, extension of SRI in 5 districts

in the near future is in the agenda of Sir Dorabji Tata Trust. A detailed paper covering BAIF's work on SRI in Dangs district of Gujarat was presented by Mr. Sachin at 3rd National Symposium on SRI held at Coimbatore on 1-3 December 2008.

Visit [www.sri-india.net](http://www.sri-india.net) for the ppt on 'Promotion of SRI in Rainfed Rice Cultivation' in Dangs district of Gujarat presented by Mr. Sachin at the 3rd National Symposium.



Somra Singh in his field showing the height of the SRI paddy crops

### Making Khunti district proud!

Foundation for Emancipation of Marginalized (FEMALE), an NGO, has initiated thorough demonstrations of SRI methodology in the Raina block of Khunti district, Jharkand. In 2008, farmers reported as many as 82 tillers on a single plant. A sample plant from the field of farmer Somra Singh was awarded the 1st position at district level by the District Agriculture Department on the occasion of the 1st Foundation Day of Khunti district.

## Here's more reading and video links on SRI:

### SRI Vietnam links page

<http://vietnamsri.wordpress.com/>

### Low efficiency of resources raises concerns

[www.financialexpress.com/printer/news/420797/](http://www.financialexpress.com/printer/news/420797/)

### For SRI Bahasa (Indonesian Language)

[www.youtube.com/watch?v=DtkJ5ljd0eY](http://www.youtube.com/watch?v=DtkJ5ljd0eY)

### 400,000 hectares eyed for organic farming

[www.mb.com.ph/issues/2009/02/13/BSNS20090213148014.html](http://www.mb.com.ph/issues/2009/02/13/BSNS20090213148014.html)

### 18 Assam farmers in Tripura for SRI training

[news.chennaivision.com/index.php/2009/02/18-assam-farmers-in-tripura-for-sri-training/](http://news.chennaivision.com/index.php/2009/02/18-assam-farmers-in-tripura-for-sri-training/)

### Musiri farmer achieves maximum yield

[www.thehindu.com/2009/02/13/stories/2009021358730300.htm](http://www.thehindu.com/2009/02/13/stories/2009021358730300.htm)

### Tirumanur farmer records highest yield

[www.hinduonnet.com/holnus/015200902130921.htm](http://www.hinduonnet.com/holnus/015200902130921.htm)

### Training to farmers in SRI

[www.hinduonnet.com/thehindu/holnus/015200902100333.htm](http://www.hinduonnet.com/thehindu/holnus/015200902100333.htm)

### Tamil Nadu farmers dissect State budget

[www.thehindu.com/2009/02/22/stories/2009022256970300.htm](http://www.thehindu.com/2009/02/22/stories/2009022256970300.htm)

### Bacolod advocacy on climate change goes to mall

[www.pia.gov.ph/?m=12&fi=p090225.htm&no=66](http://www.pia.gov.ph/?m=12&fi=p090225.htm&no=66)

### Farmers harvest triple benefits of experiments

[www.telegraphindia.com/1090219/jsp/northeast/story\\_10551493.jsp](http://www.telegraphindia.com/1090219/jsp/northeast/story_10551493.jsp)

### SITMO introduces system of rice

### intensification to Ifugao farmers

[www.pia.gov.ph/default.asp?m=12&sec=reader&rp=1&fi=p090221.htm&no=5&date=](http://www.pia.gov.ph/default.asp?m=12&sec=reader&rp=1&fi=p090221.htm&no=5&date=)

### Training of Trainers on Ecological System of Rice Intensification (SRI), Kampong Thom

<http://www.foodsecurity.gov.kh/>

### Introduction of the system of rice intensification

[http://pib.nic.in/release/rel\\_print\\_page.asp?relid=47760](http://pib.nic.in/release/rel_print_page.asp?relid=47760)

### Paddy output in TN 'satisfactory'

[newstodaynet.com/newsindex.php?id=14878%20&%20section=6](http://newstodaynet.com/newsindex.php?id=14878%20&%20section=6)

### Cambodia Seeks Overseas Buyers for Bumper Rice Crop

<http://asiacalling.kbr68h.com/index.php/archives/2341>

### SRI is promoted under World Bank project

[www.tmcnet.com/submit/2009/02/24/4009010.htm](http://www.tmcnet.com/submit/2009/02/24/4009010.htm)

### Orissa hopes for record rice production despite floods

[www.outlookindia.com/pti\\_print.asp?id=625674](http://www.outlookindia.com/pti_print.asp?id=625674)

### Exposure trip for State farmers

[www.assamtribune.com/scripts/details.asp?id=mar0309/State16](http://www.assamtribune.com/scripts/details.asp?id=mar0309/State16)

### For video clips on Pulling type weeders, Sudhakar marker and some mechanised weeders see the url

[http://www.youtube.com/results?search\\_type=&search\\_query=sukshethram&aq=f](http://www.youtube.com/results?search_type=&search_query=sukshethram&aq=f)

### Farmers harvest triple benefits of experiments

[www.telegraphindia.com/1090219/jsp/northeast/story\\_10551493.jsp](http://www.telegraphindia.com/1090219/jsp/northeast/story_10551493.jsp)

Governor optimistic on financial front, March 18, 2009, E-PAO (Manipur, India) (SRI ref in 3rd para from bottom)

SRI method: Thanjavur stands first in State: - March 15, 2009, The Hindu, (Tamil Nadu, India)

Upcountry insight: Rice farmers target increased production by 2009- March 12, 2009, The NewTimes (Rwanda)

SRI method: T.N. steals a march over Andhra Pradesh - March 11, 2009, The Hindu (India)

## SRI network launched in state of Bihar

A meeting was convened in Patna, December 29, with over 135 participants from all over this state, from NGOs, government agencies, research institutions and private sector, and particularly from the self-help group (SHG) federations that are playing an active role in SRI dissemination. The meeting was organized by a private consulting firm which has many pro bono activities, BASIX, together with the Women Development Corporation of the state government's Dept. of Welfare.

Minutes are at:

<http://ciifad.cornell.edu/sri/countries/india/inBiharSymposium122908.pdf>

**BASIX** has developed an innovative strategy, signing up farmers, even small and poor ones, for SRI training and supervision throughout the season for a set fee, 300 rupees plus tax (about \$7). Farmers can recover this amount several times over from their net increase in farm income from SRI. This mechanism self-finances the technical backstopping that gives farmers both the knowledge and the confidence needed to undertake SRI. The Bihar SRI partners

expect to establish a 'learning alliance' similar to that in the state of Orissa, as documented in:

[http://sri-india.110mb.com/documents/SRI\\_in\\_Orissa.pdf](http://sri-india.110mb.com/documents/SRI_in_Orissa.pdf).

### **ECUADOR: 33rd country to join 'the SRI club'**

Jorge Gil Chang, director of FUNDEC (Fundacion para el Desarrollo Agricola del Ecuador), has reported on the first SICA/SRI trials in his country during 2008. His paddy yield with 10-day seedlings and 40x40 cm spacing on a 1,200 m<sup>2</sup> plot using some microorganism soil supplementation was 8.8 t/ha, compared with 2.3 t/ha on the adjacent control plot where conventional methods were used [ <http://ciifad.cornell.edu/sri/countries/ecuador/index.html> ]. National average yield in Ecuador is 3.8 t/ha. Jorge and his colleagues plan to expand SICA/SRI trials and demonstrations in this year.

### **COSTA RICA: 34th country to report SRI results – with mechanized transplanting**

Oscar Montero, after three years of work with SRI concepts and practices, has reported through Rena Perez that he obtained 8 t/ha yields this past season in Costa Rica with SICA/SRI methods. He redesigned a mechanical transplanter (Yanmar AP100) to speed up and save labor on crop establishment. This could open up new possibilities for the spread of SICA/SRI cultivation in Latin America, where hand transplanting has been a major barrier to adoption, given labor shortages in rural areas. Oscar's report and pictures are posted on the SRI website: <http://ciifad.cornell.edu/sri/countries/costarica/index.html>

### **CHINA: New system of wheat-rice intensification**

Dr. Zhang Weijian, director of the China Academy of Agricultural Sciences (CAAS)

Institute for Agroecology and Farming Systems, has provided us with a report on the results for 3 years of his Institute's experimentation in Jiangsu province. The CAAS Institute is adapting SRI concepts and methods to improve productivity of the wheat-rice rotational farming system which is very important in China and also South Asia, covering 22 million hectares in these two regions. [put in URL for this report, which I sent to you for posting]

Given China's current average wheat and rice yields, a year's cycle of wheat and rice will usually produce about 10 t/ha of grain. With what is being called 'the System of Wheat-Rice Intensification' or SWRI, annual combined yields of 13, 15 and 17 t/ha have been achieved in different locations in Jiangsu province. This opens up new opportunities for SRI use as SWRI's shortening of the rice crop cycle is advantageous for the accompanying wheat crop grown in rotation, permitting earlier planting, plus giving more rice yield. SRI aerobic soil conditions benefit the wheat crop, which is not well adapted for anaerobic soils.

### **Malaysia: SRI evaluations are started in 2009**

The interdisciplinary SRI Group at the National University of Malaysia (Update #18) organized a training program at the end of January 2009 for 30 participants, farmers, entrepreneurs, extension officers and academics, with two trainers from the National Organic SRI Center (NOSC) at Nagrak in Indonesia coming as resource persons. SRI trials are being conducted at two sites where university faculty already have good working relationships with rice farmers.

Dr. Anisan Izahak who serves as the SRI Group's coordinator reports that its members are aiming for 'a soft launch' of SRI in Malaysia in March or April, when the growing SRI plants can be shown to visitors. Staff from the Federal Land Consolidation and Rehabilitation Authority (FELCRA) and the Malaysian Agricultural and Rural Development Institute

(MARDI) are also planning to start their own SRI trials and demonstrations in 2009. FELCRA has previously sent some of its staff to the NOSC, maintained and operated by the Indonesian NGO Aliksa Organic SRI Consultants (AOSC), for SRI training. [ <http://ciifad.cornell.edu/sri/countries/malaysia/index.html> ]

### **Article on SRI adoption in Tamil Nadu in IRRI newsletter**

A survey of farmers in the Cauvery Delta and Tambiraparani River Basin by TNAU faculty has been published in IRRI's International Rice Research News which assesses reasons for the adoption and discontinuance of SRI (see <http://beta.irri.org/publications/images/stories/irm/pdfs/2009/sri.pdf> ). Average yield increase with SRI methods was only 27%, but the survey also showed that this is with incomplete adoption of the recommended SRI practices. This can be considered as a flaw or fault in SRI -- or as an indication that higher yield increases are still available to Tamil Nadu farmers if and when they use the methods more fully or correctly. Publication of this article indicates that IRRI's International Rice Research News is willing to accept articles with data and analysis on SRI.

The article does not consider the wider context of SRI adoption in Tamil Nadu state, where already 500,000 hectares of SRI rice have been harvested in the 2008-2009 season -- and the government expects to achieve the target of 750,000 hectares for the whole season (THE HINDU, January 29, 2009 -- [www.thehindu.com/2009/01/29/stories/2009012959310400.htm](http://www.thehindu.com/2009/01/29/stories/2009012959310400.htm)).

Full reports or pictures can be accessed from the SRI website: <http://ciifad.cornell.edu/sri/>

CIIFAD SRI Group welcomes others to subscribe to SRI discussion group. Names and email addresses can be sent to: [srtrice@cornell.edu](mailto:srtrice@cornell.edu)

## Congratulations! Dr. Baharul



The Department of Science and Technology of the Government of Tripura has selected Dr. Baharul Islam Majumdar for the 2007-08 Acharya Praful Chandra Ray Award for his outstanding contributions in the field of agriculture, citing his leadership in popularizing the System of Rice Intensification (SRI) techniques across the state of Tripura. This is the first such award given by the Science and Technology Council in the agriculture sector.

Dr. Majumdar began his own trials of SRI methods in 2000, and in 2002-03 he started doing on-farm trials/ demonstrations with 44 farmers. By 2005-06, this number had expanded to 880 farmers on 352 hectares.

Farmers' good results and their confidence in the methods helped get State government support for a popularization campaign, under Dr. Baharul's leadership. The next year, 73,390 farmers used SRI methods on 14,678 hectares, and in the 2007-08 season, over 160,000 farmers used SRI techniques on 32,500 hectares. The Tripura government goal for 2008-09 of 250,000 farmers using SRI methods on 50,000 hectares (21% of total rice area) is on track to be achieved. In 2007-08, the average SRI yield in Tripura was 4.3 tons/hectare compared with the state's average paddy yield of 2.5 tons/hectare.



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The views expressed in the bulletin are those of the authors and do not necessarily reflect the views of the ICRISAT-WWF project and SRI partners.