

REPORT FROM AN INTERNATIONAL SYMPOSIUM ON **SUSTAINING FOOD SECURITY AND MANAGING NATURAL RESOURCES IN SOUTHEAST ASIA: CHALLENGES FOR THE 21ST CENTURY**, CHIANGMAI, THAILAND, JANUARY 8-11, 2002 -- FOR SRI COLLEAGUES -- NORMAN UPHOFF

After the first two days of the symposium, already before I had made our plenary presentation about SRI (a paper written with Y.S. Koma, Humayun Kabir and Klaus Prinz as co-authors), there was so much progress to report on behalf of SRI that the plenary talk seemed anti-climactic. This symposium, organized by the University of Hohenheim in Germany with a number of co-sponsors, brought together many key actors from different institutions around Asia concerned with rice. These included IRRI's new deputy director **Wang Ren**; former DG of IRRI, **M. S. Swaminathan**; our CIIFAD colleague **Robert Havener** who was for a while acting DG of IRRI and before that DG of CIMMYT and president of Winrock; IRRI board member **Xuan Tong Vo** from Vietnam; IRRI staff from several countries; **Joachim von Braun**, newly appointed director of the International Food Policy Research Institute (IFPRI) as well as others.

1. Monday evening, January 7, before the symposium formally started, our colleague **Phrek Gypmantasiri**, deputy director of the Multiple Cropping Center at Chiangmai University and one of the organizers of the symposium, had arranged an informal dinner for me to meet some of the other participants in the symposium who had arrived from organizations working with SRI in the Southeast Asian (SEA) region.

Unfortunately, **Koma Yang Saing** from Cambodia could not come, though he had hoped to be here; and neither could **Humayun Kabir** from Metta Foundation in Myanmar, though a number of staff that he works with on with SRI were in Chiangmai and joined us for dinner. Similarly, **Khamloun Keoka** from Laos, though he was registered to attend the symposium, could not get here. However, several staff from the NGOs that he works with, Community Aid Abroad and Oxfam, had staff at symposium who joined us for dinner.

Klaus Prinz, an advisor with the McKean Rehabilitation Center here in Chiangmai, who was one of the first persons in the SEA region to take an interest in SRI, from his contacts with Roland Bunch and also with ILEIA, was also at the dinner. He had plans to visit Cambodia later in the month and to meet Koma. The dinner was at an open-air restaurant with a lot of good Thai food, so discussions were enjoyable but not very focused. What was clear was that there is a lot of interest and even enthusiasm from people working with SRI at the grassroots in Thailand, Cambodia, Laos and Myanmar.

2. The highlight of first morning session was **M. S. Swaminathan's** plenary presentation giving an overview of sustainable agricultural and natural resource management issues. One graph that he presented was particularly relevant for my plenary presentation; it showed the maximum rice yield as of 1995 as 10 t/ha, with a projected maximum by 2015 using biotechnology as 15 t/ha. SRI methods have been able to surpass both levels.

3. At lunch, by good fortune I sat with staff members from the Metta Foundation and from Oxfam/CAA. The Lao agricultural extensionist, **Vongsakid Sengthong**, said that he would be able to send us a report on their 2001 season results, commenting that they were good, but he had no figures to give. Our English communication was limited.

Awng Gum Sha from the Metta Foundation did have some production figures to report. They were in baskets per acre, which he did not know how to express in tons per hectare. In the Kachin area of northeastern Myanmar (Burma) where Metta is working with about 30 farmer field schools, introducing integrated pest management and other agricultural innovations (now including SR) among hill-tribe farmers, the average rice yield is about **40 baskets per acre**. With FFS improvements, they are getting now about 70 baskets per acre. With SRI methods, this past season farmers could get about **100 baskets per acre**, with a top yield of 130 baskets. These increases have made Metta and the farmers it works with very interested in pursuing SRI experimentation, adapting it to local conditions. With Metta and CAA, I emphasized that we encourage experimentation and adaptation, saying that SRI is not a technology or a set of practices, but rather a set of principles and methods that we expect to be fitted to local circumstances with farmers becoming more active and critical-thinking in the process.

4. During the morning session, I met with **Xuan Vo Tong** from Vietnam briefly. We had been on a review team together in China in 1999, when I first told him about SRI. At that time he was Rector of Cantho University in the Mekong Delta, a major rice-growing area but one where flooding is seasonal and hard to avoid. His initial trials with SRI got flooded out in a particularly bad year, so there has been no further experimentation with SRI, although he may try again now that there is growing interest in and respect for SRI evident at the symposium.

At the coffee break the first afternoon, I sought out Xuan to ask him if he could point out for me IRRI's deputy director for research, **Wang Ren**, who was attending the symposium, so that we could get acquainted. As luck would have it, Wang was coming out of the auditorium right behind Xuan, and he said that he was likewise looking for me, so we should get together. We went off and spent the half-hour break plus almost half hour (cutting into the following panel discussion time) talking.

Wang assured me with his first sentence that "IRRI is not against SRI." While it is not doing SRI evaluations in Los Baños, Philippines (although Steve Morin has done some trials there), IRRI is working with some Chinese institutions that are already evaluating SRI because this will be quicker and cheaper for getting good results. Several of the persons and institutions with whom IRRI is cooperating on this are ones with which we have been working -- Dr. Cao Weixing, dean of agriculture at Nanjing Agricultural University, and Dr. Yuan Longping, director of the National Hybrid Rice Center. Cao and Yuan gave good reports about SRI to Wang and his IRRI colleague (Shaobing Peng) when they visited China last year to learn more about the system.

Wang and Shaobing talked also with others in China who are working with SRI, persons whom I did not know about but who learned about SRI from my talk at IRRI in 1999 or

from my Sanya visit in April 2001 or from papers that we have circulated. The assessments that Wang has gotten from Chinese colleagues are basically positive so he said there is acceptance that SRI may offer something of value, although nobody in China has yet gotten yields above 15 t/ha with SRI methods, which some of the best farmers working with us in Madagascar have obtained. This means that there is still skepticism about some of our reports about SRI, but there is no opposition, Wang assured me, and IRRI is trying to learn about it and from it. This was good news.

Wang is himself an entomologist and previously a top official in the Chinese Academy of Agricultural Sciences. He was recruited to IRRI to give some new perspectives, since he is neither a rice specialist nor a plant breeder. Obviously, he is talented and respected. We had a great conversation that afternoon. An indication that he took SRI seriously was that -- when we met again the next morning for me to give him a copy of our new book *Agroecological Innovations* which contains a chapter on SRI -- he asked whether we could have dinner together before the end of the symposium to have further discussions. (He asked this with Bob Havener standing beside us; Bob was pleased that Wang and I were working on a rapprochement between IRRI and SRI, as he had himself been trying to accomplish this. In a report prepared by Sunendar Kartaatmadjah, our Indonesian AARD colleague who visited Madagascar in April 2000 preceding a visit to IRRI, Sunendar reported that he talked with Wang at that time and that Wang was open to SRI.)

5. That evening, I was invited with some other participants to the home of **Dr. Uraiwan**, a senior social science faculty member at Chiangmai University and Cornell alumna who has played a leadership role in Thailand and the region, serving on the boards of directors of several CGIAR centers. At the dinner party, I had a chance to have long discussions on SRI with the **ICRAF** representative in Thailand, **David Thomas**, who knew a lot about the system and was very interested (with both curious and skeptical questions), and with the **IWMI** representative in Thailand, **Fritz Pennings de Vries**. Fritz, previously on the faculty at Wageningen University in the Netherlands, took several years of leave from the university to work in Thailand with the International Board for Soil Research, Analysis and Management (IBSRAM). When IBSRAM was absorbed into IWMI so that research on soil and water will be better integrated within the CGIAR system, he stayed on with IWMI. Fritz also knew a lot about SRI already, but I hope that I was able to heighten his interest in soil microbiology aspects of SRI.

From the conversations with David and Fritz, it is clear that many conversations have been going on about SRI. I stressed that we are interested in SRI not just for rice, but for what might be learned from this system about agricultural improvement more generally -- about the merits of aerated soil, about wider spacing, etc. I also stressed that we see SRI as something evolving, not something "set in concrete."

6. That first afternoon I had talked briefly with **Guy Trebuil**, the **IRRI** representative in Thailand, after his excellent panel presentation on participatory upland watershed and natural resource management. He sounded positive toward SRI work in our brief conversation. It would have been good if IRRI could have had someone like him in Madagascar during the 1990s.

Another member of that afternoon panel was **Hermann van Keulen**, chair of the Plant Production Systems department at Wageningen University and one of the leading Dutch scientists on rice. In May 2001, I had spent an evening with him in Wageningen, en route to Madagascar, talking about SRI over dinner. He was fairly skeptical then, based on his many years of research, but personally friendly. I was able to update him briefly on SRI evidence received since we had talked, and he wished us well. I spoke with him at more length after a panel on the third day, and he sounded genuinely interested in SRI and had some suggestions for the kinds of evaluation that would help to test the methods and satisfy critics. He will discuss these with Wageningen program colleagues who are in a position to carry out such evaluation.

7. After the morning plenary on the second day, there were poster sessions. The poster that I was most interested to visit was presented from Leyte State University in the Philippines (with which Cornell has had almost 20 years of collaborative relations with this institutions when it was known as the Visayas State College of Agriculture). The LSU poster was on "improvement of soil quality in degraded lands through rain forest farming." It was prepared by **Victor Asio**, head of the Institute for Tropical Ecology at LSU, and the president of the university, **Paciencia Milan**. (It was a pleasant surprise to find a university president presenting research like this. From our discussion she obviously knows the substance of this work.)

The poster showed how within 5 years, utterly degraded land can be reclaimed -- made fertile, with good soil tilth -- by planting indigenous varieties of trees, and letting the tree litter build up, with resulting increases in microbial activity initially on, and then in, the soil. During this time, farmers can get some income by interplanting food crops, and they can continue getting income from shade-tolerant crops like taro once the canopy closes. LSU calls this research "geo-ecological investigation." It has very promising results. The trees' shade and root action change soil pH, increase P availability, etc. and transform the quality and productivity of the soil, quite demonstrably and measureably.

Of course, once we had discussed this system, I started talking with Victor and Paciencia about SRI, and both were very interested. As luck would have it, Victor and I were able to get together a lunch to talk for another hour. He grasped everything that I said about SRI very quickly, having done a Master's degree at IRRI in Los Baños. He knows most of the IRRI staff there and also our colleagues at University of the Philippines Los Baños.

While Victor is presently working mostly on issues of upland restoration, he remains very interested in rice and agroecological questions. As we went along, he kept saying, "I can get students to work on that...I can get students to work on that..." He also knows other agroecologically inclined researchers in the Philippines, so he is a good addition to the SRI network. The 20-year connection of Cornell with his university will also be helpful, and the positive attitude of LSU's president. (Victor and Paciencia subsequently hosted a visit to LSU in March 2004 to talk about SRI.

8. That evening as I was taking the elevator down to the big poolside dinner put on for symposium participants by the Eiselen Foundation of Ulm, Germany, which is funding

the symposium, I happened to meet Wang Ren and **M. S. Swaminathan** at the elevator. M. S. asked whether Norman Borlaug has taken an interest in SRI, and I said that I have tried three times to get him interested, but thus far with no evident success. I conjectured that maybe because SRI does not build on the two "pillars" of the Green Revolution that Borlaug launched (and Swaminathan furthered) -- new varieties and chemical inputs -- he might see SRI as a competing approach.

M. S. did not disagree with this comment. He has become an advocate of agroecological approaches these days, and as we rode down in the elevator, he commented as an aside, that he thinks SRI is "probably basically sound." This statement from M. S. is *very* encouraging to us and will probably encourage others to take a more favorable view of SRI. I told him about the April conference and apologized that we do not have travel funds to pay his way to attend, but I said that if his research foundation could send him or some other agronomist to Sanya, we would be very happy to have their participation.

9. At dinner, I sat with Xuan Vo Tong, and we discussed SRI with regard to Vietnam. I also had a chance to talk briefly, mostly renewing acquaintance, with **Prabhu Pingali, CIMMYT**, one of the keynote speakers and perhaps the leading agricultural economist in the CGIAR system these days. Among other things, he has called attention to the declining yield increases for rice and wheat worldwide, and to the economic and other costs of the excessive use of agrochemicals. He has been interested in SRI 'from afar.' I will try to follow up on SRI also with Joachim von Braun, newly appointed director-general of IFPRI, the International Food Policy Research Institute. (As the symposium was breaking up on the third day, von Braun came over to say good-bye and indicate an interest in learning more about SRI.)

9. The first two days were obviously packed, but the symposium was not yet over. Our paper on SRI was the third of three plenary papers on the morning of the third day. I think that there was good attention from participants even though this was the last plenary paper of the symposium. I thanked the organizers for inviting me and my colleagues to present this as a plenary paper because it is both controversial and counterintuitive. Controversial because it raised questions whether farmer knowledge is always correct, and also whether scientists' knowledge is always correct. E.g., we are finding it possible to surpass the 2015 yield ceiling of 15 t/ha thought to be achievable only through biotechnology). SRI is counterintuitive because it suggests that 'less can produce more.'

Others can judge how well the presentation went. Bob Havener's wife told me that he had said it was excellent, so that is a much appreciated complement. There were some good questions, a couple of them skeptical or critical, but no attacks. We now have more evidence to answer such questions, thanks to Joeli, Oloro, Jean de Dieu and Andry who have done detailed thesis research on SRI in Madagascar.

10. At the end of the plenary session on Thursday morning, Ren Wang from IRRI asked to speak. He said that he thought he should comment because many were interested to know 'what is IRRI doing on SRI?' He said that it has been "exciting" to observe and learn about SRI, the various reports, data, etc. Some of the scientists at IRRI have

different opinions, but they don't represent the institute or the CGIAR system. IRRI is working maybe on a different agenda but toward the same goal with SRI, which IRRI has "been watching very closely."

It is not important, he went on, whether the top yield with SRI is 18 tons, or 20 tons, or 25 tons. "We can leave this question to others. IRRI is keen to look at the essence of SRI," and it needs to take a positive attitude. He said that IRRI is working with partners in China to evaluate SRI at various sites. They are already testing SRI so it makes most sense to work with them. He congratulated me for the presentation and for the efforts that I was making in proposing SRI. "We want to work together," he said, to which I nodded vigorously in agreement. "There are many scientific questions to be answered." More nods. "We want to look to the essence of this new approach." This is exactly what we have been hoping for.

A German participant was not entirely satisfied, suggesting that an even more active approach by IRRI would be appropriate. He noted that on his family's vineyard in Germany, they had been able to bring their grape plants into bearing one year earlier by following the kinds of methods that I had described (wide spacing? soil aeration?). He said that given the urgency of reducing world hunger, IRRI and other international centers should work more on "innovative" research (meaning SRI) than just on "adaptive" research. It was too bad in a way that the positive gesture of Wang was not met more affirmatively, although he could see from this comment that there are persons who would like to see a more proactive effort made.

11. After the plenary session, a German professor came up to express support for our work, especially the emphasis on roots. It turned out that he is a colleague of the professor from the University of Kiel in Germany who contacted us after the German Greenpeace magazine article, and who has links with Chinese university colleagues on water-saving methods. He was pleased that we were already in touch with German and Chinese researchers.

12. IRRI's representative in Laos, **Karl Goeppert**, came up with his Laotian colleague, **Kouang Douangsila**, to say that they are decided to try SRI out in Laos in a big way, getting 5-6 other institutions/projects/ programs to evaluate it in the coming season, which starts in May. He will send a delegation from Laos to the Sanya meeting in April. He wants us to send him all the materials we can and he asked me to visit Laos in April when I plan to be back in Thailand for a seminar, if only for one day. I recommended that he get Koma to visit and help with training for SRI, since Koma knows Southeast Asian conditions much better than I and has hands-on experience with SRI. I also suggested that they could invite Sebastien or Justin, but he says that little French is spoken in Laos any more. I had lunch with Karl and his colleague, again good fortune in seating, and they confirmed their intention to evaluate SRI widely and systematically.

There is Swiss funding for the IRRI program in Laos, Karl told me. The present project will end in August 2003 and a new one will start. The Laos government has made clear it does not want a 'chemical-dependent' rice strategy, because Lao farmers are too poor and

it doesn't like the hazards of agrochemical use. So SRI seems well-suited to the needs of this very poor country, where slash-and-burn cultivation is an endemic problem, and where they need to find ways to raise dramatically the yields of rice on what little lowland paddy area is available.

The secretary general of a Thai NGO called the Progressive Farmers Association, **Montri Gosalawat**, waited patiently to see me. He said that he is very interested in SRI, and PFA has about 5,000 members in northern Thailand who can be gotten to try out these methods. I said that I would send him our manual and other materials as soon as I get back to Ithaca.

12. Klaus Prinz arranged for some of his colleagues from Thailand and Cambodia who are working with Bread for the World, a large German NGO, to talk with me about SRI during the coffee break. They had already talked among themselves in previous months about how they could help support SRI with web page or other activities that facilitate communication within the SEA region and beyond. I said that we are working on a web page, through Lucy Fisher's efforts over the holiday, and hope to have one up and running within a few weeks. They would like to see an interactive page with a list-serve that permits people to ask each other questions. The main problem is not technical (Lucy has set up three such list-serves already) but figuring out how it will be supported/staffed with at least one person monitoring and managing it, to keep the flow of information going and to ensure quality communication. We have not solved this problem yet, but are working on it.

George Deichert, GTZ agricultural development advisor for Kampong Thom province, was in the group. and he said that he is working closely with Koma on SRI testing and spread. He confirmed that there are a number of Cambodian organizations/programs, not just CEDAC, working on SRI these days, and he said that they have had good results in Kampong Thom. There is considerable enthusiasm building up.

14. Before and after lunch, I went to two panels on rice production, neither oriented to SRI issues. The one evaluating the productivity of chemical pesticides (herbicides and insecticides) was very innovative, showing that if you treated pesticides not as an "input" with a direct contribution to yield like labor, water and fertilizer, but rather as a loss-reducing factor, this means that the mathematical relationships at the margin are specified differently, and one arrives at different estimates of the productivity of agrochemicals. Indeed, the marginal productivity in a number of the multiple regressions was zero.

There was good discussion and afterwards I talked with Deichert, von Keulen and others. **Elsa Foerster**, a GTZ advisor in northern Vietnam, who spoke about best methods for communicating with farmers, was very interested in SRI and wants all of our materials to discuss with colleagues. She thinks she can get activities going in that country.

15. After the concluding plenary session, I spent an hour with **Manfred Zeller**, director of the Institute of Rural Development at University of Goettingen in Germany. He has done research in Madagascar over the last 10 years, mostly on farmer adoption (or non-

adoption) of new technology. He knows Chris Barrett well and the general institutional situation, and the need for increased rice production. He offered to have some of his students do thesis research in Madagascar on SRI if we have topics to suggest that would help to advance the state of knowledge and practice for SRI.

16. The three days of symposium were topped off with a long leisurely dinner with Ren Wang in the hotel's Chinese restaurant. We discussed many things. It turns out that he is a good friend of my best friend in China, Li Xiaoyun, dean of the College of Rural Development at China Agriculture University in Beijing. I thanked him for his positive attitude toward SRI. He said this is something that IRRI should have, and as director for research (succeeding Ken Fisher, who was rather dismissive of SRI in his August 1999 communication), he will try to ensure a good working relationship. We talked about phyllochrons, root die-back, P solubilization, etc., as well as research management, institutional politics, etc. His IRRI colleague Shaobing Peng who is working on SRI evaluation in China will be in communication with us and he will try to send Shaobing to the Sanya workshop. (He cannot come himself because the IRRI board of directors is meeting that same week. We will meet during the Wageningen-IRRI workshop on water-saving rice production methods the following week, however.)

17. As luck would have it, the next morning at breakfast I sat with **Aldas Janaiah**, an agricultural economist at IRRI Los Baños. We discussed SRI, and he thought that some of his colleagues in Andhra Pradesh state of India should take an interest in this. He will contact people at the agricultural university there about undertaking trials, explaining that in AP, unlike most other Indian states, the university is well-linked for dissemination. So this could give us another good opportunity in India.

18. On the shuttle bus to the airport I happened to sit with Janaiah, Ren Wang, and Joachim von Braun. We had some further discussions, including with von Braun on questions of root systems and soil microbiology. This symposium was an ideal place to make contacts and have discussions about SRI with key people throughout Southeast Asia. I feel that our links with IRRI, and not just at Los Baños but for several country programs, are now better. Wang will talk with other top management of IRRI to support a cooperative relationship. No matter what the past problems of communication and collaboration, Wang said that IRRI will be glad to work with us -- CIIFAD, Tefy Saina, FoFiFa, the U of Tana, and any of our partners in other countries -- to understand better "the essence" of SRI. He said in the plenary that IRRI should not be interested only in things that it originates itself. It is good that he takes this broader view of SRI, seeking to understand its "essence," not seeing the matter as just one of "technology evaluation."

I also learned that we are doing with SRI "resonates" with a lot of the thinking in German universities these days. There is a lot of interest in soil microbiology and in the roles of roots. I especially thanked **Prof. Franz Heidhues**, the eminent agricultural economist at University of Hohenheim who headed the planning for the symposium, for giving us this opportunity to share our experience and thinking about SRI. He said rather that he should thank us of making the presentation, as it was a valuable contribution to the symposium.

He was very complementary about our breaking new ground and spoke of the need to shake up old ways of thinking when they were no longer supportable empirically.

With a rice scientist as eminent as M. S. Swaminathan now willing to consider SRI as "basically sound," SRI should encounter much less opposition, so that attention can be devoted to testing and demonstration, not debating whether SRI is worth evaluating. With a growing number of partners in a wide variety of countries we can proceed with the task of building up systematic knowledge that can inform and motivate better practice. I am sure that this is what Fr. de Laulanié would like to see happening. The insights that he developed by working with farmers should begin to make their way into accepted rice science.