



# Remote Sensing Technology in Agricultural Investigation

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# Background

- **Low agricultural production efficiency in Southeast Asia**
- **The intricate nature of cultivation poses challenges in investigation and guidance**
- **Remote sensing technology helps the collection of information that is imperceptible to the naked eye**



# Drone

## Salt damage investigation in Northeastern Thailand using drone



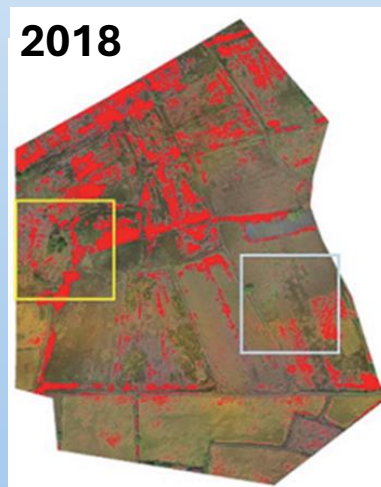
- Salt damage is one of the most serious reason of reducing rice yield in this area
- Distribution of salt concentration/damage is uneven

# Drone

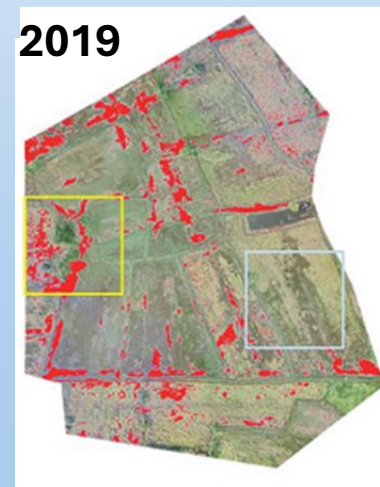
## Benefits:

- Large area coverage
- Rapid data collection
- Precision

Whole area pictures were taken by drone  
Recognized non-vegetation area via machine learning



14.6%



10.0%  
(Yang et al., 2020)

# Satellite



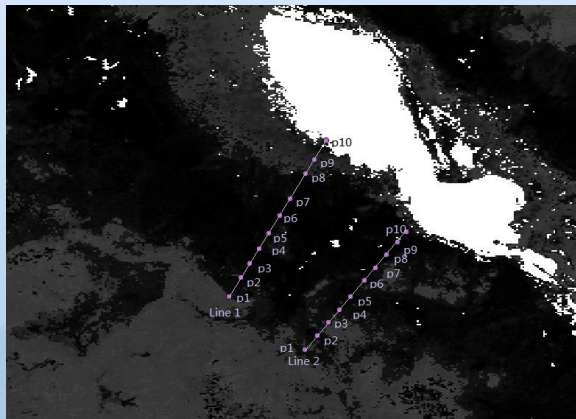
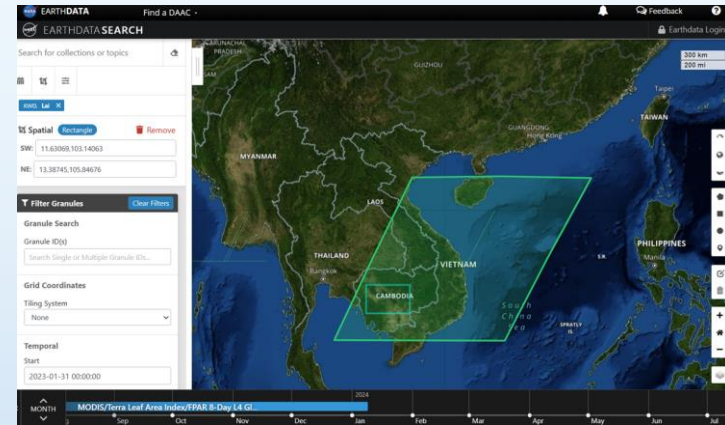
## **Cultivation change investigation in Cambodia using MODIS LAI data**

- **In Cambodia, the rice production has increased threefold in 20 years**
- **Less information about changes in rice cultivation (statistical data and interview records)**

# Satellite

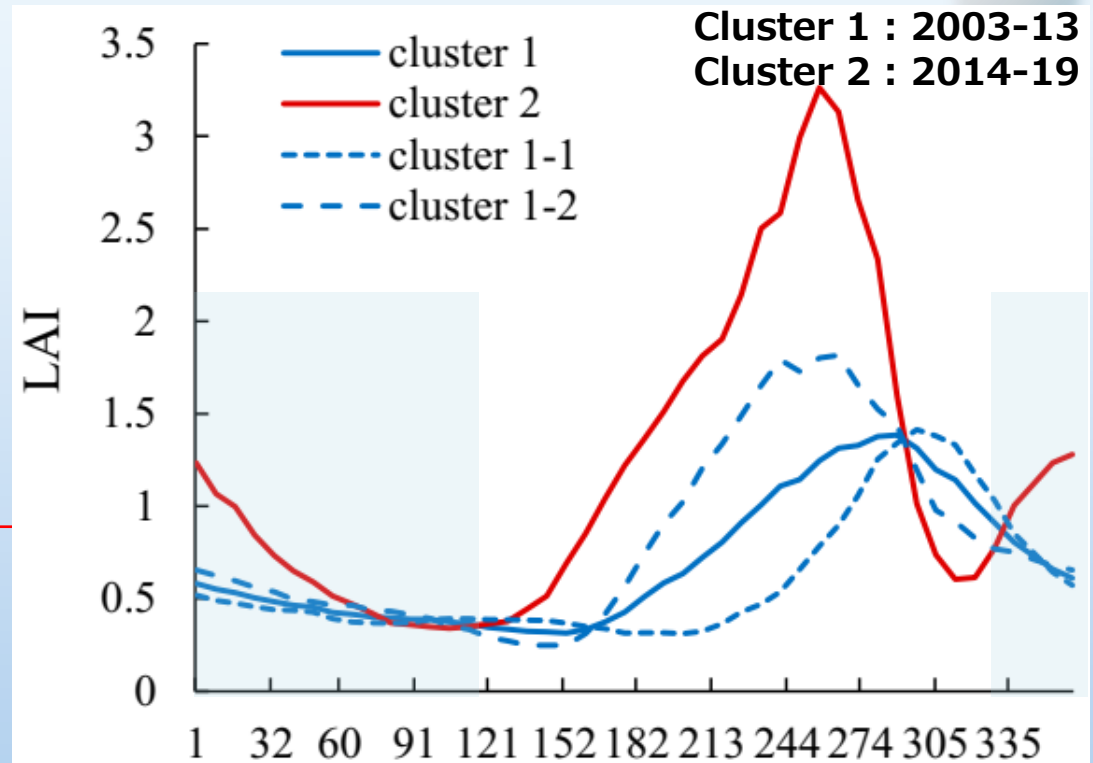
## Benefits:

- Larger area than drone
- Data of passed years is available



**Data: LAI product of MODIS (2003-2019)**  
**Area: Pursat province**

# Satellite

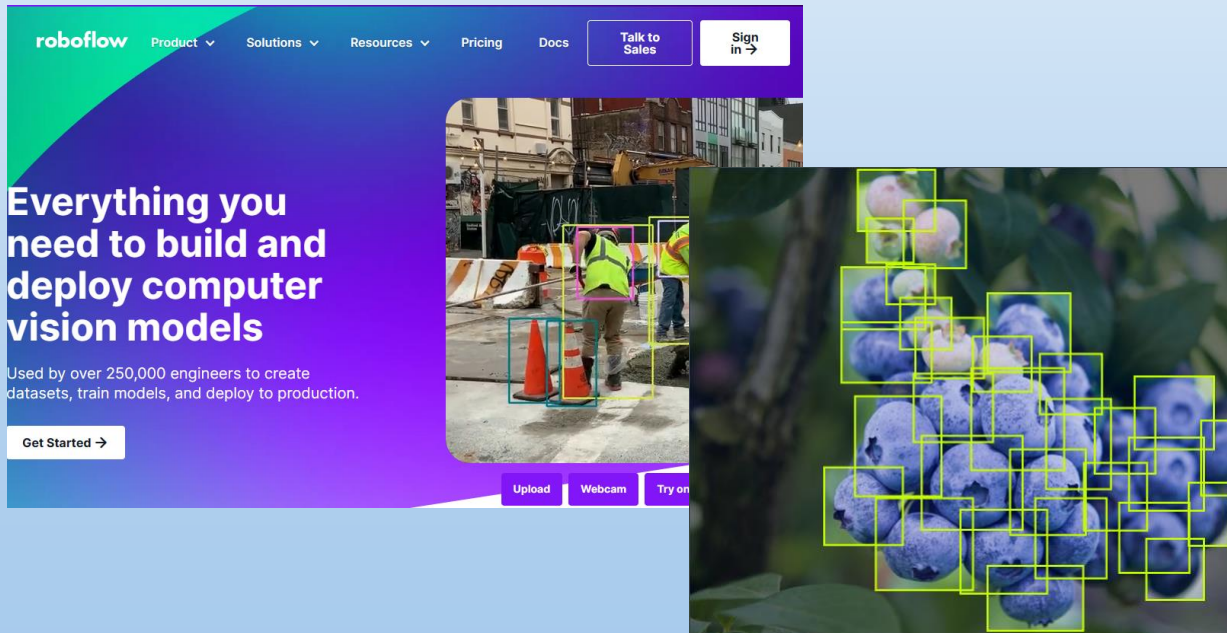


- Application of pesticides and chemical fertilizers
- New breed
- Cultivation from only rainy season to two seasons



**Remote sensing tools can be used for agricultural surveys in Southeast Asia to address various situations and for various of purpose.**

## YOLOv8

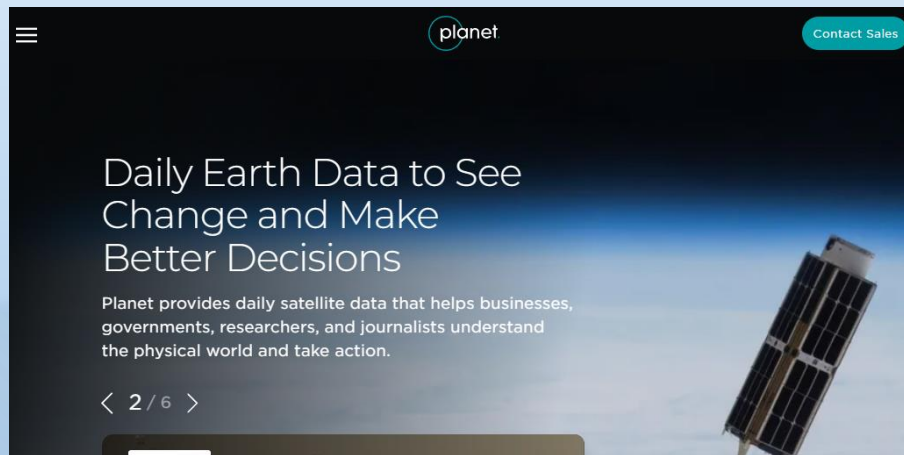






**Remote sensing tools can be used for agricultural surveys in Southeast Asia to address various situations and for various of purpose.**

## Planet





## Future goals:

- **Develop better methods**
- **From scientific research to practical (for officers to guide farmers)**



**Thank you for your  
attention**