



REPORT

Second National Review and Planning Meeting for SRI-LMB



Ha Tinh, Vietnam - 17 August 2017



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1. BACKGROUND

1.1 CONTEXT

SRI-LMB (<http://www.sri-lmb.ait.asia/>), an EU-financed regional project, hosted by the Asian Center of Innovation for Sustainable Agriculture Intensification (ACISAI), Asian Institute of Technology, Thailand (www.ait.asia), aims to contribute towards enhancing the resilience of rainfed farmers confronting climate change in the Lower Mekong River Basin (LMB) region. It brings various stakeholders together working at global, regional, national, and local levels. The purpose is to increase crop yield, productivity and profitability on sustainable basis at smallholder farmers' field in rainfed areas of LMB. The project through its action aims to address the food security and livelihood issues of smallholder farmers by developing adaptive measures against climate change. The action is being implemented in four LMB countries: Cambodia, Laos, Vietnam and Thailand. The total period for implementation is 60 months (2013-2017). The project is led by the Asian Institute of Technology (AIT) in partnership with FAO, Oxfam, SRI-Rice of Cornell University and University of Queensland together with many national partners coming from national universities, NGOs and ministries.

The Project Management Unit (PMU) of SRI-LMB Vietnam in partnership with the Plant Protection Department (PPD), Ministry of Agriculture and Rural Development (MARD) and Crop Production & Plant Protection Sub-Department of two provinces (Bac Giang and Ha Tinh) has organized a series of activities since 2014.

In April 2013, the Project organized a Regional Inception and Planning Workshop in Bangkok (Thailand). This was followed in May 2014, by the National Inception and Planning Workshop in Vietnam organized to develop detailed work plans for the project involving participants from Plant Protection Department, Ministry of Agriculture and Rural Development, AIT, Oxfam and other relevant stakeholders and representatives of the two selected provinces (Bac Giang and Ha Tinh).

Participatory rural appraisal conducted by the local civil society organization (CSO) Community Action Center (COMAC) and baseline surveys were conducted that led to the establishment of season-long Central Farmer's Participatory Action Research (CFPAR), one in each province Bac Giang and Ha Tinh. The CFPARs trained approximately 60 Technical Staff and Farmer Trainers (from 3 districts of each province). Technical Staff and Farmer Trainers established over 12 experiments at 12 Farmer's Participatory Action Research (FPAR) sites in summer season 2015 in Bac Giang province. In December 2015, the results of these FPAR experiments were deliberated, debated and validated by the Technical Staff and Farmer Trainers and provincial group at the provincial workshop.

Following that, in a second cycle (2016) and third cycle (2017) of FPARs, a total of 60 new farmers' groups were established (36 from Ha Tinh and 24 from Bac Giang provinces). A total of 60 successful field experiments were set-up in second and third cycles of FPARs in the two provinces from January 2016 to June 2017 participated in by 1,800 farmers. The first National Review and Planning Meeting was held in Bac Giang in November 2016. Participants included representatives from PPD, MARD; local civil society organizations (CSOs); academic institutes; representatives from Bac Giang and Ha Tinh; Local Management Unit (LMU) Coordinators, Trainers and Farmer Trainers; development and project partners (FAO-IPM); and the Project Coordination Unit (PCU). The meeting reviewed the activities that were conducted from 2014-2016; CSO partners shared experiences gained during the implementation of SRI activities; activities were planned for the third FPAR cycle.

Results of FPARs conducted over three cycles from 2015-2017 show that average yield (tons/ha) from 36 SRI demonstration fields in Bac Giang from summer season 2015 to spring season 2017 was higher than Farmer Practice (FP) fields by about 0.6 -1.2 tons/ha. In SRI fields, because of reduced expenditures, especially reduced rice seeds and pesticide use rates, the net returns (benefits) increased from VND 6,081,000 - 8,931,000/ha (US\$ 267.51 -392.85/ha¹). In Ha Tinh, average yield (ton/ha) from 36 SRI demonstration fields (FPARs) from spring season 2016 to spring season 2017 was slightly higher than FP fields (0.16 - 0.36 tons/ha). The net returns from SRI fields were slightly higher from VND 2,500,000 - 3,000,000 (US\$ 109.10 - 131.96) because of reduced expenditures, especially reduced transplanting density from 4-5 seedlings/hill to 1-2 seedlings/hill, reduced or no pesticide use and lower costs of

irrigation. In all experiments, plots where SRI practices were employed performed better and got higher returns compared to plots where farmers' conventional practices were applied.

It was against this background that the second National Review and Planning Meeting was held in Ha Tinh province on 17 August 2017. The purpose of the meeting was to showcase some of the successful SRI innovation from fields and by farmers and collect feedback from local and national audience to strengthen project implementation through an improved work plan for the future, beyond the SRI-LMB project.

1.2 PURPOSE

The purpose of the National Review and Planning Meeting was to assess the result of project activities and discuss plans for FPAR follow-up activities after completion of the EU-funded project.

1.3 OBJECTIVES

The National Review and Planning Meeting was organized by the FAO IPM Programme country office, SRI-LMB PMU in Vietnam with assistance from the National IPM Programme and was expected to:

- share learning from the implementation of the FPARs by Trainers and Farmer Trainers from 6 districts in 2 provinces in Vietnam;
- disseminate and promote best adaptable local practices (innovative technologies) for sustainable rice intensification;
- inform conformity of the project's objectives and its results within the Government's target "New Rural Development" strengthening the linkage between agriculture and socio-economic development and other policies by engaging MARD policy makers and its departments (e.g., PPD) with other projects and CSO's working in similar areas;
- discuss plan of actions for FPAR follow-up activities after completion of the EU-funded project.

(Please refer to Annex 1 for the detailed schedule of the National Review and Planning Meeting).

1.4 PARTICIPANTS

Participants included representatives from Farmer Trainers and community-based organizations from two provinces (Bac Giang and Ha Tinh) as well as national and provincial agriculture departments, the PCU based in Asian Institute of Technology (AIT), FAO, the local partner civil society organization (i.e., Center of Initiatives on Community Empowerment and Rural Development), and related academic and research institutions [i.e., Center for Agricultural Research and Ecological Studies (CARES), Vietnam National University of Agriculture and Thai Nguyen University (TNU)].

(The list and contact details of each participant are attached in Annex 2.)

2. SUMMARY OF SESSIONS

The meeting was divided into three major sections: (1) review of activities implemented from 2014-2017; (2) experience sharing by other institutions and organizations working in SRI-related project/activities; and (3) planning for FPAR follow-up activities post the EU-funded project.

The first session aimed to share general information on results of activities from Bac Giang and Ha Tinh provinces; the second session shared information on impact of FPARs on application of SRI practices in Bac Giang and Ha Tinh; support to FPAR women's groups in Bac Giang province; and the Vietnam SRI Network. In the planning part, the LMU Coordinators presented their work plans for FPAR follow-up activities beyond the EU-funded project.

2.1 REVIEW OF RESULTS FROM 2014-2017

After the Welcome Speeches by **Mr. Nguyen Quy Duong**, Vice General Director of PPD, MARD and **Mr. Nguyen Tuan Thanh**, Vice Director of Ha Tinh Agriculture and Rural Development Department, **Mr. Nguyen Tuan Loc**, Director of Plant Protection Centre Region IV and National Training Expert presented the results of project implementation from 2014-2017. A summary of the activities and number of participants are presented in Table 1.

Table 1: Key activities and participation in SRI-LMB Project 2014-2017

Activities	Bac Giang	Ha Tinh	Total
Spring season 2015 (Jan to May 2015)			
Central Farmer's Participatory Action Research (CFPAR)			
- Number of participants	1	1	2
- Number of women	33	33	66
- Number of Field Experiments	22	14	36
- Number of SRI Demonstrations	3	3	6
	1	1	2
Summer season 2015 (Jun to Oct 2015)			
Farmer's Participatory Action Research (FPAR)	12	-	12
- Number of farmers	360	-	360
- Number of Field Experiments	12	-	12
- Number of SRI Demonstrations	12	-	12
Spring season 2016 (Jan to May 2016)			
Farmer's Participatory Action Research (FPAR)	-	12	12
- Number of farmers	-	360	360
- Number of Field Experiments	-	12	12
- Number of SRI Demonstrations	-	12	12
Summer season 2016 (Jun to Oct 2016)			
Farmer's Participatory Action Research (FPAR)	12	12	24
- Number of farmers	360	360	720
- Number of Field Experiments	12	12	24
- Number of SRI Demonstrations	12	12	24
Spring season 2017 (Jan. to May 2017)			
Farmer's Participatory Action Research (FPAR)	12	12	24
- Number of farmers	360	360	720
- Number of Field Experiments	6	12	18
- Number of SRI Demonstrations	12	12	24

The field experiments focused on solving problems in agriculture production such as: high cost of production resulting from high transplanting density (number of hills/m² or number of seedling/hill) and high seeding rates for broadcasted rice; weed management; and lodging of rice plants resulting from lack/method of application of potassium or method of fertilizer application and water management. The field experiment plots were arranged according to RCBD, with three treatments and three replications. The treatments in the experiment on transplanting density used the same amount and method of fertilizers application. The treatments on the experiments on method of potassium application and fertilizer application used the same transplanting density. Weekly field surveys and observations were carried out as part of the agro-ecosystem analysis for making field management decisions. At the end of each season, productivity and economic benefits were calculated. In the demonstration fields, SRI principles were applied (e.g., transplanting with young seedling, one seedling/hill, pest management based on agro-ecosystem analysis). The SRI demonstration fields were compared with farmer practice fields (FP).

In SRI demonstration fields, depending on local conditions, farmers applied one or more SRI principles (e.g., reduced transplanting density, use of young seedlings, and not keeping water in the field the whole season).

In general, in both experimental fields and SRI demonstration fields, the farmers saved on the costs for seeds, water, chemical fertilizers, pesticides. The savings in addition to increased yield productivity led to increased benefits from rice production.

To supplement the report of the National Training Expert, Ms. Do Thi Luyen (LMU Coordinator, Bac Giang province) and Mr. Nguyen Tong Phong (LMU Coordinator, Ha Tinh province) shared more details for each province, including:

- Criteria for selecting FPAR farmers: Hard working, smart and poor farmers and interested in learning.
- Criteria for selecting FPAR location: The field is large enough (500-1,000 m²), with conditions similar to/representative of other fields in the location and convenient to visit.
- Information on FPARs: Location, date of opening, date of flowering, date of harvesting, number of sessions and name of Farmer Trainer for each FPAR.
- Design of field experiments: The experiments were arranged as RCBD with 3 replications, with bunds between plots.
- Economic analysis: Seeds, fertilizer, pesticide, labour, other costs; total yield, price, net income and benefit.
- Components of yield and productivity including: Number of panicles/hill, number of panicles/m², number of grains/panicle, number of filled grains/panicle, % filled grains, weight per 1,000 grains, theory yield and actual yield (ton/ha).

2.2 Key learning from FPARs

- Select the experiments to respond to location-specific problems and condition: e.g., transplanting density or seeding rates for broadcasted rice – depending on climate and varieties commonly used in the location. Almost all experiments and SRI demonstration fields gave high yields and reduced expenses so the farmers and local leaders are interested in and support the project.
- Selecting fields for experiments should be according to the purpose of experiment, e.g., if one of the objectives of the experiment is to show results of water management regimes (i.e., draining at tillering stage and keeping water in at dough and ripening stage), the sites should be selected where the most impact can be demonstrated. For example, selecting sites with access to irrigation facilities or fields that allow control of water application.
- Better preparation is needed before implementing field experiments including selecting farmers, selecting fields, selecting and layout of experiments and defining the survey methods.
- The groups should be ready to deal with severe weather conditions as flooding, drought, pest and disease occurrence. (Last season, one experiment in Luc Nam district could not be completed because when the rice seeds were broadcasted there was prolonged and extremely heavy rains that destroyed all rice fields. Because it was late in the season, the fields could not be re-sown for the experiment.)
- District Trainers should be equipped with enough knowledge as to be able to explain to farmers about problems faced during the implementation of the field experiments.
- It is a must to keep records in the Field Diary on the basic data to calculate productivity, benefits and other things related to rice production.
- Strengthen communication from commune level to PMU, especially on reporting and recording data from field experiments.
- Select core farmers with good technical knowledge and experience and enhance their capacities on SRI through FPARs using Farmer Field School (FFS) approaches. The model using core groups of farmers to support Farmer Trainers and District Trainers can be used to convince local leaders and other farmers in the community about SRI.
- The project provides a technical entry point to work with communities. The application of one or all of the SRI principles will depend on the local conditions.
- SRI introduces practices to cultivate rice and obtain higher benefit, increase yield and reduce expenditures on seeds, fertilizers, pesticides, irrigation, and also improves the environment. To help farmers apply SRI practices and principles, we need to enhance their knowledge and change their attitudes (i.e., about old practices). On the other

hand, we also need to change the thinking of the government technical staff and managers and lobby for support from local leaders.

- The main local rice varieties should be used for the experiments.
- Select farmers who have NOT participated in FPARs in the previous seasons.
- It is a common practice for farmers not to keep water in the field from milk stage to ripening stage (i.e., drain the field after flowering) that reduces productivity especially when drought sets in. There is a need to carry out an experiment on the influence of water on rice yields/production.

2.3 PROPOSAL FROM PROVINCES

After Mr. Nguyen Tuan Loc reported, a representative for each province (i.e., the LMU Coordinator) presented the province' report and proposal for future activities. The recommendations from both provinces are reproduced below:

2.3.1 Bac Giang:

- Request the FAO-IPM Office, PPD to pay attention to investment and take advantage of funding sources of international organizations to develop SRI on rice and other crops for Bac Giang province.
- Continue to implement field experiments to address agricultural production constraints and assist localities in finalizing procedures to disseminate technical advances to farmers.
- Select localities that are responsive and active as project areas in the future to help local farmers access and apply SRI technical advances to respond to climate change.
- The results of field experiments can be used locally by incorporating research results into technical procedures and training recommended for farmers in the area.
- At the end of the project the group of Trainers would have been equipped with a methodology for guiding farmers to design field experiments and communication methods. Suggest that the group develop and bring about the results achieved to expand to other farmers.
- After completion of the training, participants will actively participate in program activities and mobilize other funding sources to develop the SRI program more and more broadly.
- It is suggested that local governments at all levels should pay more attention to funding and resources to expand the SRI program in general and to the rainfed area in particular.

2.3.2 Ha Tinh:

- It is proposed that local authorities at all levels and professional agencies advocate and guide the application of the SRI into local rice intensification programs.
- AIT, FAO - IPM Office, Plant Protection Department are requested to continue to support and assist localities in expanding the application of improved rice intensification programs and support resources to apply the programme on other crops such as peanut and citrus.

Farmer representative from Bac Giang (Mr. Duong Van Thuyet) and Ha Tinh (Mr. Phan Van Xuan) expressed their impression about participation in the project. They are happy that they increased income from agriculture production by saving on seeds, fertilizers, pesticides while increasing productivity. They hope that the project will expand to other sites and continue longer so that more farmers can benefit.

2.4 SHARING FROM OTHER ORGANIZATIONS

2.4.1 Center for Agricultural Research and Ecological Studies (CARES -VNAU)

Dr. Nguyen Thi Bich Yen, Center for Agricultural Research and Ecological Studies (CARES -VNAU) delivered a presentation on the "Impact of FPARs to SRI application in summer season 2016 in Bac Giang and Ha Tinh"

Monitoring was carried out in six communes:

In Bac Giang: Dong Phu, Tan Thinh, Tan Hiep in summer 2015, summer 2016 and spring season 2017

In Ha Tinh: Thach Son, Hong Loc, Song Loc in spring 2016, summer 2016 and spring 2017

The study focused on 3 groups: farmers who participated in FPARs, farmers who did not participate in FPARs (but live in the same communes) and control (farmers who did not participate in FPARs and live in other communes). The purpose of the study was to:

- Assess changes among farmer groups effected by FPAR
- Analyze the characteristics of farmer groups (e.g., differences based on geography and social conditions)
- Provide critical information for policy makers in the development of sustainable agriculture

The following Table provides information on sampling done for and time of survey.

Table 2: Information on survey samples and time of survey

Survey Location	Number of samples			Interview time
	FPAR	Non-FPAR	Control	
Bac Giang	42	21	21	2 times: before and after summer 2015
	42	21	21	Before summer season 2016
	74	19	17	After summer season 2016
	114	21	21	After spring season 2017
Ha Tinh	42	21	21	2 times: before and after spring 2016
	42	21	21	Before summer season 2016
	77	18	17	After summer season 2016
	114	21	21	After spring season 2017

The criteria for assessing application of SRI techniques is provided in the following Table.

Table 3: Criteria for assessing application of SRI techniques

Criterion	Farmer's Practice	Transition to SRI	SRI
Soil for seedling raising (nursery)	wet soil with high seed rate	wet soil with low seed rate	dry soil bed with low seed rate
Age of seedling	> 30 days	16-30 days	8-15 days
Seed rate	100-150 kg/ha	20-20% lower Farmer practice	5-20 kg/ha
Planting density	more than 10 x 10 cm	10 x 15 cm - 19 x 19 cm	20 x 20 cm - 30 x 30 cm
Number seedling/hill	5-6 seedlings/hill	4-5 seedlings/hill	1-3 seedlings/hill
Water management at tillering stage	flooded	Soil kept moist	Alternate wet and dry
Manure	< 5 tons/ha	6-9 tons/ha	> 9 tons/ha

Weed management	Herbicide and by hand	1-2 times by weeding tools	> 2 times by weeding tools
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Findings:

- According to the indicators (i.e., SRI concepts) in the above table, following are some results related to adoption of practices by various groups:
 - ✓ Planting method
 FPAR: Lower no. of seedling/hill (80%); Younger seedling (68%); Lower planting density (40%); Lower seed rate (14%)
 Non-FPAR: N° seedling/hill (68%); Age of seedling (56%); Planting density (33%); Seed rate (3%)
 - ✓ Application manure: FPAR (73%); Non-FPAR (57%)
 - ✓ Hand weeding: FPAR (11%); Non-FPAR (8%)
 - ✓ Water management: 56% applied kept fields wet at tillering stage – please mention for specific groups
 - ✓ Not application pesticides: FPAR (17%); Non-FPAR (11%)
 Reduced pesticide at the tillering stage – please mention for specific groups
- Rice yield and net-return from FPAR farmers higher than non-FPAR farmers
- Farmers believe that applying FPAR- (SRI practices?) reduces amount of seed, pesticides and labor
- Farmers evaluated the FPAR training as “good”.

2.4.2 ICERD

Mr. Ngo Tien Dung, ICERD gave a presentation on the project- **"Support to SRI-LMB FPAR Women's Groups to enhance efficient application and appreciation of SRI for the improvement of livelihoods and the environment"**

The following Table provides a background on difficulties/constraints of FPAR farmers in applying SRI practices.

Table 4: Difficulties / constraints of FPAR farmers in applying SRI practices

SRI principles	Current application
1- Young seeding	Possible application
2- Wide spacing (transplanting) Wide seeding (direct seeding)	Application not as per expectation because of lower soil fertility/nutrient content
3- Alternate wet and dry	Application not as per expectation because of degraded irrigation system; not well prepared drainage in the individual field; difficult to reach the agreement between SRI farmers and non-SRI farmers
4- Weeding and aerating the soil	Less applicable because of lack of tools, lack of labor
5- Increase in use of organic manure/bio-fertilizer	Less of collected livestock waste is applied to the crops because farmers have gotten used to chemical fertilizers
Others issues	Commonly use chemicals to control weed, golden snail
	Men and youth are forced to look for off-farm jobs leaving the agricultural work load on the women

The project to support FPAR women's group will introduce activities to address issues raised by the community in the planning workshop.

The activities include,

- Planning workshop: To identify constraints, difficulties and propose the topics that farmers want to study after FPAR, and implement suggested follow up activities to enhance the application of SRI in the communities.
- Farmer study on applying bio-mats in raising poultry and livestock and making compost: To improve soil ecology (involves collecting livestock waste or residue on bio-mats to make compost to apply on rice and other crops)
- Farmer study on minimum tillage in crop production and mulching with straw: To improve soil ecology; mulch potato field with straw. The straw residues are incorporated into the soil for ecological recycling;_mulching prevents evaporation of soil moisture; preserve organisms in the soil by stopping the practice of burning rice straw;_reduce labor cost from no till.
- Training farmers on preparing alternatives to chemical pesticides: Introduction to mass production and field releases of the bio-agent *Metharizium anisopliae* (entomo-pathogen) to control BPH by the community; production of natural products (plant extracts or 'botanicals' using fermentation), introduction of attractant trap/bait to control vegetable pests.
- Training farmers on pesticide risk reduction (including community action plans): To raise farmers' awareness about risks of chemical pesticides, including discussion about options for risk reduction; survey current situation of pesticide risks in the communities and the cause of risks; propose action plans on pesticide risk reduction and present them to the Commune People's committee.
- Community workshop to analyze gender roles in crop production: To establish the baseline and look into the overall challenges and issues that women face in their farming and application of SRI; create a forum for women and men to discuss about solutions to overcome the difficulties in order to promote SRI in their communities.
- Develop a model on "Sustainable rice intensification, response to climate change": To demonstrate community collaboration in the application of SRI in a large area of over 10 ha, under the facilitation, assistance of FPAR women farmers. Options: Improve irrigation scheme and community collaboration on water use to meet requirements of SRI technique; create the drainage system within the field (drainage system can prevent the occurrence of golden apple snails); Improve technical skills in order to improve soil ecology, reduce labor cost; Apply alternatives to chemicals (fertilizers, pesticides); adopt SRI practices.
- Exchange visit by farmers (farmers visit activities carried out by other study groups): To facilitate visit of leaders of women's Union to the fields for discussion with SRI farmers.
- FPAR women farmers work on dissemination and advocacy: To convince the Commune Authorities about the results from experiments and pilot models through: reports, Farmer Field Days, Farmers' fields as "show rooms", direct dialogue or through Farmer's Union, Women's Union dialogue with commune authorities; use the public address system (i.e., loudspeaker) of the community to inform about the program activities and to disseminate knowledge to the community; participate in drafting Commune's strategic plan, annual plan on sustainable agriculture in which SRI application is integrated; success stories and other documents will be reported to PPSD and PPD-MARD.

Planning activities under a Letter of Agreement between FAO and ICERD have commenced but the implementation of field studies by FPAR women's groups are yet to start.

2.4.3 Thai Nguyen University

Dr. Hoang Van Phu, Thai Nguyen University shared about the "**SRI Network in Vietnam**"

The following points were discussed:

- Five principles of SRI (transplant with young seedling with 2.5-3.0 leaves; transplant with 1 seedling/hill; do not use herbicide, ensure hand weeding 2-3 times; rational water management; organic fertilizer application)
- SRI has been successfully applied in over 55 countries as reported by the SRI-Rice
- In Vietnam, SRI started from 2003 with participation by many organizations including PPD-MARD, Thai Nguyen University, NGOs and extension services. Many SRI Clubs have been set up in some provinces. In 2015, a Vietnamese SRI Network was established. By 2016, about 2,000,000 farmers are applying SRI on a total area of 500,000 ha, as shown in Table 5.

Table 5: Spread of SRI in Vietnam

Year	Number of provinces	Number of farmers	Total area applied with SRI practices
2011	22	1,070,384	185,065
2014	23	1,800,000	394,894
2015	35	1,910,255	436,377
2016		2,000,000	500,00

- The SRI Network aims to gather and connect people interested in expanding SRI in Vietnam; to collaborate in research and dissemination of SRI; be part of proposal calls for raising funds and expanding the SRI policy.
- Since its founding, the Vietnam has: set up a website for the Network; conducted regular meetings, study tours, exchange of experiences in Nghe An, Quang Nam; held a workshop on "Sharing experiences and SRI in the trend of ecological approach"; linked with other SRI Networks; organized the event "A Journey 10 years SRI in Vietnam"
- Plans for the future: To continue to engage in the Sustainable Rice Platform (SRP); write a case study; change logo and slogan; develop Vietnam SRI's kit; upgrade the website by establishing a fan-page; link with SRI-Rice; publish a newsletter 2 times/month; organize meetings through Skype.

2.4.4 FAO

Ms. AlmaLinda Abubakar, FAO Asia Regional IPM/Pesticide Risk Reduction Programme shared information about **"Save and Grow: Innovative Integrated Agro - Aquaculture in Vietnam (and other SEA countries)"**

Key points from her presentation are as follows:

- The total population in the world is expected to reach 9.2 billion people in 2050 and nearly twice as much food as present will be needed. In efforts to intensify crop production, pesticide use in agriculture has increased and brought associated problems, such as harming vital ecosystem services; frequent poisoning and chronic health problems; exposing women and children to risks as well as trade and food safety concerns.
- In Asian crop production: land, labor and water is moving out of agriculture. Major changes in crop production/protection practices and increases in efficiency are needed. In order for crop production to grow, farmers will need to learn how to save resources and use them efficiently!
- FAO's IPM/Pesticide Risk Reduction Programme takes an integrated approach to address pesticide/chemical risks: regulatory control and farmer education.
- Under its Save and Grow programme, FAO supports countries: to focus on the importance of goods/services produced by and available from rice agro-ecosystems, identify sustainable rice production practices to enhance resilience and increase efficiencies in rice production to improve food security, with concerted action from field to policy.
- In Vietnam and other countries in Southeast Asia, the introduction of the innovative integrated agro-aquaculture has resulted in yield increases, significant reduction in production costs, and significant increase in net incomes from rice-fish production and planting of vegetable crops on the bunds. Other aquatic species, e.g., plants, also contribute to household nutrition as less pesticides are used in the rice field.
- In the Philippines, Save & Grow practices have increased rice yields by 27%, reduced cost of production by 17%, and increased net income by 72%
- The following Table gives details about the Vietnam example:

Table 6: Yields and benefits from rice only and integrated rice-aquatic biodiversity production systems

Parameters	Bac Giang	Quang Binh	Average
Rice Yield (kg/ha)	6,120	5,417	5,768.5
Gross income from rice production only (US\$/ha)	2,215	1,569	1,892
Yield of fish and other aquatic organisms (kg/ha)	7,913	1,860	4,886
Gross income from fish and other aquatic organisms (US\$/ha)	9,981	1,738	5,860
Gross income from rice, fish and other aquatic organisms (US\$/ha)	12,196	3,307	7,751
Input cost (US\$/ha)	4,547	1,402	2,975
Profits (US\$/ha)	7,649	1,905	4,776
Difference in gross income between rice production only and integrated rice-fish-aquatic biodiversity production (% increased)	551%	211%	381%

- Agreement between CSO-PPSD-Commune was important as to realize the success of the initiative.
- In 2017, FAO will support the scaling up of the work on agro-aquaculture funding 50 FFS – rice-fish (Ninh Binh; Nam Dinh; Thai Binh) and rice-shrimps (Bac Lieu; Soc Trang; Ca Mau).

2.5 PLANNING ACTIVITIES

The LMU Coordinators of Bac Giang and Ha Tinh presented their work plans for FPAR follow up activities beyond completion of the EU-funded project.

Bac Giang province

- Dissemination and advocacy: To take advantage of local budget and other projects to implement SRI; integrate SRI with other community activities (e.g., set up SRI groups)
- Propaganda: Prepare journal and newspaper articles to disseminate information; develop technical process, ie., guidelines for carrying out above activities; expand through farmers-to-farmer training – this will be based on internal discussions, including interaction with the farmers, but more details need to be worked out.

Ha Tinh province

- Advocate, guide and direct the application of SRI programme on large scale
- Provide directions on potassium application (i.e., 3 times per season) in 3 project communes
- Provide directions for hand weeding 1-2 times/season for areas where conditions are favorable for weeding.
- Develop a model of SRI in a large area: In 2018 on 3-5 ha specifically in Hong Loc commune with planting density at 40 hills/m², 1 seedling/hill; Thach Son commune: planting density at 35 hills/m², 2 seedlings/hill; Song Loc commune: direct sowing at 2kg/sao. Organize FPARs in neighboring communes, in areas where farmers practice direct sowing using a lot of seeds and set up a model on direct rice seeding using machines.
- In 2019: Set up a 5-10 ha model in the villages that implemented the SRI program based on the results of the study. Organize FPARs in neighboring communes and in areas where farmers practice with direct sowing using a lot of seeds and set up a model on direct rice seeding using machines.

2.6 CLOSING SESSION

In the closing session, **Mr. Ashwin Mysore** from AIT remarked that according to the reports from Mr Loc, Dr Yen of Ha Tinh and Bac Giang provinces, SRI practice adoption has been useful compared to non-adoption. Similar trend is seen in other project countries too. The SRI-LMB project was involved with experimentation with SRI practices in the rainfed areas of four countries. Even at the regional level, it is seen that SRI contributes to increasing yield, reducing input costs

and increasing economic efficiency. On the continuity of project activities, one of the comments from Mr Loc was that it was essential to demonstrate SRI on a large plot. The project with ISERD has an activity which is focusing on this, **Dr Abha Mishra** has informed that involvement of AIT in post-project phase will depend on the workshop outputs, plans and recommendations from the Ministry, which will be factored into in our own discussions for planning and decision making.

Mrs. Almalinda Abubakar, FAORAP said that the FPAR was initially designed to select farmers who had graduated from FFS and planned for only 3-4 sessions/season. However, this had to be adjusted to address field realities where there are less farmers trained in FFS in rainfed areas and three sessions are not sufficient. The results that have been demonstrated thus far is due to the efforts of the PPD, National IPM Programme, CP&PPSD leadership, IPM Trainers and Farmer Trainers. Participants were challenged to try out integrated agro-aquaculture to address issues with pesticides, to increase productivity and economic benefits as well as improve nutrition

Mr. Nguyen Quy Duong, Vice DG of PPD concluded saying the SRI-LMB FPARs have allowed farmers to directly engage in fields research to address the difficulties of production in each locality. The experience was practical and will have a direct impact on changing the production practices of farmers as well as their spread to the community.

SRI has brought about economic environmental and social benefits. Based on the reports and comments, the results of the SRI-LMB project are sustainable and have a far-reaching impact on the community, have contributed to reducing production costs (in particular seeds, chemical pesticides and water) and bringing efficiency to production. It is recommended to find the funding sources to promote the scaling up of the project. There are sources from local economic development funding; World Bank 7 project; and agricultural extension funds.

Currently, the Plant Protection Department is implementing the model of value chain production (on black pepper). We will also work with the Vietnam Rice Association to discuss the directions for the development of rice production chain, which provides an opportunity for applying SRI. If FAO resources allow, it is recommended that FAO support Training of Trainers(TOT) courses, because now in the provinces there is a shortage of IPM Trainers who can work with farmers in FFS.

AIT needs to consider continued support through a Phase 2 of this project, expanding SRI to crops other than rice (e.g., peanut, corn, soybean). Sri-Network should work closely with Provincial Crop Production and Plant Protection Sub-Departments (CP&PPSD) to share information on SRI results with a view to disseminate results on a large scale.

Annex 1: Schedule

Schedule of the National Review and Planning Meeting SRI-LMB Project Ha Tinh, Vietnam - 17 August 2017

Time	Activity	Person-in-Charge
0800-0830	Registration	Organizers
0830-0900	Opening ceremony Introduce programme and participants Welcome Address	Organizers Mr. Nguyen Quy Duong, Deputy Director General (PPD-MARD) Mr. Nguyen Tuan Thanh, Deputy Director, Ha Tinh DARD
	Summary of SRI-LMB and learning from SRI-LMB project in Vietnam 2014-2017	Representative of Vietnam's PMU
0900-9300	Report on result of SRI-LMB project in 2 provinces (Ha Tinh and Bac Giang)	Center for Agricultural Research and Ecological Studies (CARES)
090.30-1000	Report on follow up activities in support of FPAR women's groups on the programme in Bac Giang province	Center of Initiatives on Community Empowerment and Rural Development (ICERD)
1000-1015	Viet Nam SRI Network and SRI - Social perspective and development	Dr. Hoang Van Phu, SRI Coordinator, Thai Nguyen University
1015-1030	"Save and Grow: Innovative Integrated Agro - Aquaculture in Vietnam"	FAO's Pesticide Risk Reduction programme;
1030-1045	<i>Tea-Break</i>	
1045-1115	Report SRI-LMB result in Bac Giang province after 3 cycles	Ms. Do Thi Luyen, LMU Coordinator, Vice Director of Bac Giang CP&PPSD
1115-1145	Report SRI-LMB result in Ha Tinh province after 3 cycles	Ms. Nguyen Tong Phong, LMU Coordinator, Vice Director of Ha Tinh CP&PPSD
1145-1155	Report from a farmer in Bac Giang about their impression and feeling when participated on the programme	Farmer from Bac Giang
1155-1205	Report from a farmer in Ha Tinh about their impression and feeling when participated on the programme	Farmer from Ha Tinh
1205-1330	<i>Lunch Break</i>	
1330 - 1530	Planning of the follow-up activities when EU funded project end (by provincial group)	
	Presentation of plan with details of activities by province	Representative of province
	Question and Answer on work plan	
	Summary work plan for next season	
1530-1600	<i>Tea-Break</i>	
1600-1700	Speech by representatives:	

Time	Activity	Person-in-Charge
	<ul style="list-style-type: none"> - Plant Protection Department - AIT - FAO - Farmers - NGOs... 	
1700-1730	Close of the meeting	
1800	Welcome Dinner Hosted by SRI-LMB Project	

Annex 2: List of Participants**LIST OF PARTICIPANTS**

No.	Name	Address	Gender
1	DO THI LUYEN	CP&PPSD BAC GIANG	Female
2	DAM THI THANH HOA	CP&PPSD BAC GIANG	Female
3	NG. THI MINH NGUYET	CP&PPSD BAC GIANG	Female
4	PHAM MINH TU	CP&PPSD BAC GIANG	Male
5	TO VIET LONG	YEN THE DISTRICT	Male
6	THAN VAN HIEN	YEN THE DISTRICT	Male
7	NGUYEN THI NGOC	YEN THE DISTRICT	Female
8	PHAM THI DUNG	LANG GIANG DISTRICT	Female
9	NGUYEN THI THUC	LANG GIANG DISTRICT	Female
10	NGUYEN THI MEN	LANG GIANG DISTRICT	Female
11	NGUYEN VAN LUU	LANG GIANG DISTRICT	Male
12	NGUYEN VAN TUYEN	LANG GIANG DISTRICT	Male
13	CAO MINH QUANG	LUC NAM DISTRICT	Male
14	NGUYEN VAN TA	LUC NAM DISTRICT	Male
15	NGUYEN THI NHUNG	LUC NAM DISTRICT	Female
16	NGUYEN THI VAN	LUC NAM DISTRICT	Female
17	LUONG DUC TINH	LUC NAM DISTRICT	Male
18	DUONG VAN THUYET	FARMER	Male
19	NGUYEN TUAN THANH	DEPARTMENT OF ARD	Male
20	NGUYEN TRI HA	CP& PPSD HA TINH	Male
21	NGUYEN TONG PHONG	CP& PPSD HA TINH	Male
22	PHAN THI ANH THO	CP& PPSD HA TINH	Female
23	TRINH THI GIANG	CP& PPSD HA TINH	Female
24	NGUYEN CAT QUYEN	CP& PPSD HA TINH	Male
25	NGUYEN THI MINH	CP& PPSD HA TINH	Female
26	NG. THI QUYNH NGA	CP& PPSD HA TINH	Female
27	LE VIET BINH	HONG LOC COMMUNE	Male
28	PHAN VAN XUAN	HONG LOC COMMUNE	Male
29	NGUYEN THI HUONG	HONG LOC COMMUNE	Female
30	HO THI LIEN	HONG LOC COMMUNE	Female
31	HO VAN MINH	SONG LOC COMMUNE	Male
32	PHAM THI HA	SONG LOC COMMUNE	Female
33	PHAN CHI HIEU	SONG LOC COMMUNE	Male
34	PHAN THANH CONG	SONG LOC COMMUNE	Male
35	NGUYEN THI NGA	THACH SON COMMUNE	Female
36	NGUYEN THI THANH	THACH SON COMMUNE	Female
37	PHAN VIET DE	THACH SON COMMUNE	Male
38	NGUYEN DOAN LOI	THACH SON COMMUNE	Male
39	NGUYEN QUY DUONG	PPD - MARD	Male
40	DO HONG KHANH	PPD -MARD	Male
41	HOANG VAN PHU	TN UNIVERSITY	Male
42	NGUYEN THI BICH YEN	CARES	Female
43	NGUYEN TUAN LOC	NGHE AN RPPC	Male

44	HO HUU THUAN	NGHE AN RPPC	Male
45	NGO TIEN DUNG	ICERD	Male
46	NGUYEN KHAC KIEN	ICERD	Male
47	NGUYEN VAN CUONG	PPD-MARD	Male
48	TRAN VAN HAI	NGHE AN RPPC	Male
49	NGO THI PH. DUNG	PPD-MARD	Female
50	ALMA LINDA ABUBAKAR	FAO RAP	Female
51	ASHWIN MYSORE	AIT	Male
52	TRAN VAN HIEU	FAO-IPM VIETNAM	Male
	TOTAL		21 Female, 31 Male