Improving and Scaling up the System of Rice Intensification in West Africa

SRI-Rice Trip Report
03-05 March 2014
Republic of Benin

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1. Introduction

This trip report covers a technical support trip by Devon Jenkins to central Benin in early March 2014. SRI-Rice representatives are responsible for traveling to each of the 13 participating project countries during the first phase of the project. This support visit was combined with travel to Benin for a project workshop in Porto Novo on February 17th-19th, and another support trip to southern Togo on 05-08 March 2014.

2. Background and Planning

2.1 Objectives

The general objective was to learn about SRI field activities in Benin in order to better inform our technical support to local partners. The specific objectives were to visit with farmers, field technicians and training staff; to observe local conditions; to discuss training strategies; to learn about past activities and future plans; and to provide direct feedback to technical partners and farmers about current and previous SRI trials.

2.2 Expected Results

To develop a better understanding of farmer conditions, farmer experiences with SRI, and the level of SRI adoption in parts of Benin. To become better acquainted with WAAPP Benin staff and partners.

2.3 Trip Itinerary

<table>
<thead>
<tr>
<th>Date</th>
<th>Locations</th>
<th>Activities</th>
<th>People</th>
<th>Notes</th>
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<tbody>
<tr>
<td>Monday</td>
<td>Cotonou, Kakanitchoué (Adjo, Ouémé) Parakou</td>
<td>• Travel from Cotonou to Parakou via Kakanitchoué • Field visit in Kakanitchoué • Initial meeting with DEDRAS</td>
<td>Pascal GBENOU (CCR-B, SAIN Farm School) Kayodé Raoul BALOGOUN (DEDRAS)</td>
<td>Field visit notes (3.1) for details of the field visit to Kakanitchoué Mme Osseni interviewed Raoul BALOGOUN, and both SRI-Rice and ProCAD have copies of the video</td>
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<td>3/3/14</td>
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<td>Tuesday</td>
<td>Parakou, Kpassa (Tchaourou, Borgou) Koroborou (Tchaourou, Borgou) Boukoussera (Tchaourou, Borgou)</td>
<td>• Field visits in Kpassa, Koroborou, and Boukoussera • Meetings with DEDRAS technicians/trainers</td>
<td>Farmers in each village DEDRAS technicians/trainers CARDERE technicians</td>
<td>ProCAD and SRI-Rice have copies of interviews with DEDRAS technicians and farmers</td>
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<td>4/3/14</td>
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<td>Wednesday</td>
<td>Parakou, Cotonou</td>
<td>• Travel back from Parakou to Cotonou</td>
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<td>5/3/14</td>
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2.4 Participants

Participants included Devon JENKINS (SRI-Rice), Mme Sofiath Osseni (Communications Director, ProCAD/WAAPP Benin), Antonin AKIYOKO (Consultant/SRI Trainer, DEDRAS), Lionel AYEDEGUE (Consultant/SRI Trainer, CARDERE), and a videographer for ProCAD/WAAPP Benin. The ProCAD team interviewed farmers, technicians and partner organization staff, and participated in technical interviews and discussions with farmers.
2.5 Background

Between June and August 2013 two organizations held the first large regional trainings SRI training in Central and Northern Benin. DEDRAS, a Christian NGO working in Northern Benin, conducted trainings for 160 farmers and six technicians in Banikoara, N’Dali and Parakou; CARDERE, the agricultural extension service of the Gov. of Benin, conducted trainings for 100 farmers in Tchaourou and Parakou.

Central and Northern Benin are transitional zones from the more humid parts of Southern Benin to the semi-arid, Sahelian environment that dominates in the far north and into neighboring Niger and Burkina Faso. Central and Northern Benin have a mono-modal rainy season, lasting from April-June until September-November, in contrast the bimodal rainy seasons in Southern Benin.

Farmer trials conducted during the rainy season in 2013 were hampered by extremely poor rains, which started late and were inconsistent throughout the season. Farmers in rain-fed upland conditions, especially in the Banikoara region, had near total crop failures, both for SRI trial plots and their traditional fields. Those farming in lowland valleys or depressions, where water was more accessible, had better yields, and SRI plots performed well. Rains in Central Benin were better, but still very poor.

3. Site Visits

3.1 Kackanitchoué – 10km northeast of Adjohoun – Farm/school and training site for CCR-B

Pascal Gbenou’s farm/school SAIN was the first SRI site in Benin, after Pascal GBENOU began conducting trials upon returning from a training in Madagascar. As president of CCR-B, Pascal has brought scores of farmers to his farm for short SRI trainings, in addition to hosting and leading SRI trainings for Peace Corps West Africa. During this visit we saw field trials he had setup in collaboration with Cyriaque Akakpo (INRAB, WAAPP SRI Focal Point for Benin) of five of the most commonly promoted varieties of rice in Benin, grown in multiple treatments of SRI and conventional production. The plots were close to harvesting, with SRI plots set to be harvested within one week’s time, and the conventional plots in 2-3 weeks time (demonstrating the quicker maturity caused by SRI). All plots were randomly staggered across a uniform strip of land, and sown on the same date.

3.2 Kpassa – 15km east of Parakou – Trained by CARDERE in 2013

Visited with a group of farmers in town, discussing their experiences with SRI, then went with two of the farmers, Odile (female) and Martin (male) to visit Odile’s field (see figures 2 and 3, next page), which was immediately adjacent to a small seasonal pond. The soil here, and throughout the entire region, is low in organic matter with a high clay content, and during this dry time of year was as hard as concrete, showing deep hoof prints and markings clearly from last year’s season. Both farmers said their results with SRI
were terrific, but that they had encountered some difficulties:

1. No tractor for field preparation (this is a general constraint, not specifically a problem with SRI)

2. Lack of familiarity using organic matter or composting – transhumance is very common in this area, so animal manure is pretty readily available, though farmers gave conflicting accounts of how easy it would be to collect it. Farmers currently burn their fields each year to remove weeds and make the fields look tidy, destroying some of their potential organic matter.

3. Availability of labor, for everything. Transplanting and weeding took lots of time, and this is a constraint to greater SRI adoption. All weeding was done by hand hoe, with no mechanical weeder available at the moment. A mechanical weeder would greatly facilitate increased adoption of SRI.

Pictures on the previous page illustrate Odile’s field during the rainy and dry seasons. Note the seasonal pond in back/lef, and the increased growth and levels of crop residue in the SRI plot. Odile’s SRI plot yielded 5.5 t/ha, compared to a conventional 1.5 t/ha.

3.3 Koroborou – 5km east of Parakou – Trained by DEDRAS in 2013

Visited with Sharifa, the DEDRAS trainer for this village, and a group of farmers to talk about their experience with SRI, their impressions, and their plans for the coming season. One farmer, Attalane Issifou, talked about his experiences the previous season. On a roughly 100 m² SRI demonstration plot he harvested approximately 150 kg of rice, for an estimated yield of 10 t/ha (due to the small size of the plot, and the lack of precise measurement, there is a large margin of error), versus 1.5 t on his half hectare traditional plot (3 t/ha). He used chemical fertilizer, due to a lack of time to collect animal manure in advance, but said he’ll use organic matter next time, and that with the abundance of transhumance Fulani herding, collecting manure wouldn’t be a big problem. He also transplanted, but due to late rains, had to redo the nursery several times. His biggest challenges were labor, transplanting, weeding and water control. He saw a pictures/videos of a rotary weeder, and believes this would help him greatly.

Attalane was very impressed with SRI and said that he planned to increase the amount of area under SRI next year, including introducing it into the large seasonal flood area adjacent to the village (see figure 4, next page). His existing plot, however, is remote, and we weren’t able to visit it.
3.4 Boukoussera – Between Parakou and Tchaourou – Trained by DEDRAS in 2013

Boukoussera is a sedentary Fulani village, with active involvement from ProCAD (WAAPP Benin coordinating organization), DEDRAS, and other NGOs. Several villagers were trained in 2013 by CARDERE and DEDRAS, and around the same time two of these villagers were trained as well by CCR-B at Pascal Gbenou’s farm in Kakanitchoué. SRI-trained farmers installed 100 m$^2$ demonstration plots, using transplanting at the two-leaf stage, seed selection using salt water brine, use of organic matter (primarily cow manure), and weeding by hand using small hoes. Fields were both improved and unimproved bas-fonds.

One farmer, who had attended both the CARDERE training and the Kakanitchoué trainings, showed us his fields. His SRI-trial yielded 75 kg for a 100 m$^2$ plot (7.5 t/ha), well above the traditional average of 2-3 t/ha. Access to organic matter is reportedly very high, owing to the fact that cows are abundant.

During the whole group meeting, many farmers voiced concerns about the soil, saying that each year it becomes harder and harder. As with the other two villages visited in the Parakou region, they expressed a desire for a tractor, saying that soil preparation now is too difficult without one, regardless of the crop or methodology (SRI/conventional). It sounds like argillic soils, excessive plowing/soil working, and low levels of organic matter are at least partly to blame for this situation.

Conservation Agriculture (CA) would be an obvious method to explore to help reverse this situation. I introduced the idea briefly, and they were interested, but skeptical. Their skepticism revolved primarily around the issue of weed control, so any trials would need to incorporate this from the beginning.
4. Commentary

4.1 Future Steps

DEDRAS expressed interest in working with farmers on CA, as well as developing a weeder program, and training farmers in compost production. Antonin AKIYOKO (the consultant who led the SRI trainings for DEDRAS in 2013) and Lionel AYEDEGUE (the consultant who led the SRI trainings for CARDERE in 2013) have submitted a proposal with a female colleague under the auspices of DéDESC for a follow-up project that would work in the Tchaourou and Bembèrèkè Communes (just north of Parakou) in 2014. If funded, this 10-month project would introduce SRI to the Bembèrèkè Commune, while continuing to train new farmers in the Tchaourou Commune, and would work in both communes to conduct compost fabrication trainings.

4.2 Observations and Conclusions

Central and Northern Benin have made a promising start with SRI, but face serious challenges to increased adoption. In the general Parakou region the hard soils need to be addressed. In the short term this could be with greater access to mechanization for land preparation, but this will likely only delay and eventually exacerbate the problem, so a program to test SRI in conjunction with Conservation Agriculture could be a big boost for farmers throughout the area if successful. Compost is another factor that needs to be addressed, and support should be provided to NGOs and the GoB’s extension services (CARDERE) to facilitate compost trainings. Mechanization is also an issue, and many farmers expressed a desire to increase their SRI trials beyond small demo plots, but without tools like rotary weeder it is unlikely that most farmers will be able to adopt SRI as their predominant method of rice cultivation. A clear majority of the areas in Northern Benin are rainfed, with the notable exception of the Niger River areas near Malanville. Adaptation for these systems will require some extra support, testing and direct communication with farmers. Technicians in the area had been advising farmers to transplant, as per standard SRI technique, but for a majority of farmers in these regions this may not be the most appropriate technique, and trainers/technicians should be encouraged to teach farmers to experiment freely.

Lastly, Parakou is quite different from Northern Benin, and further support will be needed in the Banikoara region to assist DEDRAS in helping farmers there adapt SRI. Approximately 100 farmers there were trained last year, and due to extreme difficulties with weather, many had poor experiences with SRI. A support trip to Banikoara is recommended for the near future.