

REPORT FROM VISIT TO CARE/BANGLADESH AND FIELD VISIT WITH ITS LIFE PROJECT, NOVEMBER 29, 2000

Reached CARE offices at 8:15, met with Gopal Chowhan, project coordinator for LIFE (Locally Intensified Farming Enterprises), and Peter Bezkorowajnyi, LIFE advisor, then joined by Mian Sayeed Hassan, senior scientific officer, Bangladesh Rice Research Institute (BRRI), based at BRRI's regional station at Comilla. Then met Michael DeVries, sector coordinator for Agriculture and Natural Resources (ANR) sector; and Marco Barzman, project coordinator, New Options for Pest Management (NO-PEST). Gave seminar at 9:00 for about 20 CARE staff, joined by several BRAC agricultural staff. Discussion went until 11:00; met Dr. M. C. Nandeesh, GOLDA project coordinator, whose staff are also testing SRI. Drove with staff to Kishoreganj, arriving about 3:30, met local project staff and went to field. Murad Bin Aziz and Rakibul Hassan, who write up evaluation of SRI experience in preceding boro season, accompanied us.

MOSUA VILLAGE: Visited two fields where SRI crops were still growing. Talked with three farmers who had planted SRI to get their assessments. All three were very enthusiastic about SRI. Their observations included:

- More tillering, more grains per panicle, and larger grains (CARE data show a 12% greater grain weight with SRI methods).
- Plants are deeper green and have larger leaves. One farmer said that other farmers had asked him if he had planted a different variety, thinking this must be a foreign variety.
- Less problems with pest and disease.
- Farmers think that their yield will be higher with SRI methods. This is the aman season, and there was water stress earlier in the season, a problem for any method. Yields are generally lower in aman than in the following boro season. Hassan estimated that the SRI yield from the first field we visited would be only about .5 t/ha higher than the adjoining control plot. Still, farmers said that they saw improvement with SRI and look forward to trying it in the next season.
- Some of the other farmers in the area who tried SRI became discouraged by about 45 days after transplanting (DAT), because there was so little growth, and even gave up tending their SRI plots; but after that, the growth began and they became enthusiastic.
- The methods practices were not "full SRI," in that water control was not very good because of the rains. Spacing was 30x30, and single seedlings were planted. Farmers found it difficult to plant tiny plants.
- The conclusion of farmers was that this method was definitely worth experimenting with further. Yields in the area have been stagnant so they are looking for way to raise them.

NAYAPARA VILLAGE: Here a young farmer, Enamal Haque, has used SRI methods with a traditional variety, Kailloy, which has a very fine taste and thus commands a higher price in the market. Farmers like to grow it even though its yield is lower. There was a "black" rice (Kalojira) being grown in an adjoining field. While it gives low yield, it brings a high price. Some farmers in other villages have tried SRI with this variety. Chowhan thinks that SRI may be particularly useful for these local varieties, because even a 30-50% increase would pay off with higher income.

Haque expressed satisfaction with his SRI results so far. When asked the most difficult aspect of SRI, he said the water control. The transplanting was difficult too, but he did not seem as concerned with that. He acknowledged that the slow initial growth in the field had been a concern; some neighbors joked that it looked like he had left his field "in fallow," and some even brought cattle to graze. But it subsequently grew very rapidly and impressively. Farmers often come to see an adjacent field that is part of CARE's Integrated Crop Management (ICM) program, the successor to the IPM program, and they have seen his SRI field and were impressed.

In the evening, at CARE's district headquarters in Kishoreganj, CARE staff made presentations on their evaluation of SRI thus far. A summary of data reported follows. The data are from LIFE project experiments with farmers, and from the experiments of the Department of Agricultural Extension (DAE), which has taken up SRI very actively in Kishoreganj. The comparison is with the results of ICM farmers, who are doing much better than the national average because of better field management.

TILLERING:	SRI/LIFE	SRI/DAE	ICM
Tillers	46	70	22
Effective tillers	74%	81%	54%
Highest number of tillers: 117, with 103 effective tillers			

PANICLES:

Panicles/m ²	342	531	336
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Highest number obtained in the LIFE program, 425, was with 35x35 spacing; however, conventional 20x15 spacing was better in this respect than 25x25, 30x30, 40x40 or 50x50 spacing.

Grains/panicle	186	133
Unfilled grain	24%	18%
Highest number (173/panicle) was with 35x35 spacing (these farmers had best technique)		

GRAIN:

Grain weight: highest for 40x40 spacing; all SRI spacings (20x20 to 50x50) were far above the 20x15 spacing (25-27.5 g/1000 grains, compared to 19 with close spacing)

YIELD:			
Average yield (t/ha)	7.5 (BR14)	7.5 (Bina-6)	5.2 (BR 14)
Highest yield	8.7 t/ha	9.5 (Bina-6)	6.5 (BR 14)

Spacing:	7.5 t/ha with 35x35	5.2 t/ha with 20x15
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CROP PROTECTION:

The ratio of harmful:beneficial insects was 5:4 with SRI and 5:3 with ICM practices. No explanation could be proposed for this, but it is another consideration in SRI's favor.

COSTS OF PRODUCTION:

There is lower labor requirement for transplanting SRI; but higher weeding requirement. Lower but frequent irrigation is required; since farmers who use groundwater to irrigate their boro crop must pay for the volume of water used, this cost saving could be a real advantage for SRI. 92% less seed is required (for 35x35 vs. 20x15 spacing). Yield is higher with SRI. On balance, the economics of SRI look favourable.

CONCLUSIONS:

- Though yield increased significantly, optimum performance with SRI methods has not yet been obtained. (Everyone expects SRI to perform better in boro season.)
- Optimum yield depends on spacing and the most appropriate management practices with the best selected variety for the particular conditions.
- SRI opens up "a new light of hope" for marginal farmers to boost up their rice production. (words used by farmers in their evaluation).

RECOMMENDATIONS:

- When SRI and ICM plots are transplanted at the same time, rice bug infestation is greater in some plots because SRI is harvested 15-20 days later and these pests all move to the remaining SRI plots. Better start SRI earlier so there is no staggering.
- Near to the rice field bunds, there was damage to SRI crops from mole cricket and earthworms, and some damage along the boundaries from ducks due to late harvest.
- Some seedlings died, and the late-transplanted replacements did not perform as well as the early-transplanted ones.
- The panicle initiation (PI) stage was not determined, which is essential for best urea application. Applying urea at 30-45-60 DAT shows 3% increase compared to 15-30-45 DAT.
- Though most of the plots were on medium high land, good moisture control was not possible in this season due to rainfall and drainage of water from the adjacent plots.
- Since plots were small, mostly 20x40m², proper cost analysis was difficult to make.
- Where the land cannot be dried for a long period, mole crickets cause severe damage.
- Not all of the varieties responded positively to the alternate drying-wetting sequence.
- The effect of seedling age on yield was not determined; farmers mentioned that early transplanting is difficult, so it should be evaluated, how old (large) the seedlings can be while still getting the benefits of SRI higher yield.
- Proper spacing with most appropriate varieties for the local conditions needs to be evaluated further to determine what will be optimum for highest production.

BRRI: On Thursday, November 30, we drove back from Kishoreganj to Gazipur, to the main headquarters for BRRI. I met with the Director of BRRI, Dr. N. H. Chaudhury, who expressed interest in SRI. He knew that some trials had already been started. Mian Sayeed Hassan did trials during the aus season 2000 at Comilla. Using BR26, the grain yield was 5.34 t/ha, compared to 4.36 t/ha he got with conventional practice. The national average yield with BR26 is 3.29 t/ha. His conclusion was that "SRI method has great potentiality to increase grain yield in Bangladesh."

Gazi Jashim Uddin Ahmed, , Principal Scientific Officer at Gazipur, is heading up the SRI evaluation there, assisted by Md. Abu Bakar Siddique Sarker, Scientific Officer. There was also a Senior Scientific Officer in the SRI group, but I didn't get his name. There were about 75 persons who came to my seminar at 2:00 in the main auditorium. Because this was the end of the first week in Ramadan, we could not go much past 3:00, but there were good questions.

Afterwards, Md. Syedul Islam, Senior Agricultural Engineer at BRRI, expressed interest in SRI, saying that he has developed a mechanical rice transplanting machine that only uses 15-day-old seedlings, and cannot take older (larger) seedlings. This might be good for experimentation in Madagascar. If there is interest, we might try to arrange the sending of one to try out. My former student (PhD from Cornell), Nur El-Elahi, is now director of the Farming Systems Division of BRRI, and he has also expressed interest.

BRAC: When I got back to Dhaka in the late afternoon, there was a message that the Bangladesh Rural Advancement Committee (BRAC), the largest and most effective NGO in Bangladesh, had organized a seminar for me on SRI the next morning. I had been scheduled to give a seminar on Tuesday evening, when I got back from our field trip to the south (in connection with the rickets program), but the plane was several hours late, and because that was the first day of Ramadan, staff could not remain beyond 4:00. I met with F. H. Abed, executive director of BRAC, and he affirmed BRAC's interest in SRI.

Aminul Alam, deputy executive director of BRAC, hosted the seminar Friday morning at 9:00, with about 20 staff who came in on their day off to hear about SRI. It was a very good session, with a lot of interest. BRAC will definitely undertake SRI evaluations during the coming boro season, and will coordinate with CARE and BRRI, to share information and learn from their experience.

DAE: The most interesting news is that the director of the Department of Agricultural Extension in the Ministry of Agriculture, has taken a keen interest in SRI and has already gotten his DAE staff throughout the country to begin evaluations. This is possibly a problem because if the experiments are done poorly, this could discredit SRI. I would prefer that this had proceeded more slowly and carefully, as CARE is doing. But the DAE in Kishoreganj this past boro season had more farmers trying SRI and also better average yield results than the farmers working with CARE (up to 9.5 t/ha yield), so possibly this could take off with government support faster than anywhere else.

I encouraged CARE, BRAC and BRRI to think about holding an evaluation workshop in about six months' time to pool experience, involving also farmers, and bringing in DAE, to take stock of what SRI experience has been and what are the best next steps to utilize this methodology. There seems to be good personal rapport among the persons working on SRI, so I think that unhealthy competition could be avoided. The country's yield increases have been stagnant for a few years, so there is a sense of urgency about restoring yield improvement. I stressed that our aim would not be to double rice production in Bangladesh, but to raise land and labor productivity in rice production, to free up land for more diversified production that would improve incomes and nutrition.