08-29-98 From: MICET 10:31 AM

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Subject: Response to Paper on SRI

Dear Dr. Fischer,

Thank you for your message dated August 28 which was forwarded to me here in Madagascar. Unfortunately, the attached paper with IRRI's current assessment of the SRI system did not come through with the message. Could you please resend the paper to me at: micet@dts.mg? We will surely benefit from the discussion in that paper of the scientific conclusions in the existing literature about the various components of the SRI method.

Regarding the previous evaluation comparing SRI yields with those from modern methods (presumably done by FoFiFa), we have seen at least one article reporting those results. I cannot dispute their findings, but I know that we have observed and measured very different results from SRI when used in farmers' fields, not on experiment stations managed by scientists, over a four year period. Farmers' fields are the real test of any rice improvement, I'm sure you will agree. Moreover, what we have found is in line with what has been obtained with SRI methods in numerous other parts of Madagascar.

I have previously read a paper drafted by the IRRI team in Madagascar (Mimi, Bala and Susan Almy) that made a number of claims for which the factual basis is unclear and doubtful. For example, the paper said that SRI requires "up to 8 weedings." This is a caricature of SRI. Both Tefy Saina and IPNR recommend 2 weedings as the basic treatment, with a recommendation to weed more often, up to 4 or 5 if time and conditions permit.

The reason why additional weedings beyond two are recommended became clear to me when I analyzed yield data from last season for 75 farmers in the Ambatovaky area (1,200 m). With 1 or 2 weedings and SRI methods, the yields were about 7 t/h. (Two lazy farmers who did no weedings averaged 6 t/h.) But with three weedings, the yields went up to 9 t/ha, and with four weedings, they went up to 11 t/h. We cannot adequately explain this remarkable increase, but we have some hypotheses and think they merit investigation.

The IRRI paper said that SRI spacing is 30x30cm or more. But that is only the recommendation made by IPNR, the NGO promoting SRI with which Mimi has some communication. IPNR stresses "wide spacing." Tefy Saina, on the other hand, which has much more of a field program promoting SRI, suggests starting with spacing of 25x25cm. Farmers are encouraged to experiment with 20x20 or 30x30 spacing to see if either will yield better under their particular soil and other conditions. Tefy Saina with which we are working has many farmers spacing their seedlinqs 25xl4, with yields about equal to those for 25x25. Since closer spacing requires more seed, there is 50% saving of rice with 25x25 spacing, and the farmers we are working with are so poor that this saving is worth making.

Most surprising was the paper's claim that 85-90% of the rice area in Madagascar is not suitable for SRI, because of water control problems. We don't have any data on this, but based on our observations and Tefy Saina's experience, the reverse is more likely; we think that 85-90% of the area is or could be suitable, and 10-15% is unsuitable. Even some of latter, with drainage, could probably benefit from SRI methods even if it couldn't get the highest yields.

We have not found water control to be a barrier to adoption of SRI in the Ranomafana area, where now 275 farmers used the method this past season, and 870 had signed up with Tefy Saina at the end of this past season to have advice on using SRI this next season. It is starting to catch on now that farmers have seen the results over several seasons. Most were understandably skeptical and even resistant, because the management practices change dramatically four things they (and millions, maybe billions) of rice farmers have done over the years. The barriers we find are more psychological than a matter of water control.

We have shared our analysis of SRI, the method and the results, with the DG of ICRAF, Pedro Sanchez, and with the DG of WARDA, Kanayo Nwanze, and they both found the method very credible and promising.You note that all of the components (except setting out single plants) make sense, something that Bob Herdt concluded from reviewing this information several years ago. (He is a member of CIIFAD's Advisory Committee.) The question remains, and we are still not clear about this, how such high yields are possible, unless there is some synergistic effect. We have seen these yields hold up in Ranomafana over four years now.

The IRRI position that equally high yields can be obtained with HYVs and the package of practices that go with them misses, I think, the point that SRI yields are obtained without any need for purchase of chemical fertilizer or new seeds.(I hope that you and your colleagues appreciated our reporting in our paper that certain HYVs do considerably better with SRI management than conventional modern management. I would have thought that this would encourage IRRI to take a more positive view of the methodology. FoFiFa reported in its extension bulletin that IRAM-10, a Tainung-16 descendent, averaged 5.6 t/h in their trials, with an observed maximum yield of 7.7 t/ha. The two farmers who planted that variety, locally identified as 2067, last season using SRI methods on 0.9 hectare averaged a yield of 12.1 t/ha.

SRI is one of the few technologies that I have come across in the past 30 years that, if anything, favors poor and small farmers, because it depends entirely on labor and management, not on access to capital.(It does require access to biomass for compost, a constraint in some places, but one that can be taken care of with fertilizer; SRI is not against chemical fertilizers, and indeed Fr. de Laulanie started out using them, but he switched to compost when fertilizer became too expensive for most farmers.)

Contrary to the view Mimi expressed to me last year, SRI is not biased in favor of small holdings. Our statistical analysis has found significant positive correlations between yield and the size of holding on which SRI is practiced. Thus, this is not a system practical just for tiny plots, which is maintained by opponents of SRI in Madagascar such as Prof. Rene Rabezandrina who has probably been IRRI's main source of information about SRI. He is irreconcilably opposed to this method, possibly because he has a personal vested interest in the promotion of herbicide use [as a paid consultant for Hoechst chemical company].

I would have expected IRRI to be very interested in investigating seriously, not relying on hearsay and on some biased opinions, a technology that can substantially increase yields for small and poor farmers -- with no capital outlay required. IRRI says that it is concerned with poverty alleviation and food security. Such concerns should have made SRI immediately attractive to IRRI, at least eliciting some systematic evaluation.

If there was only a 5% chance that "the SRI hypothesis" is correct, it is worth examining. This was the calculation that I made back in 1993, when CIIFAD agreed to bring Tefy Saina into the project in Ranomafana. I found it impossible to believe the claim of Tefy Saina that without HYVs and without fertilizer, SRI could get yields of 5 t/h, 10 t/ha, even 15 t/ha. But the president and secretary seemed completely genuine and convinced that they could achieve this, and it was going to cost only $10,000 a year to put their field agents into villages around Ranomfana National Park with backup from the Tana office. It was a gamble, but the potential payoff could be immense if they were right. Now almost five years later, I can say that Tefy Saina has delivered on everything they told us.

You asked for comparisons not just with traditional rice-growing practices (although that is the relevant standard of comparison if one is interested in poverty alleviation and food security), but with more modern production practices. Possibly your staff did not read Table 1 carefully. It reports data from a 1996 World Bank-sponsored symposium on rice held here in Madagascar, showing that the yields with modern methods, even with optimum fertilizer applications -- 4.8 t/ha (at Marovoay) and 6.2 t/ha (at Andapa) -- were topped by the use of SRI methods in these same areas, farmers getting 7.1 to 10.2 t/ha, respectively.

Anyway, I look forward to discussions with Mimi about this. She is expected back from vacation next week, and Helen Gunther in the USAID office is already working on setting up a time for the three of us to get together. I have no animus toward her or toward Bala (with whom I have also spent some time in Indonesia). This is not a personal matter. It is about science and development. They are very capable persons and dedicated scientists. I think there may be a "paradigm" problem here, where existing knowledge and the way it is organized, and firmly believed, gets in the way of being open to new knowledge.

Maybe I am all wrong about SRI, and Tefy Saina has been duping me and others all of these years. But I don't think so, and I have invited others to join in evaluating the method and proving if Tefy Saina and CIIFAD are wrong. I had supper last night with the Peace Corps' environmental program director who told me about recently visiting a very progressive farmer near Mantasoa, whom they wanted to get for their PC training program. He is vice-president of the *Cercle des Agriculteurs Malagasy* and has set up a very sophisticated dairy production and marketing organization to serve the Tana market. He told her that he has been using SRI methods now for 5 years, and his yields are around 8 t/ha. How many farmers using the IRRI package of practices in Madagascar can say this?

I will copy this to Mimi so that she can read this as soon as she gets back, and we can talk all of this through.

Best regards,