



International K symposium
Bhubaneswar, India; 5-7 Nov. 2009

An approach for disseminating improved nutrient management for rice in the Philippines

Roland J. Buresh
International Rice Research Institute

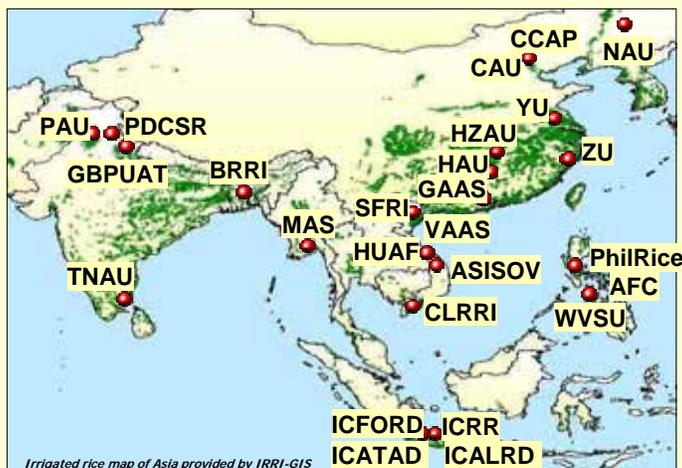
Greta G. Gabinete
West Visayas State University, Iloilo, the Philippines



This presentation was made at the IPI-OUAT-IPNI International Symposium, 5-7 November 2009, OUAT, Bhubaneswar, Orissa, India. The Role and Benefits of Potassium in Improving Nutrient Management for Food Production, Quality and Reduced Environmental Damage.



Site-specific nutrient management (SSNM) for rice was developed from 1997 through a partnership of IRRI



This presentation was made at the IPI-OUAT-IPNI International Symposium, 5-7 November 2009, OUAT, Bhubaneswar, Orissa, India. The Role and Benefits of Potassium in Improving Nutrient Management for Food Production, Quality and Reduced Environmental Damage.

Partners in 2005



Rice production in Iloilo

- Iloilo Province is a major rice growing area of the Philippines
- Yield per unit area remains low
 - Average = 3.8 tons per ha
- Yield is constrained by crop management
 - Improper timing and amounts of fertilizer
 - Excessive seed rates for direct wet-seeded rice
 - Use of low quality seeds





Indicator of successful dissemination of SSNM

Many farmers quickly obtain and use a science-based, best nutrient management guideline tailored to their specific field, crop, and season



This presentation was made at the IPI-OUAT-IPNI International Symposium, 5-7 November 2009, OUAT, Bhubaneswar, Orissa, India. The Role and Benefits of Potassium in Improving Nutrient Management for Food Production, Quality and Reduced Environmental Damage.



Steps in the pathway from research to successful dissemination

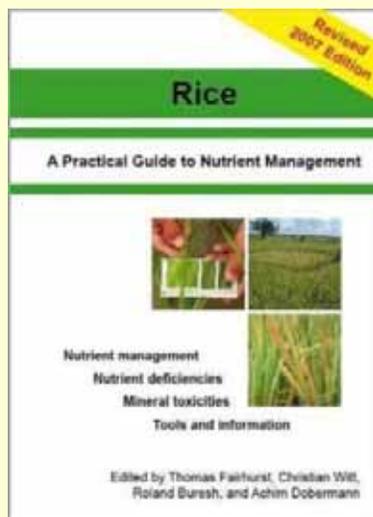
1. **Develop and validate SSNM-based principles for nutrient management**



This presentation was made at the IPI-OUAT-IPNI International Symposium, 5-7 November 2009, OUAT, Bhubaneswar, Orissa, India. The Role and Benefits of Potassium in Improving Nutrient Management for Food Production, Quality and Reduced Environmental Damage.



Use the principles of SSNM for rice established from a decade of research across Asia



Can be downloaded at this website:

<http://tinyurl.com/6lp8zj>

This presentation was made at the IPI-OUAT-IPNI International Symposium, 5-7 November 2009, OUAT, Bhubaneswar, Orissa, India. The Role and Benefits of Potassium in Improving Nutrient Management for Food Production, Quality and Reduced Environmental Damage.



Use relevant past research results



PhilRice:

- 1996 – 2004: Field research to develop SSNM principles from 1996 to 2004

WVSU:

- 2005 – 2006: Research to further develop SSNM principles
- 2007 – 2008: On-farm research to evaluate SSNM

This presentation was made at the IPI-OUAT-IPNI International Symposium, 5-7 November 2009, OUAT, Bhubaneswar, Orissa, India. The Role and Benefits of Potassium in Improving Nutrient Management for Food Production, Quality and Reduced Environmental Damage.



Steps in the pathway from research to successful dissemination

1. Develop and validate SSNM-based principles for nutrient management
2. **Develop locally adapted decision tools to facilitate dissemination**



This presentation was made at the IPI-OUAT-IPNI International Symposium, 5-7 November 2009, OUAT, Bhubaneswar, Orissa, India. The Role and Benefits of Potassium in Improving Nutrient Management for Food Production, Quality and Reduced Environmental Damage.



How to reach many farmers fast?

Challenges

1. SSNM is knowledge intensive because guidelines are specific for a field
2. Extension workers and farmers often receive differing information from various organizations



This presentation was made at the IPI-OUAT-IPNI International Symposium, 5-7 November 2009, OUAT, Bhubaneswar, Orissa, India. The Role and Benefits of Potassium in Improving Nutrient Management for Food Production, Quality and Reduced Environmental Damage.



How to reach many farmers fast?

Opportunity

Quickly provide a farmer with an SSNM-based guideline for their specific rice field

- Use information available from the farmer
- Give guideline to farmer within 15 minutes
- Minimize risk for the farmer
- Ensure high likelihood of increased profit



This presentation was made at the IPI-OUAT-IPNI International Symposium, 5-7 November 2009, OUAT, Bhubaneswar, Orissa, India. The Role and Benefits of Potassium in Improving Nutrient Management for Food Production, Quality and Reduced Environmental Damage.



Nutrient Manager for Rice software developed in 2008 for Philippines

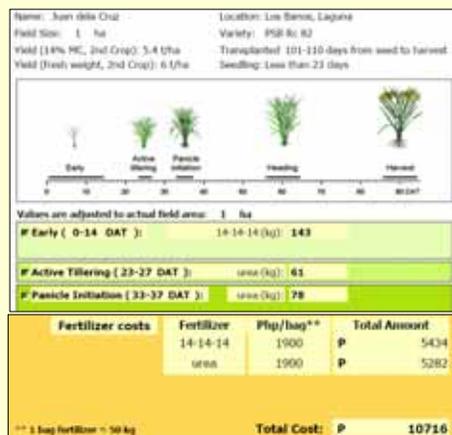
- A computer-based decision tool to rapidly provide best nutrient management for a specific rice field
- Totally consistent with SSNM principles and current science
- Targeted for extension workers and field technicians
- **Translated into local dialects**



This presentation was made at the IPI-OUAT-IPNI International Symposium, 5-7 November 2009, OUAT, Bhubaneswar, Orissa, India. The Role and Benefits of Potassium in Improving Nutrient Management for Food Production, Quality and Reduced Environmental Damage.

IRRI Rapidly provides a printable guideline based on reply to ~10 simple questions for a rice field or rice-growing area

Example for the Philippines



- Other inputs:
1. Crop residue: **medium**
 2. Organic materials: (kg) N: 10 P₂O₅: 5 K₂O: 10
 3. Other organic materials: (kg) N: 2 P₂O₅: 1 K₂O: 4
 4. Composted straw: **none**
 5. Sediment input: **none**

This presentation was made at the IPI-OUAT-IPNI International Symposium, 5-7 November 2009, OUAT, Bhubaneswar, Orissa, India. The Role and Benefits of Potassium in Improving Nutrient Management for Food Production, Quality and Reduced Environmental Damage.

IRRI

Steps in the pathway from research to successful dissemination

1. Develop and validate SSNM-based principles for nutrient management
2. Develop locally adapted decision tools to facilitate dissemination
3. Establish partnerships and confidence in disseminating SSNM through decision tools

This presentation was made at the IPI-OUAT-IPNI International Symposium, 5-7 November 2009, OUAT, Bhubaneswar, Orissa, India. The Role and Benefits of Potassium in Improving Nutrient Management for Food Production, Quality and Reduced Environmental Damage.



Establishing confidence in SSNM guidelines in decision tools through consultations and training

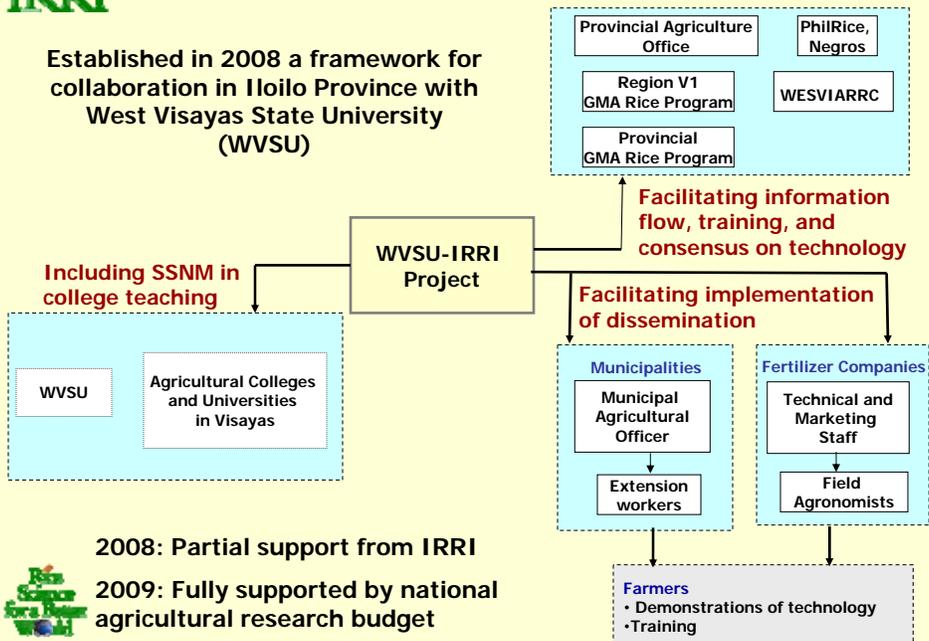
- 14 May 2008: Meeting with key organizations: WVSU, GMA Rice, PhilRice, WesVIARRC, Atlas Fertilizer, and IRRI (24 participants)
 - Developed plan for implementing dissemination of new fertilizer guideline for Iloilo
- 28 May 2008: Training of Municipal Agricultural Officers on new nutrient management guideline (57 participants)
 - Arranged by Provincial Agriculturist, with representatives from PhilRice and IRRI
- June to December 2008: Orientation and training on use of *Nutrient Manager for Rice*
 - Oriented Agricultural Technicians in twenty municipalities
 - Conduct regional training and orientation



This presentation was made at the IPI-OUAT-IPNI International Symposium, 5-7 November 2009, OUAT, Bhubaneswar, Orissa, India. The Role and Benefits of Potassium in Improving Nutrient Management for Food Production, Quality and Reduced Environmental Damage.



Established in 2008 a framework for collaboration in Iloilo Province with West Visayas State University (WVSU)



2008: Partial support from IRRI

2009: Fully supported by national agricultural research budget



This presentation was made at the IPI-OUAT-IPNI International Symposium, 5-7 November 2009, OUAT, Bhubaneswar, Orissa, India. The Role and Benefits of Potassium in Improving Nutrient Management for Food Production, Quality and Reduced Environmental Damage.



Widespread use of the *Nutrient Manager* was facilitated by training of trainers

Training video and PowerPoint on use of *Nutrient Manager* developed in the Philippines.

Comparable material can be developed for each *Nutrient Manager*



This presentation was made at the IPI-OUAT-IPNI International Symposium, 5-7 November 2009, OUAT, Bhubaneswar, Orissa, India. The Role and Benefits of Potassium in Improving Nutrient Management for Food Production, Quality and Reduced Environmental Damage.



Videos for farmers Example from the Philippines on youtube



Tagalog version

<http://www.youtube.com/watch?v=KrnuvhXm7-8>



English version

<http://www.youtube.com/watch?v=tkVnNzCF07o>



<http://www.pinoyrkb.com/resources>

This presentation was made at the IPI-OUAT-IPNI International Symposium, 5-7 November 2009, OUAT, Bhubaneswar, Orissa, India. The Role and Benefits of Potassium in Improving Nutrient Management for Food Production, Quality and Reduced Environmental Damage.



Videos for farmers

Example from the Philippines on CD



VCD
Tagalog
version



DVD
English and
Tagalog
version



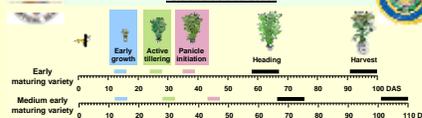
This presentation was made at the IPI-OUAT-IPNI International Symposium, 5-7 November 2009, OUAT, Bhubaneswar, Orissa, India. The Role and Benefits of Potassium in Improving Nutrient Management for Food Production, Quality and Reduced Environmental Damage.



Developed locally adapted quick guides for fertilizing rice

- Developed using the *Nutrient Manager for Rice* software
- Tailored for most common rice growing conditions in a province
- Totally consistent with SSNM principles

Guideline for wet and dry seasons for Iloilo Direct-seeded rice



Step No.	Growth stage	Days after seeding (DAS)		Fertilizer source	Yield target (based on total fresh weight from the thresher)	
		Early maturing	Medium early maturing		100-120 cavansha	130-150 cavansha
Step 1	Early growth	12 - 16	12 - 16	14-14-14 (with S)	2 bags	3 bags
Step 2	Active tillering	24 - 28	28 - 32	Urea (46-0-0)	1 bag	1 to 1.5 bags
Step 3	Panicle initiation	35 - 39	43 - 47	Urea (46-0-0)	1 bag	1.5 bags
Alternate #2						
Step 1	Early growth	12 - 16	12 - 16	15-20-0 (with S) MOPS (0-0-60)	1.5 bags	2 bags
Step 2	Active tillering	24 - 28	28 - 32	Urea (46-0-0)	1 bag	1.5 bags
Step 3	Panicle initiation	35 - 39	43 - 47	Urea (46-0-0)	1 bag	1.5 bags

1 cavan = 42 kg

This 'quick guide' is applicable for rice fields with:

- Sufficient supply of water to avoid drought
- An average level of soil fertility
- No input of nutrient through deposition of sediment from flooding
- No return of rice straw after threshing
- No use of organic inputs other than rice stubble

For fields with other crop-growing conditions, please use 'Nutrient Manager for Rice' to develop a field-specific guideline. Consult Agricultural Technicians in the local DA office or in your municipality about the 'Nutrient Manager for Rice'. You can also consult the Office of the Provincial Agriculturist (Tel. no. 033 337 3062).



This is a joint undertaking of DA, PhilRice, WVSU, and IRRI. Version 2.0 April 2009



Steps in the pathway from research to successful dissemination

1. Develop and validate SSNM-based principles for nutrient management
2. Develop locally adapted decision tools to facilitate dissemination
3. Establish partnerships and confidence in disseminating SSNM through decision tools
4. **Ensure farmers receive and understand guidelines for their fields**



This presentation was made at the IPI-OUAT-IPNI International Symposium, 5-7 November 2009, OUAT, Bhubaneswar, Orissa, India. The Role and Benefits of Potassium in Improving Nutrient Management for Food Production, Quality and Reduced Environmental Damage.



Established partnerships in 2008 for enabling contact with numerous farmers

- Conducted demonstration plots of the new fertilizer guideline in farmers' fields: 20 municipalities
- Conducted field days
- Distributed >1000 laminated one-page guidelines
- Prepared and promoted Ilonggo version of *Nutrient Manager for Rice*
- Trained and oriented Municipal Agriculture Officers, technicians, and farmer groups
- Used *Nutrient Manager* to formulate field specific recommendations for farmers



This presentation was made at the IPI-OUAT-IPNI International Symposium, 5-7 November 2009, OUAT, Bhubaneswar, Orissa, India. The Role and Benefits of Potassium in Improving Nutrient Management for Food Production, Quality and Reduced Environmental Damage.

- **2009- Department of Agriculture Regional Office and National Rice Program**
 - *Funded the research on development and dissemination of SSNM recommendation for rice in region (6 provinces)*
 - *Designated a focal person for SSNM*



Tools made available from 2009 to facilitate dissemination

Innovative Tools on Nutrient Management for Rice

- New SSNM Website: <http://beta.irri.org/ssnm/>
- Web-based decision tools: www.irri.org/ssnrice
- Decision support software
- Training video and PowerPoint for Nutrient Manager
- Computer-based teaching tools
- Tagalog version: <http://www.ipsocrb.com/central/index.html>
- English version: <http://www.ipsocrb.com/central/index.html>
- Videos for farmers in the Philippines: <http://www.pisoykb.com/resources>
- Provincial quick guides in Philippines: <http://www.pisoykb.com/resources>
- VCD Tagalog version
- VCD English and Tagalog version

A joint undertaking of the following organizations in the Philippines:
PhilRice and the Office of the Provincial Agriculturist





What is current status of dissemination (October 2009)?

- Dissemination tools are with the local government units (LGUs)
- Municipal Agriculturists (MAs)/Agricultural Technicians (ATs) have exposure on the use of dissemination tools
- Only a number of LGUs/MAs/ATs initiate dissemination activities
- Only few farmers were reached by the technology



This presentation was made at the IPI-OUAT-IPNI International Symposium, 5-7 November 2009, OUAT, Bhubaneswar, Orissa, India. The Role and Benefits of Potassium in Improving Nutrient Management for Food Production, Quality and Reduced Environmental Damage.



Continue to ensure farmers receive and understand guidelines for their fields

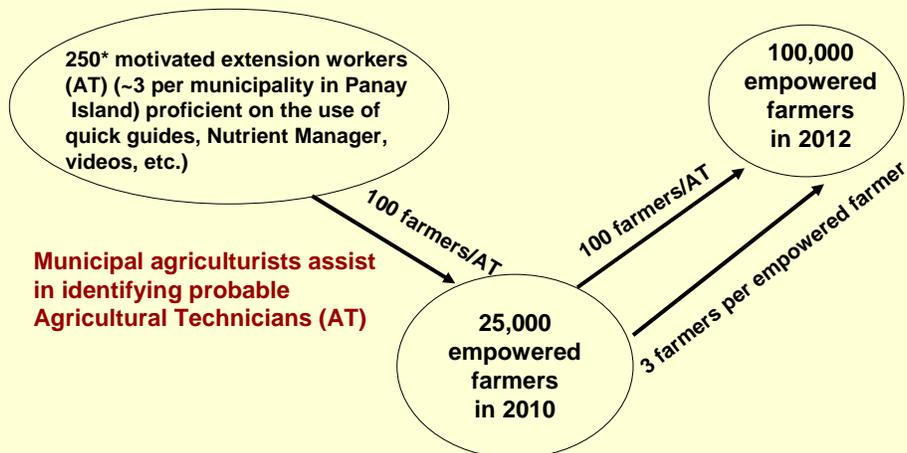
- Agricultural Technicians / extension workers need to be motivated
 - *Motivation in terms of:*
 - Continuous capability building activities
 - Access to available tools
 - Recognition by local government units (e.g. awards)
 - Entitlement to updated technology tools via text messaging and website
- Expand partnerships to include farmers' cooperatives, farmer associations, and farmer technology (FITS) centers



This presentation was made at the IPI-OUAT-IPNI International Symposium, 5-7 November 2009, OUAT, Bhubaneswar, Orissa, India. The Role and Benefits of Potassium in Improving Nutrient Management for Food Production, Quality and Reduced Environmental Damage.



Reaching 25,000 farmers or more by 2010 and beyond in Panay Island



*Assumption: There are 94 municipalities in Panay with an average of 10 ATs per municipality

This presentation was made at the IPI-OUAT-IPNI International Symposium, 5-7 November 2009, OUAT, Bhubaneswar, Orissa, India. The Role and Benefits of Potassium in Improving Nutrient Management for Food Production, Quality and Reduced Environmental Damage.



Role of partners in 2010

- WVSU/Dept. of Agric.
 - Provide technical assistance
 - Conduct capability building activities
 - Empower LGUs to conduct dissemination
 - Conduct follow-up activities
 - Monitoring uptake of technology
- Local government units (LGUs)
 - Assist in identifying ATs/farmers
 - Mobilize ATs/farmers
 - Spearhead dissemination
 - Follow-up uptake of technology



Key agents for dissemination:

Agricultural Technicians and Lead Farmers

This presentation was made at the IPI-OUAT-IPNI International Symposium, 5-7 November 2009, OUAT, Bhubaneswar, Orissa, India. The Role and Benefits of Potassium in Improving Nutrient Management for Food Production, Quality and Reduced Environmental Damage.



Lesson #1: Develop a science-based decision tool for extension and farmers

NUTRIENT MANAGER FOR RICE Philippines Version 1.11

Field-specific guidelines on nutrient management for rice

Field Size: 2 ha Variety: Angikok
 Season: 2nd crop (New crop) Transplanted: 221-120 days from seed to harvest
 Seed: 1.4% N/C, 5.4 t/ha Seeding: less than 23 days
 Seed (fresh weight): 8 t/ha

Values are adjusted to actual field area: 2 ha

Early (0-14 DAT)	14-28-14 (kg)	200
Active tillering (15-32 DAT)	200-200-05	200
Panicle initiation (33-47 DAT)	050-050-05	200

Fertilizer Cost	Fertilizer	PKG/ha*	Total Amount
1769	1536	1	1769
14-24-14	1700	1	1700
Total Cost:			3469

Other inputs:
 1. Crop residue: medium
 2. Organic material: none
 3. Other organic material: none
 4. Composted manure: none
 5. Soilborne NPK: none

Click Buttons: NPK

Home | Terms and Conditions | About

© International Rice Research Institute 2008

Example from NM Rice Philippines

This presentation was made at the IPI-OUAT-IPNI International Symposium, 5-7 November 2009, OUAT, Bhubaneswar, Orissa, India. The www.irri.org/nmrice Management for Food Production, Quality and Reduced Environmental Damage.



Lesson #2: Develop locally adapted tools to facilitate dissemination

Example from Philippines

Innovative Tools on Nutrient Management for Rice

New KSMY Website: <http://beta.irri.org/ksmy/>

Web-based decision tools: www.irri.org/nmrice

Decision support software

Training video and PowerPoint for Nutrient Manager

Computer-based teaching tools

Tagalog version: <http://www.pnaryfb.com/resources/>

English version: <http://www.pnaryfb.com/resources/>

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

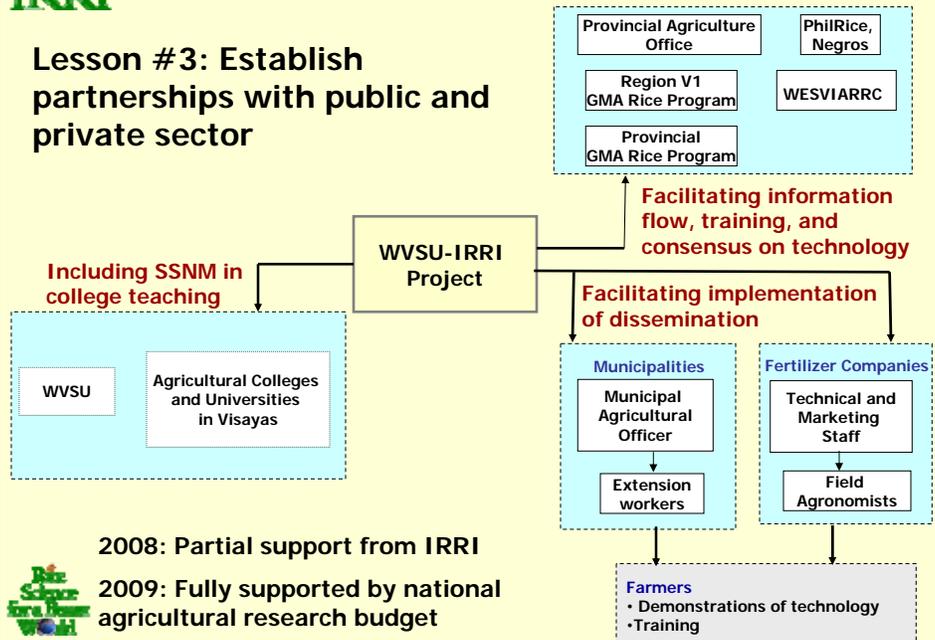
Provincial quick guides in Philippines: <http://www.pnaryfb.com/resources/>

A joint undertaking of the following organizations in the Philippines:
 PNARC, IRRI, and Office of the Provincial Agriculturist

This presentation was made at the IPI-OUAT-IPNI International Symposium, 5-7 November 2009, OUAT, Bhubaneswar, Orissa, India. The Role and Benefits of Potassium in Improving Nutrient Management for Food Production, Quality and Reduced Environmental Damage.



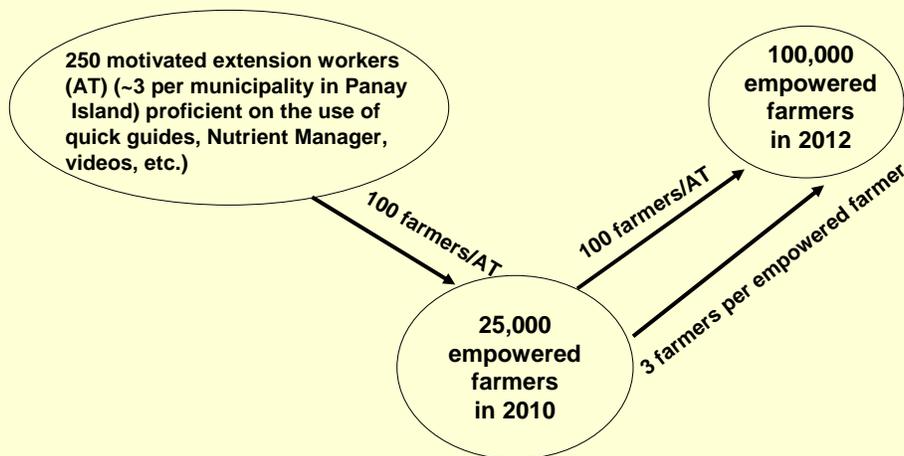
Lesson #3: Establish partnerships with public and private sector



This presentation was made at the IPI-OUAT-IPNI International Symposium, 5-7 November 2009, OUAT, Bhubaneswar, Orissa, India. The Role and Benefits of Potassium in Improving Nutrient Management for Food Production, Quality and Reduced Environmental Damage.



Lesson #4: Formulate dissemination plan based a predetermined target for number of farmers



Key agents for dissemination:
Agriculture Technicians and Lead Farmers

This presentation was made at the IPI-OUAT-IPNI International Symposium, 5-7 November 2009, OUAT, Bhubaneswar, Orissa, India. The Role and Benefits of Potassium in Improving Nutrient Management for Food Production, Quality and Reduced Environmental Damage.



New SSNM web site to be released soon

IRRI
INTERNATIONAL RICE RESEARCH INSTITUTE

Home | RESOURCES FOR: Extension and Farmers | Scientists and Researchers | Educators | RESOURCES by: Country

FOR EXTENSION AND FARMERS

- Decision support software
- Webinars
- Quick guides
- Leaf color chart (LCC)

SSNM COMPS (JISCI)

- SSNM made simple
- Publications
- FAQs

TECHNICAL INFORMATION

- SSNM in details
- Publications
- Presentations
- FAQs

Teaching Tools

SSNM
SITE SPECIFIC NUTRIENT MANAGEMENT
Enables farmers to optimally use fertilizers

Feeding crop needs

Indigenous nutrient supply
Fertilizer

WHAT'S NEW?

Web version of Nutrient Manager for Rice in the Philippines launched.

This is sample news 5
This is sample news 4
This is sample news 3
This is sample news 2
This is a sample news

- More than 50 years of research across Asia led to site specific nutrient management (SSNM) for rice
- SSNM provides scientific principles for optimally supplying rice with nutrient
- SSNM principles have led to decision tools and guidelines for extension and farmers

<http://beta.irri.org/ssnm>

This presentation was made at the IPI-OUAT-IPNI International Symposium, 5-7 November 2009, OUAT, Bhubaneswar, Orissa, India. The Role and Benefits of Potassium in Improving Nutrient Management for Food Production, Quality and Reduced Environmental Damage.