Efficient Management for SUSTAINABLE INTENSIFICATION OF RICE-BASED FARMING SYSTEMS

THE CHALLENGE:

TO FEED A GROWING WORLD POPULATION, THERE IS A PRESSING NEED TO INCREASE CROP PRODUCTION WHILE ENSURING SUSTAINABILITY AND ENHANCING RESILIENCE TO FACE NEW CHALLENGES.

This is particularly relevant to rice production in Asia, where increases in productivity are slowing and land, water and labour are moving out of production. Consequently, there is a need for achieving better efficiency, in particular:

- ***Crops and varieties*** suited to different agro-ecosystems and farming practices, and tolerant to the effects of climate change.
- ***Farming systems*** that offer a range of productivity, socio-economic and environmental benefits.
- ***Water management strategies*** that use ecosystem approaches to conserve water.
- ***Soil health*** by drawing on natural sources of plant nutrition and more judicious use of mineral fertilisers.
- ***Plant protection*** that relies primarily on healthy ecosystems and natural enemies to control pest populations.
- ***Knowledge and market systems*** that facilitate access by small-holder farmers.

Save and Grow

...in Asian rice production means increasing efficiencies to produce more, with higher quality, while relying on fewer and more sustainable inputs:

- **Better choice of appropriate management strategies**
- **Building on ecosystem services**
- **Making more efficient use of inputs**
- **Conservation and sustainable use of natural resources**

More with Less

REGIONAL RICE INITIATIVE

FAO FIAT PANIS

FROM PRINCIPLES TO PRACTICE

While Save and Grow sets forth sound principles, a main task of the Regional Rice Initiative is translating those principles into sustainable practices at the field level.

This is being accomplished primarily through Farmer Field Schools (FFSs) that continue to be adapted to meet the wider agenda of the Regional Rice Initiative.

A primary tenet of the original IPM Farmer Field Schools (to grow a healthy crop) remains intact. Healthy crops come from healthy ecosystems, and both are more resilient to pests and other stresses that result from changing conditions.

The use of FFSs also allows this initiative to build on existing capacities at the government, non-government, and local levels during this pilot phase.

INDONESIA

FAO's primary government partner in Indonesia is the Directorate General of Food Crops.

In Boyolali, Central Java, three FFSs in areas with full, partial and no irrigation have been completed in cooperation with VECO, APOB/Gita Pertiwi, APPOLI, LSKBB, facilitators from these organisations, and local agriculture offices.

In Indramayu, West Java, where up to ten pesticide applications per season are common, another five FFS are being conducted by Farmer Facilitators, with support from FIELD.

THE PHILIPPINES

Twenty FFSs have been conducted in Regions X, XII and XIII of Mindanao through collaboration between FAO, the Department of Agriculture, KASAKALIKASAN (National IPM Program), the Bureau of Fisheries and Aquatic Resources, local governments, secondary agricultural schools, and SEARICE.

LAOS

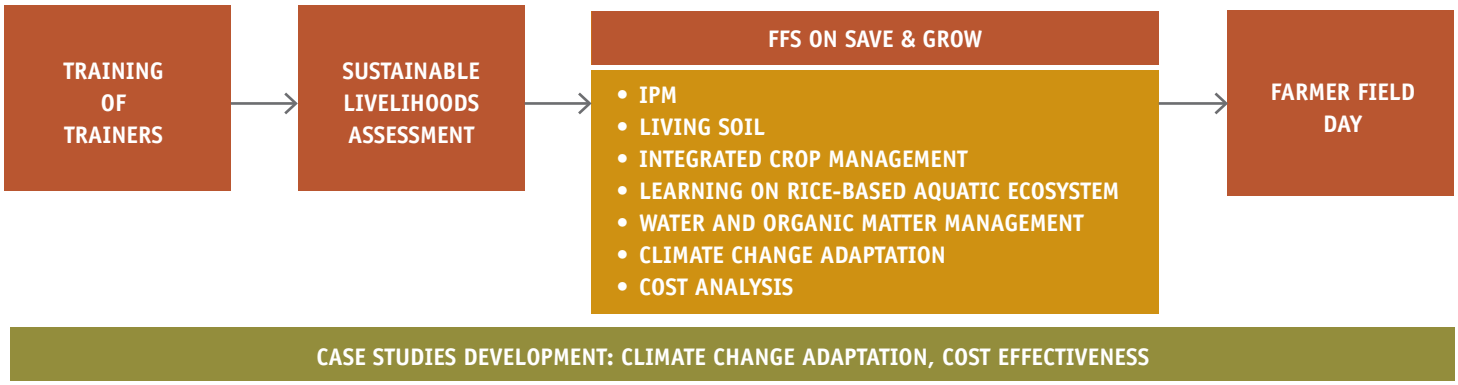
In Laos, the Department of Agriculture has expressed keen interest to implement Save and Grow-based FFSs for sustainable rice intensification in irrigated and rain-fed production areas. Implementation is scheduled for the 2014 growing season.

MAIN ACTIVITIES

In all countries, steps of implementation are:

- Initial preparations, consultations and planning with government and non-government partners
- Curriculum development and adaptation workshops to include Save and Grow principles
- Refresher courses for trainers
- Implementation of Farmer Field Schools
- Cross-visits and/or Farmer Field Days
- Development of case studies
- National evaluation workshops

Process implemented by FIELD- Indonesia



RESULTS TO DATE

Training

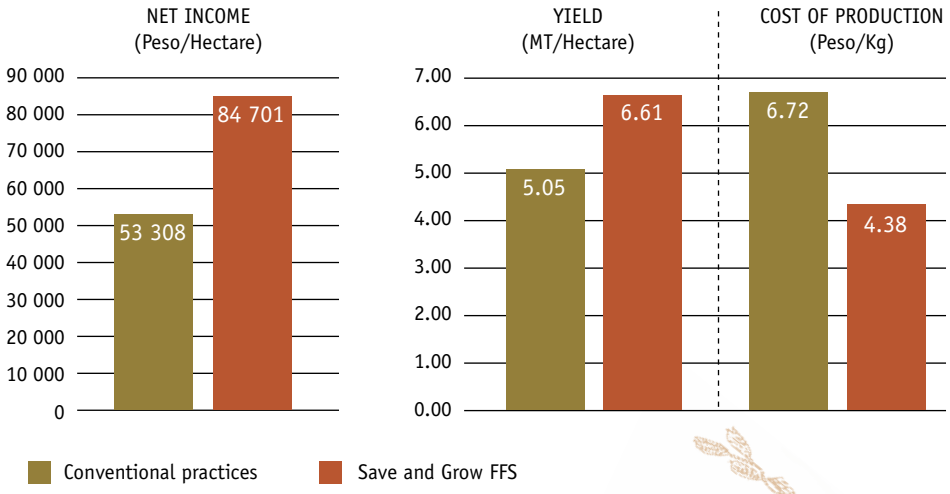
- Over 400 farmers have participated in FFSs in the Philippines
- In Indonesia, 81 farmers in Central Java and some 125 in West Java have joined FFS training
- Many more farmers have been exposed through cross-visits and Farmer Field Days
- Save and Grow curricula developed in both Philippines and Indonesia, and local facilitators trained in their use
- Staff from local governments and secondary agricultural schools involved to ensure sustainability

Efficiencies

Preliminary results in the Philippines show an average 30 percent increase in yield and over 30 percent reduction in costs, resulting in a close to 60 percent increase in net income. In Central Java, Indonesia, farmers increased rice yield by 20 percent, whereas input cost savings were variable. Returns on investments increased up to 57 percent, primarily resulting from higher farm gate prices for certified-organic rice, intended for the export market.

Results from 10 FFS in the Philippines: comparing Save and Grow and conventional farmers' practices

ITEM/FFS	REGION 10				REGION 12	AVERAGE
	BUKIDNON	LANAO NORTE	MISAMIS OR	MISAMIS OCC	S KUDARAT	
FFS SITE						
Number of FFS	2	2	2	2	2	
Municipality	Valencia City	Lala	Balingasag	Clarin	Tacurong City	
Barangay (1)	Nagbag-o	Pinuyak	Dumarait	Mialen	Grino	
Barangay (2)	Colonia	Simpak	Talusan	Kinangay S	Baras	
% INCREASE (DECREASE)						
Net Income	54.12	119.08	67.04	20.78	50.00	58.89
Yield	29.03	31.69	18.00	30.00	49.76	30.98
Cost of Production	-33.17	-47.05	-31.01	-25.32	-34.64	-34.80



Case Studies

In Indonesia:

- Increasing the efficiency of rice production systems
- Critical analysis of rice value chain development
- Innovative Save and Grow practices responding to local needs and climate change adaptation
- Cost effectiveness of Save and Grow practices

In the Philippines:

- Contributions of FFSs in conserving aqua-biodiversity in rice farms
- Efficiencies and resilience in rice farming: experience in Region XII
- Puto Calasiao: enhancing a hundred year old tradition with farmer-developed plant genetic resources
- The women of Clarin: building up family food security thru Save and Grow
- Save and Grow prospects for institutional sustainability: the Dumarait experience

In Laos and the Philippines:

- Role of family farming in rice intensification

Other Highlights

- Local assessment activities conducted on aqua-biodiversity in Mindanao and sustainable livelihoods in Indramayu
- Extensive technical and financial support from local government in the Philippines ensures smooth and sustainable implementation
- Collaboration with students from secondary agricultural schools in the Philippines enhances sustainability
- Basis established for policy decisions on Save and Grow implementation
- Field-based work promotes collaboration among Regional Rice Initiative components

LESSONS LEARNED

- Early results indicate clear field-based evidence in support of ecosystem-based sustainable rice intensification, called for in both Save and Grow and Regional Rice Strategy.
- Government and non-government partners, local facilitators and farmers have embraced the field training activities.
- Need for developing and validating Save and Grow methods at local level, through FFS and collaboration of different stakeholders.
- The multi-disciplinary and stakeholder approach has resulted in coordination and administrative challenges.
- Narrow window for Regional Rice Initiative field implementation. Greater flexibility is needed to synchronise field training with local growing seasons.

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NEXT STEPS

As Phase I was a one-year pilot phase, much work remains during 2014:

- **Completion of on-going field work and case studies**
- **Analyse results and efficiencies at regional meeting**
- **Strengthen curriculum and expand topics (soil management, post-harvest, etc.)**
- **Refine impact assessment and validate results in farmers' own fields**
- **Develop training and resource materials**
- **Enhance capacities for FFS planning, economic analysis, and impact assessment**
- **Up-scaling of training in existing countries and expansion to new countries and partners**
- **Pro-active use of field-based evidence to inform development and application of national policies for sustainable rice intensification, based on FAO's Save and Grow policy and Regional Rice Strategy**

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SAVE AND GROW

2014 International Year of Family Farming

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