

Up-scaling the System of Rice Intensification (SRI) in Ahero, West Kano, Bunyala and Mwea Irrigation Schemes

PROJECT ROLL-OUT

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Preamble

In May 2011, the National Irrigation Board (NIB) approved the implementation of a short-term project to facilitate expanded adoption of the System of Rice Intensification (SRI) in Kenya. The project targets all rice farmers in the Ahero, West Kano, Bunyala and Mwea Irrigation Schemes, as well as extension workers, irrigation engineers and other support agents.

The main focus of the project includes: capacity building, adaptive research and outreach activities. The project is being implemented by the NIB and the Jomo Kenyatta University of Agriculture and Technology (JKUAT). The Project Leader is Prof. Bancy M. Mati of JKUAT, works closely with the managers, staff and farmers of the four irrigation schemes, i.e., Ahero, West Kano, Bunyala, and Mwea.

Fiduciary oversight of the project is provided by the Manager of the Mwea Irrigation Agricultural Development (MIAD) Centre based in Mwea. Other collaborating partners include the Ministry of Water and Irrigation, Ministry of Agriculture, the Water Users Associations in the respective schemes, farmers, and development partners, especially the World Bank and the World Bank Institute. This is a short-term project for six months from June to December 2011

1.1 Background to SRI in Kenya

SRI was introduced in Kenya at the Mwea Irrigation Scheme through the collaborative efforts of Prof. Bancy Mati and Markus Moeller in July 2009. The two drew together some like-minded individuals to form a collaborative team comprised of staff from

- the Jomo Kenyatta University of Agriculture and Technology (JKUAT),
- the National Irrigation Board (NIB),
- the NIB's Mwea Irrigation Scheme, and its Mwea Irrigation Agricultural Development Centre (MIAD) located there,
- the African Institute for Capacity and Development (AICAD),
- IMAWESA, then a network of ICRISAT, funded by IFAD,
- the Ministry of Water and Irrigation (MWI),
- the Ministry of Agriculture (MoA),
- the World Bank office in Nairobi,
- the World Bank Institute (WBI) in Washington, DC,
- the Central Kenya Dry Areas Project,
- the Cornell International Institute for Food, Agriculture and Development (CIIFAD) in the USA, and
- farmers from the Mwea Irrigation Scheme interested in their own development.

Since then, NIB has played a pivotal role supporting SRI efforts by allowing use of its staff and research center at MIAD, and supporting SRI work through cost-sharing with JKUAT for the various training, research and outreach events. Kenya was the 37th country in the world to demonstrate and adopt SRI.

1.2 SRI has increased yields in Mwea, and many farmers are adopting!

A lot of progress has been made since SRI was introduced in Mwea, and impacts are beginning to show. Starting with just two farmer-adopters in August 2009, positive results and concerted training efforts have seen more farmers adopting the system. By July, over 300 rice farmers in Mwea had planted their rice by SRI method, and the number is growing every day.

The morale of SRI farmers is boosted by positive results, particularly higher yields. Using the August 2010-January 2011 results, farmers who planted by SRI methods obtained yields ranging from 6.0 to 8.5 t/ha compared to the 5.0-6.0 t/ha normally recorded in Mwea under conventional paddy practice, and this was for the low-yielding Basmati variety.

Moreover, farmers were pleased to note that SRI rice has better milling quality, with fewer broken grains of higher quality and stronger aroma, and selling faster than conventionally-grown paddy rice. Farmers have also noted that a bag of SRI rice is heavier, weighing 100-110 kg compared to the 85-90 kg for conventional rice. In effect, the average gain from SRI is about 4 bags (90 kg each) per acre (9 tons per hectare), and some farmers are getting up to 7 bags.

Also research at Mwea has recorded water savings, with water use being 25% less than under conventional flooded paddy. These results are all very encouraging, noting that many farmers were still learning and making mistakes, so the full potential of SRI methods has not yet been seen in Mwea.

Gross margin analysis of last season's data showed on average, SRI farmers earned a net income of KSh. 23,288 over and above what they would get with conventional paddy cultivation at farm-gate prices (based on paddy sales-not milled rice). This is equivalent to 31% increase on net incomes.

The much-feared extra labour required was not so much as farmers found they needed to weed their SRI rice three times compared to conventional two times. The added cost is well compensated by the higher income. Farmers have concluded that fewer workers are needed both for transplanting and weeding due to their planting in lines. The farmers did not use rotary weeders, as suitable implements were not available. When these become available, they will reduce farmers' weeding cost and improve yields substantively more.

1.3 Why expand SRI to other Rice-Growing Schemes in Kenya

Although the project has made efforts to popularize SRI in the country through organized open days, press outings for radio, TV and newspaper coverage and workshops, only a small number of government staff, NGOs, researchers, and private sector are yet aware of these opportunities. Indeed the majority of rice farmers, especially those from other schemes beyond Mwea are not aware.

Some farmers from Ahero Irrigation Scheme benefitted from training by some Indian and Japanese experts which was organized by the Mwea project team, but there were no follow-up activities to support farmers with testing and adoption. Thus, awareness creation, on-farm experimentation and capacity-building training are needed in all the major rice-growing schemes, i.e., West Kano, Bunyala and Ahero, and still in Mwea itself. There have been demands to extend SRI to the other rice-growing irrigation schemes in Kenya, so as to increase rice production and save water in all irrigation schemes. Since SRI is new, awareness-creation and capacity-uilding should be achieved within this outreach project.

2. PROJECT OBJECTIVES AND TARGET GROUPS (Expanding SRI in Kenya)

a) Main Objective

The main objective of this project is to enhance the knowledge and adoption of the System of Rice Intensification (SRI) to the major rice-growing irrigation schemes in Kenya.

b) Specific Objectives

- To create awareness on the utility of SRI methods among a wide cross-section of stakeholders (farmers, Government staff, NGOs, researchers, private sector).
- To build the capacity of farmers, extension workers, and other support agents on SRI, focusing on West Kano, Bunyala, Ahero and Mwea irrigation schemes.
- To enhance the policy support for SRI as one way to improve the productivity of rice while also saving water.

2.3 Project Areas

The project targets **four** irrigation schemes which are within the mandate of the NIB in Kenya and which grow rice, i.e. Mwea, Ahero, West Kano and Bunyala Irrigation Schemes.

2.4 Target Group/Beneficiaries

The project aims to benefit smallholder rice growers in existing irrigation schemes in Kenya and their support agents, mainly the irrigation engineers, technicians, extension staff, and policy-makers, as well as others (e.g., traders) who have a bearing on the rice sector.

The direct beneficiaries include at least 400 smallholder farmers (100 per target irrigation scheme) and at least 20 staff members from the respective schemes. Indirect beneficiaries include about 10,000 smallholder rice-growing households who will be targeted with SRI messages via extension messages, mass media, ICT, and by observations.

3. PROJECT ACTIVITIES

a) Development of training materials & awareness-creation activities

This has involved developing technical content for training materials and awareness-creation on SRI. Other activities have included: radio broadcasts (e.g., sponsored radio broadcasts), posters, fliers and pamphlets, which will be developed and distributed to each scheme and used for training and at workshops, and an international video conference will be held to expose new partners to SRI.

b) Training of Trainers

This involves training (theory and practice) of irrigation engineers/technicians, extension workers, and other support staff on SRI.

c) Demonstration training for farmers

This is conducted through field days, held within each of the seven schemes. Locally-trained staff will provide training supported by resource persons from project team.

d) Exposure tours

These involve bringing farmers and extension staff for exposure tours to Mwea to see and learn from the experiences of farmers and on-going research at MIAD.

e) Adaptive Research support

The project support one M.Sc. research student to collect comparative data from the four irrigation schemes and to assess scientifically the technical adaptability of SRI in each.

f) Technical backstopping

This project benefits from scientific inputs and technical backstopping by professionals from JKUAT, to gain from the experiences of the already established SRI efforts in Mwea. The project is supported with technical inputs in the preparation of training materials, capacity building, scientific research, and to bring in innovation and collaboration to the implementation. Also to help link this project to other initiatives and to knowledge emanating from regional and international levels.

g) National SRI Workshop

This will involve organizing a national SRI workshop involving all stakeholders, to promote SRI and also to share the results of this project.

4. SRI IS LAUNCHED IN WESTERN KENYA

The System of Rice Intensification (SRI) got off to a good start and was very well received by the farmers and NIB staff at Ahero, West Kano and Bunyala, during the recent launch held from 27 to 29th July, 2011. The three events were attended by over 750 participants in total. The farmers are very eager to adopt and try SRI for themselves and their enthusiasm was overwhelming.

Within the same week, radio adverts were broadcast in local vernacular languages on FM radio (Ramogi, Murembe and Inooro) urging farmers to adopt SRI. Thereafter, two SRI extension workers from Mwea remained to conduct practical SRI training in Ahero, Bunyala, and West Kano irrigation schemes, 30th July to 6th August 2011. This covered demonstrations of nursery preparation and transplanting, and it was well-attended in the three schemes. Meanwhile, there is great demand by farmers for training, and the biggest constraint is lack of trainers to support farmers' efforts on a day-to-day basis at the three irrigation schemes.

Timing is everything

The main rice season is the same in all four schemes and falls between July-December. At this time (July-August), farmers are preparing their paddies, tending nurseries and transplanting, based on water allocation time-tables. Thus, SRI must be fast-tracked so as not to miss the 2011 main rice season.

UP-COMING EVENTS

In the week of 8-13th August, we will be identifying local artisans based in Mwea who have a good workshop (locally called *jua kali*) to fabricate a small number of rotary weeders. The weeders are for distribution to farmers in the four schemes, to be used on trial basis. These weeders have been designed by Numerical Machines, a government-supported outfit which supports the development of small and medium enterprises (hence, Numerical Machines cannot fabricate the weeders itself). The design of these rotary weeders has been tested in Mwea with good results, but they have not been fabricated on a commercial scale before.

Between 22nd and 24th August, we will be holding SRI Training of Trainers (ToT) at the Mwea Irrigation Scheme. The ToT will be attended by extension workers and rice farmers

from Ahero, Bunyala, Mwea, and West Kano. It will involve classroom training, one field day held together with a large number of Mwea rice farmers, experience-sharing events, and a video conference. The video conference is supported by the World Bank Institute. The VC will be held in Nairobi on 24th August, linking Kenya with SRI experts from India, Philippines, USA (Washington DC) and Uganda. The video conference will have two sessions, one on SRI and the other on composting.

Meanwhile, the momentum of SRI is spreading in Kenya. It has triggered many other innovations. Watch this space!

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