Feed the Future: Innovation Lab for Integrated Pest Management Trip Report

CountryVisited: Cambodia

Dates of Travel: May 28-31, 2017

Travelers' Names and Affiliations: Buyung Hadi, IRRI

Purpose of Trip: Backstopping CARDI and GDA's activities, coordinating activities with CE SAIN and delivering CE SAIN lecture.

Sites Visited: Phnom Penh

Description of Activities/Observations:

Itinerary:

May 28: Travel from Manila to Phnom Penh, arriving in Phnom Penh on 6.30 pm

May 29: Meetings with EPIC team at IRRI Cambodia, GDA

May 30: Meetings with CE SAIN, CARDI and USAID Cambodia, delivering CE SAIN lecture

May 31: Travel from Phnom Penh to Manila, arriving in Manila on 6.00 pm

Meeting notes:

In dry/early wet season experiments, we are engaging over 35 farmer collaborators across four provinces to test various IPM tactics against weeds, diseases and insect pests (Table 1). In ~20% of these sites, field visits (2-3 times a season) for farmers in the target villages were arranged. Field visits will be arranged for 100% of the sites in main wet season (July-September). Additionally, we plan to arrange for larger scale farmer's field days at some select sites. These field days will be used as a platform for farmer exchange across villages/provinces so that the farmers can see different technologies being tested in the project. Farmer reflection meeting has been done on sites that have been harvested (Table 1) and the farmers' input will be incorporated for the main season's experiments. A coordination meeting with all of the government partners (GDA, CARDI and all PDAs) will be conducted in June/early July to collect data on and synchronize the timing of planting date, field visits, and farmers field days. We will also start collecting data on farmers across the target villages that do

not belong to our original collaborator groups but are interested or have started to independently test the IPM components. Both CARDI and GDA reported that some farmers have indeed started doing this at some of the target villages. Mechanisms for backstopping and supporting these early adopters will also be discussed at the coordination meeting in June/July.

Province	Village	Experiment	Dry/Early wet season		Comments
			Start	Finish	
Prey Veang	Thom	Trichoderma x Resistant Varieties	January	May	WS will start in July (perhaps)
		Weed Management (5 treatments including farmer's practice – 3 reps, 4 reps for the rest)	January	May	WS will start in July (perhaps)
	Sdao	EPF (Beauveria – Angkor Green) and Pre EM (cold press lemon oil) (4 reps + 4 reps of farmer's practice)	April 17 (early wet)	July	WS may start in late July
Takeo	Tonlenbattie (PDA station)	Trichoderma x Resistant varieties (4 treatments, 4 reps)	Early April	July	WS will start in June at CARDI – change IR504 to another early maturing/susceptible variety. This will also be used for Corey Riedel's experiment.

	Kandaul	CTBS (3-5 Ha per site, 2 treatment, 3 reps)	Done		Will start wet season in early July
	Rovieng	CTBS (3-5 Ha per site, 2 treatment, 3 reps)	May 25	August	Will start the wet season in early September (may use this as a demo plot for annual review)
Battambang	Boeug Pring (sensitivities about the station lead)	Trichoderma x Fungicide	Last week of April	Late July	WS may start in late July
	Boeug Pring	Weed management	May 21	Late August	As much as possible, stick with the same collaborators – but if necessary (for this case), add collaborators so that we can start WS in July?
	Ota Gnea	Weed management (4 farmers, 4 reps, 4 treatment) + 3 reps of farmer's practice	January	May	WS will start in July
Kampong Thom	Balaing (Station)	Trichoderma	May 7	August	WS will start in July (overlapping with current setup, different plots)
	O Kunthor Tbong	Weed management (4 farmers, 4 reps, 4 treatments) + 4 reps of	May 15	August	As much as possible, stick with the same collaborators – but if necessary (for this case), add collaborators so that

		Farmer's practice			we can start WS in July
	Pannachi	EPF (4 farmers, 4 reps, 4 treatments) + 4 reps of Farmer's practice	March 28	July	WS will start in July

A few specific concerns were raised on the current research protocol:

- There is a need to incorporate snail management in the Basic IPM part of the protocol. Usage of botanical moluscicide was raised (Saponin-based) as a possibility. Thus far we recommend hand picking of snails but not all collaborating farmers are willing to practice this.
- There is a wide variability in seed quality across the provincial sources. We are working to identify a number of trusted seed sources that can be shared among provinces. Another possibility is to centralize the seed source from CARDI in Phnom Penh, however CARDI does not distribute some of the popular varieties we are using as comparison in the project.
- There is a concern about the use of drum seeder as a part of our IPM package. While drum seeder indeed facilitates manual/rotary weeding during the early stage of rice production, it is not popular in the country and farmers seem hesitant to adopt this (CARDI and GDA's input). However, our collaborating farmers did not express a similar concern during the reflection meetings.

Farmer's diary data were collected in Prey Veang (as a pilot). This data will help us conducting the economic/gender specific cost/benefit analysis for each IPM component. The experience in Prey Veang will be used to guide collection of farmer's diary data in the other provinces (to be conducted by PDA at each province).

Provincial learning alliances have been conducted at each of the target province involving farmer groups, public and private sector actors. Participatory impact pathway analyses were conducted at each event. Reports of these alliances are forthcoming. Some of the learning alliances identified province-specific activities that they see will further the adoption of the IPM package (e.g. private sector training). We will evaluate the feasibility of supported these recommendations for FY 2017/2018.

At the meeting with CE SAIN we agreed that:

- EPIC will supply a protocol of rice BMP that will be incorporated to CE SAIN technological parks in Kampong Thom and perhaps Battambang. This will incorporate IPM components with clear positive data such as Trichoderma, resistant variety, line sowing, and trap barrier system. IRRI staff in EPIC will backstop the demonstration plots as we travel through Kampong Thom. IRRI staff can also act as resource person for large scale demonstrations/field days in the future.
- Rica Flor will give another CE SAIN lecture sometime in July/August.
- Rica Flor and Hok Lyda (CE SAIN director) will meet in mid-June to identify potential collaborators from RUA that work on innovation system research to be funded either through CE SAIN research grant/scholarship in tandem with EPIC student research funds.

We discussed the possibility of integrating Corey Riedel's research activity into the early wet Trichoderma experiment at CARDI. CARDI agreed to facilitate this, provided that Doug Pfeifer, Corey and IRRI come up with a coherent protocol that they can evaluate beforehand. We also discussed the possibility for Corey to use CARDI's laboratory and to join CARDI's shuttle for employees who live in Phnom Penh. IRRI has sent a formal request letter on Corey's behalf on this issue. In general, Khay Sathya (CARDI) thought that Corey would be able to access both CARDI's laboratory facility and shuttle during his stay.

CARDI is planning to conduct a rice health assessment/rice IPM training targeting academic faculties, NGOs, private sector actors and government officials on the third week of September. CARDI will provide the leadership and IRRI will provide support for this activity. Training materials being developed by CEDAC and Harvey Reissig can be tested in this training. Neang Channeth, GDA employee receiving training on mass production of biocontrol agents in Bangkok, will act as a resource person in this training.

Suggestions, Recommendations, and/or Follow-up Items:

- Farmers' input from reflection meetings need to be included in the protocol for main wet season experiments and shared to all national partners at the coordination meeting in June/July.
- Corey's research will be conducted at CARDI on top of the trichoderma experiments. We have negotiated access to CARDI's laboratory and shuttle service. Rica will help Corey on getting a short term lease apartment close to shuttle drop off. A protocol that meshes the trichoderma experiment and Corey's research (ecological engineering) needs to be formulated. Buyung has started email discussion with Doug Pfeifer on this.
- CARDI is conducting a rice health assessment/rice IPM training for academic faculties, government officials, NGO and private sector staff in September

2017. Training materials being developed by CEDAC and Harvey Reissig need to cater at least partly to this training.

List of Contacts Made:

Name	**Title/Organization**	**Contact Info (address, phone, email)**
Hok Lyda	CE SAIN, RUA	hoklyda@rua.edu.kh
Khay Sathya	CARDI	khaycardi@yahoo.com
Chou Cheythirith	GDA	Thyrith72@gmail.com