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# Disseminating site-specific nutrient management to rice farmers in the Philippines : Status, challenges and opportunities

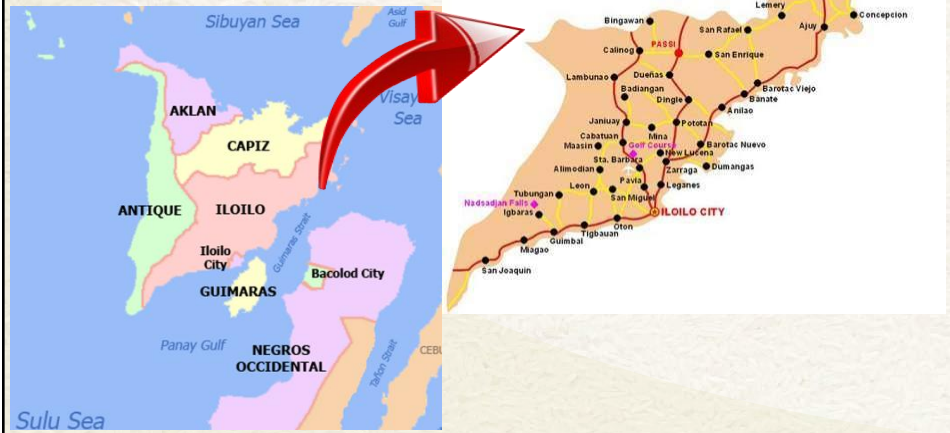
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# ILOILO PROVINCE

*Food Basket of Western Visayas*



## Status of Rice Production in Iloilo

- Iloilo is the rice granary of Western Visayas
- Nationally, ranks second or third in rice production due to vast areas devoted to rice culture
- Yield per unit area remains low, 3.8 tons ha<sup>-1</sup> (BAS, 2007)
- Due to poor crop management
  - Improper nutrient management (improper timing and amounts)
  - High seed rates (up to 200 kg/ha)
  - Use of low quality seeds (farmers` seeds)



## Milestones in the development and dissemination of SSNM

- 2005-2006 Research on “Soil and Plant-Based Approaches in Formulating Fertilizer Recommendations for Rice in Iloilo Province
- 2007-2008 SSNM verification trials in Iloilo Province
- 2009-2010 Development of site-specific nutrient management (SSNM) recommendations for Aklan, Capiz and Antique
- 2008-2011 SSNM dissemination

## Impact of SSNM on farmers in Iloilo Province



- 2006- Initial evaluation of SSNM
  - Resulted in a significantly higher yield (0.9 ton/ha) than farmer’s practice
- 2007-2008 SSNM verification trial
  - 22 farms in 6 municipalities
  - Improved nutrient management through SSNM was particularly beneficial for farmers attaining yields lower than 5 t ha<sup>-1</sup> with their current management
  - When seed cost is not considered, SSNM provided added net benefit to 68% of the farmers using a seed rate of 120 kg ha<sup>-1</sup> and to 50% of the farmers using a seed rate of 80 kg ha<sup>-1</sup>.

## Impact of SSNM on farmers in Iloilo Province



- 2008-2009 verification trial
  - During the dry season, SSNM significantly increased yield by  $1.1 \text{ t ha}^{-1}$  and gross return above fertilizer cost by  $280 \text{ USD ha}^{-1}$

## Impact of SSNM on farmers in Capiz, Aklan and Antique (CY 2009-2010)

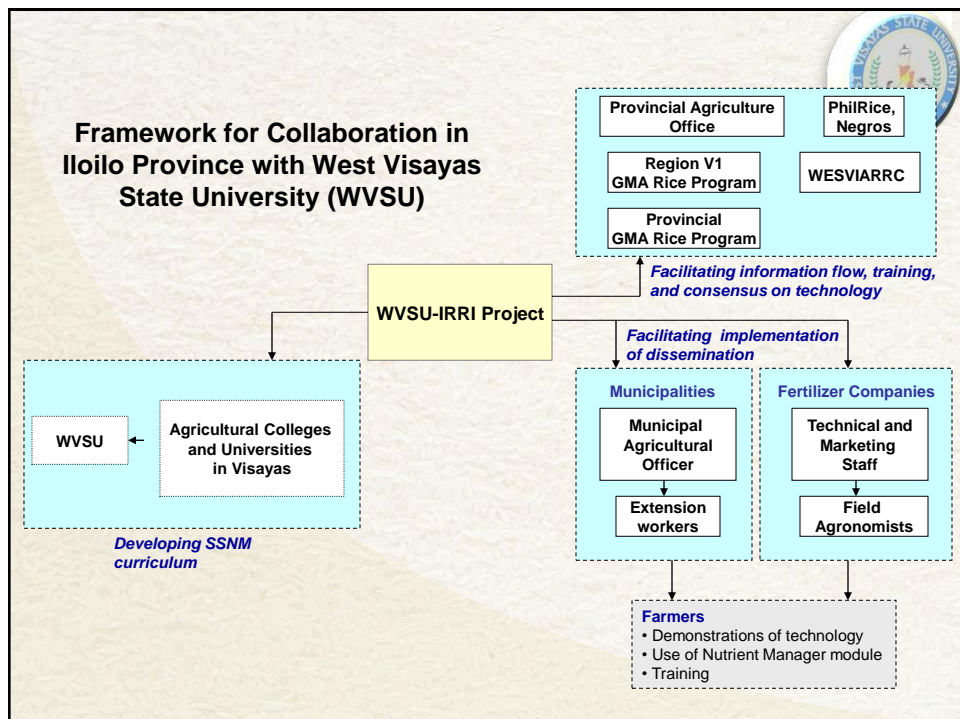


- Improved fertilizer management based on SSNM principles as used in *Nutrient Manager for Rice* increased yield and profitability for rice farming.
- SSNM yields tended to be better than FFP yields more in the wet season than the dry season, which is probably due to better nutrient efficiency arising from better water availability in the wet season.
- SSNM yields averaged 9% higher than FFP yields ( $0.37 \text{ t/ha}$ ) across the sites and seasons.
- The results from the field evaluation suggest that increased profitability of PhP 4500/ha/rice-growing season is a realistic target with *Nutrient Manager for Rice*.



## How does SSNM benefit rice growers?

1. Adjust timing of fertilizer to match critical growth stages of a rice variety
2. Adjust fertilizer rates to match a field-specific attainable target yield
3. Adjust fertilizer P and K for inputs from crop residues and organic materials





# Steps in the research to dissemination pathway for SSNM

1. Develop and validate SSNM based principles
2. Establish confidence and consensus on guidelines derived from SSNM principles
3. Develop locally adapted decision tools and aids for dissemination
4. Establish partnerships enabling contact with numerous farmers
5. Ensure farmers receive and understand guidelines for their fields

## Develop locally adapted decision tools and aids for dissemination



### Provincial Quick Guides

- Iloilo
- Capiz
- Aklan
- Antique

The image displays four provincial quick guides for fertilizer use in direct-seeded rice. Each guide includes a timeline of rice growth stages (Germination, Emergence, Tillering, Panicle initiation, Grain filling, Maturity) and a table of fertilizer application rates (N, P, K) for different soil types (Normal, Low, High) and rice varieties (e.g., IR64, IR50429, IR64476, IR64477, IR64478, IR64479, IR64480, IR64481, IR64482, IR64483, IR64484, IR64485, IR64486, IR64487, IR64488, IR64489, IR64490, IR64491, IR64492, IR64493, IR64494, IR64495, IR64496, IR64497, IR64498, IR64499, IR64500). The guides also provide instructions on how to use the fertilizer and contact information for the Provincial Rice Coordinator in each province.

## Innovative Tools on Nutrient Management for Rice

Locally adapted decision tools and aids for dissemination

**New SSNM Website**  
<http://beta.irri.org/ssnm/>

**Web-based decision tools**  
[www.irri.org/nmrice](http://www.irri.org/nmrice)

**Decision support software**

**Training video and PowerPoint for Nutrient Manager**

**Nutrient Optimizer for Rice**  
**Computer-based teaching tools**

**Tagalog version**  
<http://www.pinoyrkb.com/maab27-v4/v4/muab27-4>

**English version**  
<http://www.pinoyrkb.com/maab27-v4/v4/muab27-4>

**Videos for farmers in the Philippines**  
<http://www.pinoyrkb.com/resources>

**Provincial quick guides in Philippines**  
<http://www.pinoyrkb.com/resources>

**VCD Tagalog version**

**DVD English and Tagalog version**

A joint undertaking of the following organizations in the Philippines:

## Municipal agriculturists' training

# Farmers' classes



# Demo plots





## Field days



## Training of faculty members on nutrient management tools





## Current status of dissemination

- All dissemination tools are with the local government units (LGUs)
- Municipal Agriculturists (MAs)/Agricultural Technicians have exposures on the use of all dissemination tools
- A number of LGUs/MAs/ATs initiate dissemination activities
- By the end of 2011 about 6000 farmers in Iloilo and nearby provinces had been reached through training programs, lectures and demonstration plots
- Many farmers are still unreached
- Uncertain as to uptake of technology by farmers



## Constraints to wider adoption

- Lack of motivation and commitment among MAs and ATs to disseminate the technology
- Lack of confidence among MAs and ATs to train farmers
- Insufficient support from the heads of local government units
- High cost of fertilizers
- Poor irrigation services



## Opportunities

- Information technology applications



- Availability of other projects which support dissemination activities- Cyber Village Project; Department of Agriculture dissemination project; Agricultural Training Institute (ATI)-funded 'Nutrient Manager' smartphone recommendation validation
- Presence of Farmers Information Technology Services (FITS) Centers nationwide



## Acknowledgment

- Rice farmers and local government units in Iloilo, Capiz, Aklan and Antique
- Department of Agriculture, Regional Field Unit VI
- West Visayas State University
- Atlas Fertilizer Corporation
- Farmers' Information Technology Services (FITS) Centers
- International Rice Research Institute and partners



THANK YOU!