

REPORT

ON

1 - DAY SENSITIZATION SEMINAR

FOR

SYSTEM OF RICE INTENSIFICATION

WHICH HELD ON

THURSDAY 22ND MARCH, 2007

AT

SMEDAN AKURE BUSINESS SUPPORT CENTRE

ORGANIZED BY:

COOPERATIVE ANIMISTIC WORKS SOCIETY (CAWS)

AND

**SMALL AND MEDIUM ENTERPRISES DEVELOPMENT AGENCY
(SMEDAN)**

Preamble

Rice farmers in Nigeria, as well as their counterparts the world over, reap very low return for their labour. In most favourable conditions, very low yields of about 1-3 tons/ha are achieved under the conventional methods of rice production. This is insufficient to provide for the basic needs of life and especially for food security, since most farmers have small landholdings, in most cases not exceeding 1 hectare.

Thus when we recently learnt about a new method for producing rice with different practices for plant, soil, water and nutrient management that has been successfully used in a number of countries in Asia, Europe, Africa and the Americas, we felt that rice farmers in Nigeria may as well benefit. Hence we decided to promote this method among them, which produces substantially more rice grains while planting far fewer seedlings and using less inputs than either traditional methods, i.e., it uses less water, or more 'modern' methods, no reliance on chemical fertilizer or agrochemicals.

System of Rice Intensification (SRI)

SRI involves the use of certain management practices which together produce better growing conditions for rice plants, particularly in their root zone, than those in which rice plants are grown under traditional practices. SRI was developed in Madagascar in the early 1980s by Father Henri de Laulanié, a Jesuit priest who spent over 30 years in that country working with farmers. In 1990, Association Tefy Saina (ATS), (www.tefysaina.org) was formed as a Malagasy NGO to promote SRI. Four years later, the Cornell International Institute for Food, Agriculture and Development (CIIFAD) (see <http://ciifad.cornell.edu/sri/>) began cooperating with Tefy Saina to introduce SRI around the Ranomafana National Park in eastern Madagascar, supported by the U.S. Agency for International Development. SRI had since been tested in China, India, Indonesia, the Philippines, Sri Lanka, Bangladesh and even Sierra Leone, Gambia and Zambia with positive results.

The results with SRI methods are remarkable. In Madagascar, on some of the poorest soil, where yields of 2 tons/hectare were the norm around Ranomafana, farmers using

SRI are now averaging 8 tons/hectare, with some getting 10 to 15 tons/hectare. A few farmers have even gotten over 20 tons/hectare. In other parts of the country, over a five-year period, hundreds of farmers averaged 8 to 9 tons/hectare. The national SRI average is over 6 tons/hectare, according to the Minister of Agriculture.

SRI methods have often doubled the yields of any variety of rice with which they have been used. External inputs are not necessary for a farmer to benefit from SRI. The methods should work with any seeds that are now being used.

Collaboration

In our attempt to make Nigeria benefit from this methods growing rice, our NGO needed to partner with Small & Medium Enterprises Development Agency of Nigeria (SMEDAN) (www.smedan.gov.ng) to organize a 1-day sensitization seminar for farmers. Ondo State Farmers Congress will sponsor a demonstration farm of 1 hectare to serve as a farmer field school to further help the farmers absorb this idea. The sensitization seminar sponsored by SMEDAN at Akure Business Support Centre was held on Thursday, 22nd May, 2007.

Attendance:

Farmers	27
SMEDAN staff	5
CAWS staff	3

Resource Persons:

1. Dr. S.A. Olusuyi, former Commissioner for Agriculture in Ondo State, delivered a speech on “Perspective for Rice Production in Ondo State.” (Appendix 1).
2. Mr. Charles Adeyemi, SRI Coordinator for CAWS, delivered a speech on “Introduction to SRI” (Appendix 2).
3. Engr. Adebayo Olowu delivered the training based on:

- 1). A publication titled “System of Rice Intensification: An Emerging Alternative” (2006) published on web page of the Indian NGOs Watershed Support Services & Activities Network (WASSAN) (www.wassan.org) and Centre for Sustainable Agriculture (CSA) with the support of WWW-ICRISAT Dialogue Project, and
- 2). Powerpoint draft report on the Esek Farmers Cooperative Society of Zambia.

All the farmers were given a copy each of “A Guide for Farmers Starting to Use the System of Rice Intensification” (SRIGUIDEBOOK-MM[1] and “Operationalizing the System of Rice Intensification (SRI-HOW2%20revised%201-1-07[1].

Agreements

The participating farmers resolved and agreed on the following:

1. In order to provide an avenue for further interaction for learning this new methodology, that an **SRI Farmers Association** be formed which would work closely with the Cooperative Animistic Works Society (CAWS) to promote this novel and laudable way of growing rice.
2. That each farmer would cultivate at least a plot to SRI wherein they would develop the necessary acquaintance with the method.
3. That Agric Extension Officers be trained also in the new method of growing rice and so spread the news to farmers.
4. That other farmers in Nigeria be made to know of this method of raising rice. CAWS should seek the support of SMEDAN to make the promotion of SRI a national programme.
5. That since SRI had been adapted to planting of cotton and sugarcane, CAWS may also try to publicize this so that more commodities may benefit from this methodology.
6. That the farmers in Ilaje & Ese Odo Local Govt. of the State must be taught in the techniques for raising fishes and shrimps in ‘flooded’ rice fields.
7. That Govt. should open rural roads & construct jetties in the riverine areas to make rice fields more accessible. Bush clearing should also be carried out in

locations where there can be large rice farms or cluster rice farmers. This will reduce the cost of protecting rice from pests such as rodents (cane rats) and migrating birds.

8. That machines appropriate for mechanized land preparation, application of agrochemicals, harvesting creepers, and processing (threshing & dryers) be provided. It should be noted, however, that crawler tractors & rotavators required in wetlands be included.
9. That facility for producing more than 2 crops per annum such as irrigation facilities and artificial dryers must be provided.
10. Research and studies should be carried out to determine the best time for planting rice in different locations to avoid flood & salinity conditions of different areas for the purpose of determining the best varieties to be planted.
11. That while all the above is being fulfilled, and these ultimately lead to abundance of rice in the state.
 - (a) Rice farmers' cooperative society must work together to pursue and set in motion such machineries as would make processing & marketing viable.
 - (b) Local fabricators may help in making some of these machineries (tillers, weeders, etc.) available at low cost if they are encouraged.
12. We must package ourselves in such a way as would make Government & Agencies listen to our pleas and respond adequately.

Aftermath.

- A report of the proceedings at the seminar was sent to Professor Norman Uphoff (ntul@cornell.edu) who promised that this meeting would be mentioned in the SRI Update, an electronic journal put out from Cornell University that reports on progress made in SRI worldwide.
- SRI Farmers Association selected a steering committee to guide their affairs. It also received donations of 50kg each of FARO 52 and NERICA 1 rice varieties for farmers who might wish to try them out.

- The Director General of SMEDAN had been approached to seek her consent and approval that SRI methods be adopted as a National Programme.
- Chairman of Ondo State Rice Farmers Association, Pastor Frances Ailemhe, has agreed to work hand in hand with Cooperative Animistic Works Society to promote SRI. He has thus become included in the steering committee for SRI Farmers Association.

PERSPECTIVE FOR RICE PRODUCTION IN ONDO STATE

A SPEECH DELIVERED BY DR. S.A. OLUSUYI ON THE OCCASION OF 1-DAY SENSITIZATION SEMINAR FOR SRI

The increasing preference for rice in the diet of Nigeria is attested to by the ever-rising import bill of rice by Nigeria, which has now exceeded N8 Billion per annum. Ondo State is one of the states in the South West zone of Nigeria, which is producing the least quantities of rice. This zone, being more mechanized than other zones of the country, also consumed more of imported rice, because urbanization is one of the major reasons for the shift from traditional foods to mainly rice.

Ondo State is, therefore, one of the states unnecessarily wasting her resources on rice importation, since this state has one of the highest potentials for producing rice. All of the agro-ecologies suitable for rice production -- a) Rainfed upland, b) Rain fed lowland, c) Irrigated lowland, d) Mangrove swamps, and e) Floating rice -- are available in the State.

Ondo State is particularly rich in land for lowland and irrigated rice production. These two ecologies are preferred for high yield of the higher quality, long-grained rice that we are spending billions of Naira to import. A study commissioned by Ondo State Ministry of Agriculture in 1992 (Boboye, Fagede and Ajayi, 1993) showed that Ondo State has over 80,000 hectares for lowland rice, spread over the state, but the bulk (over 30,000 ha) is available in Ilaje and Ese Odo Local Government Areas of Ondo State.

Most of these lands, which are water-logged during the rainy season, are currently underutilized because lowland rice and sugarcane, which can be grown in these areas during the wet season, are not grown.

Among the many problems which must be tackled to enable the state utilise these vast potentials to bring the State to a leading position for rice production in the country are the following: -

- 1) Ignorance in the art of rice production. The culture of lowland rice production is new to many indigenes of Ondo State. Even the extension officers are yet to receive adequate training in lowland rice production. Farmers in the riverine areas where we have the highest potentials for rice production are mainly fishermen. The need for training agriculture extension officers and farmers on the art of rice production cannot be overemphasized. Farmers in the Ilaje and Ese Odo Local Government Areas must be taught the technique for raising fishes and shrimps in ‘flooded’ rice fields, as is being practised in advanced rice-producing countries. Introducing dry season vegetable production to rice farmers will be another programme which should be carried out to increase the competitiveness of our rice farmers in rice production.
2. While there is abundant land for rice production, most of these lands are not accessible and have not been developed to facilitate mechanization and subsequent large rice farms. Government needs to open up rural roads and to construct jetties (in the riverine area) to make rice fields accessible. Bush clearing should be carried out in locations where there can be large rice farms or cluster rice farmers. This will reduce the cost of protecting rice from pests such as rodents (cane rats) and migratory birds.
3. Machines for mechanized land preparation, application of agrochemicals, harvesting creepers, and processing (threshing & dryers) must be provided. Most of the conventional land preparation equipment (tractors) cannot enter rice land during the planting of lowland rice in June/July because of the waterlogged soil. Crawler tractors and rotavators required must be provided.
4. Facilities required for producing more than 2 crops per annum, such as irrigation facilities and artificial dryers, must be provided
5. Among the problems which must be solved, to overcome the problem of marketing for locally-produced rice, is provision of rice-processing equipment such as hullers, polishers and particularly destoners.
6. There is little or no research yet in rice production in the riverine areas of the state. We need information:

- (i) On the best time for planting rice at different locations in the area to avoid flood.
- (ii) The salinity condition of the different areas for the purpose of determining the best varieties to plant.

The training course being offered today is therefore an important contribution for making Ondo State a major rice-producing state in Nigeria.

INTRODUCTION TO SRI

A SPEECH DELIVERED BY MR. CHARLES ADEYEMI (SRI COORDINATOR FOR CAWS) ON THE OCCASION OF 1-DAY SENSITIZATION SEMINAR ON SYSTEM OF RICE INTENSIFICATION.

Co-operative Animistic Works Society (CAWS) is an NGO started by a group of research-minded individual farmers here in Akure to promote the practice of healthy farming methods that will enhance productivity through enhanced and conscious cooperation between man and the animistic forces of nature.

As part of our mandate, we seek sustainable agricultural practices, to disseminate them & promote their adoption by the rural populace for purposes of development. Internet based research led us to the discovery of a new system for raising rice that is capable of multiplying farmers' yield by up to three times over the conventional practice. This new method is called the System of Rice Intensification.

History of SRI.

System of Rice Intensification was developed in Madagascar in the early 1980s by Fr. Henrie Laulainié, a Jesuit priest who spent over 30 years in that country working with farmers. In 1980, Association Tefy Saina (ATS) was formed as a Malagasy NGO to promote SRI. Four years later, the Comell International Institute for Food & Agriculture and Development (CIIFAD) began cooperating with Tefy Saina to introduce SRI around the Ranomafana National Park in eastern Madagascar, supported by the USAID. It has since been tested in China, India, Indonesia, the Philippines, Sri Lanka, Bangladesh, Guinea, Gambia, Sierra Leone and Zambia with positive results.

One of the first farmers to make use of SRI methods was Honoré Randrianasara in Madagascar, who started working with Tefy Saina in 1994/95 season, planting just 25 ares

(0.25 ha) using SRI methods. He got a yield of 9.5t/ha the first year, compared to his previous yield of 2-3tons/ha. The next year he expanded his use of SRI area to 1.25 hectares and got 10.95 tons/ha, which encouraged him to expand further his use of SRI methods to 2 ha and then 4 ha with, getting still higher yields (12.7 and 13.7 tons/ha).

In 1998-1999, he planted 5 ha, but his yields were around 7 tons/ha because the season was bad for all farmers in that region. In 1999-2000, Honore planted 8 ha with SRI, and by this time, his economic situation had improved enough to buy 9 ha of paddy land (he started with rented land) and three houses, one of them in the regional capital of Fianarantsoa. Not ALL farmers can be this successful or able to manage such large extents with this method, but Honoré has shown the potential that SRI has to improve farmers' lives.

The Typical Rice Farmer in Ondo State.

The typical farmer here struggles to cultivate about 1 ha of farmland. His yield is 50 – 60 bags, which translates to 2000 to 3000 kg, or 2-3 tons/ha. He sells grain back to ADP, keeps some for himself as seed, eats up all the money he gets from ADP, and finally he reverts back to the labour force. This he does for the intervening period of time until it is time to start rice farming again, and the process continues. He actually has no control over his life, and he and his family have no food security.

The results with SRI methods are remarkable. SRI methods have often at least doubled the yield of any variety of rice which has been tried. No external inputs are necessary for a farmer to benefit from SRI. The methods should work with any seeds that are now being used because the SRI strategy is to make the growing environment for rice more favorable.

However, you need to have an open mind about new methods and a willingness to experiment. With SRI, plants are treated as the living organisms that they are, rather than as

little machines to be manipulated. The potentials within the plants are drawn out by giving them the best possible conditions for their growth.

There are four major components to SRI practice. But some two other practices are extremely beneficial when using SRI.

1. Seedlings are transplanted early – when they are 8 to 15 days old when only the first 2 leaves have emerged from the initial tiller or stalk.
2. Seedlings are planted singly, rather than in clumps so the roots and canopy have room to grow.
3. Wide spacing of at least 25cm is maintained between plants in all directions (planting in a grid pattern 25 cm x 25 cm). Feel free to experiment -- the maximum yield has been obtained on excellent soil with 50cm x 50cm spacing, i.e., just four plants per square meter. This was in the farmer's sixth year with these methods, and his soil fertility had been greatly built up.
4. Moist but unflooded (unsaturated) soil condition. Whereas rice can tolerate standing water, it is however not ideal for rice as flooding creates hypoxic soil conditions, which can kill 75% of the plant's roots by the time it reaches the flowering stage.
5. Weeding: When fields are unflooded, there are potentially more weeds, but they can be controlled with mechanical weeding that has the added benefit of getting more air into the soil, which results in greater root growth and more soil organisms that provide various services to the plant. This gives the rest of the plant more access to nutrients. The first weeding should be done 10-12 days after transplanting, and the second weeding within 2 weeks. At least 3 weedings are recommended, but another one or two can significantly increase the yield, even adding 1 to 2 tons per hectare.
6. Organic inputs: SRI was developed initially with chemical fertilizers to increase yield on the very poor soil of Madagascar. But when subsidies were removed in the late

80's, recommendations switched to use of compost, and even better results were observed.

Observations

When all the different components of SRI are used together, the structure and functioning of the rice plant differs from what is obtained with traditional practices. They have more tillers, more roots develop, and there are more grains per panicle.

But SRI may require more labour than traditional methods of growing rice, at least in the beginning when the methods are being mastered. Some areas of consideration would be:

- i) Transplanting the tiny seedlings with fairly exact spacing and shallow depth of planting (just 1-2 cm) takes more time than just sticking clumps into the soil; however, once planting techniques are learned, because so many fewer plants are required (80-90% less), the time spent in transplanting can be reduced below current practice..
- ii) More time is spent on applying water carefully than when fields are just kept flooded all the time.
- iii) There might be some need to reconstruct fields before initiating SRI production systems, to ensure good drainage and to have very level plots so that water control is better.

Weeding takes more time if there is no standing water, but soil aeration resulting from weeding increases productivity by more than the cost of additional labour. At first, SRI can take 50% more labour, but over time, this amount is reduced. Experienced SRI farmers say that it requires less labour once techniques are mastered and confidence is gained. Since yield can be 2, 3, and even 4 times more than with correct practices, the return to both labour and to land are much higher, justifying the greater investment of labour

Is SRI sustainable?

Scientists are not certain, and many are very skeptical, about how such high yields can be obtained on such poor soil as that found in Madagascar. Fortunately SRI methods have been found to produce much-improved yields in other countries, so we know that it is not a methodology limited to one country.

Much more remains to be studied about and learned from SRI, but scientists are starting to take an interest in it as reports of superior yield increases accumulated from so many places. SRI should not be seen as a technology to be applied mechanistically, but rather as a methodology to be tested and adopted to farmers' conditions. Farmers need to be good observers and good learners to make the best use of the insights that SRI provides.

Field Training

Arrangements have been made with the Farmers' Congress to have a field demonstration of SRI here in Akure, and in another 90 days from now, i.e in 3 months, we shall invite you once more to come and see for yourselves the practicality of SRI in Ondo State, which will be the first SRI attempt in Nigeria.

On that note ladies and gentlemen, I welcome you to today's rather historic proceeding. We hope you will all benefit immensely from it. Good Morning.