

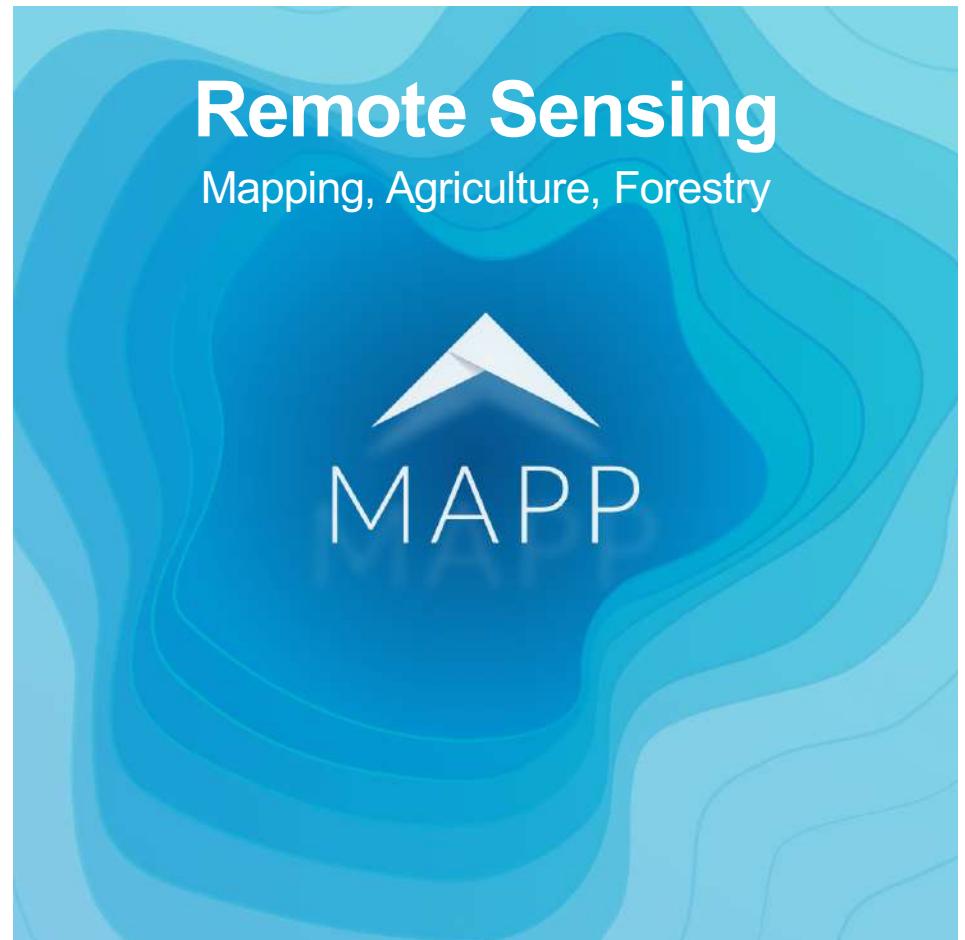


September 13, 2018

**Spin.Works, S.A.**  
Av. da Igreja 42, 6º  
1700-239 Lisboa

Tel. +351 21 012 8452  
[info@spinworks.pt](mailto:info@spinworks.pt)  
[www.spinworks.pt](http://www.spinworks.pt)

Spin.Works



## MAPP



**Satellite**  
Multispectral Image  
10 m/pixel  
update every 5 days  
global

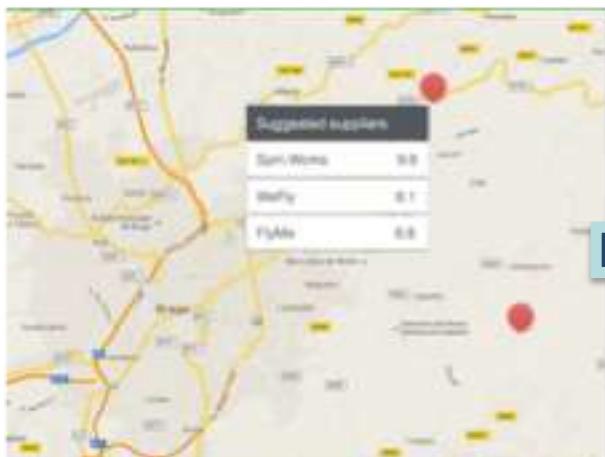


**Online App**  
Algorithm generated insights  
for farmers to take action  
without expert knowledge



**Drone**  
Multispectral Image  
5 cm/pixel  
on-demand  
3<sup>rd</sup> party local operations

## MAPP



CREATE ACCOUNT



GET INSIGHTS



TAKE ACTION



## Case Study 1 –Vineyards

Row and inter-row, ~5000 plants/ha



## Case Study 2 – Forestry, Cork Oak

Discontinuous canopy, ~100 trees/ha

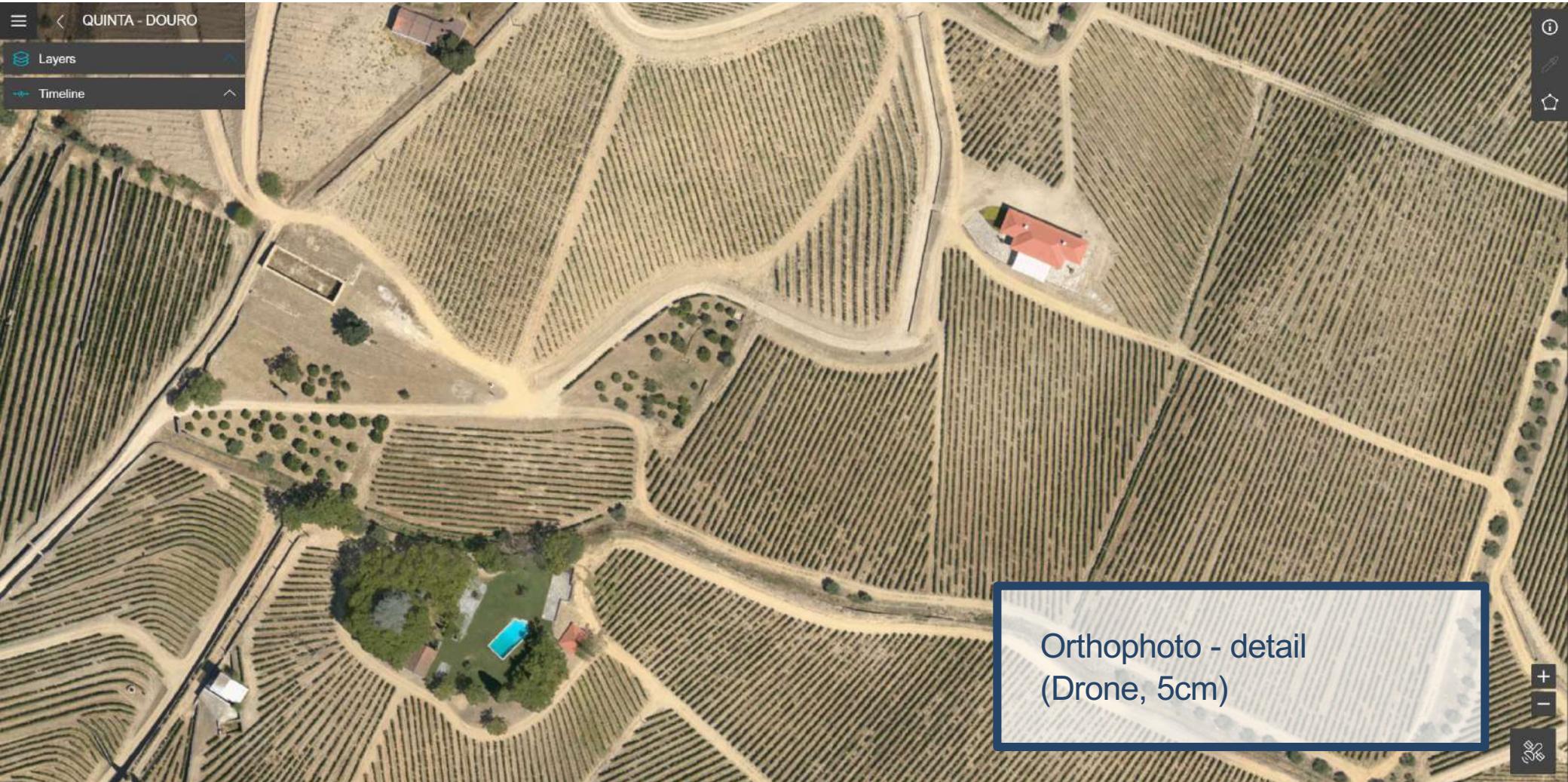
MAPP.IT

VINEYARDS

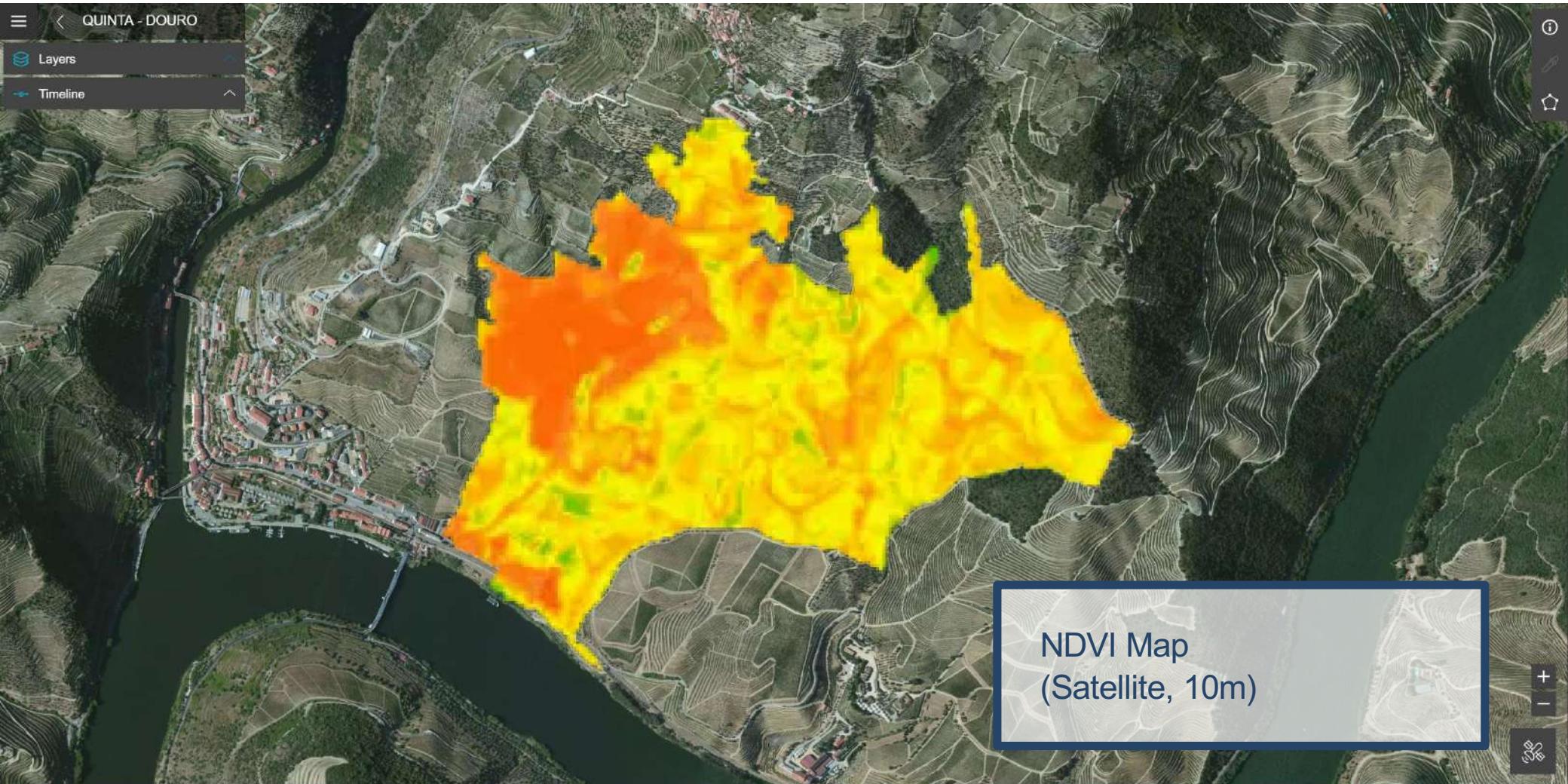
## VINEYARDS



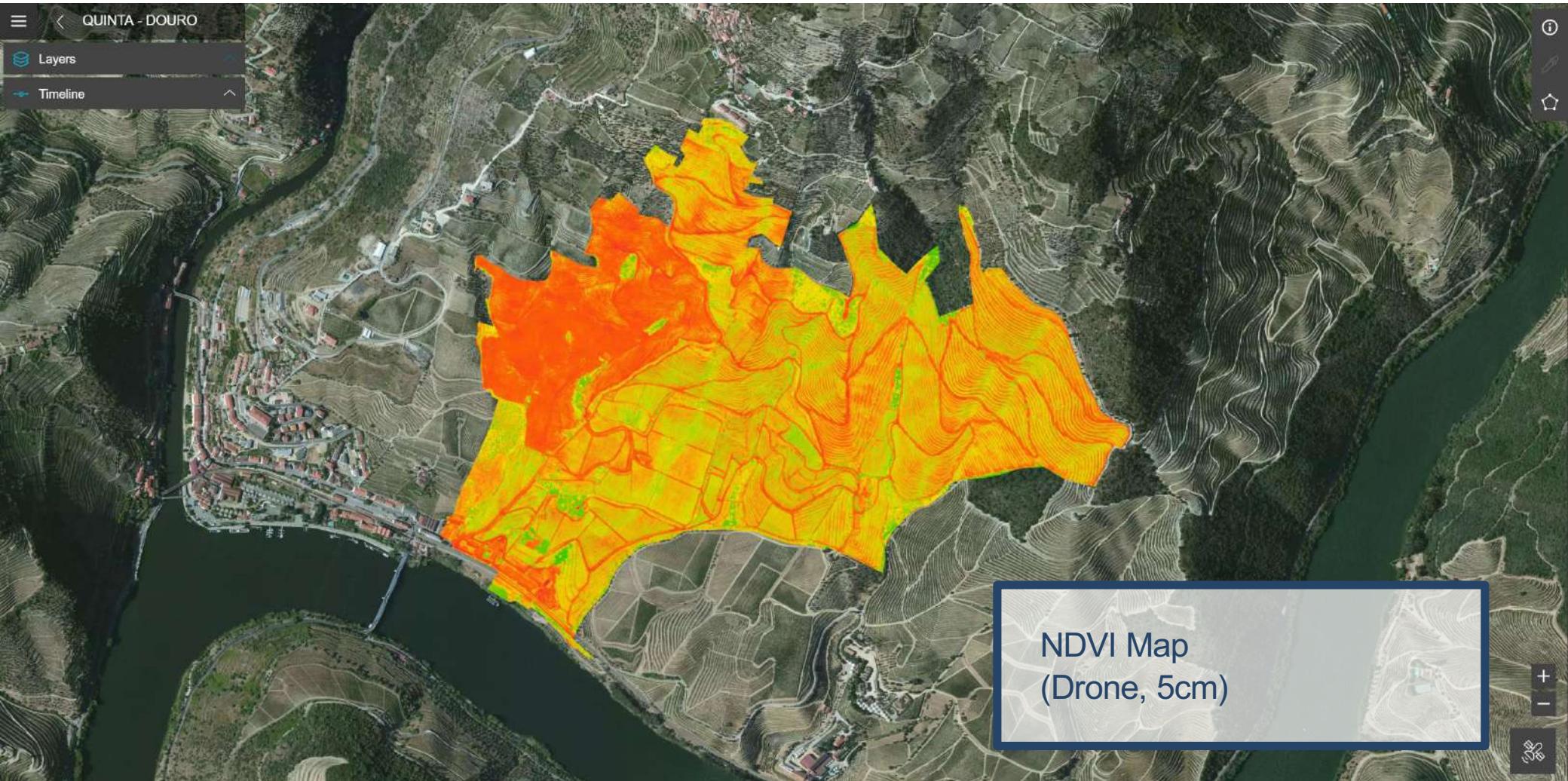
## VINEYARDS



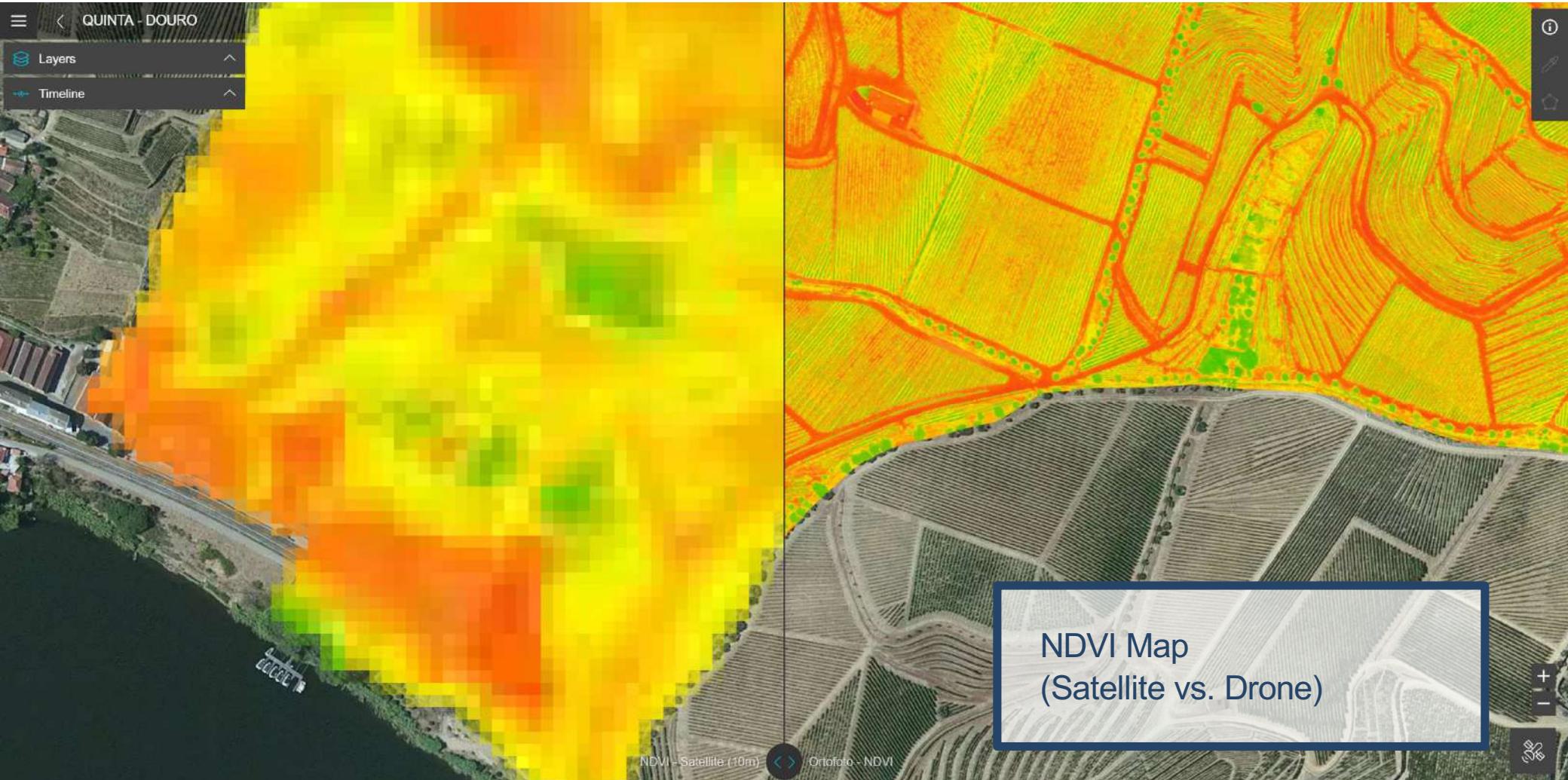
## VINEYARDS



## VINEYARDS



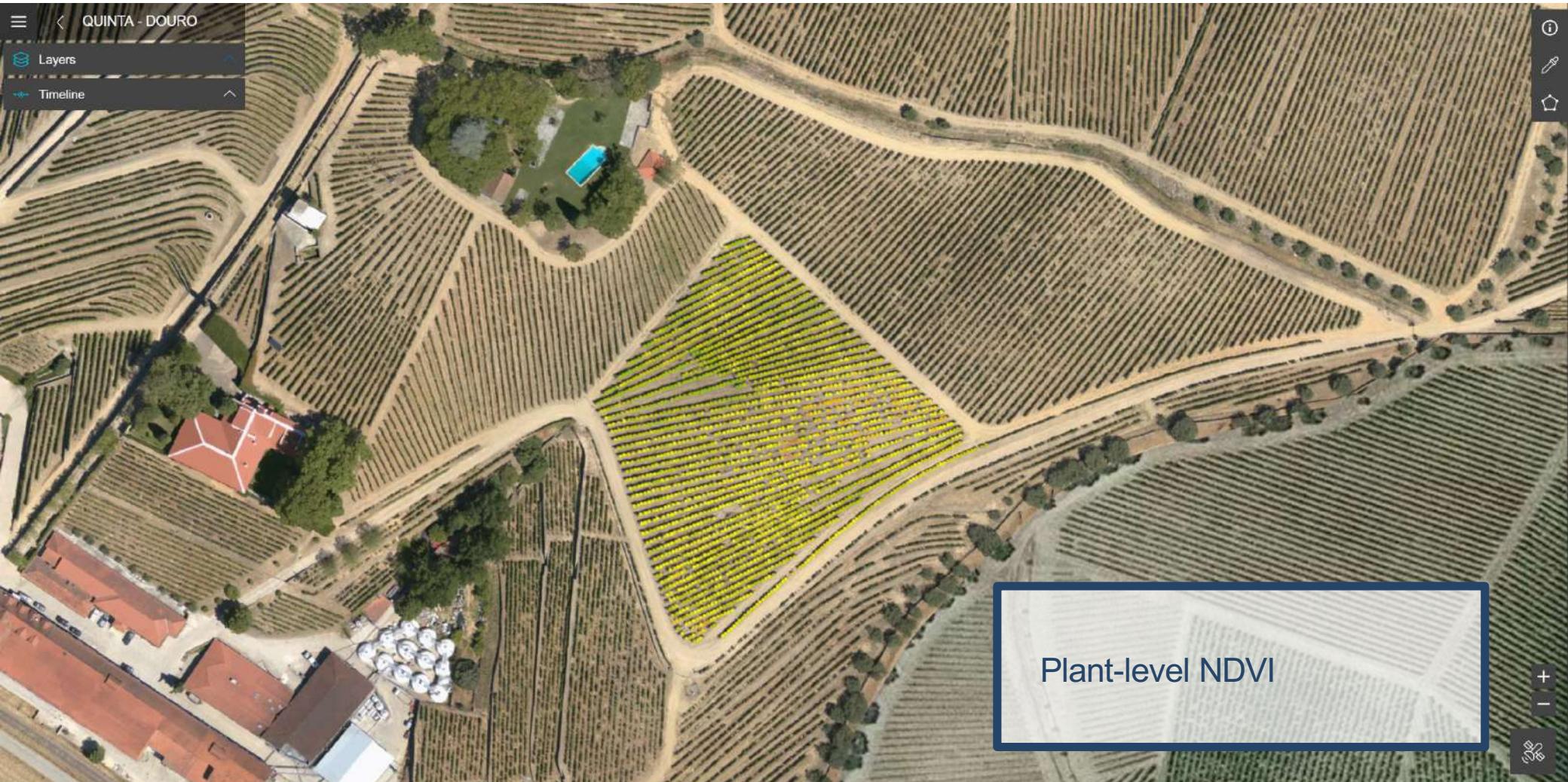
## VINEYARDS



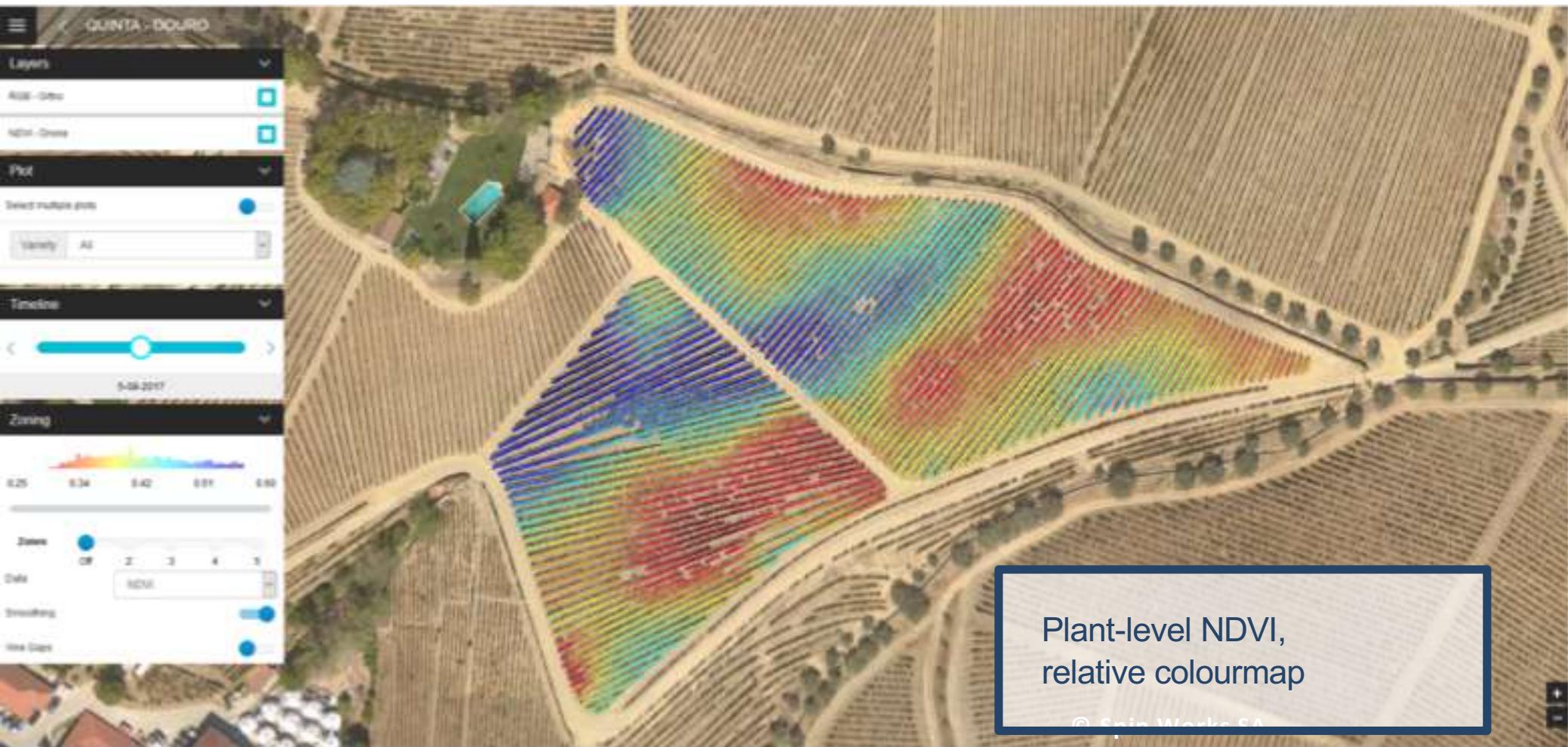
## VINEYARDS



## VINEYARDS

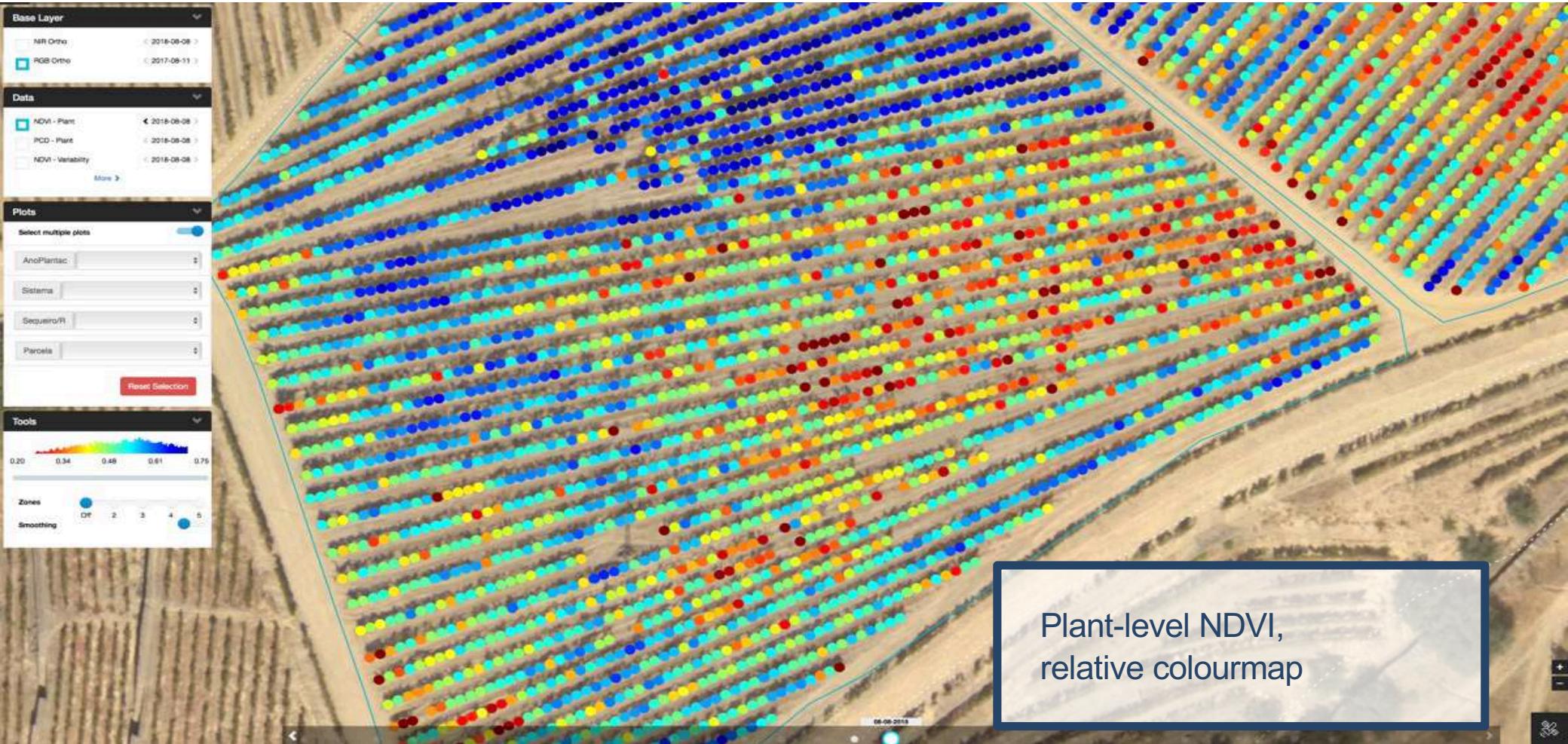


## VINEYARDS



© Spin Works SA

## VINEYARDS



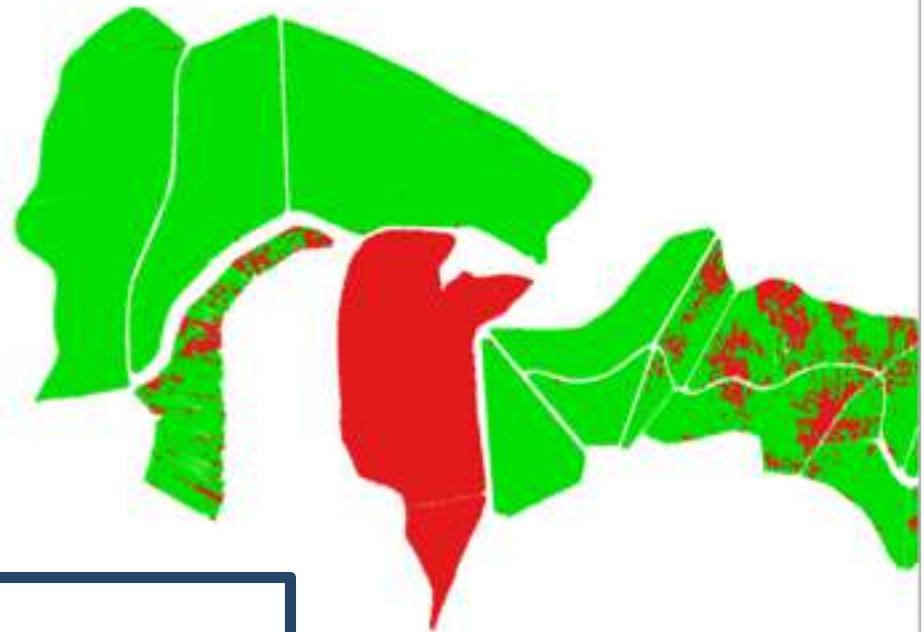
## VINEYARDS



**Sentinel, 2 classes**



**Drone, 2 classes**



Assessment in 380 ha  
showed matching of 73%

## VINEYARDS



Vine gaps

© Spin Works SA

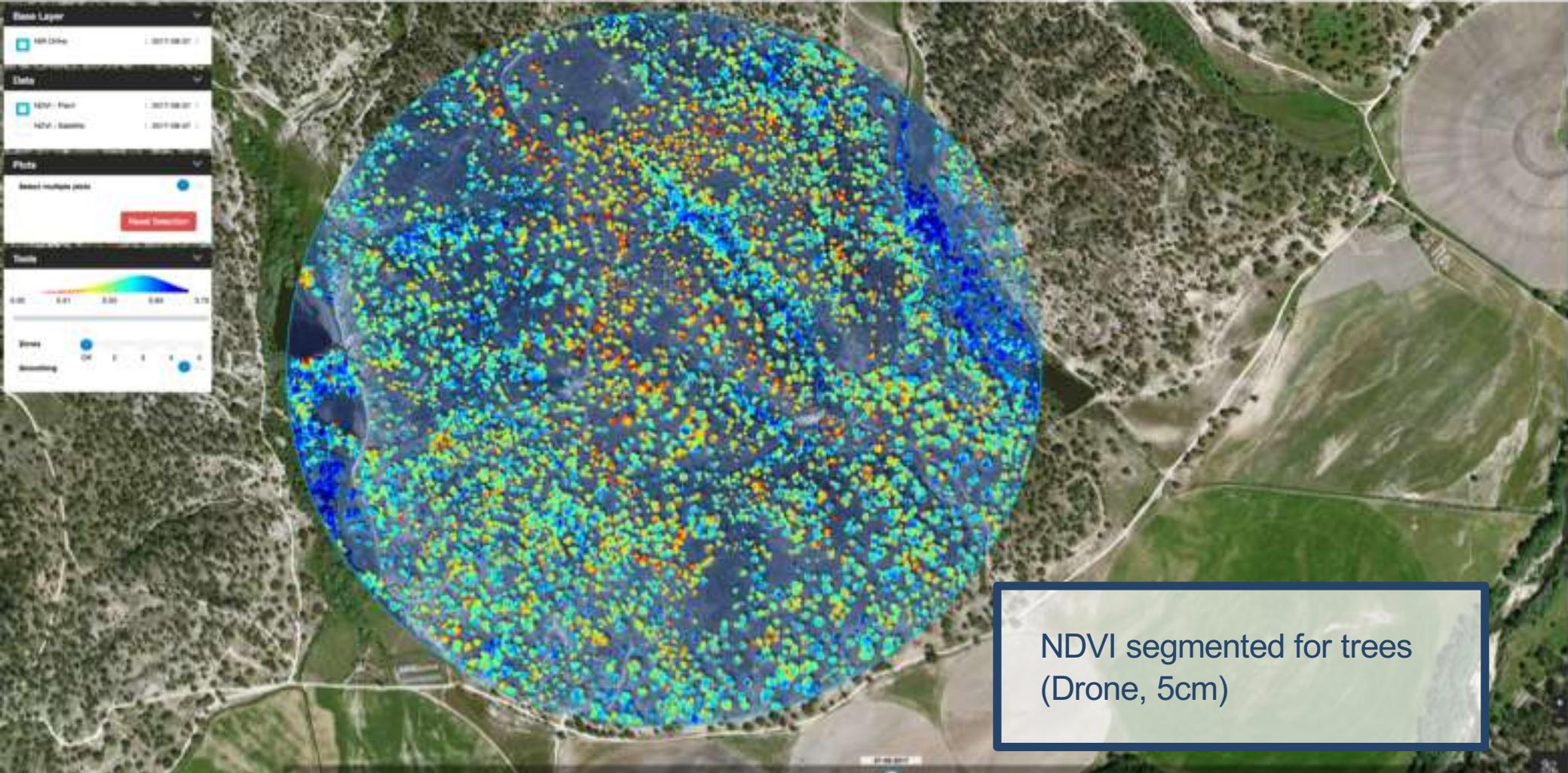
## VINEYARDS



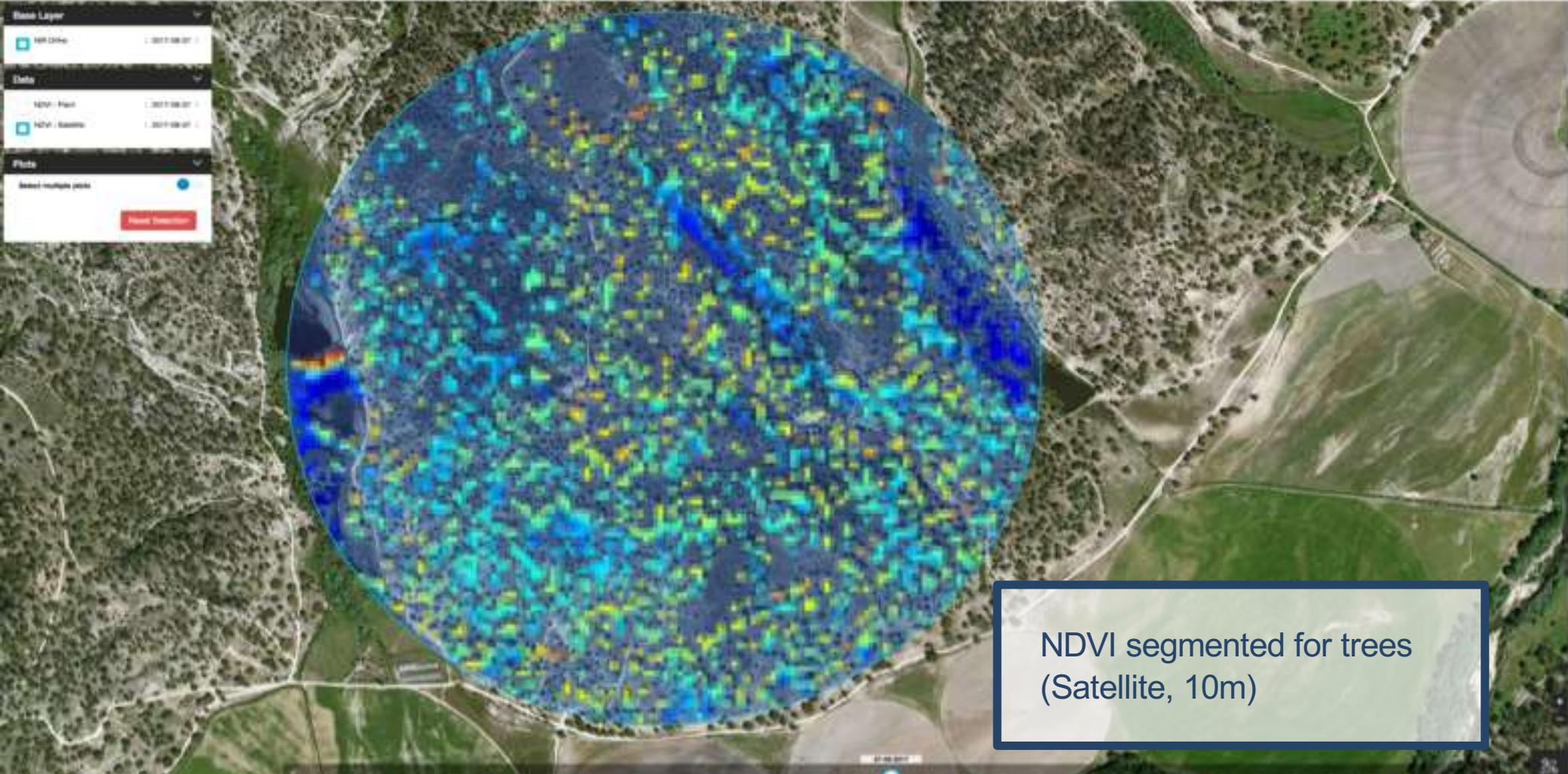
MAPP.IT

# FORESTRY, CORK OAK

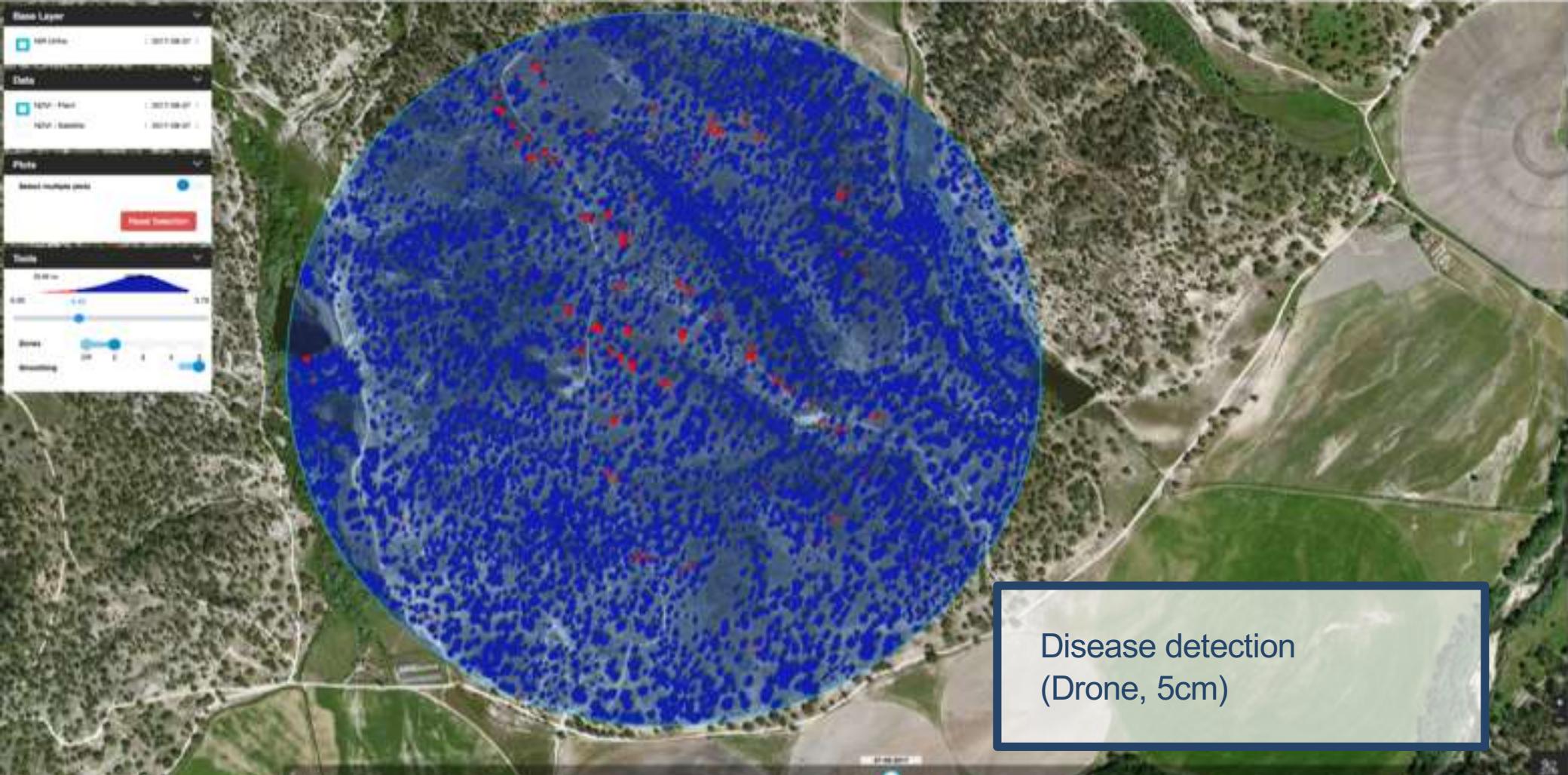
## FORESTRY



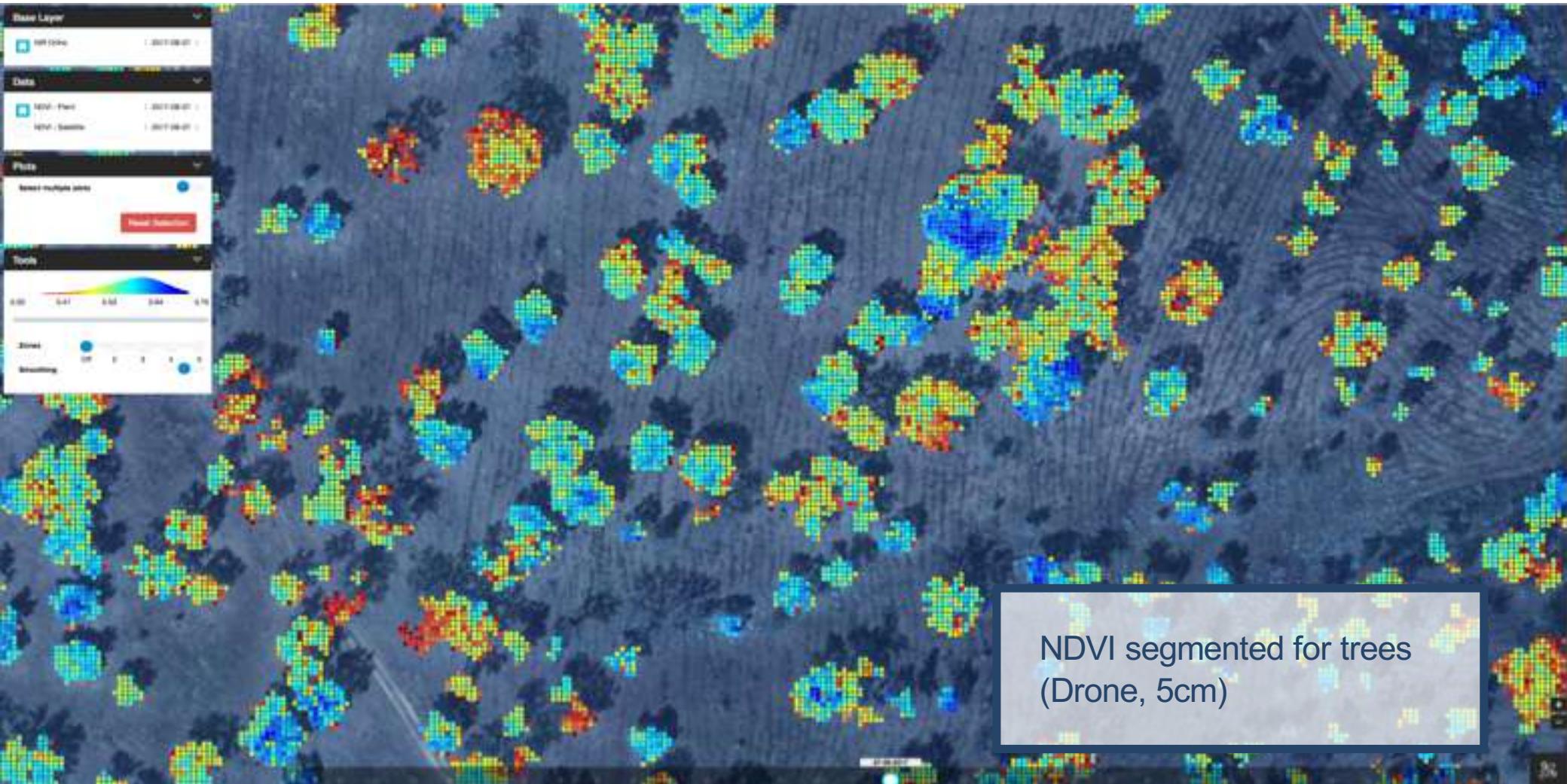
## FORESTRY



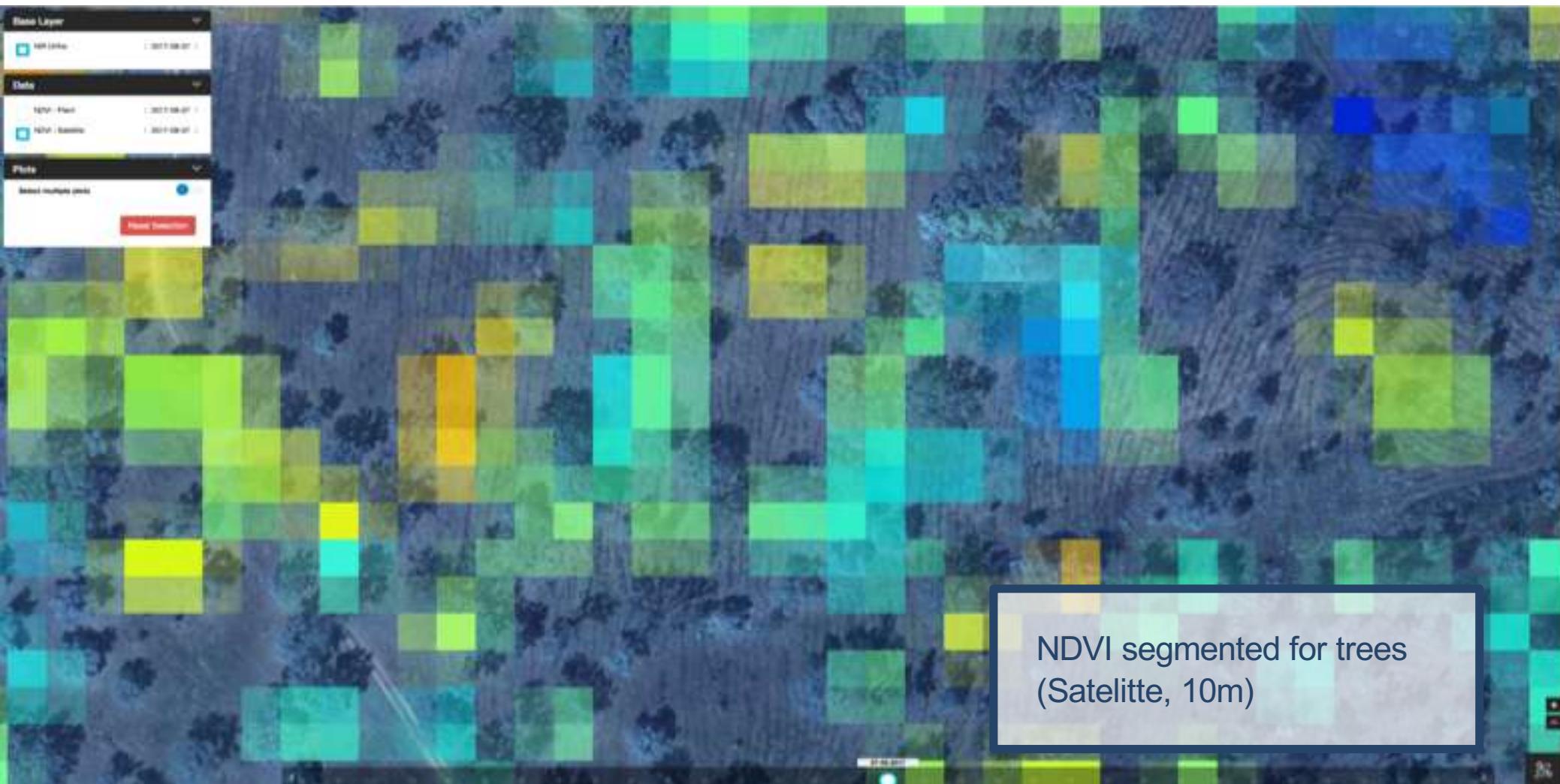
## FORESTRY



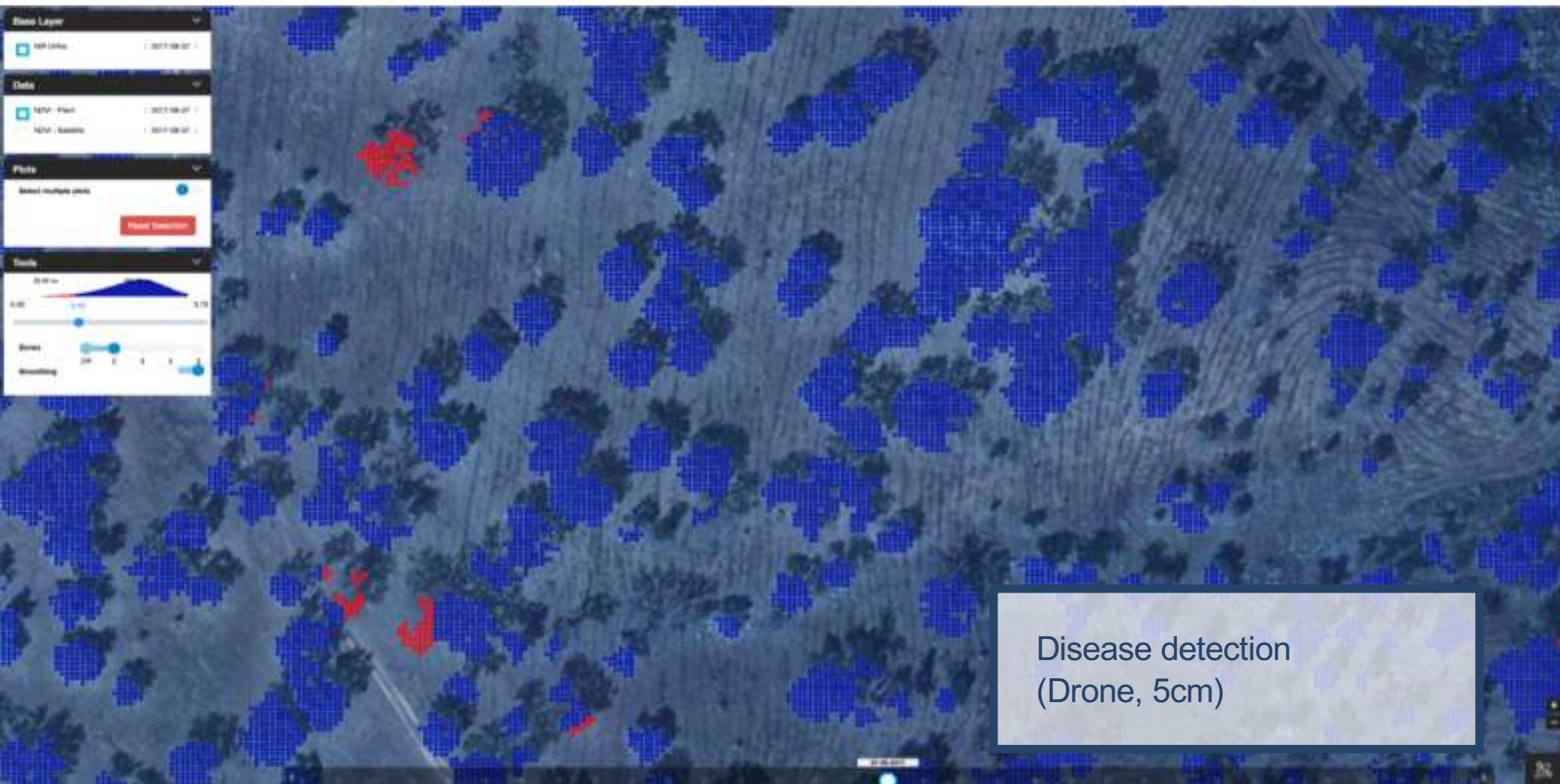
## FORESTRY



## FORESTRY



FORESTRY



## Disease detection (Drone, 5cm)

## Conclusions:

### -Operational

- Entry-level, satellite-based service for vineyards for 2 zone classification
- Sentinel-based data for general agricultural applications

### -Ongoing development

- Satellite data correction based on high-resolution drone data
- Early warning for disease/pest
- Data fusion of heterogeneous data (ESA activity)

### -Next steps

- Fusion of other available data sources beyond remote sensing
- Machine learning approach to take advantage of available Sentinel time series and years of drone and field data from Spin.Works