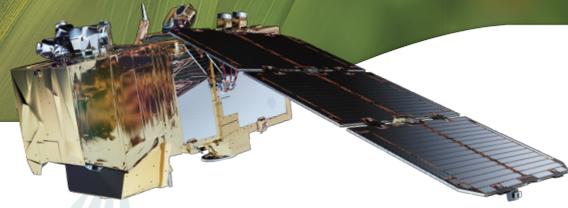


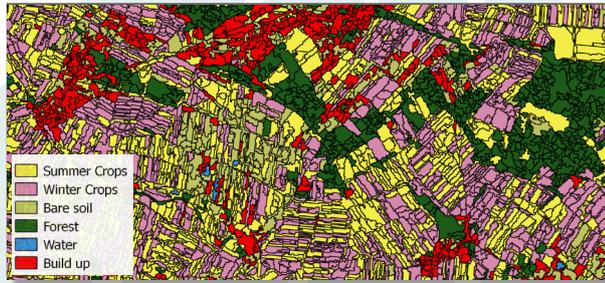
# ADDRESSING KEY CHALLENGES IN AGRICULTURE



FROM TODAY'S SOWING TO TOMORROW'S MARKETS



Near Real-time, high resolution satellite based monitoring to understand:



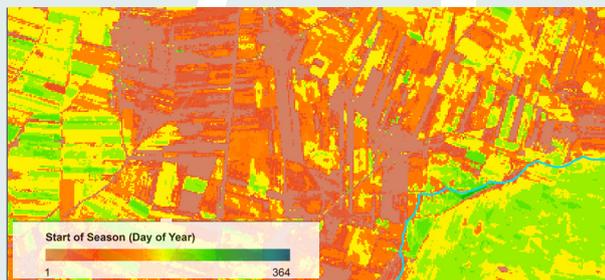
## WHERE AND WHAT?

- ✓ Cropland extent and change
- ✓ Crop type
- ✓ Field parcel delineation
- ✓ Irrigated area



## HOW DOES IT GROW?

- ✓ Crop conditions
- ✓ Crop diseases
- ✓ Yield forecast
- ✓ Water Indices



## WHEN?

- ✓ Start of agricultural season
- ✓ Dryness Index
- ✓ Water regime
- ✓ Crop failure



## WHERE IN THE FUTURE?

- ✓ Agricultural supply chain
- ✓ Suitability Mapping
- ✓ Land degradation
- ✓ Climate Resilience

# PROVIDING AGRICULTURAL SOLUTIONS AND SERVICES

## Agricultural Monitoring Services

Through the combination of satellite, weather, soil data and yield data, the agricultural sector will be able to consult, in a quick and efficient way, real status information on multiple agricultural fields or growth areas. With these additional insights one can:

- ✓ Predict regions suitable for new farming developments along yield potentials
- ✓ Assess production risk and quality losses by monitoring precipitation, soil moisture and overall crop health, including detection of diseases, thereby reducing water, fertilizer and pesticide usage
- ✓ Detect problems in an early stage and intervene in time
- ✓ Assess the development stage of the crop and the potential harvest date
- ✓ Distinguish good fields from less productive ones
- ✓ Provide quantitative and qualitative information to facilitate more efficient logistics and storage
- ✓ Access quantitative evidences in case of crop failures for insurance claims

## The Baseline Monitoring Service

This service provides basic plant condition monitoring services, including the automatic detection and mapping of crop fields or the identification and delineation of fields by individual farmers. The satellite based crop monitoring is based on a number of bio-physical parameters, each reflecting a different aspect of the plant growth condition.

## Yield Statistics

Based on the satellite based bio-physical crop monitoring service in combination with the supply of in-situ collected, field specific yield data, existing crop yield models are calibrated and provide predictions of crop yields starting in a second season cycle. Accuracy improves with each successive season of monitoring.

## Support the Detection and Control of Diseases

This service provides an operational monitoring service enabling the detection and spatially delineation of infections in the early stages as to guide and more efficiently manage pesticide control measures.

## Evidence of Crop Failure

Satellite based crop failure indices are employed to map evidences of reported crop damages due to significant hail, freeze or storm events.

## Water Management

Earth observation satellite technologies provide estimates of water availability for 4 different parameters important to agricultural farming: rainfall, evapotranspiration, soil moisture and vegetation water content.

## Geographic Suitability

Large scale satellite based land surface property assessments combined with spatial data on topography, hydro-metrology, temperature and potential present infrastructures are integrated to predict what type of crop can be produced in what regions and the potential impact on the expected income of farmers.

## Independent Service Capacities

Service access options provide:

- ✓ Ease of access via customer operated platform
- ✓ Integration of production chains through API's, enabling the integration into existing customer IT systems