

**From: TRIP REPORT FROM SRI VISIT TO THE PHILIPPINES, March 12-19, 2003**  
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**NGO Symposium:** The highlight of the visit to the Philippines was a five-hour farmers' symposium hosted Wednesday afternoon by the Philippine Movement for Rural Reconstruction (PRRM) and cosponsored with the Philippine Greens. There were about 35 participants, probably half of whom had personal experience with SRI. The others were NGO representatives. After I presented an overview of SRI, emphasizing the importance of promoting root growth and abundant and diverse microbial populations in the soil, there were several hours of discussion and sharing of experience.

José Riga from Cotabato in the southern Philippines has worked with SRI for three seasons, and he called it a "breakthrough" in rice production. He has gotten yields up to 11 t/ha, with an average of 7.2 t/ha. In 2000-2001, he said that El Niño had caused serious water shortage during the reproductive stage, but he still got a 3.8 t/ha yield, when others got little or nothing. His calculated net benefit-to-cost ratio that season was 2.2 pesos per peso expended.

Joe had had a nutritional analysis done of his SRI rice by the Food and Nutrition Research Institute of the Department of Science and Technology. He showed me the certified report, dated November 29, 2002, and let me copy down the data to take back to Cornell, for our nutrition faculty to assess how much of an improvement in nutritional content can be attributed to SRI methods. [They did not find the values reported to be higher than usual with rice, so these data did not show any nutritional advantage from SRI methods.]

For some time, we have surmised that SRI rice, resulting from more vigorous plant growth from soil microbiological changes, could have more nutritional value. But this question has not been investigated. Research reported at the China workshop in early March showed SRI rice to be "less chalky," an aesthetic rather than nutritional advantage. The nutrient content of rice can vary from field to field even with the same cultural methods, so this is not an easy matter to pin down. PRRM's vice-president, Isagani (Gani) Serrano told me that Joe is teasingly (affectionately) known in sustainable agriculture circles as 'the mad professor' because he pursues new ideas and innovations so actively and enthusiastically. The world could benefit from more of this kind of 'madness.'

Joe said that he adds natural micronutrients to reduce plant stress, using also a liquified fish abstract to increase N and burned coconut husk to provide more K; burning husks three times raises the K content to 40%, he said. He also adds P from organic sources. He had an average of 36 productive tillers with no lodging and was able to minimize water use. The rice had a very nice aroma, he said. The panicles were all well-filled, and his SRI plants were resistant to pests and disease. He now has the endorsement of the regional director of agriculture. He reported the planting of 383 acres in Cabacan and said there would be 1,500 acres in the wet season.

Participant Roland Sianghio, who said he was not a rice farmer but produces soil improvement materials, said that coconut dust is a very fine soil amendment to improve soil texture and water-retaining qualities. He puts 20% coconut dust in the organic fertilizer he makes from municipal waste.

Joe said that there can be a problem with using young plants because the golden snail (bohol) loves to eat tender leaves. Roland responded that snails should not be a problem. His solution? Eat them. If you collect them and wash them three times, he said, they are nutritious and delicious for humans to eat. There are nice recipes, he added. Otherwise, snails can be collected and crushed to feed to pigs, chickens or fish (tilapia or catfish). Someone objected that this could not be done on 10,000 hectares. This is a common argument against SRI methods, that they cannot be used on a very large scale. But Roland did not accept this. He said that hiring one person per hectare to collect snails or their eggs before they multiply is quite feasible and cost-effective. He noted that the Japanese snails, once a major pest, are now being grown as a backyard food crop and sold for 8-10 pesos/can.

Bernie Aragoza, a pony-tailed organic farmer from Cavité who attended my seminar on SRI at PRRM the previous April and has used SRI for several years, said that manipulating water levels can control the snail until the plants are large enough to withstand attack. He said that in his experience, snails can be managed. I related the report I had heard in Negros of a farmer whose crop of SRI seedlings had been eaten down to the ground by snails, yet the plants had regenerated from the intact roots in well prepared soil and had given a normal yield. I told also of two farmers in Madagascar who had had their SRI plots completely eaten by locusts, and yet the plants recovered fully. So the golden snail need not be an insuperable problem with SRI. Farmers should be able to devise suitable and effective strategies to cope with this hazard.

Bernie said that SRI is not a simple technology. It requires testing and evaluation. Most farmers in Cavité are used to doing chemical farming. "It is hard to change habits, like smoking." When he first introduced SRI there, 200 farmers came to a presentation but only 8 joined the group to work with SRI. "Until farmers see impressive results, they won't take something new seriously." The group was given a hectare of land by the governor of the province to demonstrate SRI. They have averaged 5.5 t/ha, with a top yield of 7.5 t/ha.

They are not doing "pure" SRI, however, Bernie added, since some are using chemical fertilizers. And they plant 2-3 seedlings together, out of fear for the snails. Farmers in his area usually plant 5-10 seedlings in a clump, so this is quite a change, and expanding spacing from the usual spacing of 17x17cm to 25x25 or even 30x30 cm is also a big change. Only one of the eight used chemical pesticides, and he was the one who had a problem with tungro. (The implication was that the chemical use caused this problem, because the others were spared.)

Bernie spoke very strongly in favor of using the IR-74 variety with SRI. He gets up to 50 tillers per plant with this variety. It doesn't have as good an aroma, he said, but the taste is okay, and it grows very robustly. He checked root growth at 20 days and found the SRI roots were really much longer compared to the roots in surrounding rice fields. His group had difficulty finding rotating weeders because these are not made locally any more, given the widespread use of herbicides. His summary evaluation of SRI was: "I think SRI is good, but because farmers are used to chemical farming, it is not easy to spread this method." Chemical farming is "the work of lazy people," he added. "Unfortunately, our culture now favors that system."

On a more encouraging note, Bernie said, "When farmers saw that the results of our SRI, they became interested." The farmer who had had the tungro attack still got 4.5 t/ha, when because the attack came at the flowering stage, he had not expected to get anything. Bernie expects 50 hectares to be planted to SRI this season in his area. "More and more farmers prefer just to get a job off farm, and rice production is becoming a sideline." He predicted that SRI would become more popular in more remote areas, farther from urban areas than his area of Cavité.

Next, someone from the PRRM program in Nueva Ecija spoke. His program works with 700 farmers in 23 communities on sustainable agriculture. Now they are getting involved with SRI and have two demo farms, one rainfed and one irrigated. He introduced six farmers who had come with him to the symposium. He then expressed "mixed emotions" about SRI, echoing Bernie: "It is very difficult to change practices, it is like talking to a deaf person."

PRRM in Nueva Ecija works with PhilRice on SRI and has gotten 5.3 t/ha with 40x50 cm spacing (too wide for beginning). PhilRice has gotten 3.2-3.7 t/ha on its plots, but he felt that it is not managing its field very well, suggesting that PhilRice is making only a token effort. PRRM now wants to expand its SRI work to 7 municipalities. He suggested establishing some kind of SRI demonstration center for promoting its spread, saying that farmers need to see the difference for themselves. The PRRM SRI crop had 24-27 tillers per plant compared with 10-14 tillers in other fields. "I started to believe SRI after I saw this."

I commented that the poorer showing of SRI on PhilRice plots is not necessarily due to a lack of effort on its part. We often see lower SRI yields on experiment station plots than on farmers' fields and think this is because of microbiological differences in the soil after years of continuous monocropping and application of fertilizers and chemical sprays. IRRI's plots are also producing very poor SRI plants though they are trying to get better results. Monocropping means that only one profile of exudates is being put into the soil to nourish the microbial communities there, and this leads to less species diversity. We think diversity is important for best SRI performance.

Teddy, a farmer from Isabella in the north, next reported on his experience with SRI. He said that he tried to get other farmers also to try 1 seedling per hill, but they were scared of losing their crop to snails. "When farmers passed by my field, they teased me," he said, echoing a comment we have heard from farmers in many other countries. He said that his transplanted seedlings did not change color and did not wilt as did those of other farmers. But the newly planted field looked pretty bad at first. People asked him, "Do you even have a crop planted?" Such derision we have also heard about from other SRI farmers.

When it rained, Teddy said, he had a problem with snails, because he had not put any drainage canals into his field, as he now knows he should have done. When he spread rice hulls on the field he was able to control the snails because the hulls' sharp edges cut snails like a knife. He kept the field moist and not flooded, as recommended, letting it dry up to the cracking point. But he made a mistake in not starting weeding the 10th day after transplanting, as suggested. Instead, he waited until the weeds appeared, about the 20th day, and then they were hard to get rid of. He had also made a mistake of starting with too large a field, 4,000 square meters of good soil and 5,000 meters of poor soil, before he had gained familiarity with the methods. It took two people a day to weed 1,000 square meters. Within 8 days, the weeds were back where they started.

Fortunately, he found a weeder that is better-designed and easier to use for his second weeding at 30 DAT.

During the first and second months the field looked pretty unpromising. He couldn't see much growth. But then the third month, the tillers started appearing. And then lots of people were surprised, as his plants got 30-40 tillers compared to 10-15 in neighboring plots. He watered the plot only a few times, letting it dry up between weedings. He did only two weedings though more would have been better. He got 19 bags from the good part and 10 bags from the poor part. This was about three-fourths as much as he had gotten on that field before, but he spent only 12,000 pesos, so the financial return was pretty good. They did not sell the rice, keeping it for home consumption because it was chemical-free. "We learned a lot this last season, and next time I will do better," he said in conclusion.

Another staff member with PRRM in Nueva Ecija spoke next. His rice field is 4,000 square meters, but his father would not let him try SRI on the whole area, so he tried it on only 1,000 square meters. He had help in transplanting from other PRRM staff, but he described them with a laugh as "amateurs, pretending to be farmers." They transplanted at 40x50 cm spacing, instead of the 30x30 cm recommended by PhilRice, mostly because they wanted to finish quickly.

Because their transplanting was not very regular he could use the rotating hoe in only one direction and they had to do hand weeding as well. Neighbors were skeptical about the methods. He has pictures of people standing around the field looking at it. They said that they could not see that any seedlings had been planted. "I wish I could have charged people just for looking." He had some problem with snails but limited them with water management. Despite all these problems, he got 10.75 cavans from the 1,000 sq. meters of SRI crop compared to 25 cavans harvested from the other 3,000 sq. meters. The SRI yield of 5.4 t/ha, about 30% higher than on the rest of the field, was a respectable one.

The Office of Provincial Agriculture (OPA) in Nueva Ecija got 150 cavans (7.5 tons) per hectare with SRI so they know the methods can produce more. One farmer who was impressed with the growth of his SRI plants asked for and got some of the SRI rice to plant, but he didn't get such a high yield with them, so it was clear that the good performance was due to the methods. Someone with PRRM had gotten 122 cavans per hectare (6.1 t/ha) using 30x30 cm spacing. Usually farmers plant at 17x17 cm spacing, so plant density is reduced by almost three-quarters with better results. One problem is that rotary weeders are not made very much any more. PhilRice is developing a mechanized rotary weeder. Bernie from Laguna commented on the question of weeding that if you flood the field for 5 days beforehand, it is fairly easy. He figured that it takes about 12 person-days per hectare.

Next a representative of WomanHealth spoke. Her NGO which works with women farmers in Isabela had done surveys which showed that women cultivating flooded rice have frequent vaginal and urinary tract infections (when women weed, they do so crouched down on their haunches). So when her NGO learned about SRI, it saw some possibilities for reducing women's health problems.

At first, women were really afraid to plant young seedlings, and only one per hill, with wide spacing. So they compromised with 2-3 seedlings per hill, instead of 4-5, but with wide spacing, 30x30 or 40x40 cm. "At first [after transplanting] you couldn't see anything, and the women were really afraid." But they found that the planting was easy ("light") and they could finish quickly. They had some initial difficulty in separating the tiny seedlings; "This takes time." Also, since the women did not have much control over water, their soil was usually more than wet. (This sounded like a pretty unpromising first use of SRI.)

However, the NGO representative reported, "The people are happy using the method." Their yield, 43 cavans from 0.7 hectare, was not very impressive, only about 3 t/ha. They usually got about 70-80 cavans. But this crop was hit by a typhoon during flowering. "Normally they would have lost the entire harvest." So they were very grateful for the SRI yield. They saw that the plants were more resistant to stress and also saved money otherwise spent for chemical inputs. And of course, there were personal health benefits.

Joe Riga said that if they would put more organic matter into the nursery soil, they could separate the seedlings easily. I suggested the "mix" that H. M. Premaratna uses in Sri Lanka for his seedbed, which produces seedlings yielding 10-15 t/ha: equal proportions of soil, compost and chicken manure. Joe suggested putting plastic underneath the nursery, with holes for drainage, so the seedlings can be lifted and carried to the field, but Bernie objected to this method because plastic is not biodegradable, so its widespread use could create other problems.

Next, Corrie from Consumers of Davao, an NGO in Mindanao, spoke. She said she is not a farmer but rather represents consumers, but was glad to be here with farmers. Her NGO has been promoting SRI evaluations among rice farmers in the region. She provided a report from Ruel Carillo, a farmer in Matanao who planted V10 (a Masipag variety) in the second season last year, using 30x30 cm spacing. The plants had 96-day maturity and attained a height of 60 cm. His yield was 68 cavans per hectare (3.4 t/ha), under difficult El Niño climatic conditions, so the evaluation was considered a success.

Corrie said that consumers should become closer to producers, and not just try to buy things always cheapest, and not buy imports. "Farmers can be scientists without PhD degrees," she said, a statement that Fr. de Laulanié would have loved to hear. She asked participants to consider what kinds of data should be collected on SRI for scientific evaluation. She said that if farmers are given some standard format, they can contribute to this effort.

There were then some discussions about seed selection and seed supply that I could not follow completely. Obet showed me a list he had compiled of who has started evaluating SRI where in the Philippines. There are individuals or organizations working with SRI in nine of the 15 regions of the country. He thought that of the remaining six regions, three probably have farmers already trying out SRI, but their information has not reached the network yet.

- PRRM is working in Nueva Ecija,
- Pabinhi, a farmers' organization, in Mindoro, Guimaras, and region 5 of Luzon,
- The Philippine Greens in the Cordillera, Quezon, and Cavité,
- WomanHealth in Isabela,
- PLAN International in Southern Leyte

- The government's Office of Provincial Agriculture (OPA) in Bohol,
- Balay Davao Sur Inc. in Davao del Sur,
- Outreach Philippines, Inc. and Gratia Plena in Nueva Ecija,
- CORD, another NGO, in Isabela,
- The Department of Agriculture's Agriculture Training Institute (ATI) in Cotabato
- BIND in Negros, and
- Agtalon in region 1 of Luzon.

Obet read this list to the group and said that it is probably not complete. The aim is to have at least one person or institution able to demonstrate SRI results to others in each region of the Philippines, and then to scale up (move down) to have someone in each province. Obet has produced a simple primer on SRI that is being distributed. He encouraged groups to make their own copies for distribution, and to make any improvements in it based on experience. If possible they should let him know of any changes so that he can come up with a better master copy.

Obet further noted that SRI, like any technology, contains an implicit worldview, and many people in the Philippines find the worldview implicit in SRI, stressing values of environmental and human health, use of local resources, equitable access, conservation of biodiversity, every congenial. I added comments on what we are learning about the importance of nurturing and benefiting from soil microbial communities. I compared them to workers, billions of them, who will work "for free" as long as they are given enough air, moisture, and organic matter.

The symposium closed about 6 o'clock with supportive statements from the president of PRRM, Wigberto Tañada, and Gani, head of PRRM's Institute for Sustainability, who chaired the session. There was a shared feeling that SRI knowledge and practice have advanced considerably in the Philippines since the workshop on SRI held at PRRM the previous April. They now want to have a national SRI conference, or a series of regional conferences, before the end of 2003. There should be more and more cooperation among NGO, farmer, government and research organizations as positive results accumulate and interest spreads.