



SRI-INDIA Google Group

Bimonthly Update



November – December 2012



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FOREWORD

SRI-India is a noteworthy arena for exchange of ideas, news sharing and discussions on System of Rice Intensification (SRI). The group engages in discussions and news sharing by encompassing ideas and happenings on the SRI front in India as well as from all parts of the globe. The group has a vibrant network base of academicians, development practitioners, government officials, farmers, scientists and students interested in promotion of this novel approach for sustaining rice production and increasing food security.

The bi-monthly updates compiles news sharing, information and resources on System of Rice Intensification at this online forum. One of the highlights during this period was that a large number of reports, journal articles, newsletters and publications as well as numerous photographs on SRI being shared and discussed in the community. We regret that all such documents could not be presented in this bi-monthly update. Overall, the current update presents news traffic in this group in a summarized form and interested members and others desirous to obtain detailed information are always welcome to post a request for the detailed stories and documents.

SELECTED NEWS

NATIONAL

Small Farmers Happy with SRI Method

<http://newindianexpress.com/states/odisha/article1352516.ece>

Former President of India highlights SRI in Keynote Address

<http://en.calameo.com/read/00133527638c725844f60>

Tuticorin Focuses on SRI Method

<http://www.thehindu.com/todays-paper/tp-national/tp-tamilnadu/tuticorin-focuses-on-sri-method/article4202695.ece>

SRI Revives Popularity of Paddy Cultivation

<http://www.thehindu.com/sci-tech/agriculture/sri-system-revives-popularity-of-paddy-cultivation/article4143685.ece>

SRI Comes in handy to tide over Labour Crisis

<http://www.thehindu.com/todays-paper/tp-miscellaneous/sri-comes-in-handy-to-tide-over-labour-crisis/article4135619.ece>

Push for Scientific Rice Farming

<http://in.news.yahoo.com/push-scientific-rice-farming-210438309.html>

Farmers told to go in for SRI & Short Duration Crops

<http://www.thehindu.com/todays-paper/tp-national/tp-tamilnadu/farmers-told-to-go-in-for-sri-method-shortduration-crops/article4092396.ece>

Award for Nalanda Farmers at India International Expo

http://articles.timesofindia.indiatimes.com/2012-12-23/patna/35982500_1_sohdih-progressive-farmers-district-agriculture-department

GLOBAL

Sustainable Food Production promotes Healthy Food & Healthy Living

<http://www.panna.org/blog/guest-blog-sustainable-food-production-promotes-healthy-food-healthy-living>

New Rice Technology Boosts Yields in Kenya

<http://www.businessdailyafrica.com/Corporate-News/New-rice-technology-boosts-yields-quality/-/539550/1638378/-/x83a0o/-/index.html>

1.3 Million Rice Farmers using Innovative Methods in Vietnam

<http://www.oxfamamerica.org/articles/1.3-million-rice-farmers-now-using-innovative-growing-methods-in-vietnam>

CASES & STORIES

Seeds of Innovation

<http://www.ifad.org/operations/projects/regions/pf/seeds/6.pdf>

Listening to Dryland Farmers to Improve Climate Adaptation

<http://www.agricultureday.org/blogs/2012/12/04/listening-to-dryland-farmers-to-improve-climate-adaptation/>



Case Study by WORLP

A Case Study was undertaken by Western Orissa Rural Livelihoods Project (WORLP) on System of Rice Intensification (SRI) under farmers field schools approach under its experiences from Nuapada District, Odisha, India. The brief note is available at: http://www.worlp.com/images/casestudies/SRI_FFS_Npd_final1.pdf

Dr Norman Thomas Uphoff opined that a lot of experience around the world has shown us that rice seedlings will be most productive (most tiller growth and most root growth) when transplanted while quite still young, at the 2-3 leaf stage. The WOLRLP mentions that the recommended age for seedlings at transplanting was at the 4-6 leaf stage, with plants 5-6 inches tall (quite tall). From an SRI perspective, this is somewhat late planting, and that may be why the tillering observed was not more vigorous. While having 36 tillers by the 11th phyllochron of growth is respectable, with ideal growing conditions given to young rice plants, they can have more tillers than this by the 11th phyllochron. We should not decide for farmers that they cannot manage very young seedlings. One of the most innovative farmers in Indonesia has, by choice, transplanted 4-day seedlings and said that she had excellent growth.

Also, it should be noted that the length of phyllochrons will be shortened by management that approaches the ideal. With really good management, it should be possible to help plants to complete 12 phyllochrons (cycles) of growth before the plant switches into its reproductive mode. While the results achieved with SRI methods in Nuapada district are impressive, it appears to me that the management of the plants, soil, water and nutrients in this case is still sub-optimal. In East Java, SRI farmers gave Dr Uphoff in 2009 a rice plant that had 223 tillers grown from a single seed. This means that the conditions for growth of this plant had been managed so well in all respects that the plant had kept on producing tillers into a 15th phyllochron of growth before it switched into its reproduction phase.

Dr Uphoff suggested that the FFS encourage farmers to experiment with at least some younger seedlings, to see for themselves whether their plants will be more productive if transplanted at an earlier age, rather than teach farmers that they should plant at a certain age as 'the rule.' The SRI practices that we describe in articles and that we report on the SRI-Rice website are 'starting points' for SRI management. They are not a final 'recipe' for SRI. We like to say that SRI is planted according to a menu, rather than according to a recipe. The FFS presentation that was shared with the SRI Googlegroup looked to Dr Uphoff like a standard extension approach, telling farmers what to do, rather than engaging their curiosity and imagination to take and adapt the information provided them to their own conditions and, where possible, to improve upon it. At one point in the report we read: 'The tillering, its growth and development phase is also known as Phyllocron stage of the crop.' Actually, there is not something that can be called a 'phyllochron stage' because the whole growth process of the rice plant, from germination to maturity, proceeds through a succession of phyllochrons. So there is no phyllochron stage. Another possible reason why phyllochrons are longer and number of tillers less than could be achieved is that there seems to be too much water applied to the fields. The report refers to having 5-7 cm of water at 40 to 80 DAT, having maintained 2-3 cm before that. This pattern of water management will surely create anaerobic (hypoxic) conditions in the soil that will adversely affect plant root growth and health and the abundance and activity of beneficial soil organisms, suffocating them. A basic element of SRI is to maintain the soil in mostly aerobic (well oxygenated) conditions. Making minimum applications of water on a daily basis was the WM method recommended by Fr. Laulanie from his experience. But many farmers find this too laborious if they have labor constraints, or not feasible if do not have enough water control to manage their rice paddies that way.

Doing alternate wetting and drying (AWD) is an acceptable alternative, economizing on labor and adjusting to the realities of many farmers' water availability conditions. It avoids the soil suffocation that will occur with a 5-7 cm blanket of water, or even a 2-3 cm blanket. AWD schedules can (and do) vary considerably, depending soil type, rainfall, air humidity/dryness, evapotranspiration caused by winds, etc., in addition to the constraints of water and labor availability. Some farmers will apply water for 3 days and then dry their field for 3 days; some for 6 days and 3 days, some for 3 days and 6 days, and any combination in between. Sometimes AWD can be done within a wider range, even between 2 days and 8 days [these were the limits observed in a study in Madagascar of 108 farmer in 2002]. Deciding just what AWD schedule should be followed for a particular field is where farmers' observations and judgment should be relied on. Farmers should be able to see, and respond to, what are the plants' needs, keeping in mind that plants' roots and the supportive soil organisms in on and around the roots need both water and air. Too much of either water or air means too little of the other. Management of water should optimize the mix or alternation of water and air for the roots and soil biota.

Dr Uphoff remarked that the WORLP report is welcome for its being systematic and for explaining to farmers the patterns of tillering and plant nutrient needs, although I would note that another possible limitation keeping the rice plants from achieving their maximal growth could be that there is not enough organic matter application; the application of inorganic nutrients can adversely affect the soil organisms that contribute to plant growth and health. My own preference for informing farmers about SRI opportunities is to be somewhat less prescriptive, instructing farmers on exactly what to do when. I think that SRI 'extension' is appropriately more inductive, more experimental, more participatory.

There is a very strong tradition in India of 'telling farmers what to do,' and this can be found even among many NGOs. SRI is not just an agronomic innovation, but it is a philosophical approach as well. It is based on the idea that we are not just trying to grow more rice, but we want to help farmers to learn and to grow – to become active, effective partners in improving agriculture. We do not want SRI 'adoption' in the style of the Green Revolution; rather we want 'adaption' and 'innovation.' We should all be proud of the important contributions that Indian farmers have made to the SRI movement around the world by their extending and extrapolating SRI ideas to many other crops: wheat, ragi, sugarcane, mustard, brinjal, turmeric, etc. (Even to lac in Jharkhand!) If farmers are just 'trained to do SRI,' they will not be encouraged and emboldened to use their god-given intelligence and insight for further improving their situation, in multiple and holistic ways. The name of the NGO that Fr. Laulanie established in Madagascar with his Malagasy friends to promote rural development with SRI as an 'entry point' – Association Tefy Saina – did not mean grow more rice. It meant improve the mind or improve the mentality. The Farmer Field School methodology that was developed in Indonesia in the 1980s to deal with brown planthoppers and other threats to rice production was conceived according to the same thinking, to improve farmers, not just improve their production. While with SRI we need to pay attention to material things like water management (not suffocating the roots!), the mental factor is similarly critical, capitalizing on human potentials of the mind and character as well as on genetic potentials in our crop plants (and no longer just rice!).

(Adapted from the response of Dr Norman Uphoff, Director- CIPA, USA)

REPORTS & PUBLICATIONS

Impact of SRI from 13 States of India

A policy paper under the IWMI-TATA Water Policy Program titled "Impact of System of Rice Intensification: Analysis of SRI Practices in 13 States of India", studies a sample of 2234 farmers in 13 rice growing states of India to understand the adoption levels and impact of various SRI practices.

[PDF format of this document is available on request.](#)

Experience of SDTT in Promotion of SRI: What the Results Indicate

A Water Policy Research Highlight documented in the IWMI/TATA Water Policy Programme cites the "Experience of Sir Dorabji Tata Trust and Allied Trusts in promotion of System of Rice Intensification". The paper tables adoption-related results from intensive monitoring and data collection across four cropping seasons in Nayagarh District, Odisha, India. The document is at: http://www.iwmi.cgiar.org/iwmi-tata/PDFs/2012_Highlight-44.pdf

Dr C Udayashankar, opined that SRI is one very positive example of how field based research on water-plant interaction and water management by tribal farmers in remote past in a remote area feeds into modern policy under conditions of hydro-profligacy. In this context he congratulated all the catalysts and facilitators and particularly to SDTT and IWMI for bringing out this study.

Integrated Chemical and Organic Fertilizer Management in SRI

A concise paper on Integrated Chemical and Organic Fertilizer Management on Rice growth and yield under System of Rice Intensification (SRI), brought forward by Agricultural Research Education and Extension Organization (ARREO), Iran, cites SRI experiments conducted in the Caspian Sea Coastal Area. The results show that, rice nutrition under SRI is one of the key factors for increasing yields, especially at poor soil fertility conditions. However, the kind of compost/organic material and rate of application is crucial for increasing soil productivity under SRI. <http://ijappjournal.com/wp-content/uploads/2012/726-731.doc.pdf>

Safe Alternate Wetting and Drying Technology and Water Management in SRI

The proceedings document on AP SRI Consortium's Safe Alternate Wetting & Drying Technology and Water Management in System of Rice Intensification, was subsequent to a workshop organized at WALAMTARI, Hyderabad, that enabled discussions on various water saving options in rice cultivation towards the collaborative action-research programme of the AP SRI Consortium supported by DoA and NABARD.

[PDF format of this document is available on request.](#)

Achieving Food Security in Face of Climate Change – Final Report of the Commission on Sustainable Agriculture and Climate Change

PDF format of this document is available on request.

Draft Twelfth Five Year Plans 2012-17: Planning Commission, Government of India

<http://planningcommission.nic.in/plans/planrel/12thplan/welcome.html>

Increasing Rice Yields and Saving Water: Lessons for Policy and Practice

http://knowledge.cta.int/content/download/35144/475968/file/Article_EN_Styger_SRI-RICE+explained.pdf

Resources on Phyllocron Dynamics in Rice Cultivars

The PDF formats of the relevant documents shared in this network are available on request.

THE MIXED BAG

Geographic Advancement of the SRI Methodology

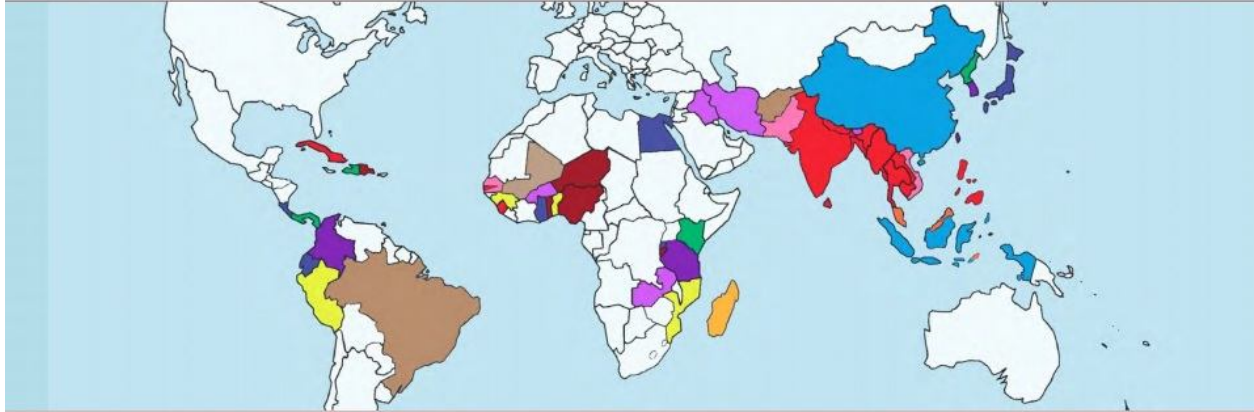
A map courtesy SRI-Rice on the advancement of System of Rice Intensification across the globe is available at the SRI-Rice web portal. This map picturizes the rapid spread of SRI and its increasing acceptance worldwide - made possible with the efforts of many who had faith on the benefits & its resource conservation elements. As on date, SRI has spread to across more than 50 countries or so. http://sri.ciifad.cornell.edu/images/global/SRI_Spread_Map_2012.pdf

SRI as a NRM approach towards Disaster Risk Reduction

The context of disasters may be multifold but vulnerability to hazards are exacerbated by poverty, disease, conflict and population displacement. This presentation encapsulates various Natural Resource Management approaches towards Disaster Risk Reduction, outlaying how climate-change is increasing climate-induced disaster risks. It thoroughly discusses Drought Risk Reduction elements and highlights System of Rice Intensification as one of the NRM based conservation technologies in this context that can build adaptive capacities among communities to cope with increasing water stress by providing more crop per drop.

<http://www.slideshare.net/saibhaskar/natural-resource-management-approaches-incorporating-disaster-risk-reduction>

2012: SRI benefits have now been seen in >50 countries of Asia, Africa, and Latin America



Before 1999: **Madagascar**

1999: **China, Indonesia**

2000-01: **Bangladesh, Cuba, Laos, Cambodia, Gambia, India, Nepal, Myanmar, Philippines, Sierra Leone, Sri Lanka, Thailand**

2002-03: **Benin, Guinea, Moz., Peru**

2004-05: **Senegal, Pakistan, Vietnam**

2006: **Burkina Faso, Bhutan, Iran, Iraq, Zambia**

2007: **Afghanistan, Brazil, Mali**

2008: **Rwanda, Costa Rica, Ecuador, Egypt, Ghana, Japan**

2009: **Malaysia, Timor Leste**

2010: **Kenya, DPRK, Panama, Haiti**

2011: **Colombia, Korea, Taiwan, Tanzania**

2012: **Burundi, Dominican Republic, Niger, Nigeria, Togo**

Courtesy: SRI-Rice Website

SPECIAL FOCUS

How Millions of Farmers are Advancing Agriculture for themselves

The world record yield for paddy rice production is not held by an agricultural research station or by a large-scale farmer from the United States, but by Sumant Kumar who has a farm of just two hectares in Darveshpura village in the state of Bihar in Northern India. His record yield of 22.4 tons per hectare, from a one-acre plot, was achieved with what is known as the System of Rice Intensification (SRI). To put his achievement in perspective, the average paddy yield worldwide is about 4 tons per hectare.

Even with the use of fertilizer, average yields are usually not more than 8 tons. Sumant Kumar's success was not a fluke. Four of his neighbors, using SRI methods, and all for the first time, matched or exceeded the previous world record from China, 19 tons per hectare.

Moreover, they used only modest amounts of inorganic fertilizer and did not need chemical crop protection.

Using SRI methods, smallholding farmers in many countries are starting to get higher yields and greater productivity from their land, labor, seeds, water and capital, with their crops showing more resilience to the hazards of climate change. The ideas and practices that constitute SRI were developed inductively in Madagascar some 30 years ago for rice. They are now being adapted to improve the productivity of a wide variety of other crops, starting with wheat, finger millet and sugarcane. Producing more output with fewer external inputs may sound improbable, but it derives from a shift in emphasis from improving plant genetic potential via plant breeding, to providing optimal environments for crop growth.



The adaptation of SRI experience and principles to other crops is being referred to generically as the System of Crop Intensification (SCI), encompassing variants for wheat (SWI), maize (SMI), finger millet (SFMI), sugarcane (SSI), mustard (rapeseed/canola)(another SMI), teff (STI), legumes such as pigeon peas, lentils and soya beans, and vegetables such as tomatoes, chillies and eggplant.

CONTRIBUTION & RESPONSES

Contribution and responses from SRI-India members during November-December 2012 were received from:

C Udayashankar * Bhaskar Jyoti Mahanta * Vivek Anand * Sharat Singh * Pramila Panda * Amrik Singh * G Karikalan * Amal Roy * Nemani Chandrasekhar * Shashi Kumar * Nandan Palaparambil * Beauty Debbarma * C V Shankar * Mumai Pheiga * Saikat Pal * Satyanarayana Mutyala * B Pandurangan * N Mahalingam * Bhola Man Singh Basnet * Norman Thomas Uphoff * Bhuban C Barah * Biksham Gujja * Rajendra Uprety * R V Ramamohan * Anibrata Biswas

ACKNOWLEDGEMENT

The cover page photograph of the current edition is a System of Rice Intensification (SRI) field from Punjab. The picture shows rice plants of a hybrid variety cultivated with SRI principles. Vermicompost, poultry manure and PSB application was done resulting in 300-350 grains per panicle. The photograph is from the Kharif 2012 season and was shared in the network by Dr Amrik Singh, Agriculture Development Officer, Gurdaspur, Punjab, India.

FEEDBACK

Suggestions and feedback towards improvement of further editions is solicited at:
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