

**APPLICATION OF SCIENCE AND TECHNOLOGY  
TO NATURAL FARMING AND ORGANIC  
AGRICULTURE SYSTEMS:  
A Component of Drought Resistant  
Natural Farming Project**

A Discussion  
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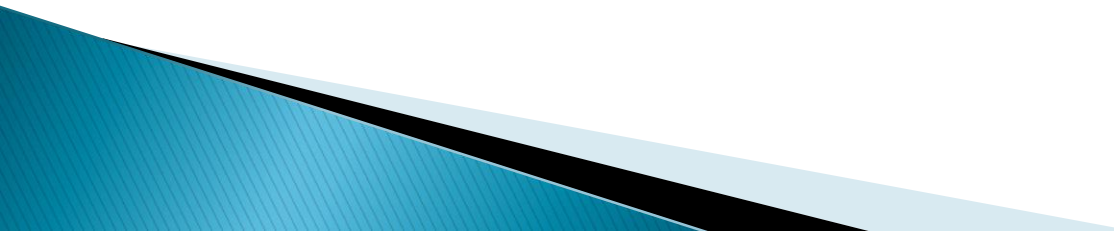
**Visayas Regional Scientific Meeting  
April 11-12, 2018  
L'Fisher Hotel, Bacolod City**

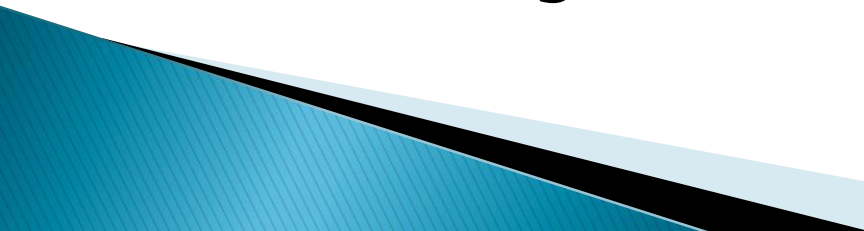
# Points of Discussion

- ▶ Science and Technology, and Sustainable Agriculture (Smart Agriculture)
  - ▶ Microorganisms
  - ▶ Breadfruit
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# Science and Technology, and Sustainable Agriculture

science-based crops and cropping system technologies, protocols and long-term strategies geared towards maximizing crop yield and minimizing adverse environmental and climate impacts

- ▶ Spatio-temporal variation of the environment that affects crop production
  - ▶ Crop-relevant environmental parameters
  - ▶ Use of networks of sensors and monitoring stations (e.g. soil moisture sensors and weather monitoring stations)
  - ▶ Simulation models
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- ▶ Climate Prediction and Agriculture (CLIMAG)
    - practical utility of forecasts of regional climate variability at intra-seasonal to seasonal scales in agricultural decision-making
    - climate knowledge and prediction capacity at seasonal time scales can contribute to adaptive management and resilience within agricultural systems
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Crop genetic coefficients



Soil data



Crop management data

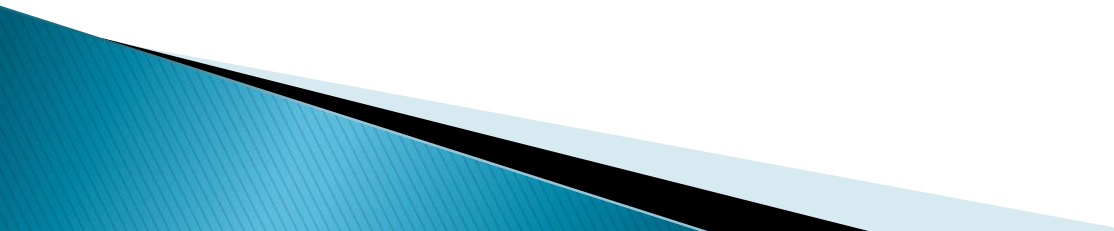


Weather Data



**SIMULATING  
SEASONAL  
CROP YIELDS**

# CTU's approach to Smart Agriculture

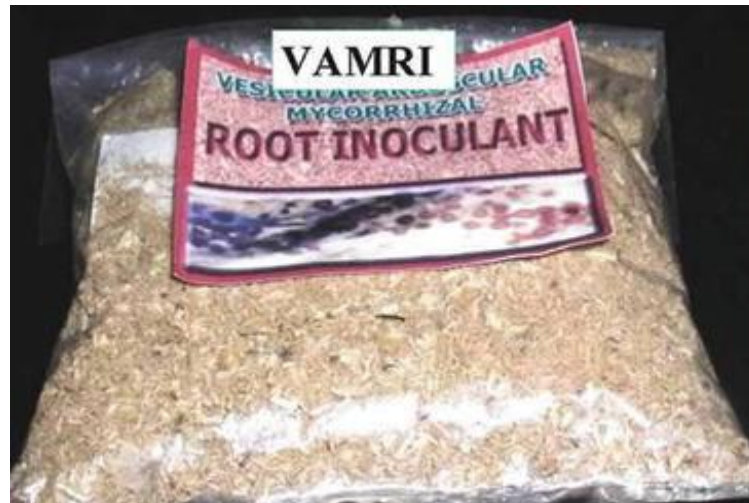
- ▶ Smarter Approaches to Reinvigorate Agriculture as an Industry (SARAI) with UPLB (DOST-PCAARRD)
  - ▶ Corn Germplasm Collection for Abiotic Resistance thru R and D (DA-BAR)
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# Microorganism and Organic Agriculture

▶ EPNs



▶ VAMRI





# Breadfruit: Carbohydrate source



“Without access to modern farming techniques or machinery, let alone science-based climate and weather data, farmers’ livelihoods hinge precariously on a changing environment that they’re struggling to understand.”



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