



Village Link

MIMU PRESENTATION

June 26, 2019



VillageLink

What We Do

Introducing a farming system

Sustainable

Productive

Resilient



HtwetToe connects farmers and agricultural professionals in a single platform, building a community and providing timely advice, so that farmers get the information and support they need to better their livelihood and increase yield.

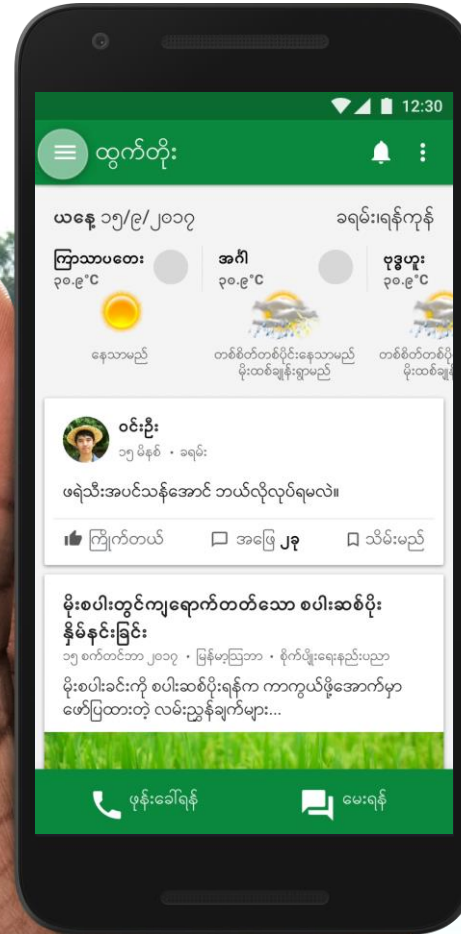


Question & Answers

Call Centre

Crop Guides

Financial Service



Weather

Weekly Crop Price

News, Articles and Videos

Loyalty Program (DM Code Scan for products)

App Performance

346,675

App Installs

13M

Screen views

1.9M

Guideline Views

48K

Monthly Active Users

70.4%

< 35 years old

29.7%

Women

15 Crop Guidelines

CABI and GAP format

1,492 Articles

32 Crops

3,000 FAQs

15 Main Crops

20 Videos

Farming Guideline

Financial Literacy

Educational Curriculum

	Total
Questions & Answers	28,410
Direct Trainings	10,924
Indirect Trainings	117,000
Content rating	
Useful Information	68%
Improve Yield	53%
Prevent lost due to bad weather	32%



In consortium with



Village Link Co. Ltd.



Myanma Awba



Miaki Myanmar Ltd.



Department of Agriculture



Weather Impact BV

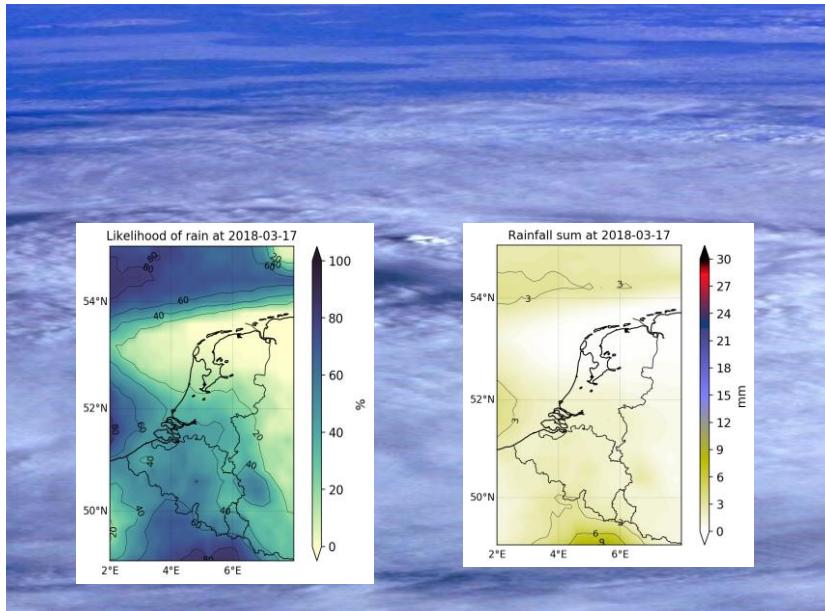


SarVision BV



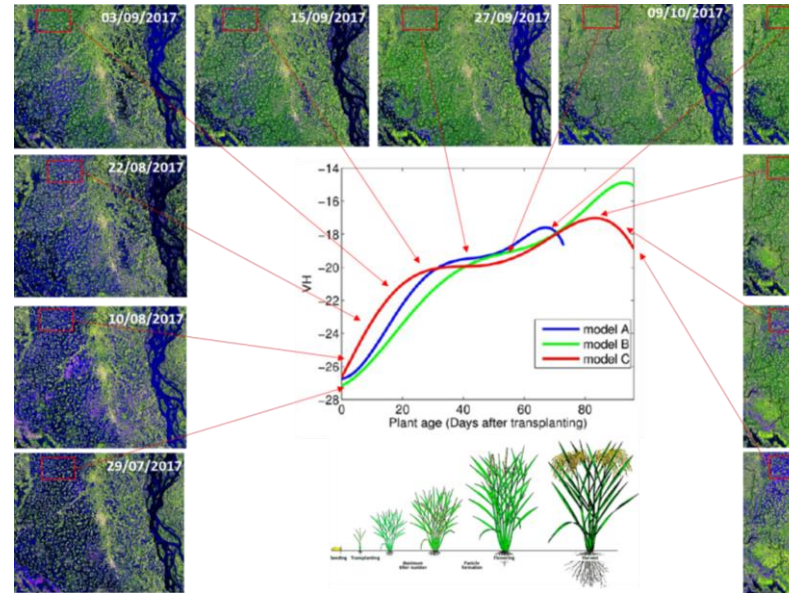
TerraSphere Imaging & GIS BV

Geodata and Agriculture



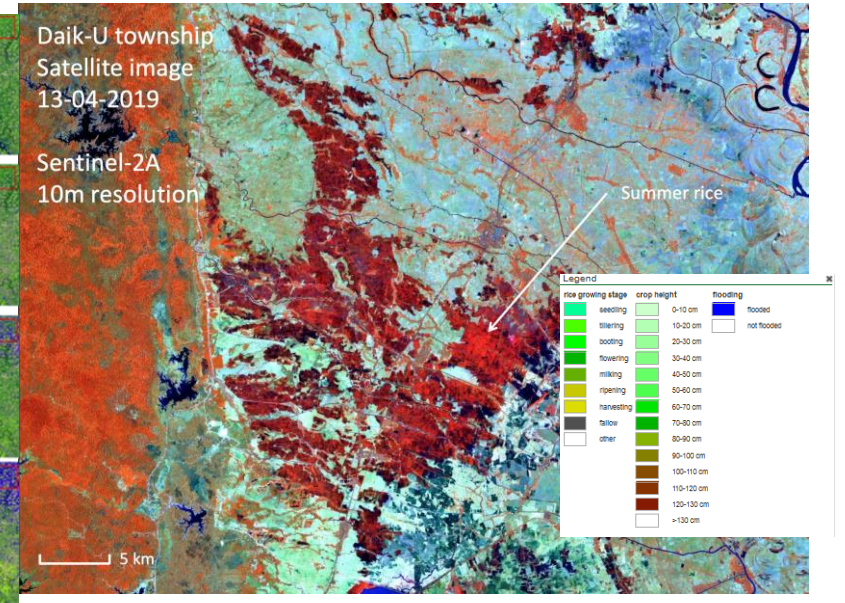
Weather Analytics

Monitors and provides more accurate weather, early warnings of droughts and floods



Crop Monitoring

Monitors and predicts crop biomass, growth stage and damage on large-scale crop growing areas



Land Monitoring

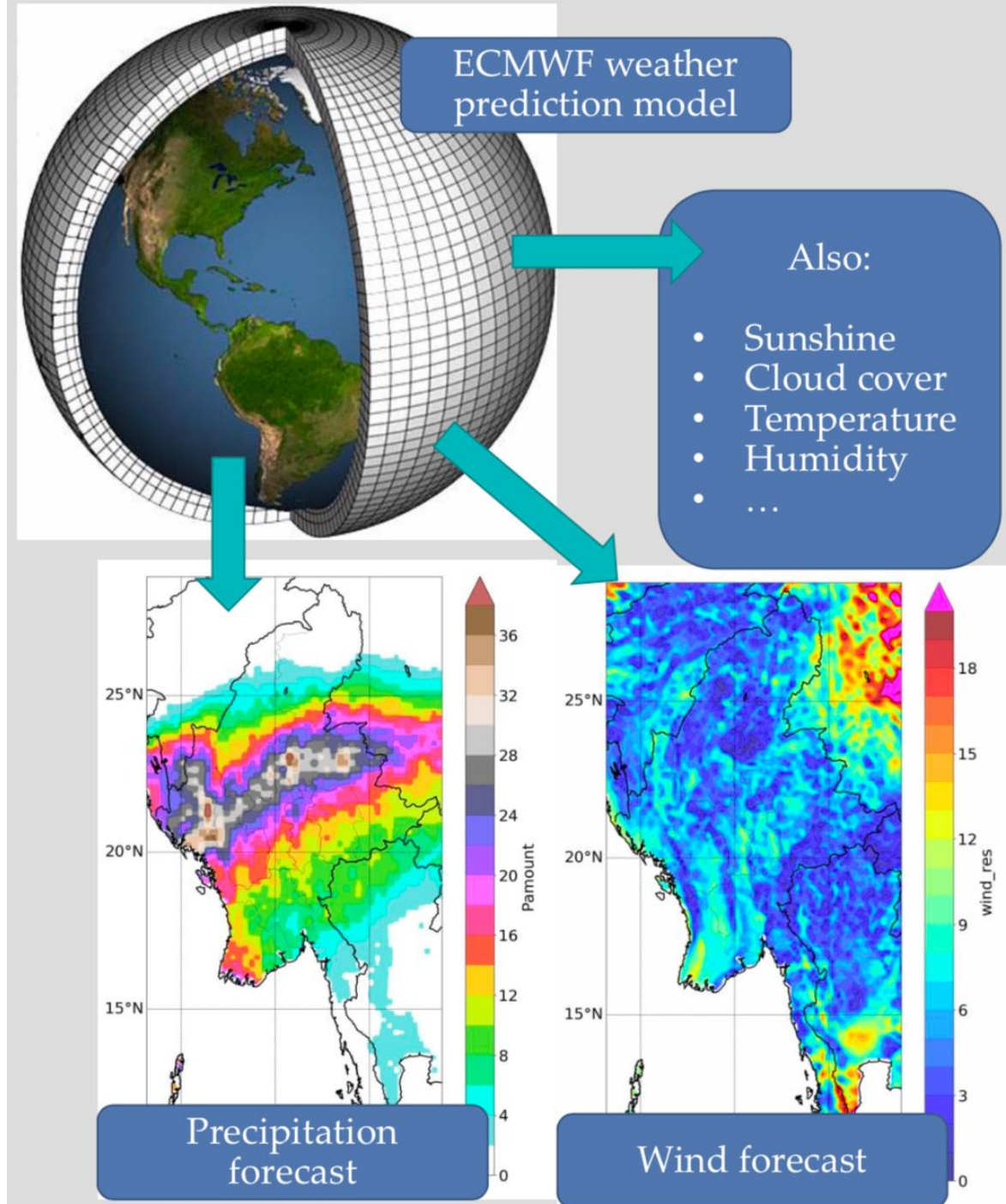
Provides crop extent, crop stages and early impact assessment



Weather Forecast Data

Weather Impact BV

- Gridded weather forecast from global weather model of ECMWF
- Size grid cell: $\approx 9 \times 9 \text{ km}$
→ $\approx 20,000$ unique forecasts for Myanmar region!
- For each grid cell we calculate a unique advisory based on the weather forecast





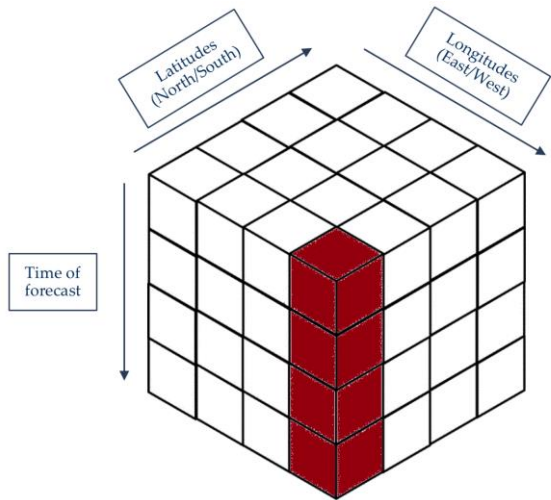
Weather Forecasts: Geodata

Weather Impact BV

Weather Data

Attributes

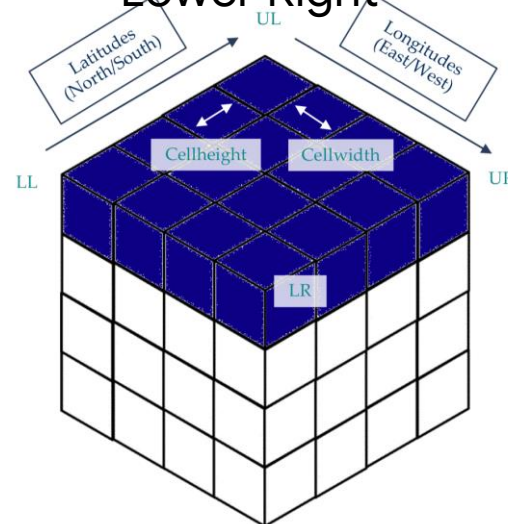
- Time dimensions
- Spatial dimensions
- Parameters/units



Geospitial Grids

Attributes

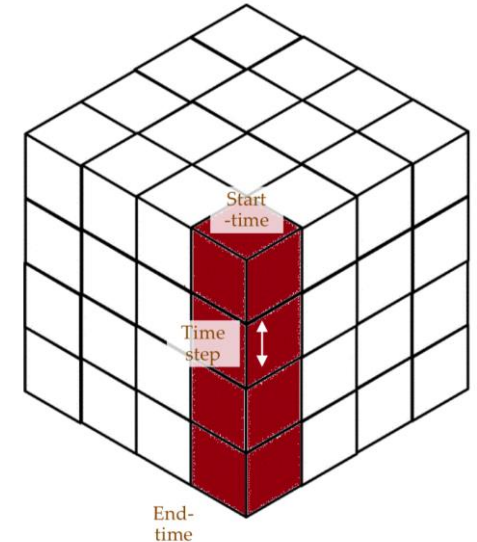
- Nrows & Ncolumns
- Cellheight & Cellwidth
h
- Corner-coordinates
 - Upper Left
 - Lower Left
 - Lower Right



Time Dimensions 1/2

Attributes:

- Start-time
- End-time
- Timestep

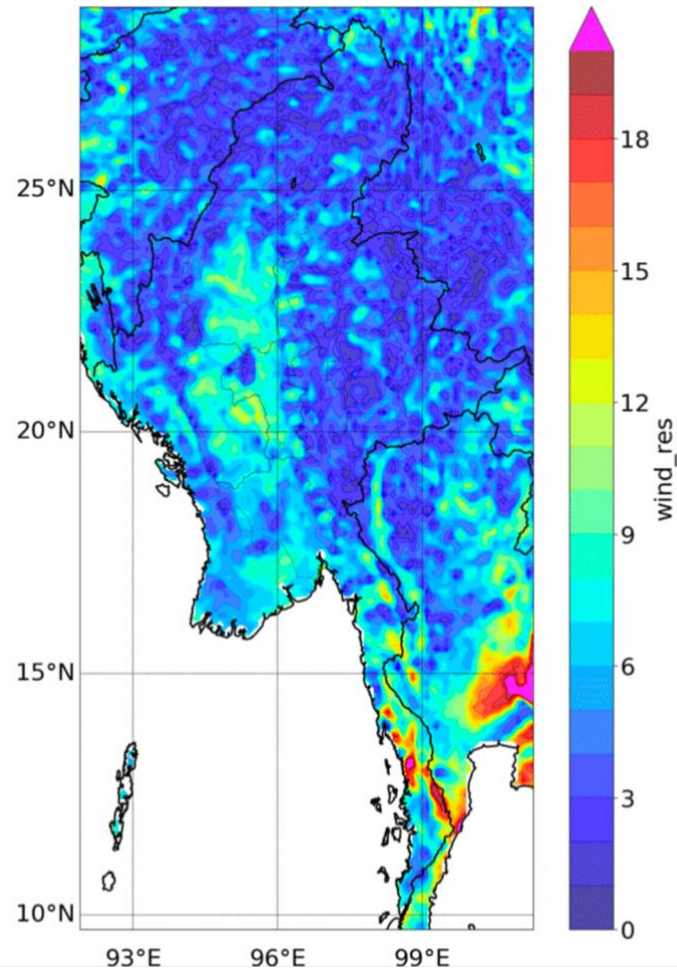




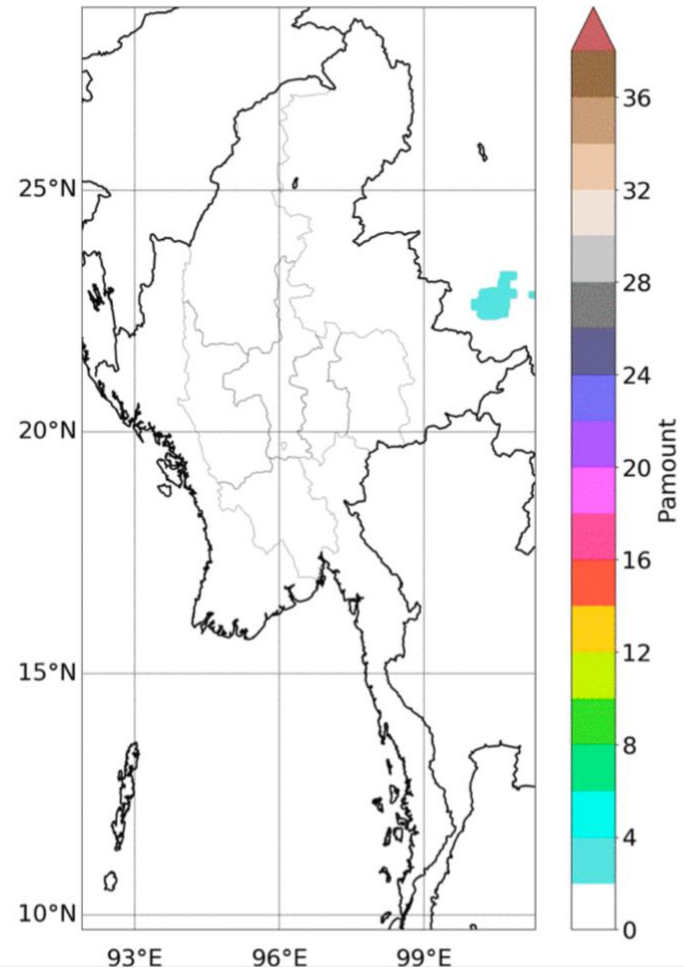
Weather Forecasts: spatial and temporal information

Weather Impact BV

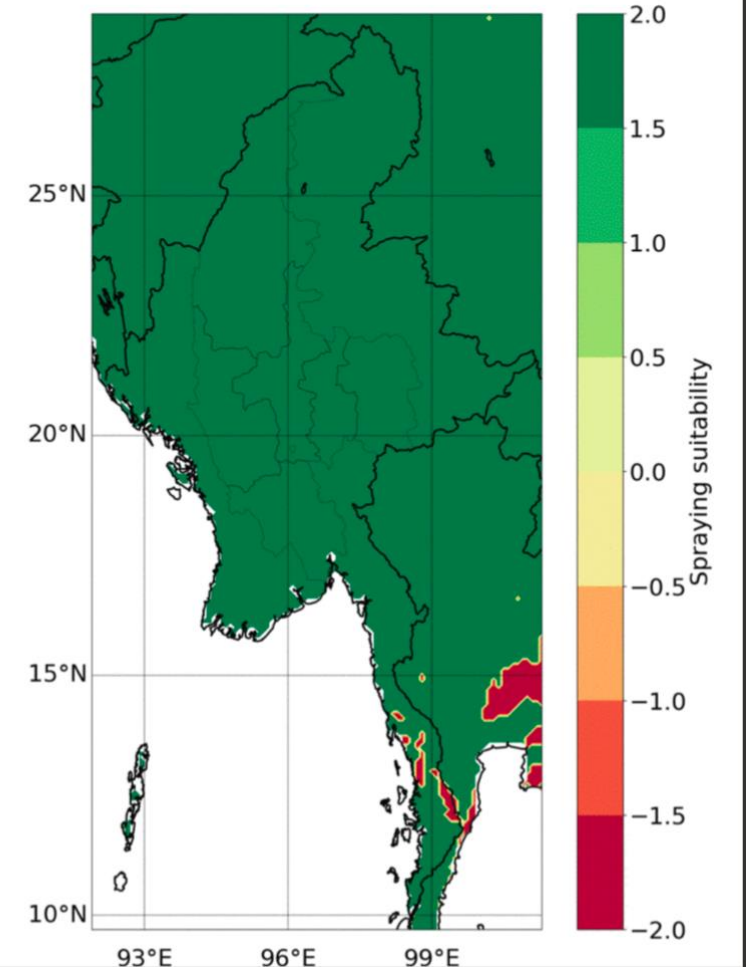
Wind speed (m/s)



Rainfall (mm/day)



Spraying suitability





Weather Impact BV

Weather Analytics

Advisories Services

- General farming activities
- Crop specific activities
- Risk for pest/disease outbreaks
- Weather Forecast

Goal

- Suitability of farming practices is related to the weather
- Automatically generate crop and regional specific advisories based on weather forecast





Data Output : End Product

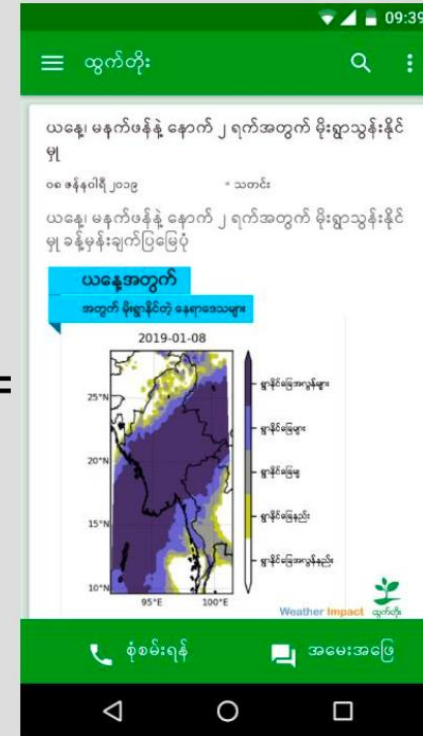
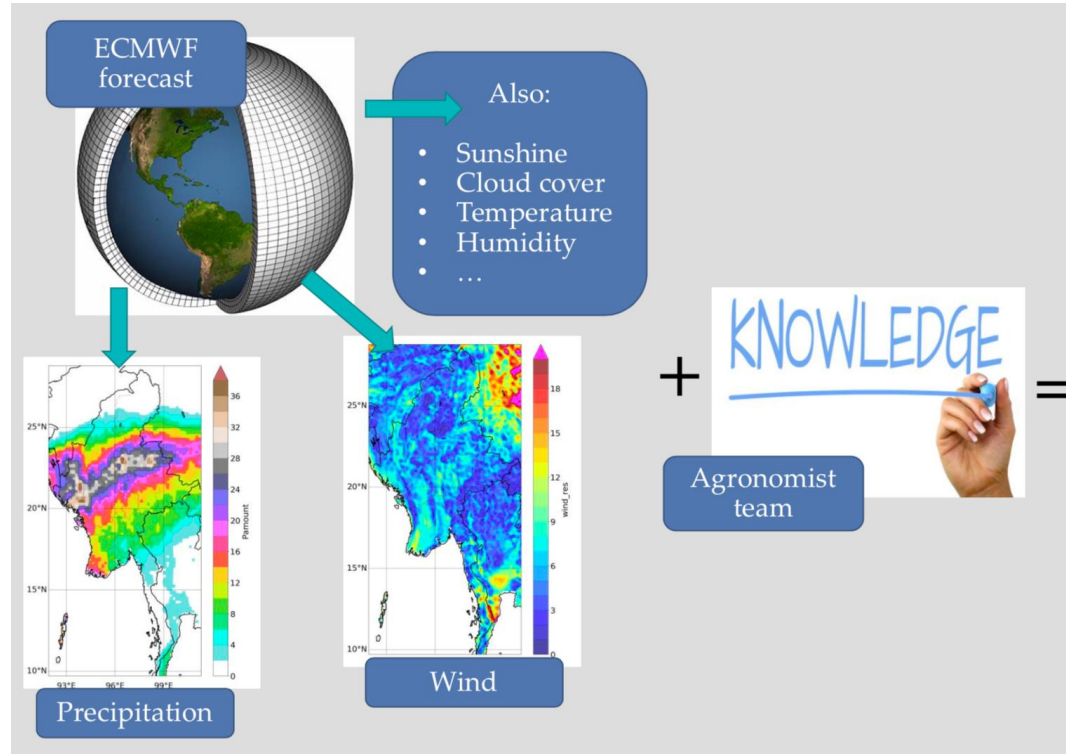
Weather Impact BV

Farming activities

- Land preparation
- Planting
- Weeding
- Fertilizing
- Spraying
- Harvesting
- (Irrigation)

Messaging

- Suitability for general activities
- Crop-specific agro-meteo suitability
- Pest & disease risks
- General weather and alerts



Land use Monitoring

Provide on-demand and automated bulk processing of satellite data to custom information and maps that can be fed into client applications.

We provide mapping and monitoring of:



Crop Extend

Eg: ha per administrative unit



Crop Type

All major crops and other land classes

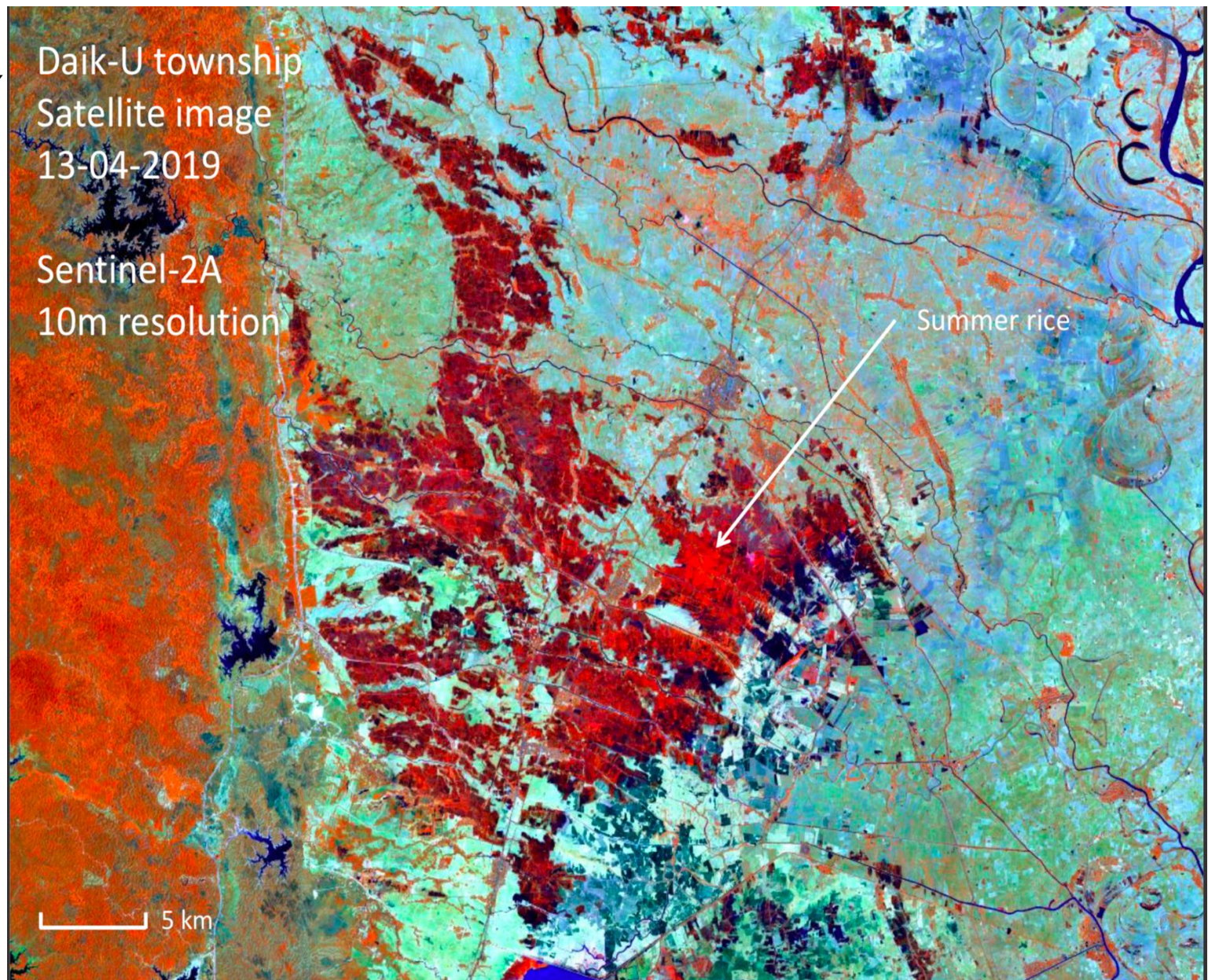


Crop Damage

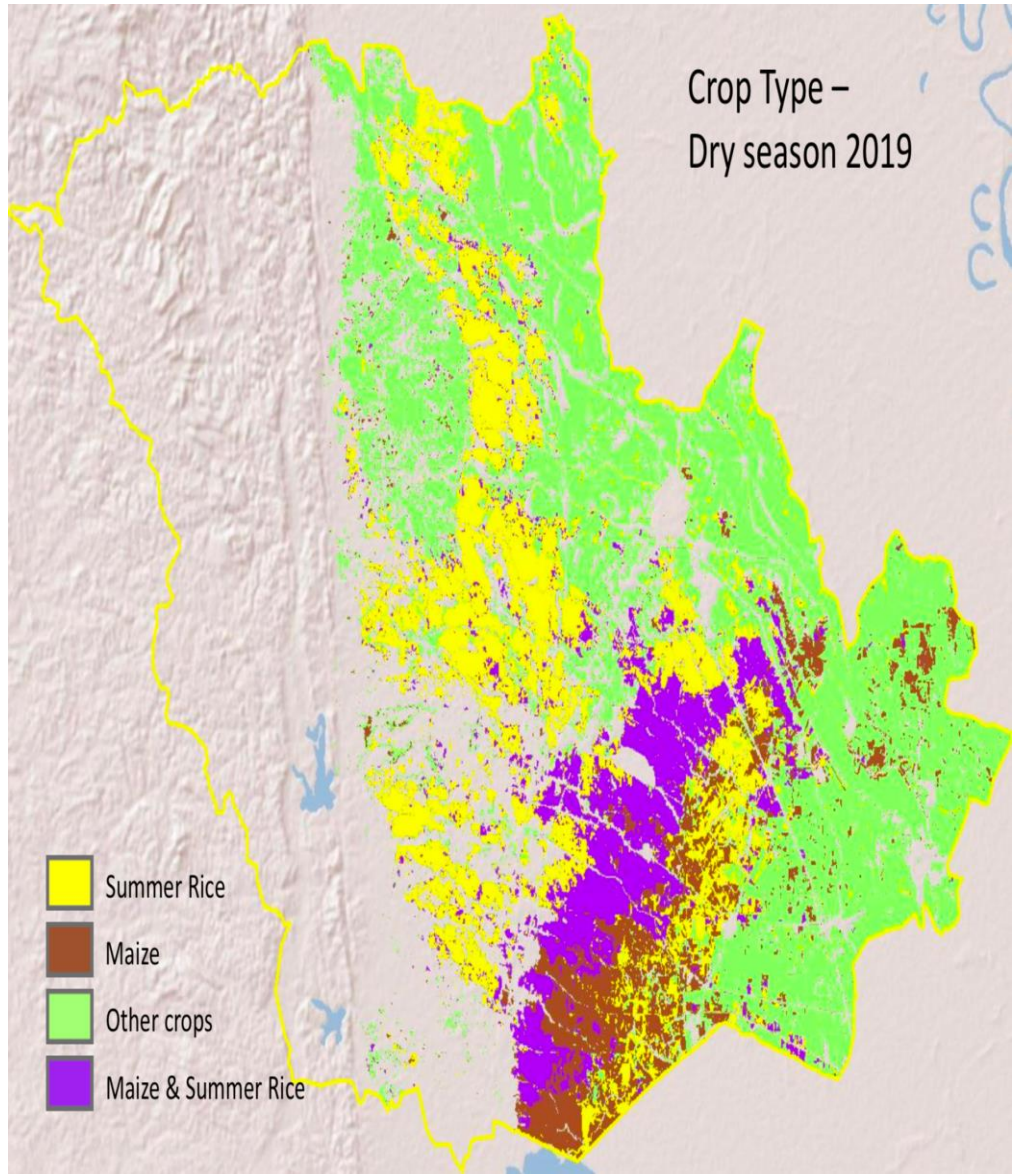
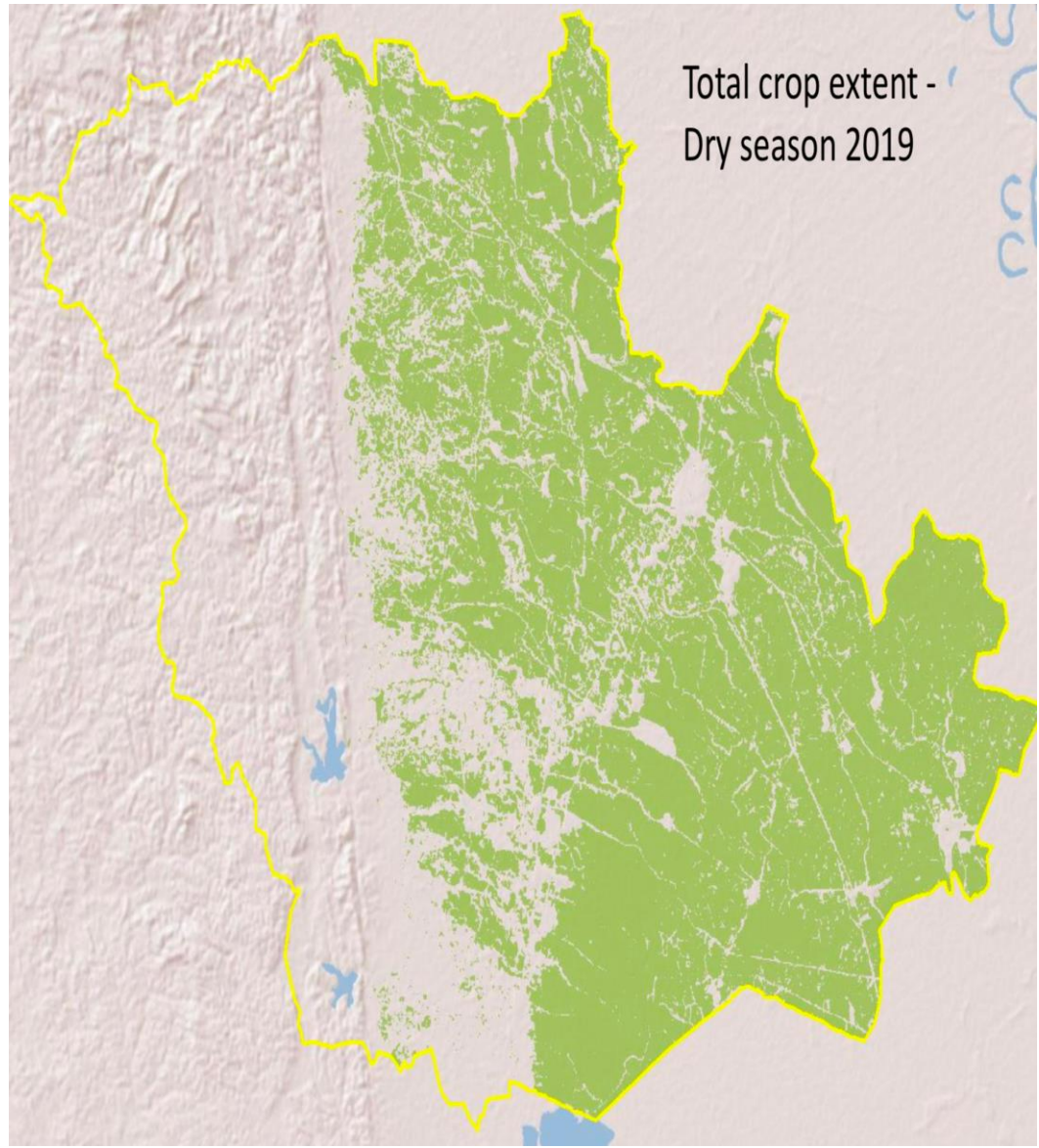
Eg: Floods, Droughts

Sentinel-2 A/B Cloud-free Satellite Images available for Daik-U Township, Myanmar (dry season):

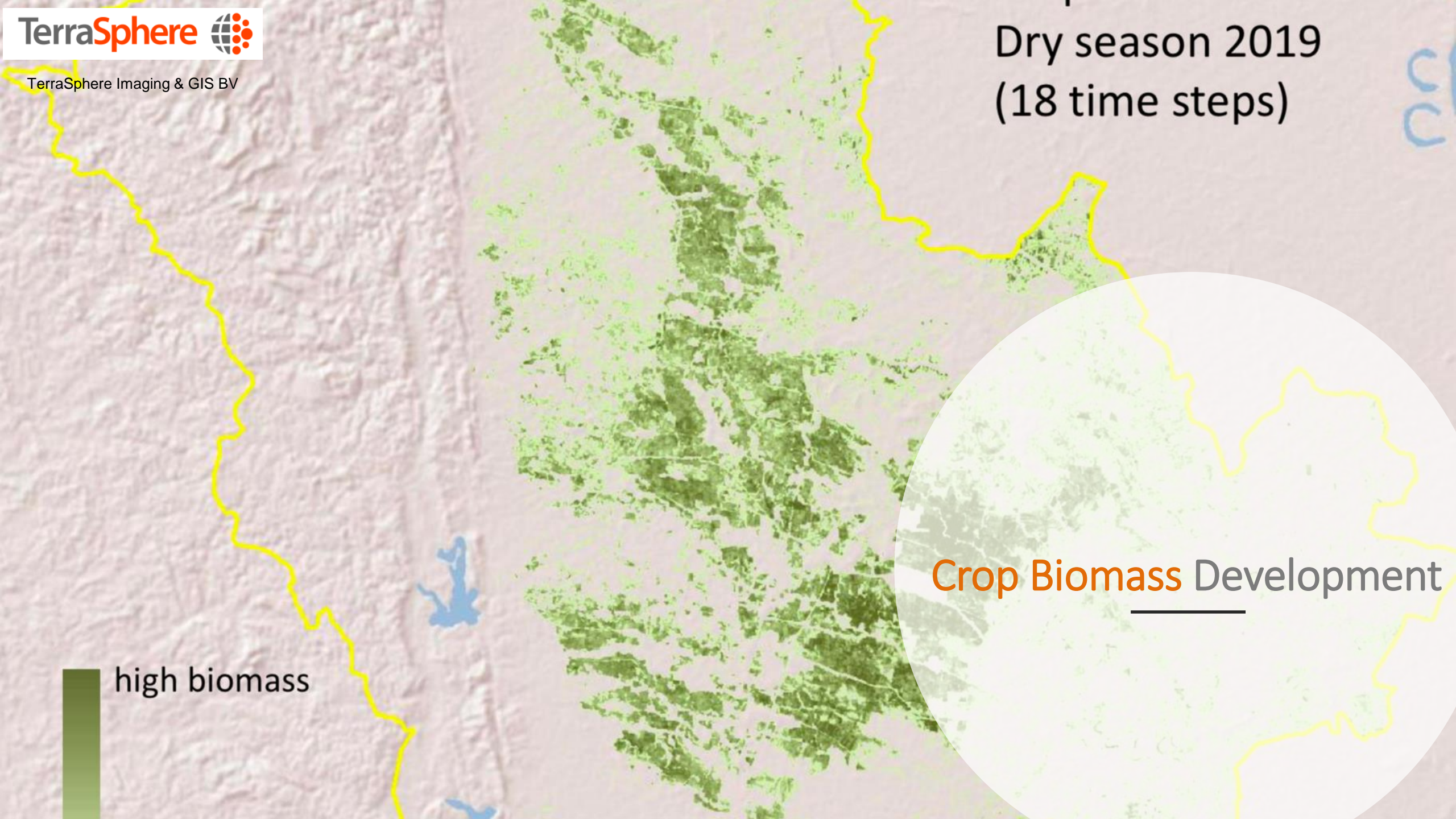
- 24-11-18
- 04-12-18
- 09-12-18
- 24-12-18
- 03-01-19
- 13-01-19
- 18-01-19
- 23-01-19
- 02-02-19
- 07-02-19
- 22-02-19
- 27-02-19
- 04-03-19
- 09-03-19
- 14-03-19
- 29-03-19
- 03-04-19
- 13-04-19



Crop Type Classification



Dry season 2019
(18 time steps)

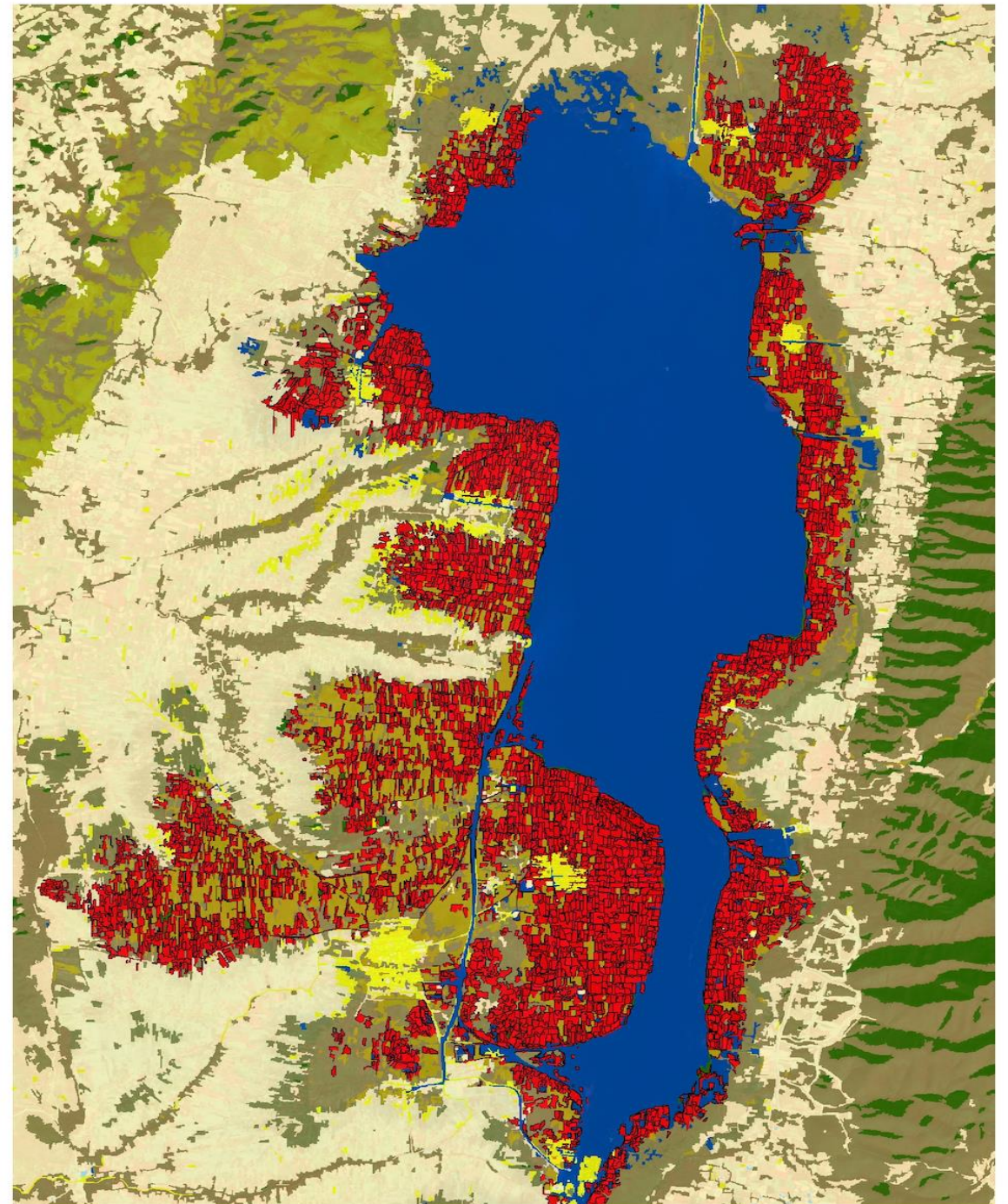


high biomass

Crop Biomass Development

Floating Tomato

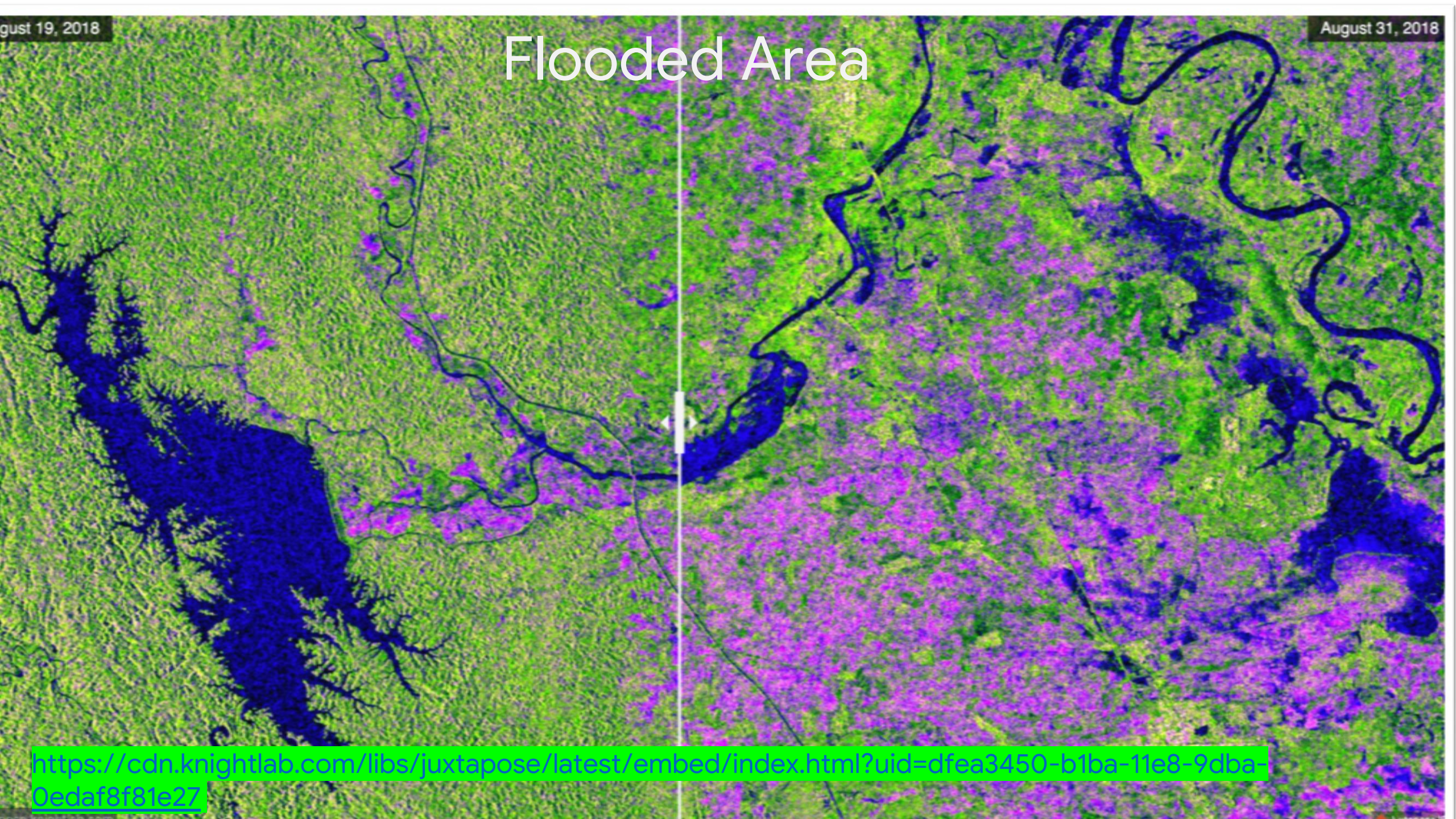
Automatic classification
of **Tomato Fields** (red)
around Inle Lake



August 19, 2018

August 31, 2018

Flooded Area



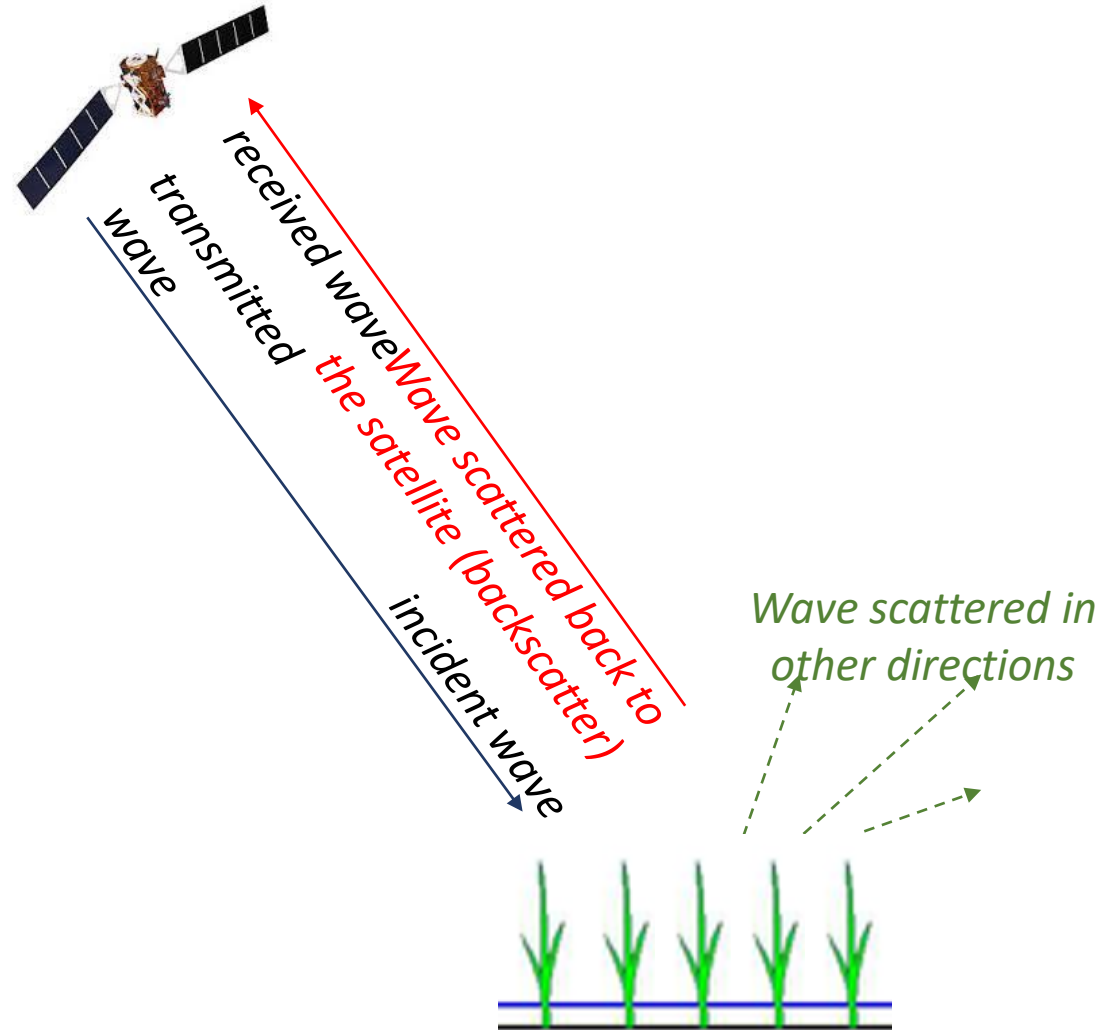
<https://cdn.knightlab.com/libs/juxtapose/latest/embed/index.html?uid=dfea3450-b1ba-11e8-9dba-0edaf8f81e27>

-
- *Background on Radar Satellite*
 - *Rice Mapping Algorithm*
 - *Algorithm Calibration*
 - *Maps Validation*



Technology radar interpretation: Radar satellites which « see » through clouds

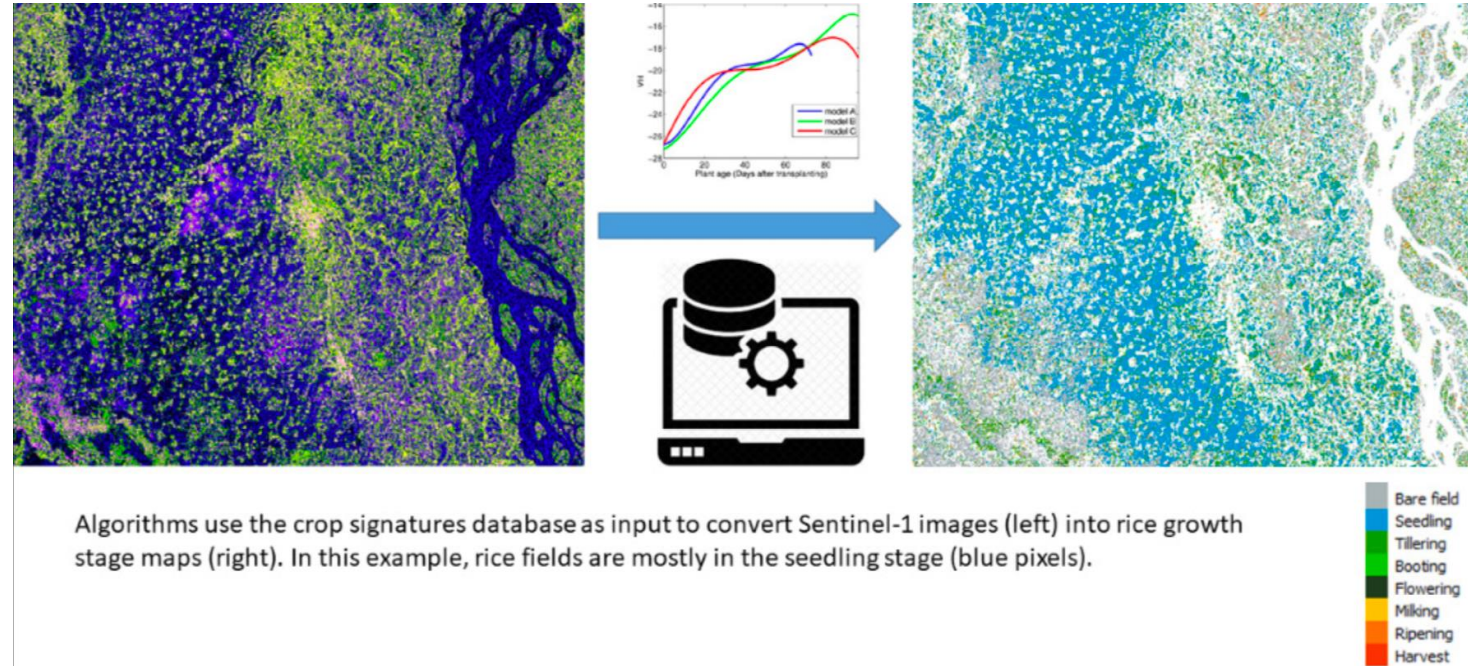
SarVision BV



Rice Mapping Algorithm

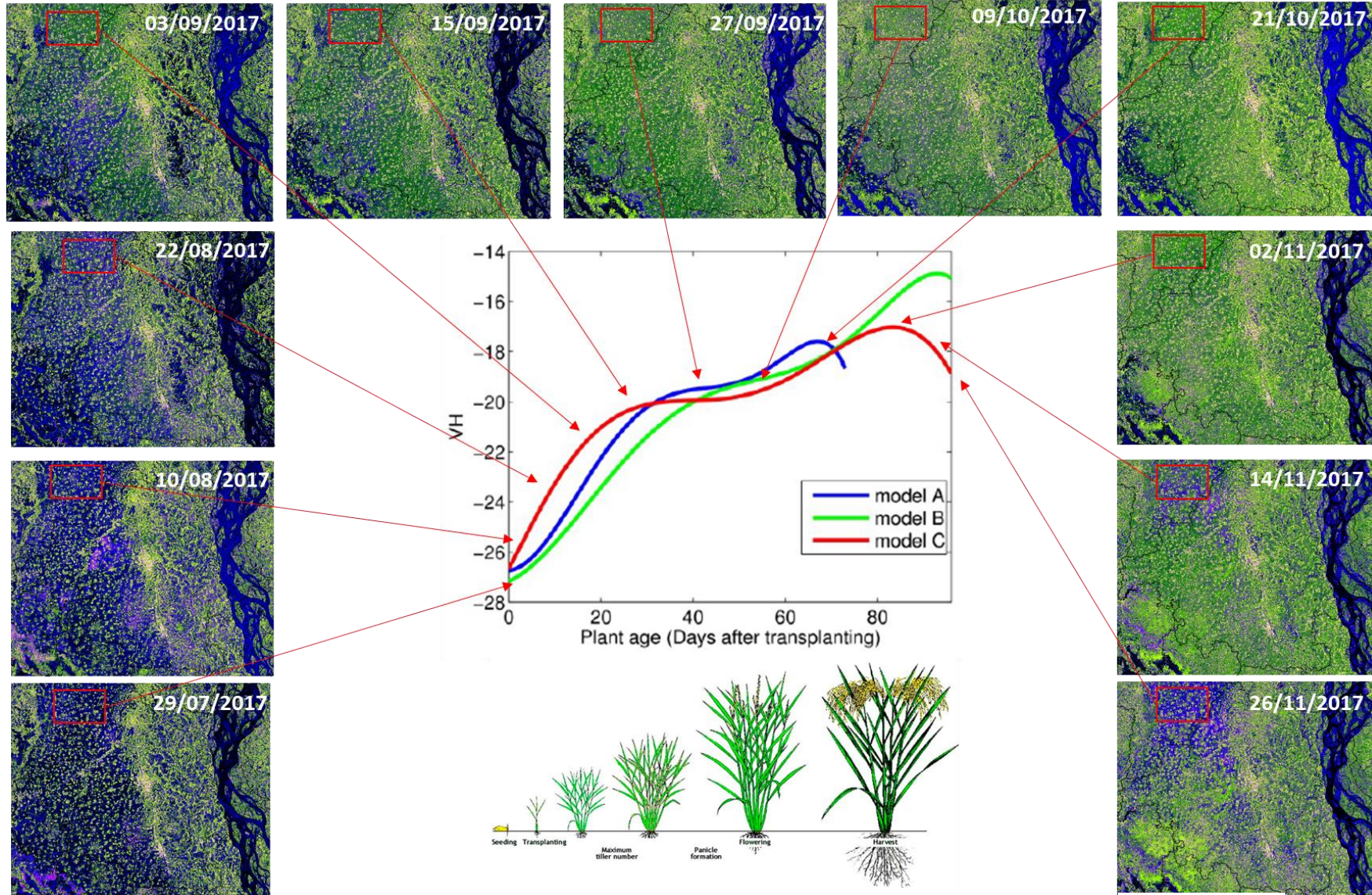
SarVision BV

Algorithm use crop signature databases as input images into rice stage growth map



Rice crops radar signatures (each 12 days!)

SarVision BV





Agri Intelligence Platform for Agriculture Management

ထွက်တိုး



Optical Image data and Radar data from satellite

Raster image extracted, analyzed and prepared by imaging partners



Crop Growth Model and weather DSS

Prediction of crop-growth based on image/localized knowledge data typically conducted by technical partner



MYVAS4AGRI Platform

1. Extract real-time weather/image data/DSS output data via api or file output
2. Beneficiary registration module
3. Advisory /Trigger/Rule configuration
4. Automatic Recommendation generation based on DSS output
5. Integration with Htwet Toe mobile app and telecom api for SMS
6. Report Generation



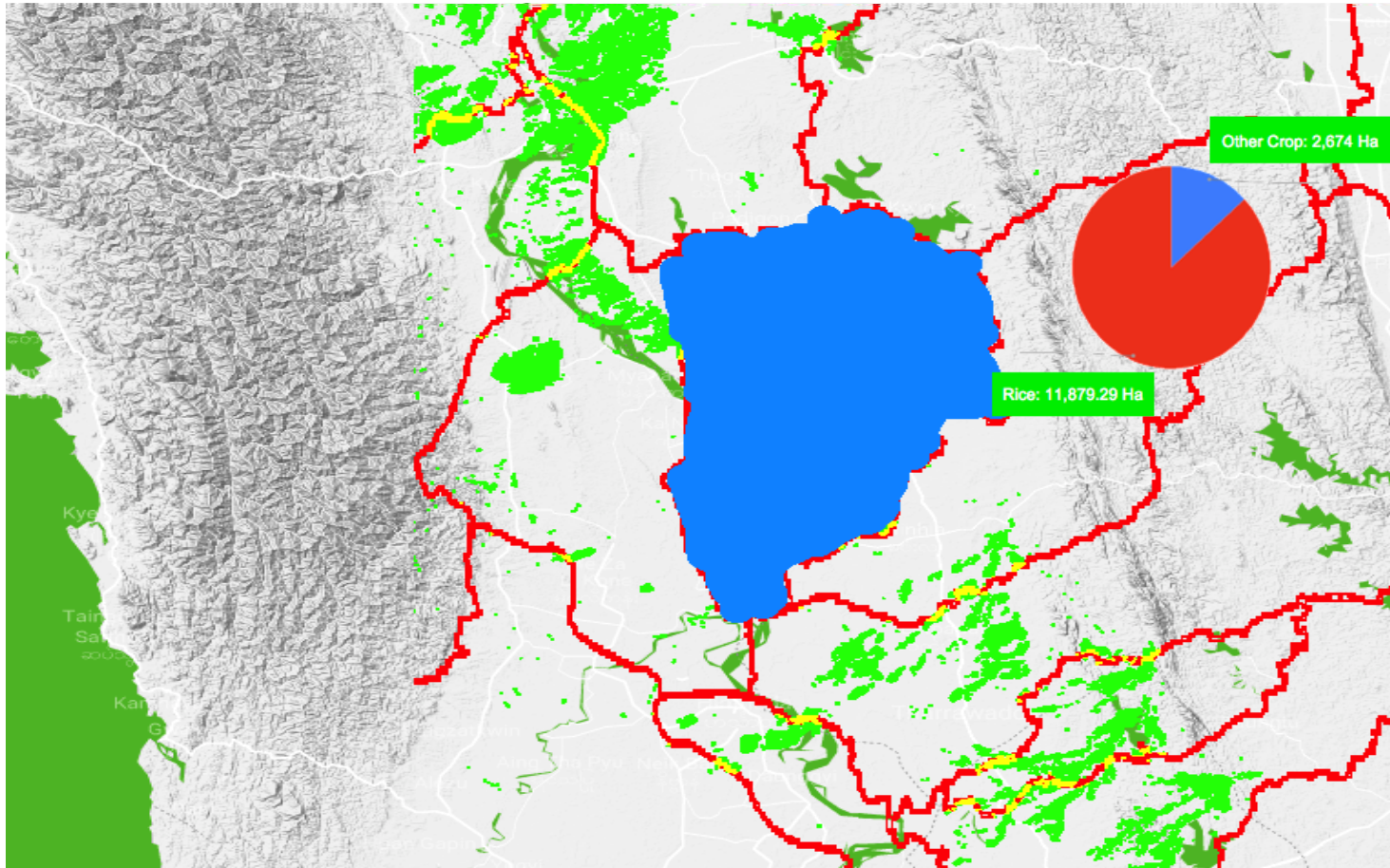
Farmer

Receive Broadcasted Notification from Htwet Toe app



Agri Intelligence Platform for Agriculture Management

ထွက်တိုး



Select Area

Mark Township & Highlight Rice Production

Select Specific Township

Show Production Data



Our Machine Learning Approach

Machine Learning Training ...

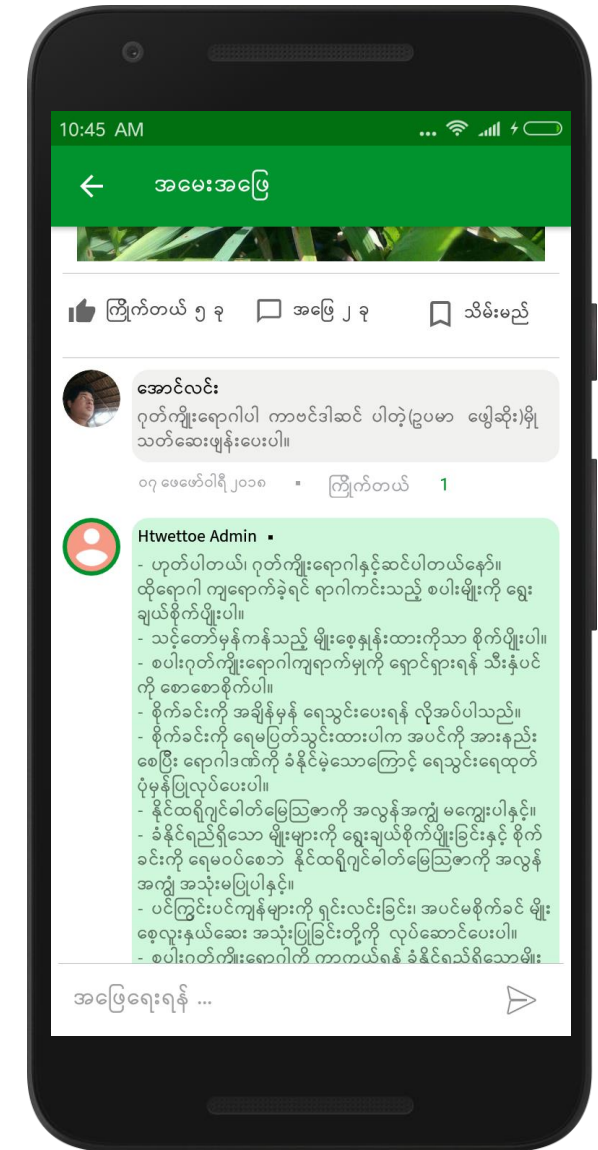


... achieving predicts result to farmer.



Question & Answer

Get answers from agronomists and other farmers





Data Collection & Training Model

သီဟိုဠ်သရက် ပျိုးပင်လေး ငွေတ အွရက်ဖျားငွေတ ခြောက်/
ဝါလာပြီး သေပါတယ် ဘယ်လိုလုပ်ရမလဲ မသိလို့ပါ



အုန်းပင်လေးများစိုက်ထားတာအွရက်ငွေတခြောက်လာလို့ပါ
ဘယ်လိုပြုပြင်ရမှာပါလဲ



ညိုတောကြောနုလို့ ဘယ်လိုဖြေရှင်းရမလဲခင်ဗျာ နည်းလမ်း
လေးပြေးပြောပေးပါ



ဘာပိုးလဲတော့မသိဘူး အစကနည်းနည်းပဲ ကြာလာရင်မြှော
င်းလိုဖြစ် လာပြီး အပင်ပါသွေသားတယ် ဘာဆေးသုံးရမလဲ
သိပါရေစ






Training Algorithm

Tagged Images

Upload Delete Back UnTagged Images

Filter by Tags
Select tags...
Filter



Quick Test

Back


Upload to Predict Image

Select Category Type(Root Project):
CROP-UAT

Select files... Done

WhatsApp Image 2019-06-06 at 10:38:46 AM.jpeg
115.33 KB

Upload to Predict Image



Prediction Results:

Crop Result

Name	Probability
Rice	100.00 %
MELON (1)	0.00 %
Melon	0.00 %

Disease Result

Name	Probability
Bacterial leaf blight	95.01 %
Non Disease and Pest	1.44 %



Training Result To App



Soe Gyi
၂၆ နိုဝင်ဘာ ၂၀၁၈

နဂါးမောက် အကိုင်းတွေဝါပြီးပျော့နေလို့ ဘာလုပ်သင့်လဲဖြေကြားပေးပါခင်ဗျ.....။

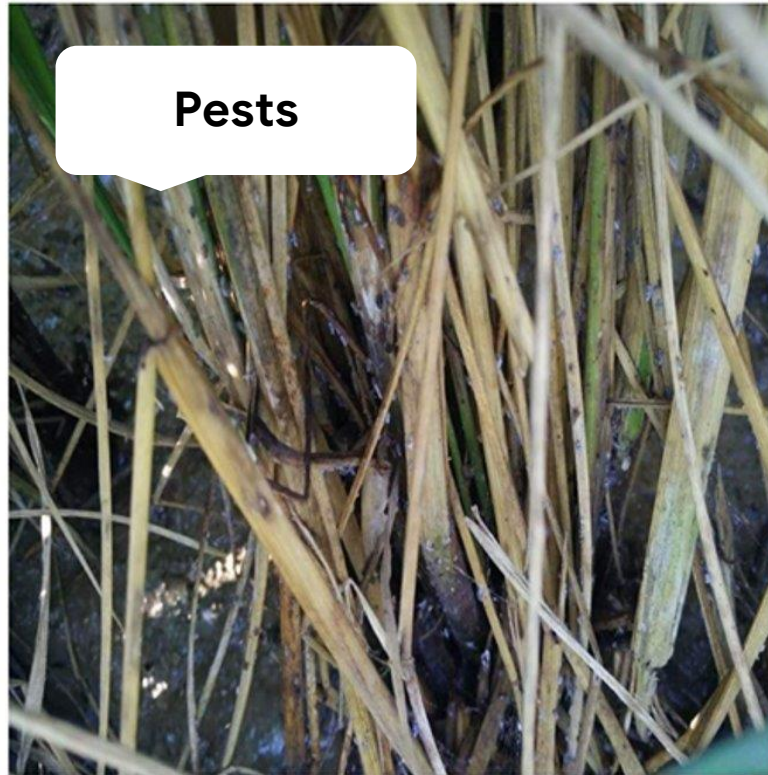
Sympton



Myo Gyi
၂၈ နိုဝင်ဘာ ၂၀၁၈

စပါးဖြုတ်ပိုးတွေဆိုးနေလို့ကူညီပါအူး

Pests



👍 ကြိုက်တယ် ၁ ခု 💬 အဖြေ ၂ ခု 📌 သိမ်းမည်



Ngin Mye
၂၈ နိုဝင်ဘာ ၂၀၁၈

ကွမ်းက အပျောက်တွေပေါက်နေတယ် သာလိကဝင်နေတယ် ဘယ်လိုလုပ်ရမလဲဗျ

Diseases



👍 ကြိုက်တယ် 💬 အဖြေ ၂ ခု 📌 သိမ်းမည်

An aerial photograph of a lush green agricultural landscape. The terrain is divided into numerous irregular, terraced plots of varying sizes, all filled with vibrant green crops. A narrow dirt path winds through the fields. In the lower-left quadrant, a small, simple wooden structure with a gabled roof is visible. The overall scene is a dense, healthy agricultural environment.

Thank you.