

# WORKSHOP REPORT



## Workshop/Training on Decision Making and Sociological Tools in Pest Management



ADB

20-23 April 2009  
Long Dinh, Vietnam

IRRI

24 April 2009

## SUMMARY

On April 20-23, the second in-country workshop-training course on “Decision making and sociological tools in pest management” was held at the Southern Regional Plant Protection Center in Long Dinh, Tien Giang province. Field work was carried out in Cai Be district.

Mr. Nguyen Van Khang, Director of Agriculture and Rural Development, Tien Giang province, formally opened the training with a welcome address. In his speech, Mr. Khang expressed her gratitude to ADB and IRRI for selecting Cai Be district in Tien Giang as the experimental site for the project. Cai Be is a rice growing area facing these challenges: 1) perturbations in its ecology and 2) farmers’ knowledge gaps and misperception in planthopper management. Mr. Khang stressed that in order to manage the pest problems, there is a need to understand the ecosystem. He pointed out as workshop participants include the plant protection technicians and local leaders in Cai Lay and Cai Be districts, the training will be a good opportunity for them to learn how to implement the project and how it can be expanded to other regions.

Fourteen plant protection officers and local leaders in Cai Lai and Cai Be districts and the Southern Regional Plant Protection Center participated in the workshop-training. Mr. Pham Minh Sang, deputy director of the Pesticides Control Centre, Plant Protection Department, served as workshop interpreter.

After the opening session, Dr. Heong, principal investigator, presented the background of the project and the expected outputs. This was followed by a description of the workshop/training objectives and expected outcomes by Dr. Escalada, Output 4 coordinator. Group exercises and focus group discussions with farmers in Cai Be District provided participants with insights into the use of sociological methods to understand farmers’ decision making, e.g., focus group discussions, emic-etic, folk taxonomy and folk paratomy. Results of group exercises and FGDs with farmers, folk taxonomy and paratomy are presented in the report.

### Background

Between 2004 and 2007 several countries in Asia suffered heavy pre harvest losses caused by outbreaks of the planthopper pests and virus diseases they carry. In 2005/06, rice production in Vietnam particularly in the Mekong Delta suffered an estimated loss of ~ 400,000 tons (or 1.1 % of Vietnam’s total). In China the planthopper problems are persistent and in 2005 about 2.8 million tons loss was reported. Also in 2005/06 extensive outbreaks of BPH occurred in Korea, Japan and Vietnam bringing about yield losses of more than 3 million tons. Planthopper outbreaks are continuously being reported in other Asian countries (see <http://ricehoppers.net/?s=outbreaks>).

In April 2008 as a response to the rice crisis, ADB invited IRRI to submit a proposal that will help reduce losses, both pre and post harvests under the 13<sup>th</sup> RETA program

(Regional Technical Assistance). The project entitled “Bringing about a Sustainable Agronomic Revolution in Rice Production in Asia by Reducing Preventable Pre- and Postharvest Losses” or the “Rice Planthopper Project” in short, was approved in October 2008.

The project will employ a multistakeholder participatory process in planning, review and monitoring of project outputs in target countries. The participatory process will engage policymakers and stakeholders in research, extension, the private sector, NGOs, local government, and farmer groups to contribute toward developing detailed research plans, help implement and review results, have policy dialogues, and provide feedback. Research on farmers’ knowledge, attitude, and practices (KAP) to document impacts on farmer and policy adoption of new ecological ideas will be conducted. The KAP studies will involve conducting focus group discussions and structured interviews of farmers and key stakeholders.

To achieve project outputs in target countries, the in-country workshop-training course aims to impact knowledge and build the capacity of project partners in decision making, sociological tools and impact assessment. With enhanced skills, partners can participate in planning, implementing and reporting baseline research activities to understand farmers’ planthopper management and key stakeholders’ response to planthopper outbreaks.

### **Workshop objectives**

1. To provide workshop participants with a theoretical understanding and conceptual framework on decision making – bounded rationality, procedural rationality and substantive rationality.
2. To improve participants’ understanding and skills on emic-etic approach, farmer survey techniques and focus group discussions.
3. To develop belief statements to explore farmers’ knowledge and beliefs in planthopper management and ecological engineering.
4. To conduct focus group discussions with farmers to explore their knowledge and beliefs in planthopper management and non-rice habitats.
5. To develop a survey work plan, including questionnaire pretesting, fieldwork, data processing and analysis.

**Resource persons:** Drs MM Escalada and KL Heong

### **Participants**

1. Nguyen Van Hai                      Chief of Plant Protection Station, Cai Be district-  
Plant Protection Sub-Department,  
Tien Giang province



## Workshop Outputs

Key outputs of the workshop- training were a set of belief statements for the baseline survey, a work plan and an estimated survey budget, as follows:

### 1. Belief statements

#### Box 1 - Group 1- Planthoppers

##### **BPH – damage, biology**

1. BPH is the most damaging pest in rice.  
*(Ray nau la dich hai nguy hiem nhat tren cay lua)*
2. BPH can only live on rice and no other plant.  
*(Ray nau chi sinh song tren cay lua ma khong song tren cay trong nao khac)*
3. Frequent insecticide use will lead to BPH outbreaks.  
*(Viec su dung thuoc tru sau thuong xuyen se dan den ray nau phat trien thanh dich)*

##### **Causes of BPH outbreaks**

4. Natural enemies can suppress BPH.  
*(Thien dich co the khong che duoc ray nau)*
5. If my neighbor farmer sprays insecticides, I must spray also.  
*(Neu nong dan o ruong ke ben phun thuoc tru sau thi toi phai phun thuoc)*

##### **BPH management strategies**

6. Sowing rice at the same time will reduce planthopper population.  
*(Sa dong loat se lam giam mat so ray nau)*

##### **Where do BPH come from?**

7. BPH are brought by wind.  
*(Ray nau di chuyen nho gio)*

## Box 2 - Group 2- Non-rice habitat

### **Nature of non-rice habitats**

1. Non-rice habitats are sources of pests and diseases.  
(*Moi truong song khong co lua la nguon luu ton cua sau benh hai*)
2. Non-rice habitats provide refuge to natural enemies.  
(*Moi truong song khong co lua la noi tru ngu cua thien dich*)

### **Uses of non-rice habitats**

3. Wild flowers on bunds give no benefit.  
(*Hoa dai tren bo ruong khong mang lai loi ich gi ca*)
4. Planting wild flowers on the bunds is a waste of time.  
(*Trong hoa dai tren bo ruong chi lang phi thoi gian*)
5. Wild flowers can easily be grown on the bunds.  
(*Nhung loai hoa dai co the trong de dang tren bo ruong*)

### **Maintaining non-rice habitats**

6. All kinds of plants grown on the bund should be removed.  
(*Tat ca thuc vat moc tren bo de phai duoc lam sach*)
7. Replacing plants growing on the bunds with wild flowers will bring benefit.  
(*Thay the nhung cay moc tren bo de bang cac loai hoa dai se mang lai loi ich cho nong dan*)
8. Replacing plants growing on the bunds with cashcrops will bring benefit  
(*Thay the nhung cay moc tren bo de bang cac loai hoa mau phu se mang lai loi ich cho nong dan*)
9. Farmers should not use herbicide on the bunds.  
(*Nong dan khong nen su dung thuoc tru co de phun tren bo ruong*)

## 2. Work plan

		2009												2010											
ACTIVITIES		A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D			
2	<b>Baseline surveys of farmers' KAP on planthopper &amp; disease management</b>																								
	2.1. Develop survey instrument	X																							
	2.2. Translate questionnaire		X																						
	2.3. Pretest & finalize survey instrument			X																					
	2.4. Train student interviewers			X																					
	2.5. Conduct survey			X	X	X																			
	2.6. Edit survey data							X																	
	2.7. Enter the data in Excel							X																	
	2.8. Data processing & analysis							X	X																
	2.9. Write report											X													

## 3. Focus group discussions

Workshop participants, divided into two groups, conducted two focus group discussions with farmers on April 21, 2009 in Cai Be district in Tien Giang province.



Source: CAI BE TRADING & SERVICE JOINT STOCK Co.

Cai Be district is located on the left hand side of the Upper Mekong River with a population of 1,681,558. The total area of this river-land mixed town is 2,366,63 km<sup>2</sup>.

### 3.1 Focus group discussion with farmers

#### 3.1.1 Planthoppers

<i>Themes</i>	Hau My Trinh Village
1. Most damaging rice pests	<ul style="list-style-type: none"> <li>- BPH</li> <li>- Blast</li> </ul>
2. Causes of BPH outbreaks	<ul style="list-style-type: none"> <li>- Overuse of insecticides will stimulate BPH development.</li> <li>- Farmers do not plant rice at the same time.</li> <li>- Many insecticides have knockdown effect but they also kill natural enemies.</li> <li>- Too much pesticide advertising and promotion</li> <li>- Highly toxic insecticides are often cheap</li> <li>- Traditional varieties are susceptible but farmers still plant them because they can sell these easily.</li> <li>- Farmers' belief in IPM is lost because natural enemies were unable to control BPH.</li> <li>- Single fertilizers (not compound fertilizers) will suppress BPH population</li> <li>- Some farmers observed that if there are few spiders, there are more BPH.</li> <li>- Adult BPH may have low population but when the eggs hatch, the number of instars is high.</li> </ul>
3. Natural enemies of BPH	<ul style="list-style-type: none"> <li>- Cyrtorrhinus</li> <li>- Beetle</li> <li>- Lycosa</li> </ul>
4. BPH management strategies	<ul style="list-style-type: none"> <li>- Use escape strategy; which might work better in a large area not in small individual fields.</li> <li>- Reduce seeding rate</li> <li>- Follow synchronized planting</li> <li>- Make integrated BPH management a community-based approach.</li> <li>- Farmers worry that if they don't use insecticide to control BPH and farmers in the neighboring fields apply insecticides, then the BPH will move to their unsprayed field.</li> </ul>
5. Insecticide control for BPH	<ul style="list-style-type: none"> <li>- Some farmers use insecticides selectively.</li> <li>- Chemical companies claim that their pesticides are effective but they are not.</li> <li>- Farmers said that no pesticide is effective because they spray on top of the rice plant.</li> </ul>

6. Where BPH comes from	BPH is brought by wind
7. Did you have hopperburn last season?	Yes, we had hopperburn in some areas.
8. If the government says that you should plant flowers on bunds, what will you do?	Follow it if everyone is made to plant flowers on bunds, not just individual farmers.

### 3.1.2 Non-rice habitat

<i>Themes</i>	Hau Bac A Village
1. Have farmers seen insects in non-rice habitats?	<ul style="list-style-type: none"> <li>- There are some pests - BPH, bird, rat, worm, spider.</li> <li>- Non-rice habitats are sources of pests and diseases of rice – sheath blight</li> <li>- It is a shelter of some insect pests – where insect pests may lay eggs.</li> <li>- Non-rice habitats have some natural enemies – spider, beetle</li> </ul>
2. Uses of non-rice habitats	<ul style="list-style-type: none"> <li>- We should clear the weeds on the bunds as weed seeds will drop in the rice field.</li> <li>- Keep weeds on bunds because these are a shelter for natural enemies but cut their flowers to prevent the weed seeds from entering the rice field.</li> <li>- Mung bean can be grown on the rice bunds.</li> </ul>
3. How to protect the non-rice habitat	<ul style="list-style-type: none"> <li>- Keep the grass on the rice bunds; grass can be used as animal feed for buffalo, cattle.</li> <li>- Farmers could plant flowers on the rice bunds.</li> <li>- Flowers can't be planted on bunds because bunds are narrow and herbicides applied to kill weeds could also kill the flowers on bunds.</li> <li>- Farmers also walk on the rice bunds and they can step on the flowers and kill them.</li> <li>- During the growing season, farmers put the weed residue on the rice bund. If flowers are grown, they have no space for putting the weed residues.</li> <li>- If we grow flowers on the rice bunds, can weeds on the bunds be suppressed or weeds will still</li> </ul>

	<p>flourish and we need to control them?</p> <p>- We don't know what kind of flower is suitable for growing on the rice bunds.</p>
<p>4. Will you accept or adopt the technique of growing flowers on the bunds if there is government support?</p>	<p>- If flower growing on the bunds can reduce at least 30% of insect pest population, then they will adopt, provided that the government will provide them with flower seed and technical advice.</p>

### 3.2 Lessons learned from FGDs

- 1) Farmers see the world differently. They think of growing flowers on the bunds as serious flower growing which requires cultivating them and making sure they are not stepped on.
- 2) Farmers can't appreciate small organisms such as parasitoids which are not so visible – need to find a way to communicate these to farmers.

#### 4. Folk taxonomy – rats

Folk	Scientific
Chuot bo	Mus
Chuot com	Rattus Argentiventer
Chuot cong heo	
Chuot cong nhum	Bandicota
Chuot lac	R. oliardii
Chuot sa	Shrew
Chuot dua	Probably a variation of chuot com

#### 5. Folk taxonomy – leaf-eating insects (Appendix 1)

#### 6. Folk taxonomy – stages of a rice crop (Appendix 2)

#### Workshop Materials

Workshop handouts and PowerPoint presentations are found in Appendices 2 and 3 of the Thailand workshop-training report. A new workshop handout is presented in Appendix - “How to come up with a realistic survey budget”.