

Final Report
Grant to 3A - Sahel from SRI Global Inc.,
with support from the Bridging Peace Fund

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(Translated from the original French and edited for concision and brevity.)

This is the final report from 3A-Sahel project for large-scale dissemination of SRI from May 2014 through January 2015 in the villages of Deri, Kokoro, Koundioume, Sobbo, N'Dempaba, Sarefere Mirgna, and Dountenza in the Djaptodj, and Douentza communes, in the zone of Douentza, Mali.

This is the third grant that 3A-Sahel has received through SRI Global. The first was to introduce SRI in ten villages in the region (2012-2013), and the second to introduce SRI to six villages and to scale-up SRI in seven other villages, where it had already been introduced (2013-2014).

Project Objectives

- Global Objective:
 - Contribute to increased rice production in the area through the introduction of SRI.
- Specific objectives:
 - Promote SRI technology across all project sites.
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 - Raise awareness about SRI among village leaders, government officials, and agricultural cooperative members to promote active farmer participation.
 - Strengthen farmers' and extension agents' capacity to implement SRI practices.

Targeted farmers

In each village, 3A-Sahel planned to work intensively with 5 farmers, each one cultivating a minimum of .25 hectares (.62 acres) with rice using the SRI methodology. Thus, in total, there would be 35 farmers growing rice on at least 8.75 hectares (21.62 acres).

Technical Assistance Team

In addition to project manager Hamidou Guindou, there were four agricultural extension agents hired directly by 3A-Sahel, supplemented by the efforts of two agents seconded from the government agricultural extension service.

Start-up Activities

Technical Assistance Team

Initial training focused on the agronomy of SRI, on data collection, and methods of working with farmers. Government extension agents shared their experiences from working with 3A-Sahel in previous years. Data collection forms were distributed to the team members.

Farmers

3A-Sahel trained 166 farmers (151 men and 15 women) in the seven project villages using a laptop computer and video projector (for videos and photos) and other visual aids. Much time was given over to discussions with farmers who had done SRI previously, as well as discussions with members of the technical assistance team. Farmers and extension agents worked out a tentative calendar for the project.

Operations

Preparation

Farmers collected adequate animal manure to fertilize their plots and applied it to the soil. It was agreed that farmers would set up their plots and wait for arrival of the annual flooding before installing the rice seedling nurseries. Farmers also took measures to protect the nurseries from being damaged by wandering livestock.

Nursery installation

With assistance from experienced SRI farmers, SRI nurseries were set up and maintained according to standard SRI techniques. Conventional nurseries, following the traditional farmer practices, were set up adjacent to them. In Sobbo village, nurseries had to be installed a second time after the first attempt was greatly damaged by a heavy rain.

Fertilizing, wetting, and leveling the plots

Most farmers used manure from small livestock (goats, sheep, donkeys) rather than from cattle, as the former is generally more available. In most villages, manure was worked into the soil using traditional hand hoes, although a tractor was used in Douentza town, where one is available. Water was either pumped into the plots, where pumps are in use, or farmers would work the earth after a rain. Plots were leveled using a long, straight board. As these operations require a certain amount of labor, in some villages extra workers were hired to help out.

Transplanting, weeding, and irrigation

As transplanting requires a fair amount of labor in a short period of time, farmers helped each other to transplant the rice seedlings, although there was some delay due to lack of available workers. For weeding, farmers used the mechanical cono-weeders two to four times during the season. SRI irrigation protocols were generally followed, and farmers were able to organize the irrigation schedule in their

commonly-managed irrigation schemes. In certain instances, heavy rains or pump failure made it difficult to control water correctly, and two villages, Sobbo and N'Dempaba, suffered a slightly prolonged period without irrigation due to pump mechanical problems.

Participation and hectares planted: planned vs. actual

Village	Volunteer farmers		Hectares under SRI	
	<i>planned</i>	<i>actual</i>	<i>planned</i>	<i>actual</i>
Douentza	5	7	1.25	1.75
Sobbo	5	6	1.25	1.5
Kokoro	5	4	1.25	1
Deri	5	6	1.25	1.5
N'Dempaba	5	5	1.25	1.25
Sarefere Mirgna	5	6	1.25	1.5
Koundioume	5	6	1.25	1.5
Totals	35	40	8.75	10

As seen in the table above, the number of farmers participating in scaling-up SRI exceeded initial plans. As each farmer worked a plot of .25 hectares, the amount of land cultivated under SRI increased by the same proportion.

Contingent SRI agriculture in the area

Although it was not possible to hire sufficient staff to provide full technical support to all farmers in the area where SRI had been introduced previously, many farmers in these other villages continued to do SRI on their own. Informally, nearby project technical staff were able offer them some assistance and assure that that these farmers continued to implement SRI correctly. This table details the additional SRI carried out in the area, in addition to the formal project activities.

Commune	Village	Number of hectares	Number of farmers
Douentza	Douentza	2	4
	Sobbo	3	12
	Kokoro	1	4
Djaptodji	Deri	0.5	1
	N'Dempaba	2	8
	Sarefere Mirgna	3	6
	Koundioume	3.25	13
	Batouma	1.5	6
	Amba	1.25	5
Danglo Bore	Bore	2.75	4
	Falembougou	2	2
	Manko	1	4
	Kiro	0.5	2
Totals		23.75	71

Exchange visits

Exchange visits between farmers in the different areas were organized during the month of September. Farmers from all the project villages were joined by farmers from several surrounding villages to observe the progress of the SRI plots, to discuss their experiences, and encourage other farmers to try SRI. It should be noted that several farmers who had not been formally invited turned up anyway, curious to see SRI in action and to hear about others' experiences. A total of 31 farmers (including three women) from 13 villages attended the visit, joined by the six field agents and the project leader.

Net yields by village

As in past years, the project measured comparative yields between SRI and the traditional farmer practice. The table below details the results. Following standard agronomic practice, sample measurements were taken from plots of one square meter each and located randomly across the larger fields, then controlled for consistent moisture content of 14%. Results of these precise measures are then extrapolated to metric tons per hectare.

Site	Rice variety	No. of squares sampled	SRI yield mt/ha	Farmer practice yield mt/ha	difference	Percentage difference
Deri	Ganbiaka	60	10.1	6.2	3.9	62.90%
Kokoro	Local variety	40	7.56	3.88	3.68	94.85%
N'Dempaba	Kogoni	50	8.8	6	2.8	46.67%
Douentza	BKN	70	9.4	5.21	4.19	80.42%
Sobbo	Nerica L2	60	8.84	5.13	3.71	72.32%
Koundioume	Nerica L2	60	8.4	5.7	2.7	47.37%
Sarefere Mirgna	Kogoni	60	8.37	5.47	2.9	53.02%
Average			8.78	5.37	3.31	63.36%

Summary of results

These activities allowed rice farmers in the area to learn about and appreciate SRI, including an average yield increase of 63.36% over the usual farmer practice. 166 farmers received some formal SRI training, and 40 farmers growing rice on 10 hectares were intensely trained and supported by the technical staff. In addition, 71 farmers used SRI techniques to grow rice on 23.75 hectares, with only minimal technical support.

Difficulties

As mentioned above, the diesel pumps used for irrigation in the villages of Sobbo and N'Dempaba were out of service for a time, so yields may have been lower there than otherwise. Also, the annual flooding of the arms of the Niger River came late to Koundioume and Sarefere Mirgna, causing a delay in planting.

Conclusions

The project:

- increased rice production for the participating farmers;
- farmers mastered use of SRI techniques on a larger scale;
- increased production leads to better food security in a chronically food insecure area;
- reinforced social cohesion; farmers across different villages cooperate to learn new techniques and help each other, to the benefit of all