

2.11 THAILAND

by Wachreeporn Orankanok




Achievements

- FFS is integrated in Department of Agricultural Extension's (DoAE) policies.
- FFS is used as a tool for DoAE's extension services.
- DoAE, local governments, public sector, and NGOs allocate budget to support FFS.
- Community Pest Management Centers (CPMC) across the country apply FFS approach in the IPM learning process and other learning activities



2.12 VIETNAM

by Bui Xuan Phong

<p>APPPC Workshop on Empowering Farmers through FFS IPM Training 27 February – 2 March 2017 Kathmandu, Nepal</p> <p>Vietnam Country Profile (National IPM/FFS program)</p>  <p>Ministry of Agriculture and Rural Development Plant Protection Department Hanoi, Vietnam</p>	<p>Achievements</p> <ul style="list-style-type: none"> - 2014 Irrigation Sector - MARD issued the plan by year 2020 with the goal of 30% of irrigated rice cultivation to adopt SRI, and other environment friendly methods. - Budget allocation from the government (central and local level) as well as CSOs, private companies and community to support FFS. - Cooperation with the Ministry of Education and Training to promote FFS through community learning centers and secondary school in rural area. - Farmers created initiatives such as: on sustainable crop intensification response to climate change, pesticide risk reduction, etc. - 2015 MARD's direction No. 2027/QĐ-BNN (June 2, 2015) on the promotion of application of IPM, period from 2015-2020.
<p>Progress</p> <ul style="list-style-type: none"> - FFS has been introducing to Vietnam since 1992 through IPM Program by FAD. - Department of Plant Protection - MARD is responsible for overall coordination of the implementation of the Program. - FFS has been implementing in all 63 provinces. - The Support of Communal authority and participation of civil society organizations (CSO) play important role in sustainable development of IPM in communes. 	<p>Progress</p> <ul style="list-style-type: none"> - Since 2007 the National IPM Program has developed the strategic direction for its activities on "Capacity building on pesticide risk reduction" to strengthen support for the implementation of the National's program on food security, food safety and climate change. FFS alumna plays an important role in development of initiatives (sustainable crop intensification - response to climate change, pesticide risk reduction, etc.) - Since 2012, Ministry of Education and Training has promoted FFS through Community Learning Center (CLC) and secondary school in rural area to educate farmer student on pesticide risk reduction and agro-biodiversity conservation and use.
<p>Progress</p> <ul style="list-style-type: none"> - In 2015 MARD has issued the Scheme "Promoting the application of integrated pest management (IPM) on crop period from 2015 to 2020" to contribute to implementation of the Prime Minister' Scheme on "restructuring the agricultural sector towards increasing added value and sustainable development". - Basic FFS approach has been applied in various training topics in order to build knowledge and skill for farmers and students, such as: IPM on crops, pesticide risk reduction, agro-biodiversity conservation and utilization, pesticide impact assessment, Household's Herbal Garden and Nutrient and health, Vegetable GAP, produce bio-fertilizer (Composting/Bio Mat)... 	<p>Evidence of progress</p> <ul style="list-style-type: none"> - From year 1992 to 2015, there were 3,243 PPSP's technicians trained to become FFS trainers, and 5,855 farmers were trained to become Farmer trainers; 1,231,488 farmers and school students (53% female) were trained through IPM FFS. - FFS IPM have been conducting on main crops such as Rice, Vegetables, Cotton, Maize, Tea, Citrus, Soybean, Cassava, Dragon fruit, pesticide risk reduction, agro-biodiversity conservation and utilization, pesticide impact assessment, Household's Herbal Garden and Nutrient and health, Vegetable GAP, produce bio-fertilizer (Composting/Bio Mat)... - In order to implement the MARD' Decision dated in 2015 on "Promoting the application of IPM on crop period from 2015 to 2020", since 2015 all 63 provinces throughout the country have annual plan for expansion of FFS. At central level, government allocate budget for IPM FFS through World Bank loan projects (WB6, WB7).

Evidence of progress

1992	1992-1998	1998	1998	2007-2014	2015
FIS was first introduced	Training of trainers (TOT)	Issued National strategy on promotion of IPM FIS; goal: FIS covering 10% of growing rice communities	Launched Promotion of community networks to sustain IPM FIS	Capacity building on pesticide risk reduction to support national programmes (food safety, food security, climate change)	IPM/FIS was the 2017-2018 NRM on the occasion of the 10th anniversary of the 1982-1983 IPM (IPM/FIS) project
0%	10%	10%	15%		40-95%

FFS alumna contribution to innovation

FFS farmers developed the minimum tillage practices in combination with mulching using rice straw can bring highly effective such as increase productivity: 8-25%, increase income: 19-31%; reduce labor: 28-47%; reduce use of water for irrigation: 25 - 67%, and reduce pesticide: 75%.



Application of minimum tillage potato production will allow the women in the North to grow potato again on paddy land so that they can harvest three crops per (Rice - Rice - Potato) instead of only two mono cropping of rice per year as currently practiced.

FFS alumna contribution to innovation

Furthermore, the use of rice straw for mulching can overcome the burning of straw that causes environmental pollution. In addition, the biomass of rice straw used for mulching will rehabilitate the paddy soil ecosystem.



FFS alumna contribution to innovation

- Model on "Community Education on Pesticide Risk Reduction and Development of Local Safe Vegetable Program and Market Access". The model aims to demonstrate the partnership between and amongst GOs, NGOs as well as local groups and networks of small holder IPM farmers to address pesticide risks and related issues together; develop their local safe vegetable production (in compliance with GAP) and facilitate market access for farmer's products as a community.



FFS alumna contribution to innovation



FFS alumna contribution to innovation

- FFS alumni study alternatives to chemical pesticides, e.g., biological control such as predators and parasitoids, with assistance from IPM Trainers and researchers. The aim of the activity is to develop capacities of farmer groups as to be able to rear and mass produce alternatives to pesticides at community level for sustainable crop production. Rearing linkage with field experiment of control pest convinced farmers about sustainable management of pests and encouraged many farmers to maintain self production of bio agents and help other farmers to apply. In 2015 there were 23 FFS alumna groups in Mekong Delta maintained mass rearing pathogen *Metazhium* by their own resource and applied to control BPH.

FFS alumna contribution to innovation

- Biodiversity Use and Conservation Asia Program (BUCAP) adapted the IPM FFS approach as a research and extension methodology to promote Plant Genetic Resource Management. FFS alumna conserve and make sustainable use of local agro-biodiversity and develop new rice varieties as part of participatory community breeding program. 5,150 rice FFS alumna of 200 communes of 13 provinces throughout Vietnam has involved and maintained their activities without project fund.

FFS alumna contribution to innovation

- The System of Rice Intensification (SRI): IPM trainees and IPM FFS alumni working together to develop the initiative SRI to overcome existing rice production problems, namely, the overuse of chemical fertilizers (especially nitrogen) and lack of good quality seeds. High application of nitrogen and high transplanting densities are two of the major reasons for the rice crop's vulnerability to pests and diseases, resulting in lower yields and profits.
- SRI helps farmers to save on seeds and fertilizer inputs without yield penalties. Apply SRI also makes rice plant to be tolerant to the extreme weather and pests.
- In 2007, MARD issued decision No.3062/QĐ-BNN-KHCN dated 15 October, 2007 on the recognition of SRI as advanced technology and instructing promotion of SRI application in all Northern provinces.
- Since then 29 provinces has an annual funding to organize the training for farmers to applies.
- In 2014, there were 1.813.201 farmers of 29 provinces applied SRI, with 394,894 ha.

FFS alumna contribution to innovation

- Home vegetable garden: FFS training activities related to understanding of nutrient of indigenous vegetable, traditional medicine plants and food safety (pesticide risk) have encouraged farmers become more interested in growing of vegetables in home garden with organic farming, but it also could be opportunity for market access afterwards. Since 2014 total 116 farmers (99% woman) of three provinces (Bac Giang, Lao Cai and Quang Binh) maintaining "vegetable home garden" by their own resources. This activity really help women create food safety products, diverse nutrition for daily diet of the family, on the other hand also contributed to saving the money from buying vegetables.



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FFS alumna contribution to innovation

- Response to Climate change: In order to improve the knowledge and skill of farmers on response to climate change, there are several exercises on this topic to be integrated in the other training contents for trainers and farmers (Training of trainer "TOT"), training on ABD, PRR, training for farmers the conservation of aquatic animal (Fish).
- The climate change are also discussed in the meetings of the Women Club. Raise awareness about climate change also include facilitating farmers to discuss measures to mitigate and response to climate change. The end of training, a plan on mitigation and adaptation to climate change in intensive crops, especially rice has been developed by farmer and local stakeholders.

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FFS alumna contribution to innovation



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Monitoring

- Monitoring and evaluation has been conducted at central and provincial level. At the Center, Plant Protection Department (PPD) - Ministry of Agriculture and Rural Development (MARD) is overall responsible for monitoring, PPD reported to the Ministry every week, month, quarter, and annual of the FFS programs.

- At the provincial, Plant Protection Sub-department (PPSD) - the Department of Agriculture and Rural Development (DARD) as the focal point to gather data on the performance of FFS in districts, communes, and evaluate the results achieved as well as the difficulties and limitations in the process of implementation and recommend to PPD. Annual survey (nationwide), snapshot monitoring

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Challenges/limitations

- The government recently has been implementing the standardize of the training curricula to meet the allocation of funds for the training program, while the FFS curricular is being developed very diverse.
- Demand for more FFS trainers, while many experienced FFS trainers have retired or switched positions.
- The FFS will be more organized and how to ensure the quality
- Lack of coordination among agencies such as Extension, Plant Protection (PPD), cultivated in directing production plant, so it has limited capacity to promote FFS.
- No strong incentive policies for promotion of application of biological control, reduction of agricultural chemicals;
- Promotional activities, trade of pesticides and fertilizers in village-level community / villages / hamlets still inadequate, due to lack of control role of local government. Along with the ignorance of the people, leading to overuse of pesticides, fertilizers, increasing ecological imbalances, causing outbreaks.

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Lessons learn

FFS to build core farmer groups at commune level, key farmers to help local authorities to conduct field experiments and piloting models of sustainable production, and they are also the extension forces to extend the application of the model results in the communities. Key Farmers also involved in policy advocacy.

FFS to build capacity and encourage farmers to participate in the field trials, then mobilize community to apply in a larger scale, then advocate for policy support

Mobilize communities to pilot the models: Community Education Program on pesticide risk reduction (PRR), sustainable intensification. Model aims to demonstrate the partnership between GOs and NGOs, local groups and networks of small holder IPM farmers to address PRR, to facilitate market access for farmer's products, and support the Government in enforcing regulations including strengthening pesticide management at commune level particularly in relation to food safety in crop production.

Link with media agencies to inform and disseminate the results experiences from farmers.

Participation in national workshops to propagate.

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Priorities for FFS Institutionalization

In the coming year:

- MARD to issue FFS standards as a basis for planning budget
- Provincial FFS Strategy completed to promote sustainable crop intensification and response to climate change

In the next 2-3 years:

- Building capacity for staff on FFS facilitation
- Promoting organic production
- Promoting agricultural biodiversity, pesticide risk reduction
- Promote training programs on nutrition and health
- Bring youth into Agriculture

Long-term:

- Reduce pesticide use, improve adaptive capacity, improve farmers' incomes across the nation

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Thanks for your attention!

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2.13 SUMMARY

The twelve country reports testified the achievements of IPM-FFS in the region. They described increases in farmer's knowledge and skills, the reduction of agricultural chemicals and highly toxic pesticides, new developments in bio-pesticides, and impacts on farm income and benefits for the environment. While most countries have practiced FFS for more than 10-20 years, this approach has only recently been re-vitalized in Indonesia, Malaysia and Thailand to address sustainable crop production intensification (SCPI) and diversification. In several countries, IPM-FFS is already well institutionalized and practiced country-wide with funding from local and national budgets, while in other countries it is still at the stage of localized and specific projects. Most FFS have been implemented in rice, vegetables and fruit, but here were also examples for tea, livestock, health issues, food security and climate change. In Pakistan, the FFS model has been modified into Women Open School, Children Ecological Club, Farm Family and Farmer Business Schools. Farmer empowerment was a major issue in Nepal and Vietnam. In China and Thailand, FFS are used to support a transition to larger-scale farming. Particular Climate Fields Schools were implemented in Bangladesh in flood, flash-flood, saline and drought affected areas. In Malaysia, rice, oil palm and cocoa varieties were being screened for heat and water-efficient qualities.

Discussions

During the discussions, the following issues were raised:

Institutionalization and Sustainability

Experiences with turning IPM projects into regular government programs were of major interest. Generally, success stories depended on political priorities, government policies and a long-term strategy. Early progresses in Indonesia in the 1990s were revised by subsequent governments. The traditional extension activities for technology transfer and distribution of government welfare (seeds, fertilizers, etc.) are still widely practiced and are in conflict with the FFS approach. Nevertheless, several countries have managed to establish IPM-FFS. In India, many agricultural stations were turned into IPM stations. Recently in Bangladesh, the IPM Section of the Department of Agricultural Extension was created in 2016 to coordinate IPM activities at field level. Its establishment did not require new personnel but used existing extension staff at district level for carrying out FFS and monitoring activities – including transferring new technologies such as IPM and fertilizer management.

Funding for FFS

It was found remarkable that many IPM programmes are still financed as projects and have not yet secured funding through the regular budgets of the government extension system. Nevertheless in China, funding for FFS and support to the IPM programme comes mainly from the central government. In addition, more and more provincial and local governments now provide funding for the FFS approach and expand its application to other issues beyond IPM. The national programme on “Zero pesticides by 2020” and provincial Plant Protection Stations have adopted FFS to extend technologies for achieving the national goal. Self-financed FFS are funded by farmers' cooperatives from their profits from higher yields from vegetables and fruits. In the Philippines, FFS funding comes from both national government (for new pests) and local governments, NGOs, etc. Farmers demand FFS from local governments. In Indonesia, there are strong involvements of farmers, trainers and local governments in the programme.

Climate forecasting

In Bangladesh, early warning and climate forecasting is done at local and national levels. For climate change mitigation, inputs come from projects. Remote sensing information is used to design activities. In Cambodia, IRRI remote sensing information is shared with the National IPM Programme for action. Mobile phones are used for informing communities and IPM trainers about the information. In the Philippines, a two-year IRRI remote sensing project involved two groups of people in data collection: one group on physical information and one group on plant health. As of now, there is no clear indication that pests or disease can be forecasted by using remote sensing; there is only early warning on pests. Information from remote sensing is used after a pest incidence for policy making and resource allocation.

Save and Grow FFS

Save and Grow FFS are an expansion of existing IPM-FFS by integrating aquatic biodiversity, trees outside forests, and crops other than rice. The aim is for farmers to produce more with less input. In the Philippines, rice is the staple and main source of income for Filipino farmers. The *Save and Grow* FFS on sustainable intensification of rice production integrates fish rearing and vegetables to improve nutrition and allows farmers to have additional income.

Use of abamectin

Nepal does not use of abamectin in FFS due to its side effect of secondary pest resurgence. However, in some countries, such as Bangladesh, it is registered as a biopesticide as an alternative to highly toxic chemicals.

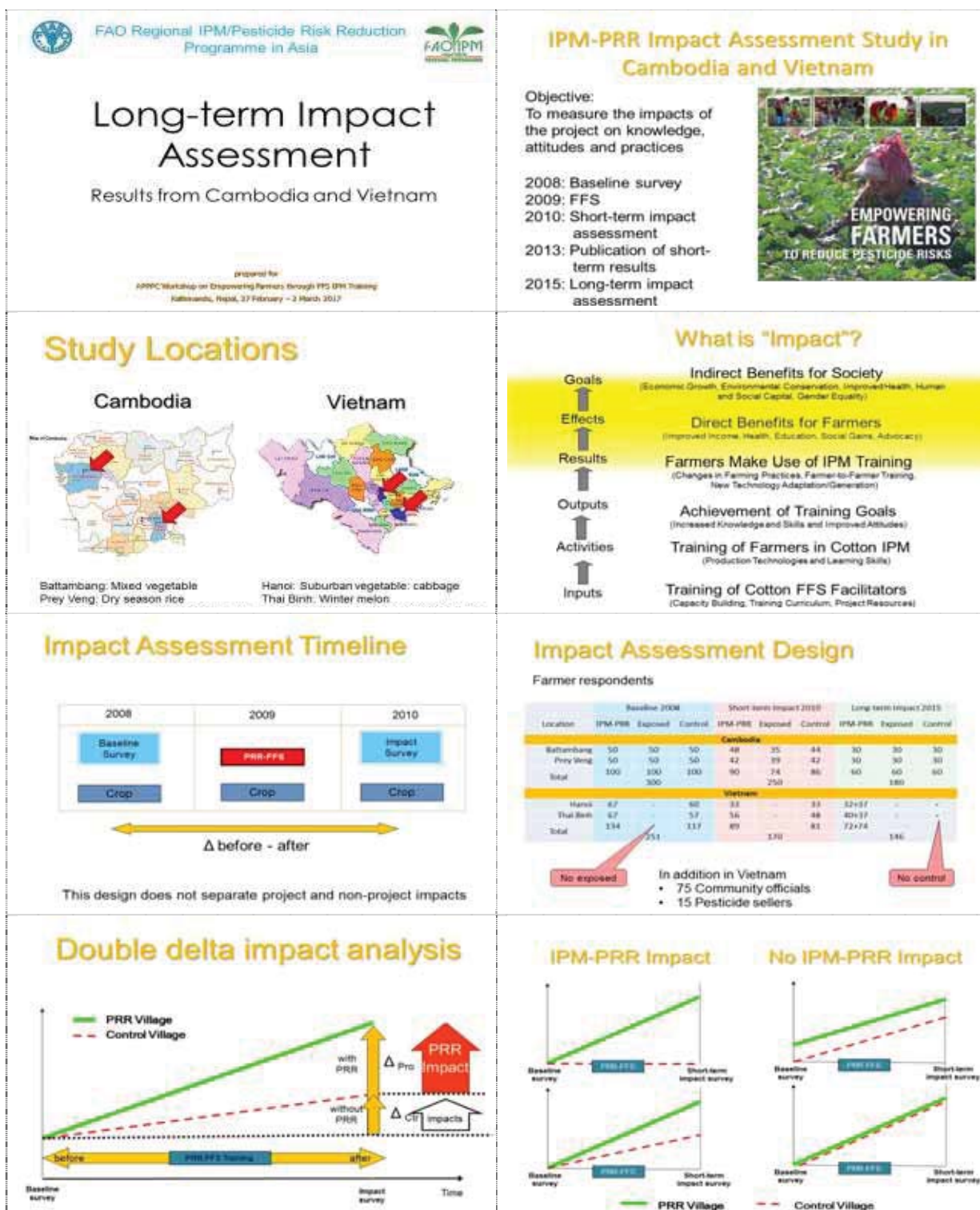
Conclusion

The examples in the country reports showed the rich experience with IPM-FFS in the region and the different directions which this approach has taken in various countries. Generally, its importance for supporting agricultural development has grown over the years, and it has demonstrated a high adaptability and relevance, even for other sectors that aim at empowering farmers to improve their livelihoods and face new challenges such as climate change.

3. SUSTAINABLE INTENSIFICATION OF CROP PRODUCTION

3.1 LONG TERM IMPACT ASSESSMENT

by Gerd Walter-Echols



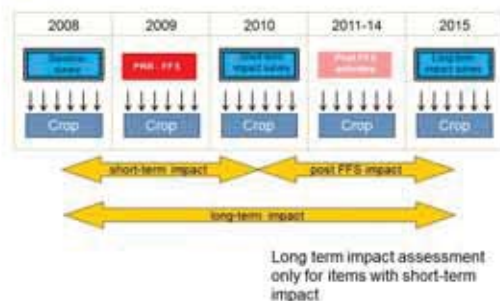
Short-term impact results

Community officials
Increase in knowledge

Pesticide shops
Owners more aware of local regulations
Improved storage practices

FFS Farmers
Increase in knowledge
Reduction in total pesticide use
Reduction in Class I pesticides
Less mixing of pesticides
Improved disposal of pesticide containers
Increased use of protective clothing
Reduction of poisonings
Reduced pesticide risk

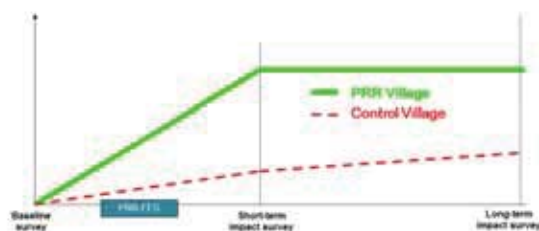
Long-term impact assessment timeline



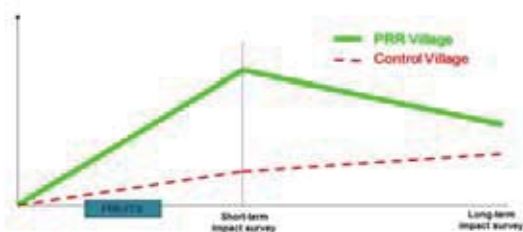
Post-FFS Activities 2011-2015

Cambodia	Vietnam
Ban of WHO Class I pesticides in 2012	Courses on safe vegetable production
Courses on GAP	Courses on VietGap
Formation of IPM Farmers' Clubs	Courses on IPM
Field studies and post-FFS sessions	Promotion of vegetable certification
Collective gathering of pesticide containers	Formation of PRR farmer groups
No-Pesticide Day campaign	Formation of VietGap groups
	Collective gathering of pesticide containers
	Installation of pesticide container tanks
	Local regulations
	Pesticide shop inspections

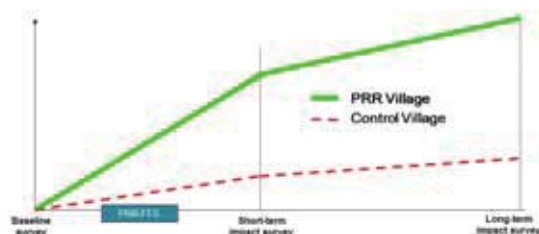
Possible result: Continuation of short-term impact



Possible result: Loss of short-term impact

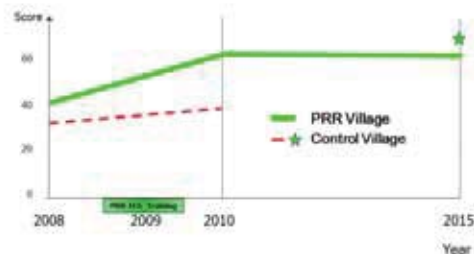


Possible result: Enhancement of short-term impact



Long-term Impact on Community officials

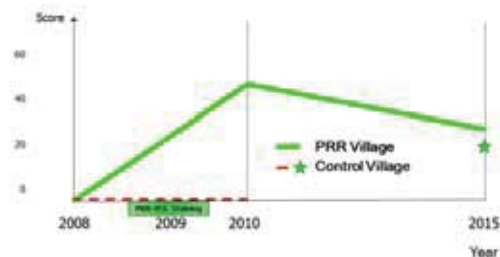
Continuous* activities Vietnam, community officials



* Activities that started before the IPM-PRR programme, such as...
Community group participation; information dissemination; pest surveillance and warning

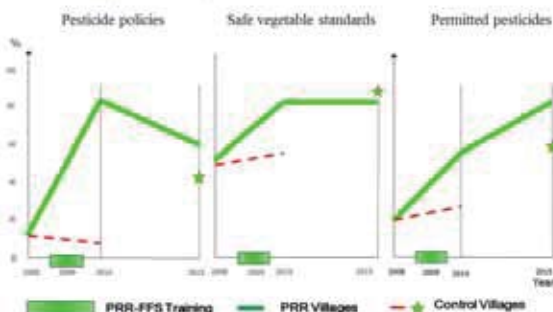
New IPM-PRR activities*

Vietnam, community officials



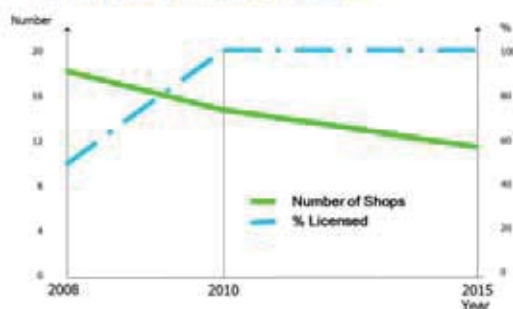
* New PRR group formation; enforcement of local PRR regulations; installation of pesticide disposal containers

Impact on knowledge of Community Officials, Vietnam

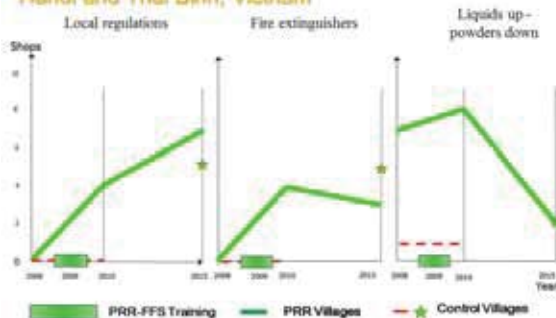


Long-term Impact on Pesticide shops

Number of Pesticide Shops Impact study communes, Vietnam

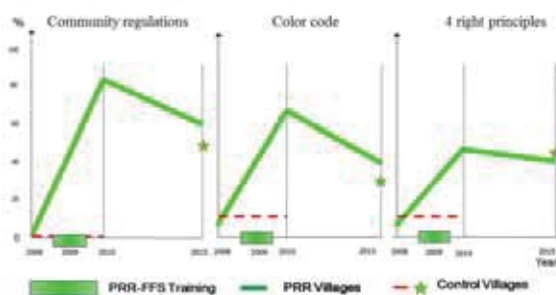


Impact on pesticide shops Hanoi and Thai Binh, Vietnam

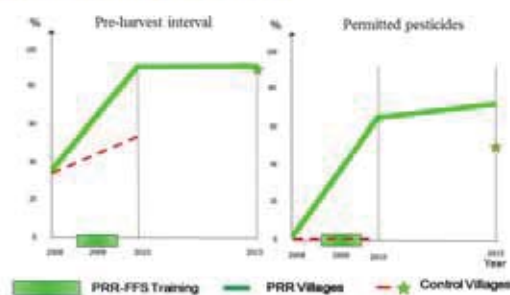


Long-term Impact on Farmers

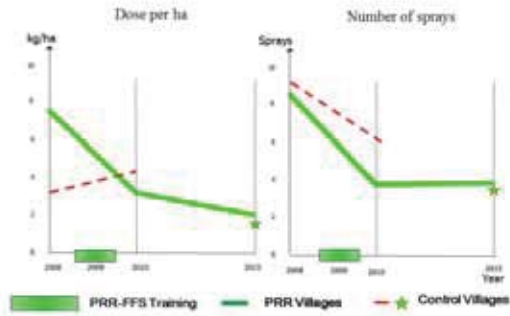
Impact on farmers' knowledge of Hanoi and Thai Binh, Vietnam



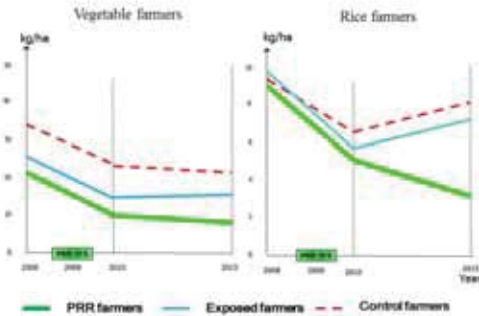
Impact on farmers' knowledge of Hanoi and Thai Binh, Vietnam



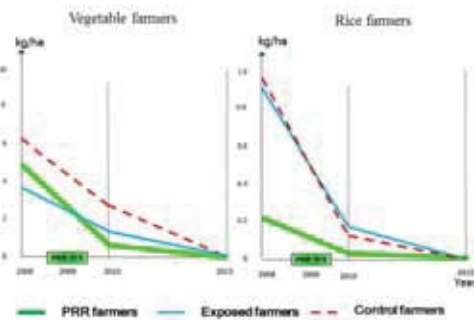
Impact on farmers' pesticide use Hanoi and Thai Binh, Vietnam



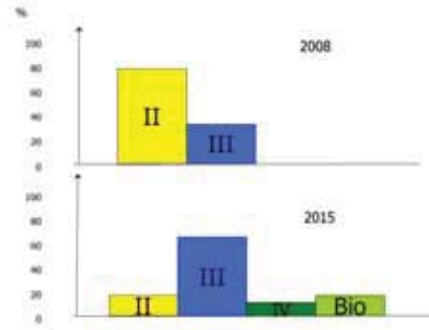
Impact on farmers' pesticide use (hectare) Cambodia



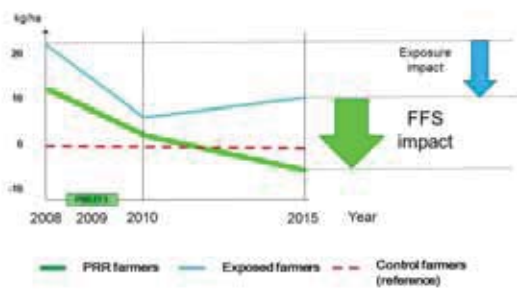
Impact on use of Class I pesticides (ha) Cambodia



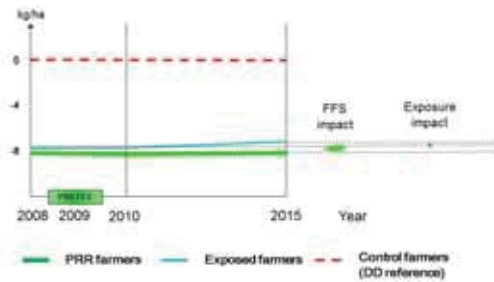
Pesticide Class Profile Thai Binh, Vietnam



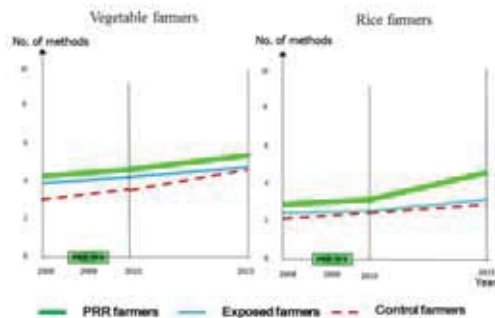
DD Impact analysis of pesticide use in rice Cambodia



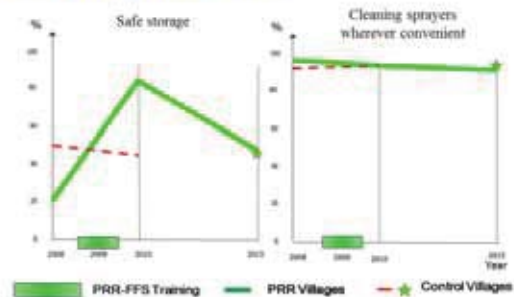
DD Impact analysis of pesticide use in vegetables Cambodia



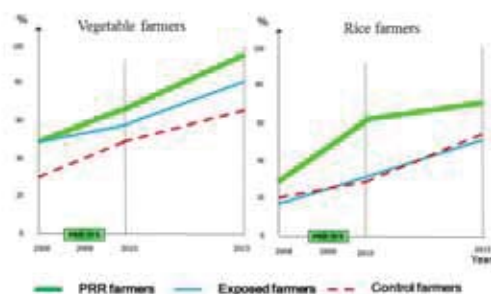
Adoption of alternative methods Cambodia



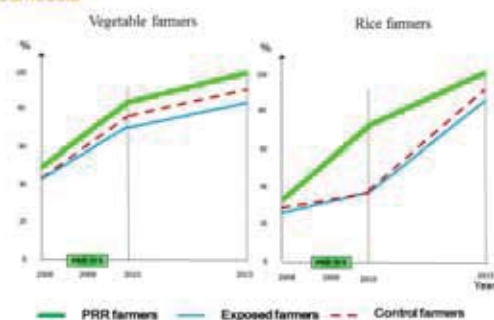
Impact on farmers' safety practices Hanoi and Thai Binh, Vietnam



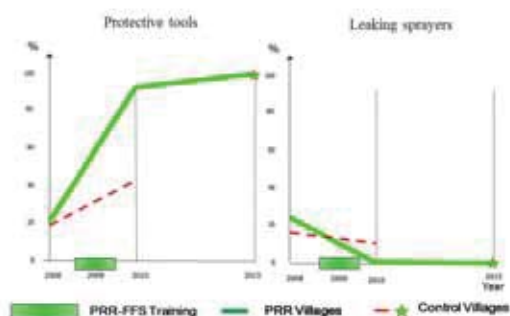
Impact on burying/burning pesticide containers Cambodia



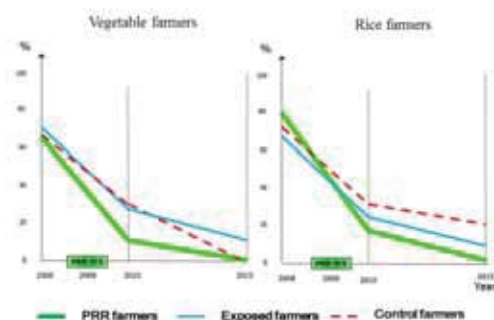
Impact on use of arm and leg protection Cambodia



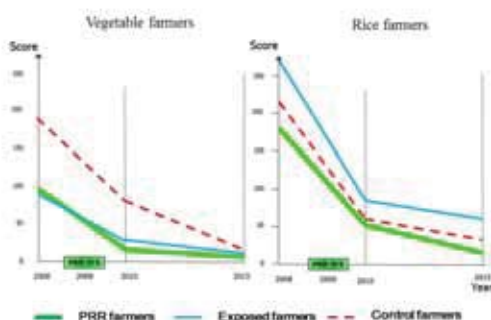
Impact on farmers' exposure to pesticides Hanoi and Thai Binh, Vietnam



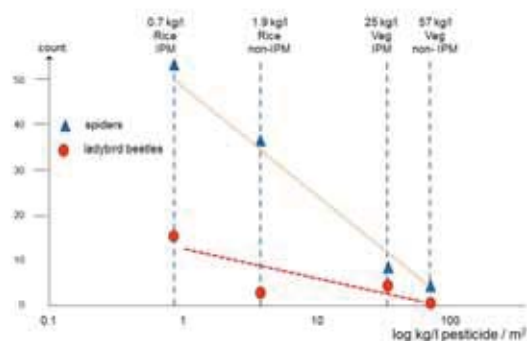
Impact on pesticide poisonings Cambodia



Impact on potential risk Cambodia



Impact on the environment



Long-term impact results Combination of programme and FFS impacts

Community officials
Lasting increase in knowledge

Pesticide shops
Lasting improvements of safety measures

FFS Farmers
Lasting increase in knowledge of policies and regulations
Using less than 50% the pesticides than before
Virtual elimination of highly toxic pesticides
Lasting improvement of safety measures

Long-term country benefits

- Fewer poisoning cases
From >50% to 0%
- Reduced pesticide risk
From index 140 to <20
- Richer ecosystem
> 10 x more beneficials

by Alma Linda AbuBakar



Why FFS? Working in partnership

- FFS is a space for farmers, extension workers and scientists to work together to generate vital knowledge and localized solutions to problems. Co-creation of knowledge...
- Farmers are a source of this knowledge and at the same time the pillars of transformation
- The opportunity is huge to transform farming systems and environments towards future food security – improved knowledge, skills base and perceptions



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Why FFS? Environment and Livelihoods

- FFS as an effective approach for adopting and adapting appropriate practices, and technologies for improved production and for soil, water and environmental health
- Livelihood perspective: FFS facilitates the ability to leverage financial services, markets and marketing information, diversification, value chains, value-adding elements and strengthened governance and management structures /mechanism to build trust among FFS farmer groups.
- programmers need to view FFS “system-wise” and not as small projects for imparting agricultural skills



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Challenges of the FFS



- Quality of facilitator
- FFS takes time – season-long, team building skills
- FFS programmes require space for the unexpected, for innovation
- Tendency to simplify and/or standardize curricula
- Institutions are often not well prepared to adapt to change
- FFS impacts can be found in a range of domains
- Many FFS and FFS programmes are too focused on production activities and not enough on other livelihood aspects



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Addressing challenges of FFS The Context

- Consider FFS programmes within the broader national programming framework - assess the existing national frameworks and programmes for agricultural development
- Does FFS fit within these frameworks and programmes? How will FFS contribute to the broader government goals?
- Map existing supportive structures for extension service delivery using appropriate tools.
- This will provide direction on the appropriate grounding for eventual FFS processes, linkages and institutionalization, should the final decision be made to take on FFS



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Facilitating the institutionalization of FFS

- Continued action after basic FFS learning cycle: community ownership, appropriation
- Institutionalisation at local and national level
- Harmonization at regional and global level



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Decision tree – FFS and context

- Is FFS the most suitable approach for the project/program that will be designed? Questions to ask:
- what is the problem to be addressed?
 - the expected time-frame and the budget available.
 - FFS is not the one and only option – in some cases other options might be preferable or more feasible.

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FFS basic learning cycle

- Working in groups (15-25 farmers)
- Season-long activities (following the season of crops or development cycles of animals)
- Regular meetings/sessions during the season
- Study/learning plots/experiments to compare current practices with improved/alternative practices
- Each FFS meeting includes:
 - Agro-ecosystem analysis
 - A group dynamics exercise
 - A special topic
 - Feedback on the sessions
 - Facilitation not teaching

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FFS cycle: Non-negotiables

- Farmers define and drive FFS and FFS programmes
- Farmers co-produce and co-create knowledge, science, public agricultural services
- Learning process and knowledge generation central in FFS and FFS programmes
- Building trust, strengthening groups
- Situation/location specific activities, i.e. locally appropriate learning curriculum



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FFS cycle– what next

- better work as a group, prepare follow-up action
- basic understanding how groups function
- activities to enhance critical analysis, evaluation and planning for post-FFS after basic learning cycle

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Designing a FFS Programme

- Time dimension
- Assessing local context
- Establish necessary partnerships (complementing broader service delivery system)
- Stakeholder and stakeholder analysis
- Framing programme objectives
- Defining the geographical scope
- Capacity needs
- Scaling up

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Time dimension – FFS or not?

- < 6 months – consider another approach
- 6-12 months – not recommended
- Up to 2 years – minimum duration for acceptable quality FFS
- > 2 years – ideal for FFS programme development

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Capacity needs

- Availability of FFS master trainers
- Public extension system in place, supportive of participatory group-based learning
- Government extension staff available at local level
- Technical expertise available in the FFS technical entry points
- FFS manuals and resource materials on the envisaged technical focus areas available, adapted to local situation and language of envisaged facilitators
- Social interaction between rural women and men – local cultural context

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Scaling up

- Depends on investments to develop human capacity (training of facilitators) – high quality human resource base
- Level of institutionalized support structures for FFS mentoring, supervision and quality control
- Time/availability of facilitators for FFS, dropout rate
- Number of seasons/cycles per year

High numbers can be reached if all conditions are favourable

- BUT more feasible way of achieving large scale without compromising quality is:
 - doing it gradual
 - using lessons to strengthen the next phase
 - while at the same time taking time to build the necessary human capacities, as well as systems and mechanisms for upscale

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FFS-Human capacity

FFS programme manager	Location	Technical / educational	Training
FFS master trainers	Training FFS facilitators	Strength and potential experience in FFS programme organization and implementation	Specialized FFS master trainers (2-3 months)
FFS coordinators / field supervisors	Support FFS facilitators in the field	Technical and educational FFS facilitators	FFS facilitator training (2-3 months)
FFS facilitators	Facilitate FFS sessions	Agri-technical extension staff, FFS facilitators	FFS facilitator training (2-3 months)

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Cheap is expensive

- TOF is not TMT
- Different ways of training FFS facilitators:
 - Continuous season-long training
 - Zig-zag / sequential season-long training
 - Short intensive training (with on-the-job follow up)
- There are pros and cons for each various TOF model:
 - Expensive / cheap
 - Quality
 - Time away from home/family/office (ability for women to participate)

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FFS learning content

- Pre-condition assessment / survey
- Baseline information
- Community Consultations
- Developing the FFS Curriculum
 - FFS season, dates of meetings and topics of discussions / activities
 - Key activities: AESA, field comparative experiments and (special) topics
 - Topic matrix: topic, sub-topic, training methodology and estimated time needed
- Topics can include life skills, gender equality and nutrition!

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MEL

- Monitoring: to ensure the quality of the process, keep the FFS learning on track and adapt to circumstances that may arise along the way
- Evaluation: to assess the overall results and performance of an FFS programme
- MEL as a continuous participatory cyclic process

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PLAN DO CHECK ACT

- PLAN** Define expected outcomes and workplan
- DO** Carry-out plans
- CHECK** Assess results and identify shortcomings
- ACT** Define corrective actions and adjust

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Monitoring, evaluation and continuous learning (MEL)

Why?

- Improve quality of all aspects of FFS activities, including planning, the choice of quality indicators, data collection and feedback
- Engage stakeholders in participatory MEL – towards better efficiency, ownership and responsibility, rich dialogue

Identifying sound indicators is essential to ensure the quality of results of FFS and FFS programmes

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Monitoring – at FFS group and project level!

Stages to monitor in FFS programme:

- Training of facilitators
- FFS ground working
- Initial stage FFS implementation
- Regular FFS implementation (weekly sessions)
- End of FFS experimentation
- End of FFS activities
- Post FFS activities

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Results chain for FFS programmes



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FFS – wide range of impacts



Impact assessment - considerations

- Impact assessment framework (natural-human, financial and social-political impact)
- Who to design and carry out impact assessment – external institutions
- Impact targets should be built into the project/programme design
- Identifying indicators, including parameters
- Choosing tools and methods to assess impact
- Important to address stakeholder issues in impact assessment but also to provide accurate reporting

33



FFS budget

- Checklists:
 - + M1 and TOP courses & refresher training events
 - + Other training events: Curriculum development and review, group mobilization, etc.
 - + Staffing costs (personnel, travel, equipment, others)
 - + Monitoring, evaluation and learning
 - + FFS implementation (group budget (personnel, travel, training, equipment, others))
- Costs depend on local conditions/costs, differ per country
- Co-financing or self-contribution by FFS groups (inputs for experiments, field study plot, labor, snacks). Move towards more group contributions.
- Careful with free inputs- avoid creation of dependency syndrome
- Grant system

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FFS learning cycle

- Expanded learning elements and follow-up action
 - Adaptive research
 - Expanded curricula: business skills, life skills, nutrition, literacy and numeracy skills
 - Livelihood dimension: farming as a business, group savings, group marketing, etc.
 - Community wide challenges: rangeland rehabilitation, revitalizing of local seed system, watershed management, community animal health, early warning systems, community based marketing information system, resource management & sharing agreements, mechanisms for conflict management
 - FFS Networking

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3.3 INSTITUTIONALIZATION WORKSHOP

by Alma Linda AbuBakar

 <h4>FFS Institutionalization and Networking for Up-Scaling Agroecology in Asia</h4> <p>http://www.fao.org/ag/ess/essn/essn/essn/essn/1326/</p> <p>FAO presentation for APPPC-IPM Workshop Kathmandu, February 2017</p>	<h4>Agroecology for Food Security and Nutrition</h4> <p>Our current global food systems are not sustainable (economic, social, environmental)</p> <p>Transformation needed towards balance between ecological soundness, economic viability and social justice (Gliessman, 2015)</p> <p>Requires changes in field practices and day-to-day farm management => Complex transition process</p> <p>Mobilizing farmer knowledge and learning systems for sustainable management of agroecosystems</p>
<p>Challenge: Sustainable Intensification of Crop Production, optimizing multiple ecosystem goods & services</p>  <p>A POLICYMAKER'S GUIDE TO THE SUSTAINABLE INTENSIFICATION OF SMALLHOLDER CROP PRODUCTION www.fao.org/ag/ess/essn/essn/essn/1326/</p>	 <p>Capacity building on Sustainable Intensification of Rice Production through Farmers Field Schools</p> 
<p>Institutionalization of Farmer Field School Regional Workshop Bangkok, 24-27 May 2016</p> 	<h4>Objectives of the workshop</h4> <ol style="list-style-type: none"> 1. Share and learn from country experience and lessons learned on institutionalization of FFS at the local and national level 2. Develop action points for operationalizing FAO's FFS Guidance Document at national and regional level 3. Assess needs and interests for a regional FFS network in Asia
 <h4>FFS basic learning cycle</h4> <ul style="list-style-type: none"> • Working in groups (15-25 farmers) • Season-long activities (following the season of crops or development cycles of animals) • Regular meetings/lessons during the season • Study/learning plots /experiments to compare current practices with improved/alternative practices • Each FFS meeting includes: <ul style="list-style-type: none"> ➢ Agro-ecosystem analysis ➢ A group dynamics exercise ➢ A special topic ➢ Feedback on the sessions ➢ Facilitation not teaching 	<h4>Evolution of the FFS approach</h4>  <p>1989: Agro-pastoral systems, Semi-arid, Rainfed, High yield irrigated</p> <p>2016: 90+ countries</p> <p>Regions: ASIA, AFRICA, LATIN AMERICA, NEAR EAST NORTH AFRICA, EASTERN & CENTRAL EUROPE</p> <p>Activities: Agro-pastoral systems, Semi-arid, Rainfed, High yield irrigated, Agro-ecosystem analysis, Group dynamics exercise, Special topic, Feedback on the sessions, Facilitation not teaching</p>
<h4>Adoption of FFS remains problematic (Gliessman, 2003)</h4> <ul style="list-style-type: none"> • Tension between traditional top-down approaches and the new focus on farmer empowerment weakens institutional support. • Lack of partnership between actors, limited expertise at national level and absence of political will to promote new approaches <p>The essence of FFS challenges conventional agricultural extension approaches but an enabling environment for institutional support is needed to expand, improve quality, strengthen impact and continuity of FFS</p>	<h4>Outputs: What are we institutionalizing?</h4>   <ul style="list-style-type: none"> • LEARNING PROCESS • Professionalism, dedication and commitment for Quality Farmer Education based on adult education principles and good practices



Outputs: What are we institutionalizing?

- Institutionalization requires change, and change takes time
- It is complex, not linear
- Diversification in institutionalization
 - Government Institutionalization
 - Important roles for private sector and CSOs
 - Policies and important but so are local groups and communities

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Outputs: Institutionalization

Scaling up/out (experiential learning process for farmer education)
Committed policy support
Resource mobilization – HR, technology, S, etc.
Extension reform/transformation
Integration in educational system
M&E – standardization, certification
Autonomous body



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Objectives of the workshop

1. Share and learn from country experience and lessons learned on institutionalization of FFS at the local and regional level
2. Develop action points for operationalizing FAO's FFS Guidance Document at national and regional level
3. Assess needs and interests for a regional FFS network in Asia

FAO Workshop on Institutionalization of FFS

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Operationalizing the FAO FFS Guidance Document

- Sharing the document with relevant government agencies, universities, other organizations, and FAO offices. In some countries, a letter would be needed from FAO to officially present it to government
- Translating the document (in full or in part) into local languages, with possible financial assistance from FAO
- Workshops and other means to disseminate the document's contents, and get feedback about it for future adaptation
- Use the document to improve FFS programs, particularly curricula and monitoring mechanisms



<http://www.fao.org/3/a-i5296e.pdf>

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Objectives of the workshop

1. Share and learn from country experience and lessons learned on institutionalization of FFS at the local and regional level
2. Develop action points for operationalizing FAO's FFS Guidance Document at national and regional level
3. Assess needs and interests for a regional FFS network in Asia

FAO Workshop on Institutionalization of FFS

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Regional FFS Network: conclusions and recommendations



FAO Workshop on Institutionalization of FFS

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Regional FFS Network: conclusions and recommendations

- Make for effective use and help support the existing Asia regional FFS networking platforms
- Formal networks in place: CSOs led (e.g. The Field Alliance) and FAO led (e.g. FAO Regional IPM Programme)
- Informal networks: Use of social networking facilities through smartphone applications (e.g. Line, Facebook)
- Need for a dedicated regional FFS platform/networking facility expressed
- FAO to consider taking on/host such a platform

FAO Workshop on Institutionalization of FFS

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Results and Follow-up

Regional Workshop on Institutionalization of Farmer Field Schools at the Local and Regional Level
14-17 May 2016
Bangkok Hotel, Bangkok Thailand

RESOLUTION

Item	Area	Resolution
1	1.1	1.1.1
2	2.1	2.1.1
3	3.1	3.1.1
4	4.1	4.1.1
5	5.1	5.1.1
6	6.1	6.1.1
7	7.1	7.1.1
8	8.1	8.1.1
9	9.1	9.1.1
10	10.1	10.1.1
11	11.1	11.1.1
12	12.1	12.1.1
13	13.1	13.1.1
14	14.1	14.1.1
15	15.1	15.1.1
16	16.1	16.1.1
17	17.1	17.1.1
18	18.1	18.1.1
19	19.1	19.1.1
20	20.1	20.1.1

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Results and Follow-up

- Workshop Report Finalization and Distribution
- National Events for Awareness Raising and Introduction of FFS Guidance publication
- Regional and Global Events: FFS networking
- FAO's FFS website – launched in May 2016
- Final test phase of the Global FFS Platform
 - Member area
 - Knowledge repository
 - Roster of FFS Experts

FAO Workshop on Institutionalization of FFS

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Relevant FAO websites and links:





































<http://www.vegetableipmasia.org>
<http://www.fao.org/farmer-field-schools/en/>
<http://www.fao.org/about/meetings/regionalconferences/aprc33/documents/en/>



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3.4 CLIMATE CHANGE ADAPTATION IN AGRICULTURE THROUGH FFS IN NEPAL

by Madhusudan Paudel

<div data-bbox="240 262 776 304">    </div> <div data-bbox="267 304 776 388"> <h4>CLIMATE CHANGE ADAPTATION IN AGRICULTURE THROUGH FARMERS FIELD SCHOOLS: AN EXPERIENCE SHARING FROM NEPAL</h4> </div> 	<div data-bbox="849 262 1385 304">    </div> <div data-bbox="966 304 1385 346"> <h4>Impacts of Climate Change</h4> </div> <ul style="list-style-type: none"> • Prolonged and frequent droughts in many parts of the country adversely affecting agricultural yields (MOAC, 2014). • Erratic onset and cessation of the rainy season have increased the risk of crop failure and rendered traditional knowledge on climate, seasons and cropping calendar obsolete (FAO, 2011). 
<div data-bbox="240 613 776 655">    </div> <div data-bbox="422 655 776 697"> <h4>Introduction</h4> </div> <ul style="list-style-type: none"> • Agriculture is the major sector of Nepalese economy. • It employs 66% labour force • It contributes 33% to the GDP. • Agriculture sector is key for the development of the economy (MOAD, 2017). 	<div data-bbox="849 613 1385 655">    </div> <div data-bbox="950 655 1385 697"> <h4>Impacts of Climate Change</h4> </div> <ul style="list-style-type: none"> • Climate change and variability, combined with degradation of land and forest cover, has increased vulnerability of rural population and risking their livelihoods (FAO, 2010). • Nepal is one of the climatically vulnerable countries in the world due to its fragile, climate sensitive ecosystem and socioeconomic circumstances (Tiwari et al., 2014). 
<div data-bbox="240 1033 776 1075">    </div> <div data-bbox="341 1075 776 1117"> <h4>Impacts of Climate Change</h4> </div> <ul style="list-style-type: none"> • CC is already having discernable impacts particularly in LDCs which are more vulnerable from the impacts because of their inability to cope with these climatic shocks (IPCC 2007). • CC is expected to have serious environmental, economic, and social impacts in South Asia in particular, where rural farmers whose livelihoods depend on the use of natural resources are likely to bear the brunt of its adverse impacts (ICIMOD 2009).  	<div data-bbox="849 1033 1385 1075">    </div> <div data-bbox="933 1075 1385 1117"> <h4>Impacts of Climate Change</h4> </div> <ul style="list-style-type: none"> • Increasing climate variability poses major challenges to food security and agriculture because of its effects on the basic elements of food production, soil, water and biodiversity. • Though Nepal has negligible contribution on global GHG emissions, impacts of climate change are tremendous long lasting and multifold both at uplands and low lands. • Climate change adaptation is Nepal's national priority (MoSTE, 2010).  
<div data-bbox="240 1463 776 1505">    </div> <div data-bbox="397 1505 776 1547"> <h4>Nepal's Response</h4> </div> <ul style="list-style-type: none"> • To address the problem caused by CC, different government and nongovernment institutions have initiated its adaptation programs through NAPA (2010). • NAPA recognized agriculture as an important sector for CC adaptation • Climate change adaptation is committed by the government through CC Policy Nepal 2011. • The policy has focused on interdisciplinary approach with 80% funds allocated at the local level particularly for poor and vulnerable groups (MoTSE 2014).  	<div data-bbox="849 1463 1385 1505">    </div> <div data-bbox="998 1505 1385 1547"> <h4>Nepal's Response</h4> </div> <ul style="list-style-type: none"> • Farmers find difficulties responding to the CC • Rural farmers have limited livelihood options • Their adaptive capacity is low due to limited information, poor access to services, technologies and productive assets. (Marasini, 2012).  

Need for Adaptation Interventions

- Capacity development of farmers
- Location specific research and evidence-based decision-making by farmers
 - Technology testing and validation and adoption
- Improved weather forecast
- Understanding complex socio-economic as well as ecological systems
- Develop community ownership of adaptation programmes
- Institutionalize CCA into local development plan
- Assist for implementation of such plans.

Climate Change Adaptation in Agriculture project

Objectives

- To strengthen institutional and technical capacities
- for reducing vulnerability and promoting climate-resilient practices, strategies and plans
- for effectively responding to the impacts of climate change and variability in agriculture sector.

Working modality

- Community sensitization
- Community based adaptation planning to identify climate risks and adaptation measures
- Testing and validation of adaptation technologies through Farmers Field Schools
- Establishment of mini weather station in FFS
- Demonstration and adoption of technologies

Project Area

Projects Districts

1. Udayapur	3. Arghakhanchi	- Representing hill districts
2. Siraha	4. Kapilvastu	- Representing Terai

Implementation modality

FAO Country Office
Project Management Unit

4 District Technical Teams

24 VDC Level Social Mobilizers

120 FFS Facilitators

Project Steering Committee – Chaired by Secretary
Technical Coordination Committee – Chaired by Joint Secretary
Ministry of Agriculture Development and Ministry of Livestock Development

Monitoring by:
Regional agriculture Directorates
Regional Livestock Directorates

District Agriculture Development Office and District Livestock Services Office

24 Village Development Committees

120 Farmers Field Schools

3,484 farm households (poor and vulnerable)

Participants: 74% women

Popularity of FFS approach in Nepal

- IPM FFS became popular during the FAO's Community Integrated Pest Management Program (CIPM) in Asia after the outbreak of Brown Plant Hopper (*Nilaparvata lugens* Stal) in 1997 in central Nepal.
- FFS was an approach to educate the people on ecological methods of farm management to address location specific problems.
- After launching three projects supported by FAO, Norway, Nepal Government and other agencies from 1998 to 2014, over one hundred thousands of farmers have been graduated from FFS and 2700 trainers are actively facilitating IPM process across the nation (Kafle et al., 2014).
- The IPM practicing farmers have reduced pesticide application by 35% in vegetables and 66% in rice over non-practitioners. The FFS farmer's getting more yields of crops, more annual income and developed better leadership than the non-FFS farmers (FAO, 2013)
- IPM-FFS has been a widely accepted platform for the policy makers, academicians, technicians and farmers in Nepal (Kafle et al., 2014).

FFS – suitable approach for CCA

- FFS as a mechanism for learning and organization in developing, testing and applying adaptation options.
- The FFS is a capacity building and participatory extension methodology based on adult education principles.
- It uses a structured group learning process, based on communities' priorities, needs, knowledge and capacity to find solutions for local problems through experiential education.
- The FFS involves communities in planning, testing and implementing diverse but integrated range of adaptation options, building on traditional (local) coping strategies for climate risk reduction

FFS tailored to fit to Climate adaptations activities

- FFS used for holistic **farming system approach** rather than a single crop as in IPM FFS
- Study of season long crop/ livestock growth cycle** and their changes with respect to problems and management requirement.
- Study of complex agro-ecosystem** present in the field and provide the opportunity of observation, generalization critical thinking and decision making.
- Experimentation**- testing and validating the technology according to local need and problems and adoption
- To create best platform to assess, **evaluate indigenous knowledge, skills and practices** evolved from the experiences of generations
- Acquire new knowledge** through new intervention, critical thinking analysis, discussion, and evaluation.

First Phase FFS in winter 2016

Wheat/ goat based FFS

Arghakhanchi – 4

Udayapur – 6

Kapilvastu – 6

Major interventions made on the basis of corresponding

Community based adaptation planning

- Use of drought tolerant variety
- Minimum tillage to utilize residual moisture after rice **wheat/garlic**
- Economic use of water in critical crop growth stage in wheat
- Use of organic matters
- Balanced fertilizer use in crop growth stage requirement
- Soil test and soil management (Legume integration , compost)
- Healthy disease free seed
- Soil / water conservation using mulching and drip irrigation

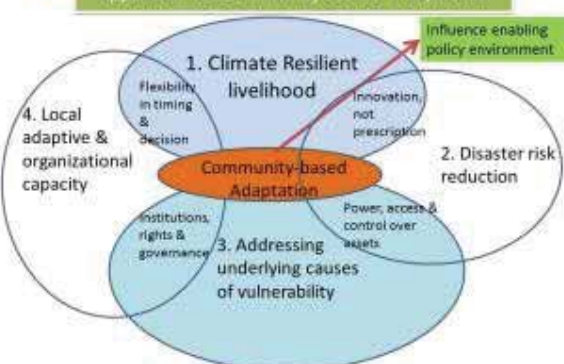
Community based adaptation

- Local communities know better about their problems and resource endowments
- They can plan better if guided systematically
- CBA helps to reach a critical mass of vulnerable communities at local level
- CBA increases ownership of local communities over the planned activities

Methodology for Community-based Adaptation

1. Climate-resilient livelihood strategies, including capacity building for planning and improved risk management
2. Disaster risk reduction and management
3. Capacity strengthening of local civil society and government institutions so that they can provide better support to communities, households and individuals in their adaptation efforts
4. Social mobilization to address underlying causes of vulnerability, eg: gender-based inequality, poor governance
5. Influencing the enabling policy environment through advocacy.

Approach to Community-based Adaptation



Conducted Activities in FFS

FFS Experiments Comparative study : Adaptation vs local practice



Testing of stress tolerant varieties



Drought

Drought

Climatic information collection and use

- Daily meteorological data collection and relating to local condition crop and goat
 - Prediction
 - Basis use for management decision
- Forecasting
- Involve in practicing and relating with past experiences
- Decision making in AESA


































Agroecosystem analysis relating with agrometeorological data



Conservation farming (garlic in minimum tillage)

- T1 – Minimum tillage + Mulching
- T2 – Minimum tillage + Mulching + FYM
- T3 – Minimum tillage + straw mulching
- T4 – Local practice










<div data-bbox="243 178 771 231">    </div> <div data-bbox="243 231 771 304"> <h3>Garlic in minimum tillage</h3> <p><i>immediately planted in residual moisture just after rice harvest</i></p> </div> <div data-bbox="243 304 771 598">  </div>	<div data-bbox="852 178 1380 231">    </div> <div data-bbox="852 231 1380 304"> <h3>Wheat in minimum tillage</h3> <p><i>in residual moisture just after rice harvesting Udaipur Katari</i></p> </div> <div data-bbox="852 304 1380 598">  </div>
<div data-bbox="243 609 771 661">    </div> <div data-bbox="243 661 771 724"> <h3>Mulching in potato</h3> <p><i>Udaipur Katari FFS, December 2016</i></p> </div> <div data-bbox="243 724 771 1039">  </div>	<div data-bbox="852 609 1380 661">    </div> <div data-bbox="852 661 1380 724"> <h3>Integration of Livestock</h3> </div> <div data-bbox="852 724 1380 1039"> <div data-bbox="852 724 1112 1039"> <p>Goat</p>  </div> <div data-bbox="1112 724 1380 1039"> <p>Introduction of forage</p>  </div> </div>
<div data-bbox="243 1050 771 1102">    </div> <div data-bbox="243 1102 771 1165"> <h3>Livelihood diversification</h3> </div> <div data-bbox="243 1165 771 1480"> <div data-bbox="243 1165 503 1480"> <p>Vegetable farming</p>  </div> <div data-bbox="503 1165 771 1480"> <p>Nursery raising</p>  </div> </div> <p>Family Nutrition and livelihood diversification</p>	<div data-bbox="852 1050 1380 1102">    </div> <div data-bbox="852 1102 1380 1165"> <h3>Adaptation practices - We are learning from farmers community</h3> </div> <div data-bbox="852 1165 1380 1480"> <p>Farmers know more than us</p> <ul style="list-style-type: none"> • Mulching in potato - Udaipur • Early planting to escape from phytophthora late blight of potato – Kapilvastu • Conservation of moisture / organic matter - Kapilvastu • Integration of lentil with rice in residual moisture- Siraha • Use of herbs and mustard oil to prevent livestock disease - Arghakhanchi • Land use / variety / time of planting /available moisture / labor - tactful strategic adaptation - Arghakhanchi </div>
<div data-bbox="243 1491 771 1543">    </div> <div data-bbox="243 1543 771 1606"> <h3>SWOT Analysis of FFS for Adaptation</h3> </div> <div data-bbox="243 1606 771 1896"> <h4>Strength</h4> <ul style="list-style-type: none"> • Prepared community based adaptation plan, • Aware of points of intervention, • Very enthusiastic communities in the districts, • Supportive DADO and DLSO in the districts, • Good support from NARC and policy level. </div>	<div data-bbox="852 1491 1380 1543">    </div> <div data-bbox="852 1543 1380 1606"> <h3>Weakness</h3> </div> <div data-bbox="852 1606 1380 1896"> <ul style="list-style-type: none"> • Less competent farmers facilitators • Qualified farmers facilitators demand more logistics and time, • Needs intensive technical support from DADO's focal persons, they are also busy in their own programmes. </div>

<div data-bbox="240 184 305 231"> </div> <div data-bbox="457 178 521 231"> </div> <div data-bbox="690 184 748 231"> </div> <div data-bbox="415 239 609 281"> <h3>Opportunity</h3> </div> <ul style="list-style-type: none"> • Enormous chance to develop adaptation technologies • Nobel work • Address felt acute problems of the farmers • Suitable project areas in terms of climate induced problems • Helpful farmers communities. 	<div data-bbox="857 184 915 231"> </div> <div data-bbox="1068 178 1131 231"> </div> <div data-bbox="1323 184 1382 231"> </div> <div data-bbox="1063 226 1174 264"> <h3>Threat</h3> </div> <ol style="list-style-type: none"> 1. Project VDC's are located in very far and in remote areas (Not easy for immediate support) 2. Farmers are extremely poor, they need immediate livelihood supports 3. Arghakhachi <ul style="list-style-type: none"> • Harsh steep slope of uplands • Complete drought 4. Inadequate resources to support large infrastructures like irrigation schemes
<div data-bbox="264 592 308 630"> </div> <div data-bbox="472 592 521 630"> </div> <div data-bbox="711 592 748 630"> </div> <div data-bbox="427 630 596 667"> <h3>Conclusion</h3> </div> <ul style="list-style-type: none"> • The project is in beginning and has got immense support from government and farmers communities. • The issue of climate change is very prominent therefore all stakeholders have put high expectations to bring some solutions • Projects will be able to achieve its objectives and outputs. • Lessons learnt will be useful for future projects 	<div data-bbox="852 592 915 638"> </div> <div data-bbox="1068 592 1131 638"> </div> <div data-bbox="1299 592 1359 638"> </div> <div data-bbox="977 638 1243 947"> </div> <div data-bbox="989 936 1255 995"> <h2>Thank you</h2> </div>

3.5 INNOVATIONS IN IPM-FFS AND ADAPTATION TO CLIMATE CHANGE

by Cahyana Widyastama

 <p style="text-align: center;">Innovations in IPM Farmer Field Schools and Adaptation to Climate Change</p> <p style="text-align: center;">Experience Sharing by: FIELD Foundation – Indonesia In the APPPC/FAO Workshop on Empowering Farmers through FFS IPM Training Kathmandu, Nepal, 27 February – 2 March 2017</p>	<p style="text-align: center;">FIELD Foundation – Indonesia (NGO) a brief information:</p>  <ul style="list-style-type: none"> • FIELD = Farmers' Initiatives for Ecological Livelihoods and Democracy • Established on June 2001 • Personnels: Initial team members were previously fully involved in the FAO – IPM Program in Indonesia since 1989 • Post FAO-IPM Program: as FIELD, facilitated farmers and marginal communities in Indonesia <ul style="list-style-type: none"> – with various entry points: Agriculture (rice, vegetables, secondary crops, estate crops); Agro-forestry; Disaster Risk Reduction; Climate Change Adaptation; Water and Sanitation - – Utilizing Farmer Field School (FFS) and its follow-up (Farmer Science; Farmer Action Research; Community Organizing; and Community Advocacy) as methodology for Community Empowerment – Core of the methodology = "Agro"- Ecosystem Analysis as the heart of FFS & Follow-up Activities
<p style="text-align: center;">Some Examples</p>	 <p>Start with FFS on RICE IPM (FAO-IPM era)</p> <p>'Ballot Box' Test (Pre Test & Post Test)</p> <p>Weekly Meeting Activities:</p> <ul style="list-style-type: none"> • Observation and AESA • Discussion and Decision Making • Special Topics • Group Dynamics
<p style="text-align: center;">To FFS on Ecological Vegetables</p> 	<p style="text-align: center;">FFS & Farmer Field Study on Estate Crops</p> 
<p style="text-align: center;">FFS on Ecological Sweet Potato</p> 	<p style="text-align: center;">FFS on Ecological Shallot</p> 



FFS on Soybean



FFS on Family Food Security, Nutrition and Health



FFS and Farmer Field Study on Participatory Plant Breeding (Rice & Local Vegetable)

Objective:
Farmer can produce varieties that are suitable with local need and condition

FFS on Watershed Management



From FFSs to Watershed Management



FFS on Eco Rice (SRI)



FFS on Multi-Purpose Trees



FFS on Living Food Bank



Exploring Rice Planting Methods



Exploring Aquatic Ecosystem and Non-Rice Plants



Integrating Save & Grow with Rice-Fish



What Farmers learned from the program

Farmers can enrich the production diversity in the Rice Ecosystem ("more than just rice")



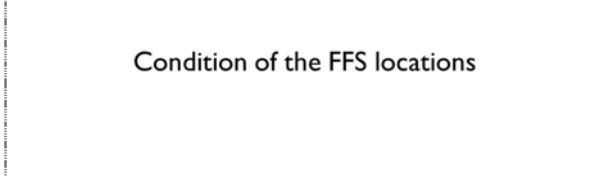
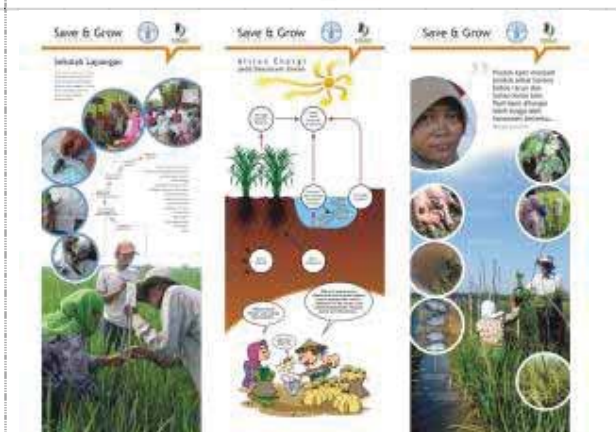
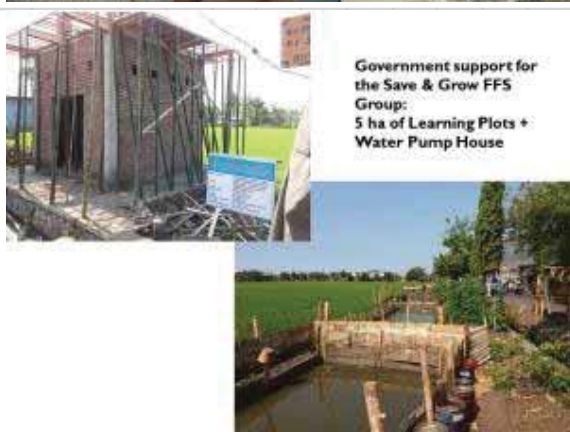
Farmers get opportunity to explore, develop and test ecological technologies



Making fish feed utilizing various available source of protein



Working with Biogro: spreading *Trichoderma* from the soil, and propagation of *Trichoderma*





Salinity problem



What Farmer Learned in the FFS and Field Study

- **Understanding Climate and its Impact in the Village:** Pattern of cropping season related to water availability; changes in the pattern; impact in the village; actions have been taken by community
- **Water availability:** in the watershed (spring and other water source debit measurement; existing distribution system); in the soil (soil humidity, water holding capacity, soil texture and structure, pH, etc.)
- **Climate:** Rainfall measurement to "read" the pattern (to determine "real rainy season" and "false rain")
- **Biodiversity:** Crop diversity, Variety diversity, "Extinct" varieties
- **Local Wisdom**
- **Various Field Studies for Adaptation:** Variety screening to drought, salinity; Variety crossing and selection; Planting technology for adaptation
- **Dialogue with relevant institution** (BMKG – Bureau for Meteorology, Climatology and Geophysics).

Understanding Village Condition in terms of Climate:
Water resources, availability and distribution;
Soil Properties as "water saving";
Cropping pattern, Crops Diversity as a potentials for Adaptation



CLIMATE

Observe & Measure :

- Rainfall
- Temperature
- RH
- Evapotranspiration
- Determine Onset



VARIETIES SCREENING:
Identify the traits of the available varieties;
Screen the local adaptive ones



Mungbean
Evaluation
Trial

Drought Tolerance Screening



CROSSING RICE:
Breeding objective: drought tolerant; moderate yield;
short duration; not too tall; can be grown as upland rice



CROSSING MAIZE

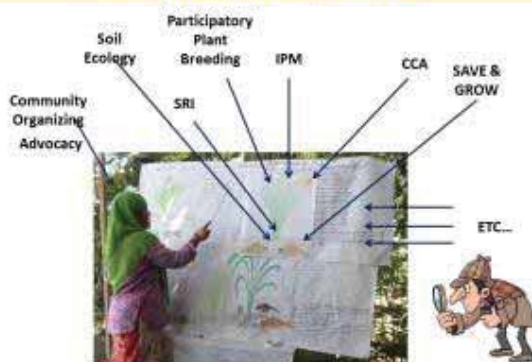


ADAPTIVE CAPACITY BUILT BY FARMERS

Farmer become capable in:

- Determining the start of the rainy season (can distinguish "false rain" and "true rain")
- Develop technologies to adapt the impact of the Climate condition in their locality:
 - Transplant older rice seedling to adapt water salinity
 - Prepare seeds of appropriate crops and varieties adaptive to climate condition (from selection and crossing)
 - Home gardening with adaptive crops and varieties
 - Improve the water holding capacity of the soil with organic matter
- Start to communicate with local Meteorology & Climate Bureau

Farmers do "AGRO"-ECOSYSTEM ANALYSIS
through FFS and Follow-up Activities



Our thought on The name of the FFS?

- Every Project, every Donor Agency tend to give "new name" for their project.
- For FIELD, the important thing is the "Vehicle" that give opportunity for farmers to do the learning process → FFS and its Follow-up Activities
- The "Heart" of FFS = Ecosystem Analysis
- The content of FFS: IPM, ICM, Save & Grow, Watsan etc. becomes an "Entry Point" for us to interact with farmers and give them opportunity for Empowerment

Innovations?

We just try to consistently implement the basic principles of Community Empowerment, and let the Farmers / Community enter the journey of learning process in understanding their LIVELIHOODS ECOSYSTEM, generate knowledge, communicate and work together to make decision, do action etc, and create their INNOVATION ("new" creation, adaptation, etc).



Etc.







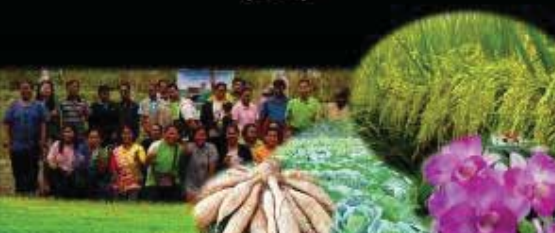






Thank You

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3.6 IPM DEVELOPMENTS IN SUPPORT OF SAVE AND GROW IN THAILAND

by Paveena Konyong

 <h2>Mobilization of Agricultural Extension in Thailand</h2> <p>By Department of Agricultural Extension Ministry of Agriculture and Cooperatives</p>	 <p>Thai Farmers are individual small or ungrouping. The farmers has no bargaining power for the production cost and marketing price of the product.</p> <p>1</p> <p>Agricultural Problem Background</p> <p>2 Natural Disaster</p> <p>3 Outbreak of pests and Diseases of the Agricultural Communities</p>
 <p>Since 2015</p>  <p>Ministry of Agriculture and Cooperatives (MOAC)</p>  <p>Large Scale Farming (LSF) Agricultural Learning Center (ALC)</p>	 <h2>Large Scale Farming (LSF)</h2> 
 <h2>Why LSF ?</h2> <ul style="list-style-type: none"> To enhance farmer knowledge To increase the bargaining power i.e. production factor, marketing To reduce production cost <p>The farmer have the better income, livelihood and more sustainable agriculture.</p>	 <h2>LSF Operations</h2> <p>1 Site selection and combine the small farmers into the large field</p> <p>2 It is necessary to assign the single management team with professional field manager.</p>
 <h2>LSF Operation (cont.)</h2> <p>3 Determination of strategic and set the procedure development</p> <p>4 The site specific technology was transferred to the farmers.</p>	 <h2>LSF Operation (cont.)</h2> <p>5 Standard specification conform with (GAP/GMP/Organic)</p> <p>6 Supporting Activities (Machineries/Equipment)</p>

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LSF Operation (cont.)

7 Supplementary income and marketing network was gained.

8 To adopt the Sufficiency – Economy Philosophy

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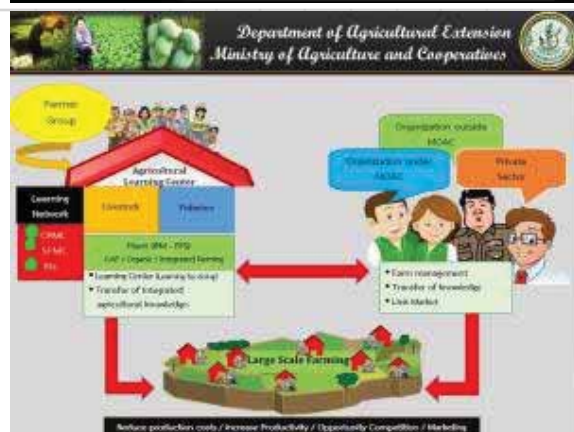
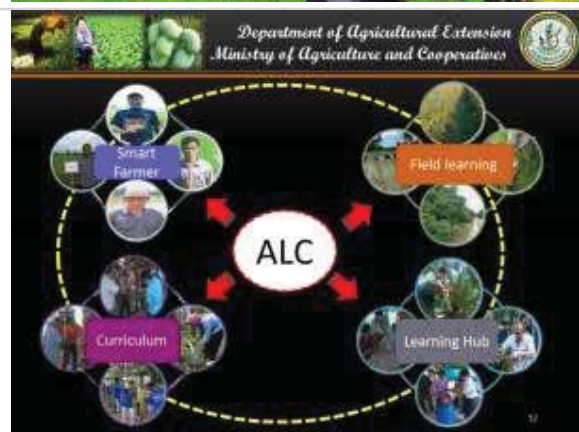
Agricultural Learning Center (ALC)

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882 ALCs

Obligation of ALCs

1. Suitable technology transference
2. Agricultural information support and service
3. Agricultural community network center



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LSF and ALC Integrated Goals

- To develop ALC of each community in the target agricultural area to implement for LSF.
- To improve agricultural production efficiency by LSF
- To cooperate with other organizations both governments and private sector for the improvement of agricultural production efficiency of the community.

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Methodology

Target Selection

Select the target area which is producing a target agricultural commodity (crops, livestock and aquaculture) and feasible for LSF practice.

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Methodology (Cont.)

Development of master trainer and improvement of participatory learning curriculum

- To Training and develop master trainer
- To develop participatory learning curriculum according to FFS practice

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Methodology (Cont.)

Development of farmer group


FFS

- IPM
- GAP, Organic
- Soil and Fertilizer management
- Marketing management
- etc.

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IPM-FFS Training Program by Agricultural Extensionist



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Methodology (Cont.)

Networking and learning units

Community Pest Management Center (CPMC)



Soil and Fertilizer management Center (SFMC)

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- Higher income
- Sustainable occupation
- The agricultural production will be done based on the needs of the community
- IPM are ready to transfer to other farmers via FFS.

- For rice, dry crops, trees, fruits, vegetables, mulberries, orchards, livestock and fish farms. Over 10,000 farms have participated in the programme on farmland, totaling over 1.5 million Rai or 2.4 billion square meters.



- Among 600 active large-scale farms, 480 have succeeded in their goals.
- Rice : reduce costs from 4,200 to 3,400 baht per Rai or 1,600 square meters of land, a reduction of up to 25 percent or almost 1,000 baht.



- Average production output has also increased from 583 kg to 659 baht per Rai, generating a total of 1.188 billion baht in revenue.



- IPM-FFS is an essential for Agricultural Extension Worker in knowledge transfer to farmers
- DOAE has employed implements IPM-FFS as a tool to disseminate the knowledge to farmer member of 882 ALC units, which composed a major learning center of the country and also expanded the knowledge to the alliance network



3.7 LINKING PLANT CLINICS WITH FFS by Vinod Pandit

 <p>Linking Plant Clinics with FFS Lose less, feed more! Dr. Dilli Ram Sharma & Dr. Vinod Pandit CABI KNOWLEDGE FOR LIFE</p>	<h4>About CABI</h4> <p>An inter-governmental, International, not-for-profit organization set up by a United Nations level treaty</p> <ul style="list-style-type: none"> Global Leader Scientific publishing Agricultural research Agricultural development Bioservices Consultancy Project delivery
<h4>Agricultural development</h4> <p>Plantwise: (A PPD and CABI led initiative in Nepal)</p>  <p>Plantwise is a practical, achievable and sustainable way to improve food security and improve the lives of millions of smallholder farmers.</p> <p>Plantwise will improve food security and the lives of the rural poor, by:</p> <ul style="list-style-type: none"> improving <u>plant health systems</u> within developing countries helping to establish a network of plant health clinics delivering accessible, actionable advice to farmers providing an authoritative local and global source of information on plant health 	<h4>National Actors of Plant Health</h4>  <p>www.cabi.org KNOWLEDGE FOR LIFE</p>
<h4>Implementation Structure</h4>  <ul style="list-style-type: none"> Macro-level: Plantwise Programme Board & National Forum Meso-level: National Responsible Organisation (NRO) Micro-level: Local Implementing Organisation (LIO) NRO – responsible for implementation at national level LIO – responsible for operating and financing plant clinics according to the minimum requirements 	<h4>Plantwise (PW)</h4>  <h4>Brief about Plantwise in Nepal</h4> <ul style="list-style-type: none"> GPC (Global Plant Clinic), launched in Nepal in 2008 Plantwise launched in Nepal in 2012: Agreement signed with PPD in 2013 (with an extension till 2019) 8 year implementation of Plantwise: Plans scheduled till 2020 Aims for gradual National ownership of the concept
<h4>Plant clinics</h4>  <p>Plant clinic shall mean a facility at a designated public place and open to all farmers,</p> <p>to</p>  <p>Respond to the immediate needs of farmers, offering advice on demand</p> <p>Accept any crop and any problem</p>	<h4>Clinic coverage in Nepal</h4>  <p>Kathmandu Cluster (green): Kathmandu, Lalitpur, Bhaktapur, Kirtipur, Sindurpur, Nuwakot, Dhading, Besis, Panch, Makawanpur, Sindhuli, Dolakha, (11)</p> <p>Morang Cluster (blue): Siraha, Saptari, Morang, Sarlahi, Jhapa, Bara (6)</p> <p>Burkha Cluster (red): Kanchanpur, Kailali, Bardiya, Doti, Dhangadhi, Panchthar (7)</p> <p>Kailash Cluster (yellow): Kailash, Rupandehi, Nainikot, Chitwan, Palpa, Syang, Tanahun, Kailash, Gorkha, Lamjung, Myagdi, Parbat, Dhaulagiri, Annapurna (14)</p> <p>www.cabi.org KNOWLEDGE FOR LIFE</p>

Snapshots : Training and Plant Clinics



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Reference materials and backstopping



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Plantwise (PW)



Future activities : Way forward.....

- To extend the program to newer area's
- To promote locally based IPM strategy
- Technical backstopping & Diagnostic support (Global Diagnostic support) for in-country programme management
- Promoting linkages & data usage
- M&E to assess PW impact and lessons learned

Farmer Field School (FFS):

(A FAO & PPD led initiative in Nepal)

- An Innovative participatory and interactive learning
- Emphasis is discovery based learning and problem solving
- Builds farmers capacity to analyse their production systems, identify problems, test possible solutions and adopt practices most suitable to their production systems.
- Provides an opportunity for farmers to test/evaluate suitable land use technologies and introduce new technologies through comparing conventional ones and indigenous ones.

Benefits of this complementation:

Win-Win situation

Advantages to Plant Clinic	Advantages to FFS
Platform for showcasing, testing and validating PW technologies & local reference	Refined FFS generated learning materials in form factsheets and PMDGs
Feedback on extension messages (Factsheets and PMDGs) for quality improvement of PW publications	Additional technological options for studying in FFS and adapting to local farming conditions
Stable local groups for plant clinic performance monitoring and evaluation	Capacity building of FFS facilitators on different modules to serve as plant doctors
Additional source of materials for preparing extension messages from FFS, ARSA, reports, results of comparative experiments and indigenous technical knowledge	Linkage to diagnostic services: through plant clinics, local and international laboratories (IDxDx)
Extended coverage of clinics compared to conventional market places, thus increasing the reach to more small holder farmers	An avenue to disseminate FFS study results through mass media (campaign & PHR) increasing access to quick and free advice
FFS master trainers to take up the role of plant doctors post exposure to PW modules- a more sustainable approach	Accelerate the rate of technology transfer from expert knowledge to farmers

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IPM farmer facilitator as Plant Doctor

Objective



- To enhance resource utilization
- To increase involvement for effective Plant health Management
- To make cost effective Plant health management program
- To utilize local resources
- To increase the coverage/provide services to farmers at remote areas
- To reducing workload of DADOs
- To provide technical support to local government(s) in the area of Plant Protection and safe production

Steps for linkage



Exploratory visits to the countries (Nepal, Uganda, Mozambique, Maldives):

- Creating Inventory to match synergistic interventions that can address the issues at larger scale
- Develop inventory recommended technologies that can be refined into locally relevant & validated extension messages
- Identify the gaps in diagnostic services and self decision practices among FFS & Non FFS farmers with a view to design actions.

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Prioritizing the actions – Nepal Context



- Discuss the results of the exploratory visits with PPD and CABI, to initiate preparations for proposal development
- Introduce PW activities – Trainings/workshops
- Exchange visits to Clinic and FFS
- Setting up pilot clinics in proximity to existing FFS groups
- Agree on the roles of CABI and National IPM Program running PW and FFS
- Elect a task force to put together a combined PC and FFS curriculum based on the existing and on-going ones

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PW Blog

THE PLANTWISE BLOG

THOUGHTS ON "FARMER FIELD SCHOOLS TO LINK WITH PLANT CLINICS IN NEPAL"

Farmer field schools to link with plant clinics in Nepal

Blog contributed by Martin Kwaesi (CABI) and Edo Mafu (Plantwise National Coordinator, Mozambique)

Plantwise-Farmer Field Schools: Synergies in Mozambique

August 23, 2015 August 26, 2015 David Ouedraogo-Ouedraogo

Blog contributed by Martin Kwaesi (CABI) and Edo Mafu (Plantwise National Coordinator, Mozambique)

https://plantwise.org/6062/plantwise-farmer-field-schools-synergies-in-mozambique

PW materials are assets in FFS: A case study from Maldives

Lead trainer using PW Modules to explain diagnostics

FFS trainers in Maldives using PMDGs to design experiment on IPM-vegetables

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Progress made so far

- Workshopwith about 20 FFS facilitators
- Two batch of trainings conducted, (38 FFS facilitators to become PDs)
 - 20 Farmers trained as Plant Doctor through FAO/TCP/INEP/3502 Project representing 4 districts.
 - 18 Farmers trained through PPD regular program.
- Farmers started to conduct the clinic in remote areas.
- Local Government (VDC) willing to support to Plant Doctor (IPM Facilitator) to run the clinics
- More than 400 farmers reached covering 12 crops and 18 pest/diseases

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Actions in Pipeline

- Data harmonization in process to analyze and validate the data for quality improvement interventions
- A special case study planned to compare the quality of FFS operated Plant clinics and existing clinics.
- Review and action plan

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