



Seeding the Way with Systems of Rice Intensification in Cambodia

Introduction

Mrs Tea Sarim is one of the participating farmers in a European Union funded multi-country (Cambodia, Lao PDR, Vietnam and Thailand) project called “Sustaining and Enhancing the Momentum for Innovation and Learning around the System of Rice Intensification (SRI) in the Lower Mekong River Basin” (<http://www.sri-lmb.ait.asia/>). Mrs Sarim is from Kampot Province in Cambodia, where she farms paddy rice.

She is a 57 year old farmer who has readily shared her SRI adaption experiences with others. She has enlightened many women farmers with SRI farming techniques in her small village called Deim Pour in Angkor Chey district. She was selected to participate in a season long training for farmers called CFPAR and later became one of the smartest farmer trainers to transfer knowledge of SRI techniques to other farmers in her community by conducting various Farmers Participatory Action Research projects.



Figure 1. Khmer women in the rice field

Khmer¹ women farmers are very hard working and have a hectic work life supporting their family needs, daily household jobs and other agricultural works. Sarim is one of those too, and is responsible for feeding her family. Having practiced farming for five years, Sarim was unable to feed her family well and conventional farming consumed a lot of time and labour.

She experienced her workload being reduced after adapting SRI in her fields. Today, she produces more than 6 tons per hectare by spending less cost on seeds, water, labour, and other resources. In three years span, after adapting SRI, she has watched her sticky rice field grow well with tillers producing many seeds and reduced about 20% of her workload. Today, she is very happy with the results of SRI and able to support basic and other commercial needs of her family.

Sarim is one of the popular SRI farmer trainers in her village and wishes to help many other women farmers in her neighbouring villages to improve their economic condition.

Dr. Abha Mishra, the Team Leader of the Mekong SRI regional project and Co-Director of Asian Centre of Innovation for Sustainable Agriculture Intensification (ACISAI) at the Asian Institute of Technology (AIT), provided the following insights about the system and challenges.

¹ Khmer is synonym for Cambodian people and Cambodian language. Khmer is the dominant ethnic group of Cambodia.



Description of the Agroecology system



Figure 2. SRI weeder; Photo by Y.S. Koma, 2012.

Rice of course has been grown in this region for a very long time. Looking at it in agroecological terms, paddy rice is an open and dynamic system with a large potential to tap unused energy embedded in the biological resources and their ecological interactions. The farmers, in seeking to develop more agroecological approaches, have focused on better utilization of biological resources and decreasing fossil-fuel use.

Significant attention has also been paid to social processes and local culture and to supporting active participation of various actors working at the local, national and

regional levels. It is recognized that the participation of all actors is needed for collective action to generate positive-sum outcomes with creation of value, mostly economic but also social and environmental.

Agroecology system should be considered as “an evolving system”. Our understandings of it are often new; but the system itself is not our creation and is very, very old. The benefits being seen by this project come from a strong relationship between researchers and farmers, to adapt and evolve the system together.

To build a more sustainable paddy rice system different knowledge were used, as System of Rice Intensification (SRI); System of Crop Intensification (SCI); Farmers’ Field Schools (FFS); and Integrated Pest Management (IPM) and/or Integrated Pest and Production Management (IPPM).

Communities, both farming and scientific and at local, national and regional levels, all are learning from each other and advancing knowledge in this area. Collaboration between and among farmers, researchers, ministries, rural extension personnel, development professionals and international actors has been developed and strengthened for learning purposes. Local, national and regional learning platforms have been established for facilitating dialogue and for implementing activities at all three levels.



Figure 3. Training on SRI

The key SRI practices applied are: transplanting young seedlings or direct-seeding with very low seed rate; maintaining wider spacing between plants; keeping soil preferably moist but not continuously flooded; applying organic manure as much as possible; and managing pest and diseases through IPM. These practices are applied through a FFS approach. The main focus is on the rice crop, but already farmers are developing intercropping with legumes. We are open to bringing in fish culture or horticulture as farmers are in the drivers’ seat, but we are building upward and outward from rice.



It is important to highlight that this initiative was triggered after a drought experienced in 2015 in many areas and especially in Uttradit province of Thailand, where farmers have partial irrigation facilities, it obliged farmers to rethink their water management. With the occurrence of drought, farmers were more serious about water-saving and applying water when it was most needed. Similarly, on pest management issues, farmers experienced less pest and diseases in SRI fields last year and so pesticide application reduced. This year many farmers switched to single seedling transplanting and/or direct-seeding with low seed rate and wider spacing and they applied fewer chemicals. In one of the provinces, participating farmers went completely organic. But the project began with SRI methodology and philosophy, which is intrinsically agroecological. The project sought farmer adaptations and buy-in based on their experience and evaluation.

Political space

It is difficult to talk about political space and political support in the region. In Cambodia, SRI is being supported and promoted by the government for smallholder farmers (since 2006). There is an SRI Secretariat established within the Ministry of Agriculture, Forestry and Fisheries (MAFF) to coordinate the work. In Vietnam, SRI has been endorsed as a “technical advance” by the Ministry of Agriculture and Rural Development (in 2007). There is a recommendation to apply SRI in all food-insecure provinces, especially in northern upland areas of Vietnam. In Thailand, organic production is being encouraged, especially for smallholder farms, and so there is considerable appreciation of some SRI practices within the context of market-oriented demand. Similarly in Laos, there is some recent policy encouragement for SRI and agroecological approaches. Policy as yet needs to be put in place for up-scaling and supporting agroecological approaches.

In terms of supporting research in academia, there is some recent development at universities for Agroecology and multi-disciplinary research work; however, conventional systems still receive more resources and policy support, thereby making multidisciplinary work less attractive for researchers and students. In a few cases, the issues are handled by individual researchers and at farmers’ level with much success; however, they are not able to galvanize needed support from market and policy centres.



Figure 4. Transplanting of rice

In recent years the Agroecology concept has been increasingly used to redesign food systems, and so this subject is not only considering agricultural resources, environment and society, but politics and economics are also integrated in debate and discussion. Therefore, the concept is becoming more and more complex and the degree of ‘fuzziness’ is increasing day by day which creates some confusion among scientists and policy makers. To deal with this, it is important to be explicit in the interpretation of Agroecology based on the practical learning that is gained through their

interventions, either as farmers, researchers or development professionals. The practical experience shared on this subject may not cover all the components of Agroecology and may be categorized as ‘myopic vision’ by some. We suggest that it is worth considering and taking into account the localized vision for understanding the progress and knowledge developed on this subject. The



message should be simplified and ‘localized’ to inform policy so as to galvanize support from government. International policy should align to the field and support such development.

Outcomes of the practices

Farmers from five provinces of Cambodia and Thailand have reported higher profit, almost double, for paddy grown with the System of Rice Intensification management practices. This was due to the higher yield coupled with reduced cost of seed, seedlings, and pesticides, and also due to the higher quality of the grain produced, commanding a higher market price. This was reported from 60 action research sites spread over 15 districts of five provinces, 3 in Cambodia: Kampot, Kampong Speu and Takeo, and 2 in Thailand, Uttaradit and Surin.

Message from farmer to farmers

“Most women farmers in my village are poor and uneducated. It is hard to teach them complicated skills, so we simplified our approach to transfer knowledge to them.”

—Mrs. Tea Sarim, Kampot Province, Cambodia