ANALYTIC FRAMEWORK

Yu Takeuchi (yu_takeuchi@ncsu.edu)
Center for Integrated Pest Management

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Analytic Framework

Input Data Drivers

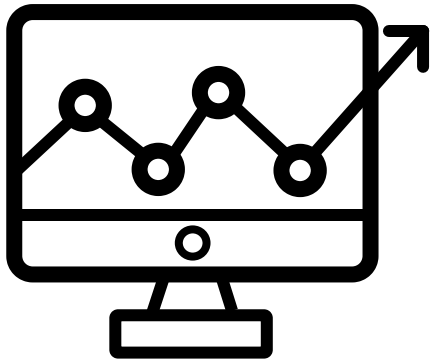
Weather Data

Pest Data

Host
Land Cover
Human Activities

Formatting

Models/Tools



Parameterization

Outputs

Display & Sharing Results

Phenology Maps

Pest Spread
Population Dynamics
Climate Suitability

Pest Forecasts
Climate Change

Framework Benefits

1 AVAILABILITY

Key models and tools are connected required datasets.

2 FASTER

All models and tools are ready to use.

3 PRECISE

All models and tools have been evaluated and verified.

4 QUALITY

Detailed documentation on all models, tools, and data are available.

5 IMPROVEMENT

Uncertainty evaluation on weather patterns and model performances.

6 CUSTOM-BUILT

Customize pest forecasts for pests and locations on websites.

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SAFARIS
Spatial Analytic Framework for Advanced Risk Information Systems

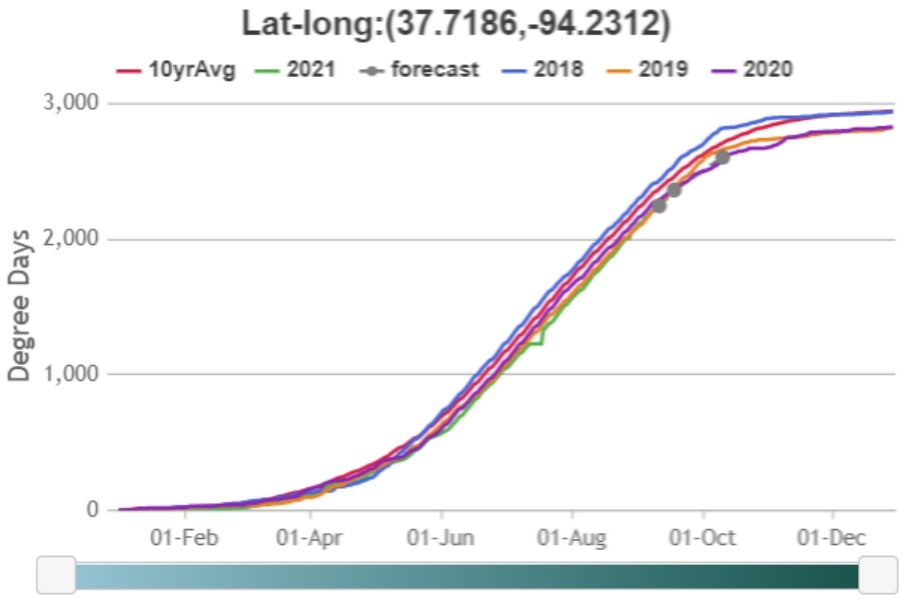
PestCAST

APHIS

Pest Name: Spotted lanternfly

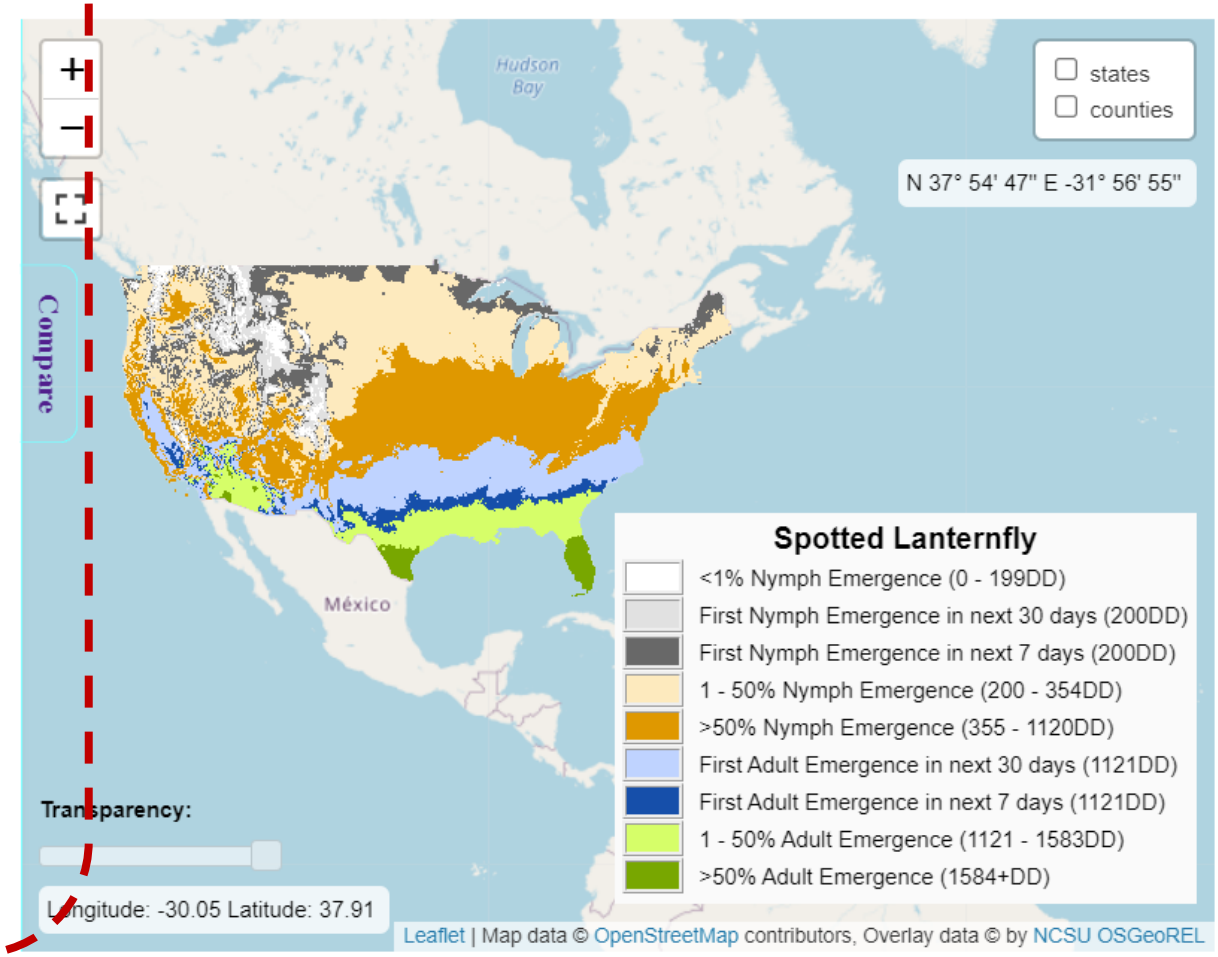
Map Date: Tue Jun 1 2021

2011 2012 2013 2014 2015 2016 2017
2018 2019 2020 2021 10-yr Avg



Lower Threshold Temp
8.14℃

Upper Threshold Temp
30.0℃



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Pest Climate Suitability

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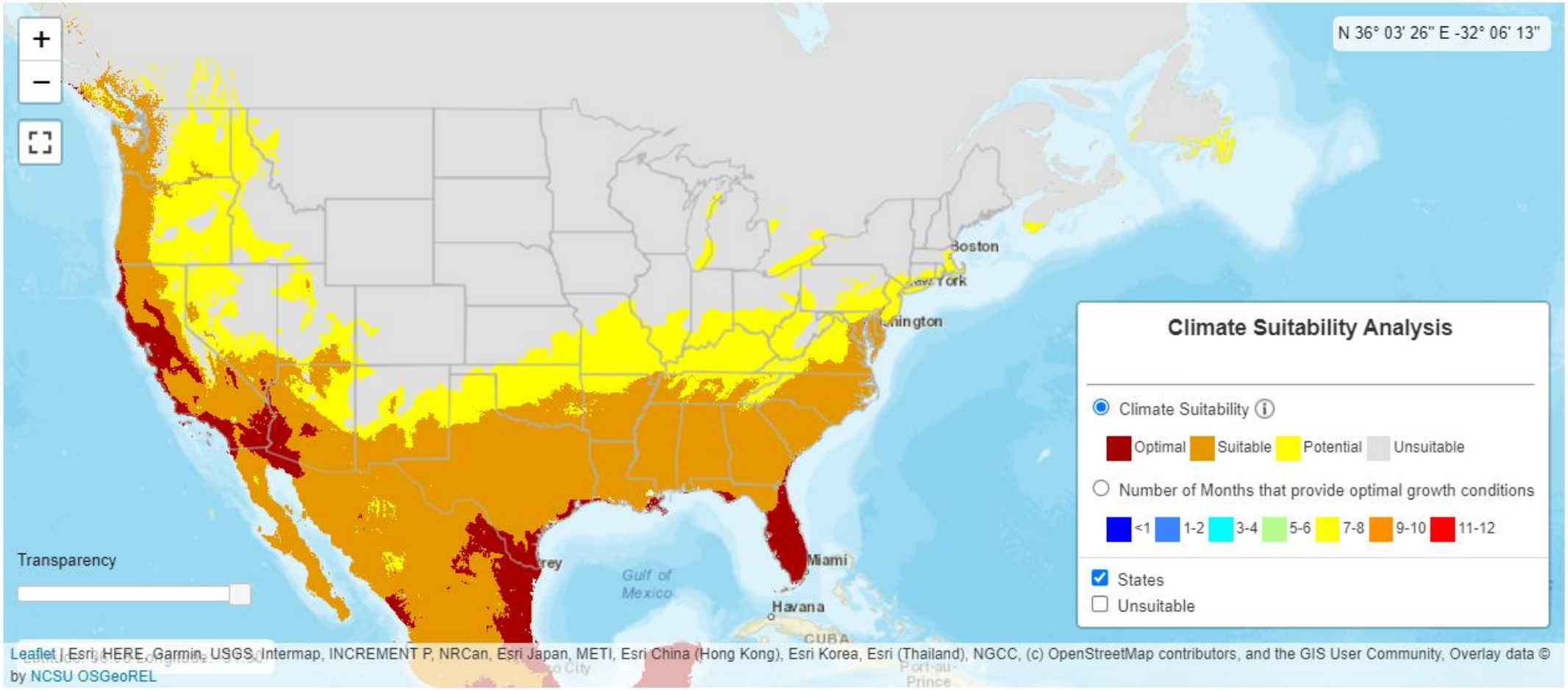
Pest Name: False Codling moth

FCM Methodology Document



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Long-term Forecasts: Oriental Fruit Fly

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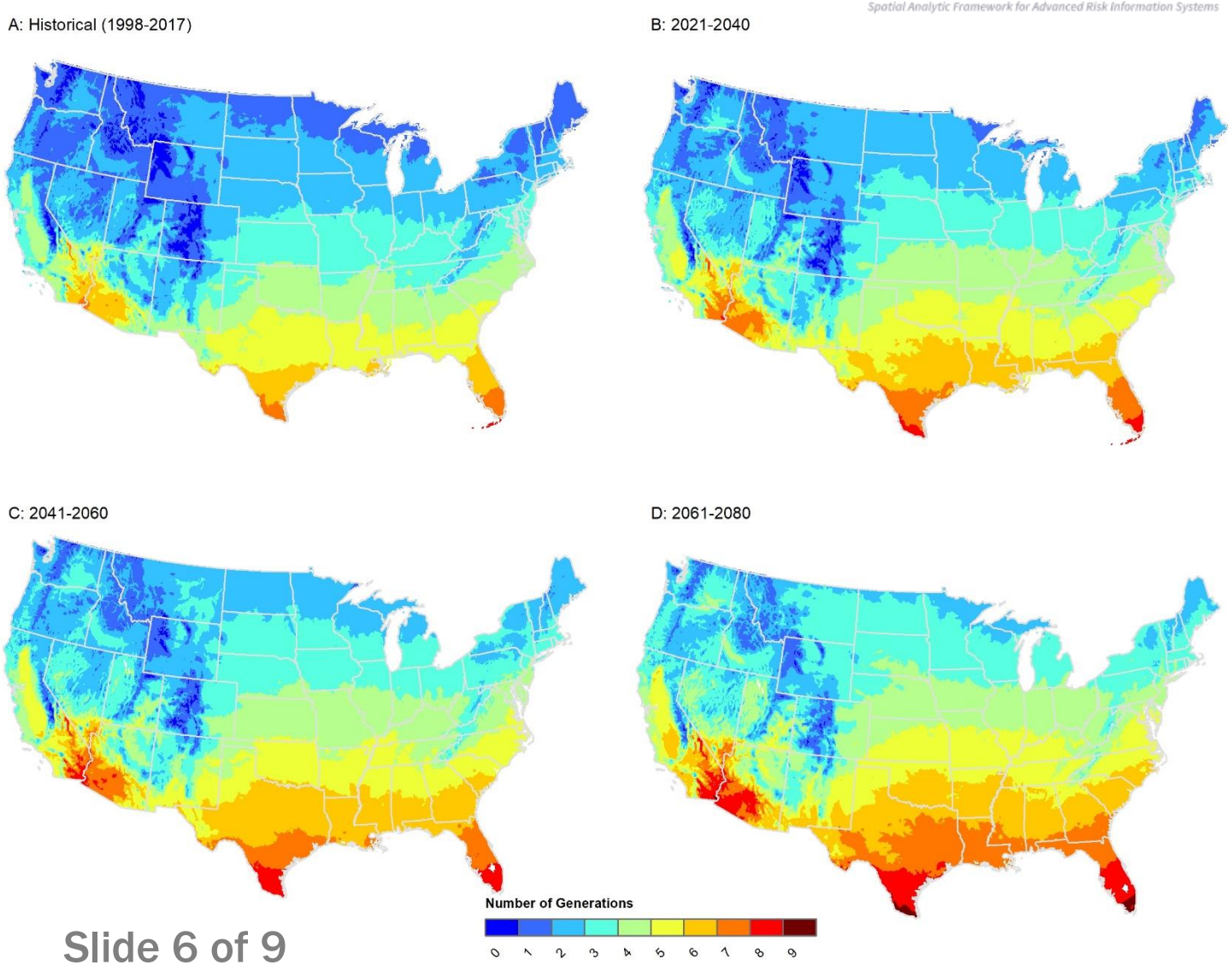
- Understand climate change effects on plant pest growth
- Southern US is expected to have 2-3 more generations in the future



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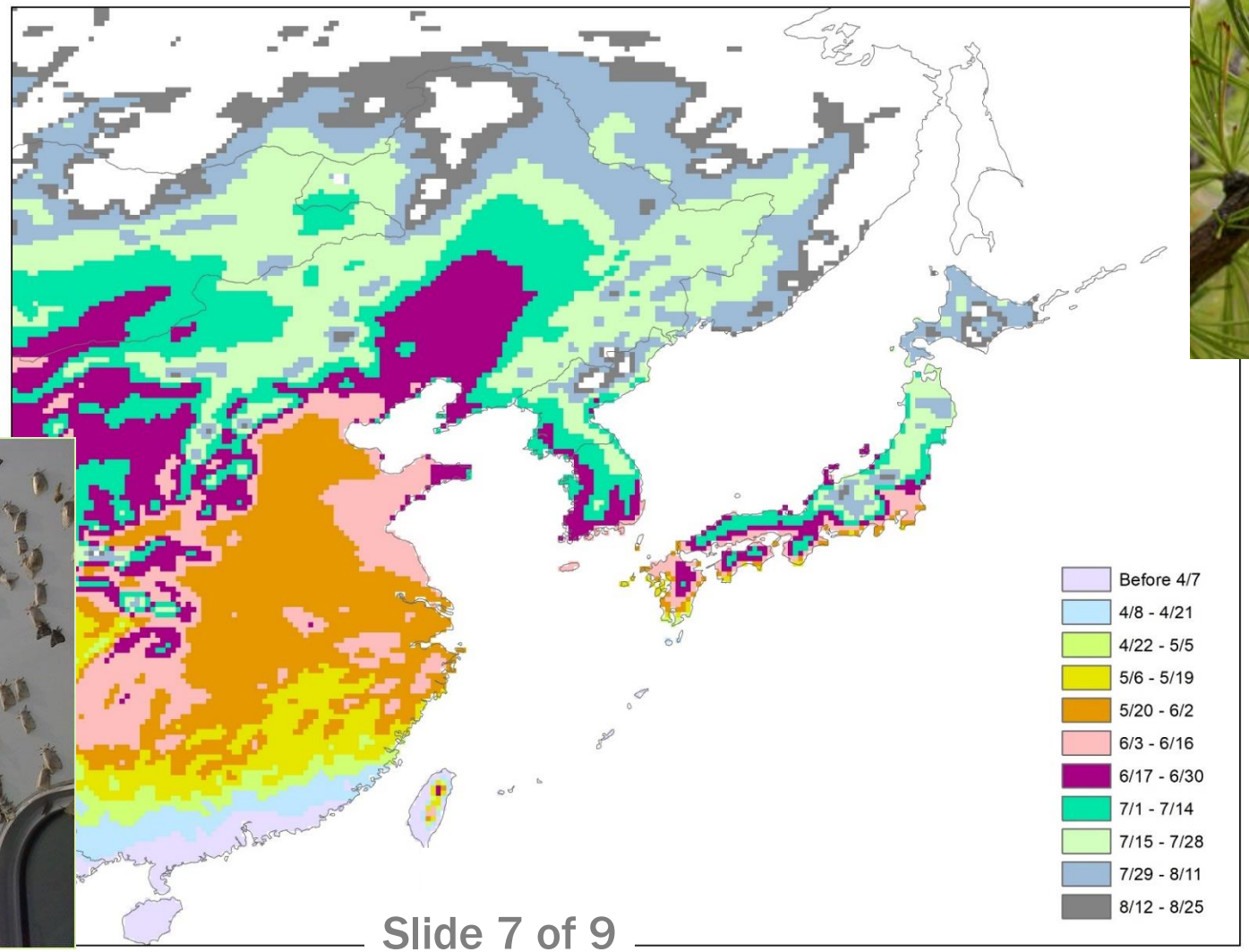
Adult Flight Period



APHIS

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Spatial Analytic Framework

Extensive knowledge on exotic species

Develop pest predictive models and tools

Has developed a geospatial analytic framework for pest forecasts and predictions

Can customize models and outputs

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Feedback from You

Understanding Your Needs

- We can provide plant pest analytic information

Sustainable Agriculture

- We can assist designing sustainable agriculture using scientific methods and leading-edge technology

Benefits

- Beneficial for area-wide pest mgt.
- Identify long-term benefits
- Support UN's 17 Sustainable Dev. Goals