

A Method in Development of Decision Support System: *From Model to User - Enabling Philippine Farmers Adapt to Climate Variability*



Help Farmers Adapt to Climate Change: *From Model to User – HOW?*

"This strange weather, I don't know which variety to plant!"

In addition to knowing when to sow, You will also know the best cultivar to sow!

Seasonal climate forecast + Crop models

Decreased monthly rainfall

Increased monthly temperatures and solar radiation

With sowings by early June, the yield difference between varieties will not exceed 500 kg/ha.

If farmers decide to sow after June 15th, the best choice will be the variety F733.

According to this recommendation, pilot plots were established to validate the agroclimatic forecasts.

Seasonal climate forecast + Crop models

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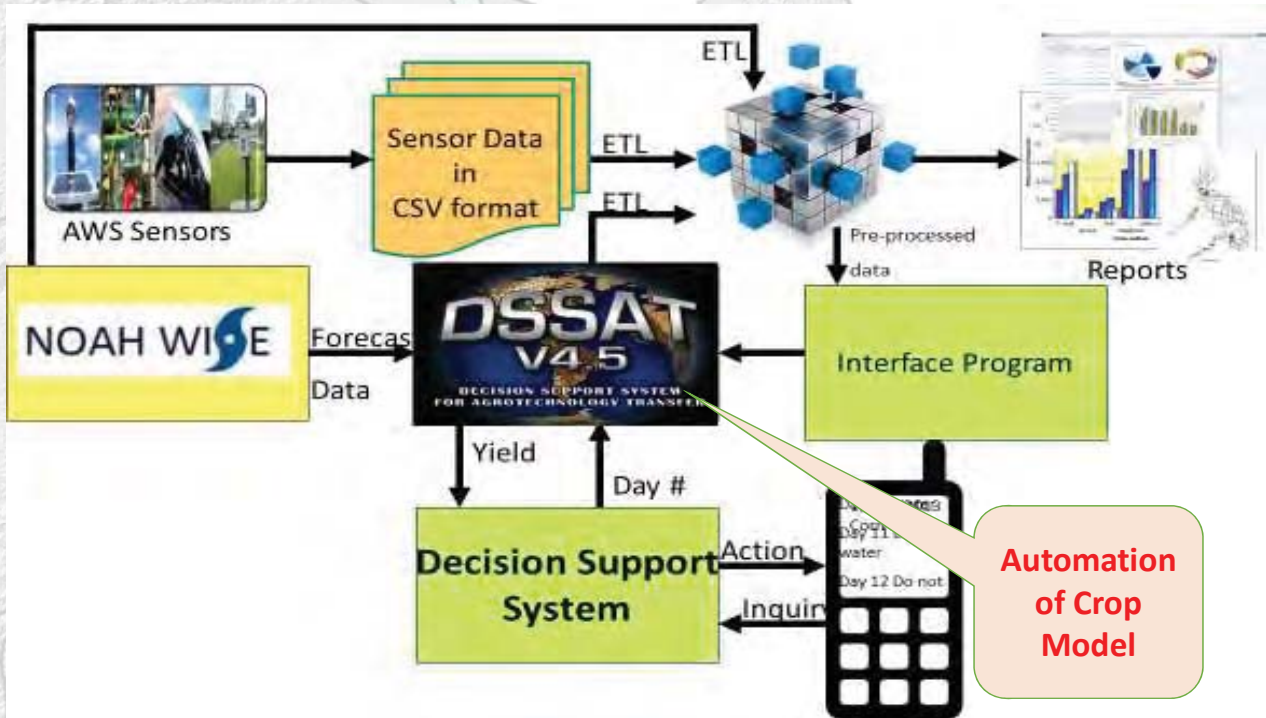
Selecting the best variety

Field results:

Fedearroz 733:	6860 kg/ha PS
Fedearroz 60:	4600 kg/ha PS

Climate controls 33 % of global yield variation. Up to 45 % in some areas of the Philippines (Ray et al. 2015)

Farmer Decision Support System



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FARMER DECISION SUPPORT SYSTEM (FDSS)

Farmers can query or the information can automatically be pushed to their phones via SMS

- When is the best date to start planting?
- How much will I harvest?
- When will the growth stages occur?
- When do I apply fertilizer and by how much?
- When do I water the plants and by how much?
- When do I harvest?
- Is it going to rain in the next 7 days?



Farmer

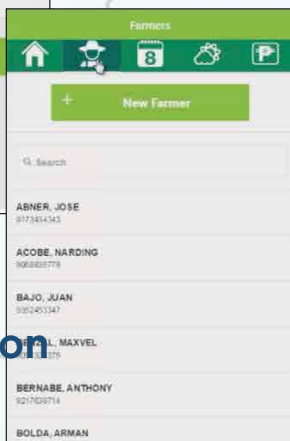


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Farmers Decision Support System



Log-in



Registration



Screen shots showing customized crop calendar

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Documentation of Increase Yield

Name of Farmer	Agro-Eco Zone	Date of Planting	Yield Information		
			Ave. Yield	Inc. Yield	% Increase
Bong Pangilinan	Rolling	Apr28, 2015	2800	3248	16.00
Felisa Manglay	Rolling	May25, 2015	3000	3800	26.67
Freddie Crispin	Hilly	June 3, 2015	2500	2800	12.00
Jessa Pascua	Hilly	May13, 2015	2600	2987	14.88
Juan Bajo	Hilly	May26, 2015	3000	4800	60.00
Maxvel Venzal	Hilly	May12, 2015	3000	4640	54.67
Me-Anne Gamiao	Hilly	May12, 2015	3000	3093	3.10
Regie Turqueza	Hilly	May28, 2015	2500	2700	8.00
Average Increase in Yield					24.41

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RECWET SEMINAR

Part
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Future Plans: *Collaboration on R&D, Education, Knowledge Sharing, Trainings, Joint Conferences*

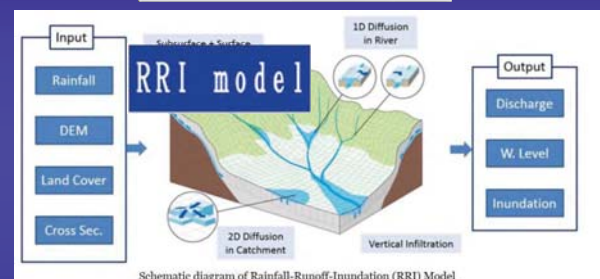


Use of Other Analytical and Strategy Tools: A proposal in partnership with T_UT and ICHARM

Japan Science and Technology Agency Homepage of Innovative Technology and System for Sustainable Water Use

<http://www.jst.go.jp/crest/water/en/index.html>

ICHARM
International Centre for Water Hazard and Risk Management
under the auspices of UNESCO



Integrated Flood Analysis System (IFAS)
Flood Forecasting System Using Global
Satellite Rainfall

FDPI
Flood Disaster Preparedness Indices

Japan-Philippines Partnership in Education, R&D and Knowledge Sharing

Japanese Institutions	Program	Areas of Collaboration
The University of Tokyo	Research Center for Water Environment and Technology (RECWET)	Faculty/Expert Exchange, Student mobility, Joint Conferences, Journal Publication, Research and Development cooperation, Capacity Building
Ibaraki University	Institute of Global Change Adaptation Science (ICAS)	
Yamanashi University	Interdisciplinary Center for River Basin Environment (ICRE)	
PWRI-ICHARM	Water Hazard Management	
Japan Water Agency	Network of Asian River Basin Organization (NARBO)	

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Some Initiatives and Future Activities

Collaborating Institutions	Proposal/Activity	Remarks
ISU-The University of Tokyo	Toward Climate-adaptive and Disaster-resilient River Basin Management: <i>Institutions, Processes and Performance</i>	Submitted for 2019 funding
ISU- Ibaraki University	Japan - Southeast Asia Research-Based Network on Climate Change Adaptation Science (Agri-Nat. Res Mgt)	Workshop at VJU on Dec. 21-22, 2018
ISU- Univ. of Yamanashi	Application of Forest Loss Surveillance using Remote Sensing for Protected Area Management and Conservation of Mountain Ecosystems: <i>The Case of Northern Sierra Madre Natural Park(NSMNP), Philippines</i>	Submitted for 2019 funding
ISU- Japan Water Agency-NARBO	Training -Workshop on Integrated Water Management	February 5-7, 2019, Phil.
ISU-TUT-ICHARM-PhilDOST	Climate Change and Disaster Risk Reduction in Cagayan River Basin, Philippines: <i>Mainstreaming Adaptation and Risk Management in Local Governance</i>	Concept Note circulated for discussion

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