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.
App Performance

346,675
App Installs

48K
Monthly Active Users

13M
Screen views

1.9M
Guideline Views

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

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%

1,492 Articles
15 Main Crops

3,000 FAQs
Farming Guideline

Financial Literacy
Educational Curriculum
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 extend, crop stages and early impact assessment
Weather Forecast Data

- Gridded weather forecast from global weather model of ECMWF
- Size grid cell: ≈ 9x9km
  → ≈ 20,000 unique forecasts for Myanmar region!
- For each grid cell we calculate a unique advisory based on the weather forecast

Also:
- Sunshine
- Cloud cover
- Temperature
- Humidity
- ...

Precipitation forecast

Wind forecast
Weather Forecasts: Geodata

**Weather Data**

- Attributes
  - Time dimensions
  - Spatial dimensions
  - Parameters/units

**Geospatial Grids**

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

**Time Dimensions 1/2**

- Attributes:
  - Start-time
  - End-time
  - Timestep
Weather Forecasts: spatial and temporal information

Wind speed (m/s)  
Rainfall (mm/day)  
Spraying suitability

Maps showing wind speed, rainfall, and spraying suitability.
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

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 corps 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

Daik-U township
Satellite image 13-04-2019
Sentinel-2A
10m resolution
Crop Type Classification

Total crop extent - Dry season 2019

Crop Type – Dry season 2019
- Summer Rice
- Maize
- Other crops
- Maize & Summer Rice
Floating Tomato

Automatic classification of Tomato Fields (red) around Inle Lake
Land Monitoring

- Background on Radar Satellite
- Rice Mapping Algorithm
- Algorithm Calibration
- Maps Validation
Technology radar interpretation: Radar satellites which « see » through clouds

Area of Patuakhali, Bangladesh
Rice Mapping Algorithm

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

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

Select Area
Mark Township & Highlight Rice Production
Select Specific Township
Show Production Data
Our Machine Learning Approach

Machine Learning Training …

1. Take Crop picture with HtwtToe App
2. Pets/Diseases Identification AI Server
3. Predicts crop / diseases and pests
4. Return the result with highest probability.
5. Show result at HtwtToe App

… achieving predicts result to farmer.
Question & Answer

Get answers from agronomists and other farmers
Data Collection & Training Model
Training Algorithm
Training Result To App

Symptom

Pests

Diseases
Thank you.