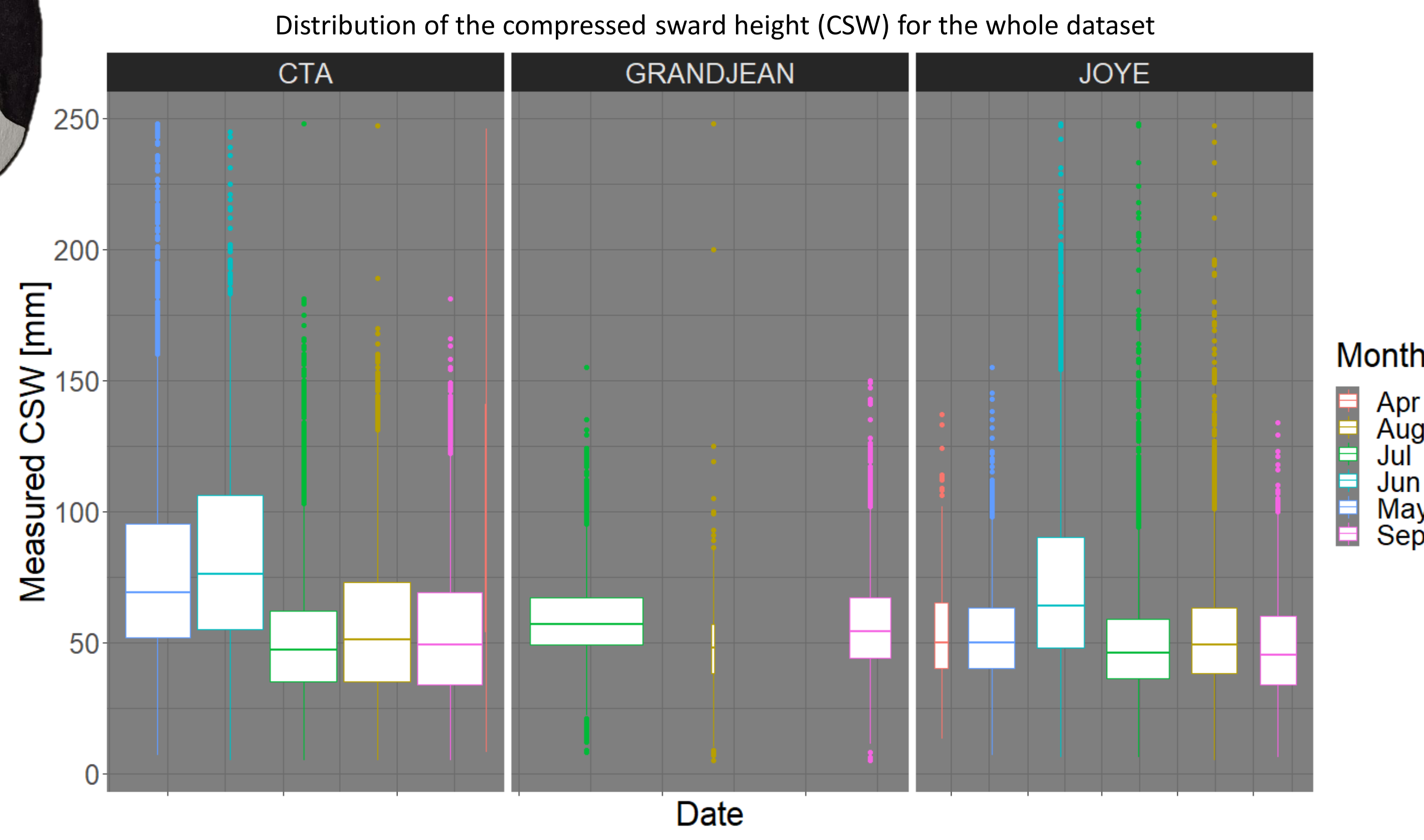
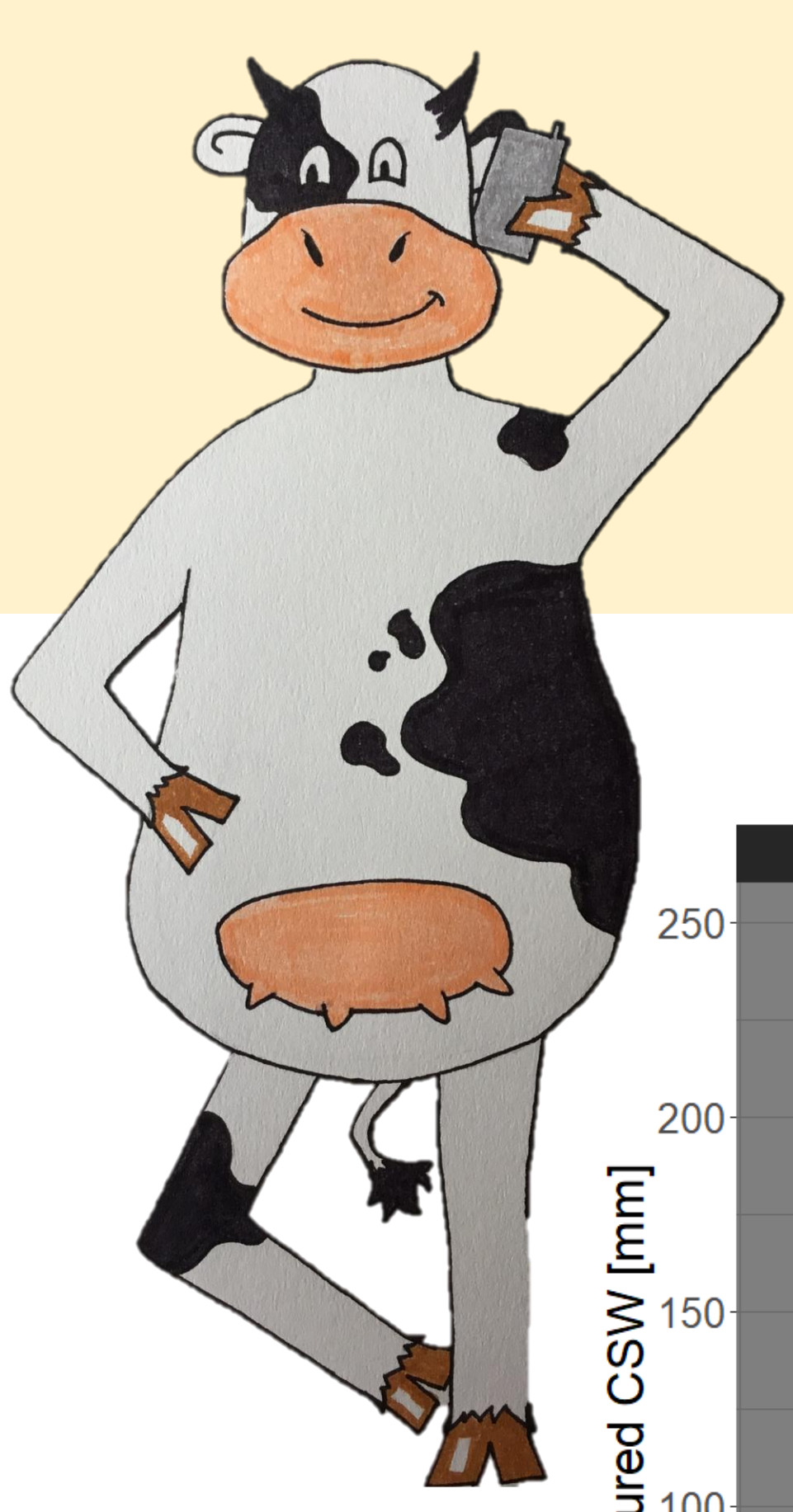


Managing the high variability of compressed sward heights to model grass growth on pastures using satellite images

C. Nickmilder*, I. Dufrasne, A. Tedde, P. Lejeune, B. Tychon, F. Lebeau, and H. Soyeurt



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Where: Wallonia (Ardennes, Condroz, Famennes)

What: Compressed Sward Height(CSH) [mm]

When: 2018-2019: pasture periods

How: Rising platemeter Jenquip EC-20G

Why: Predict CSH from remote sensing

Results:

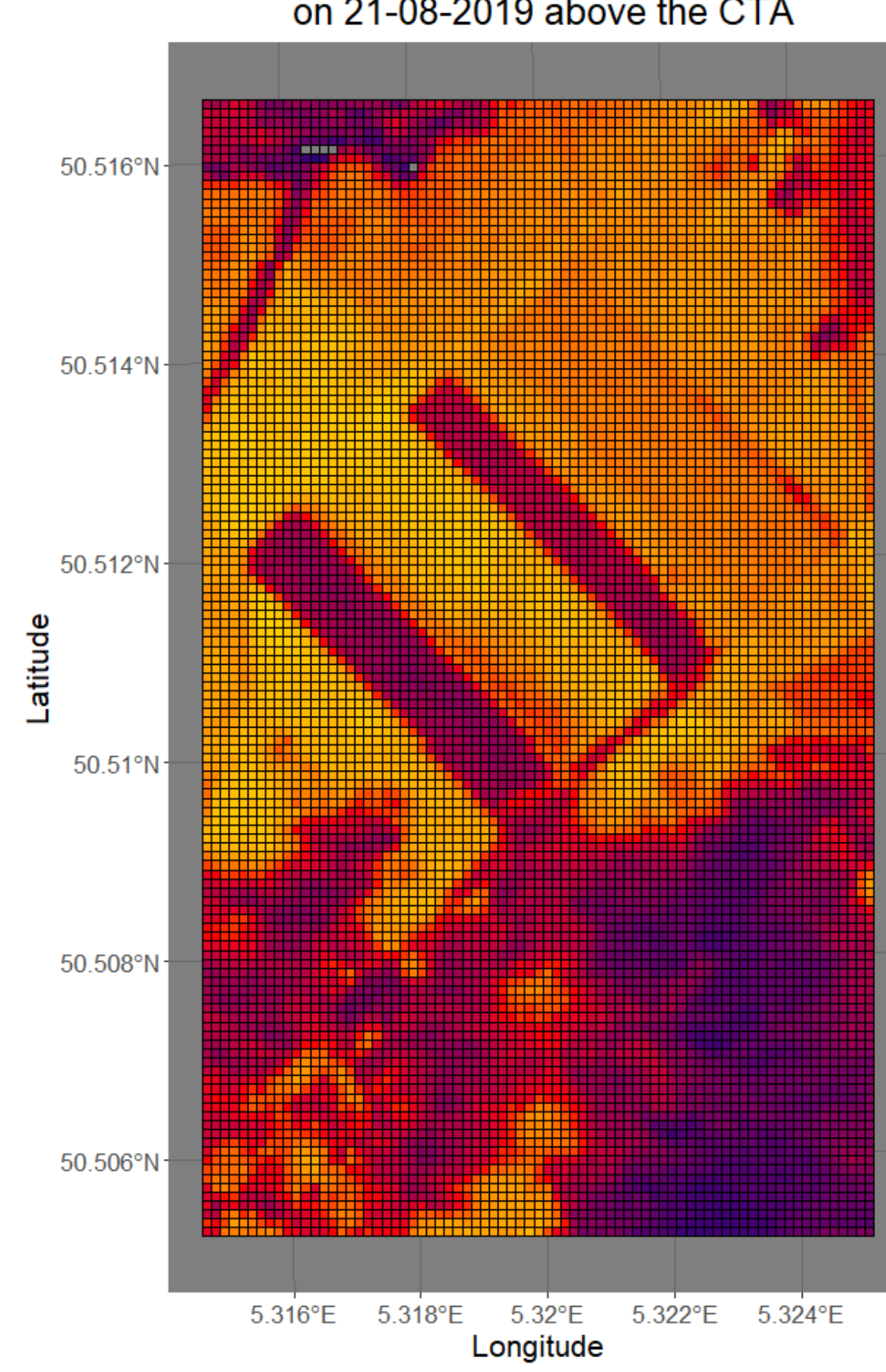
- 72,975 records on 30 parcels
- High variability of CSH
- Non-normal distribution



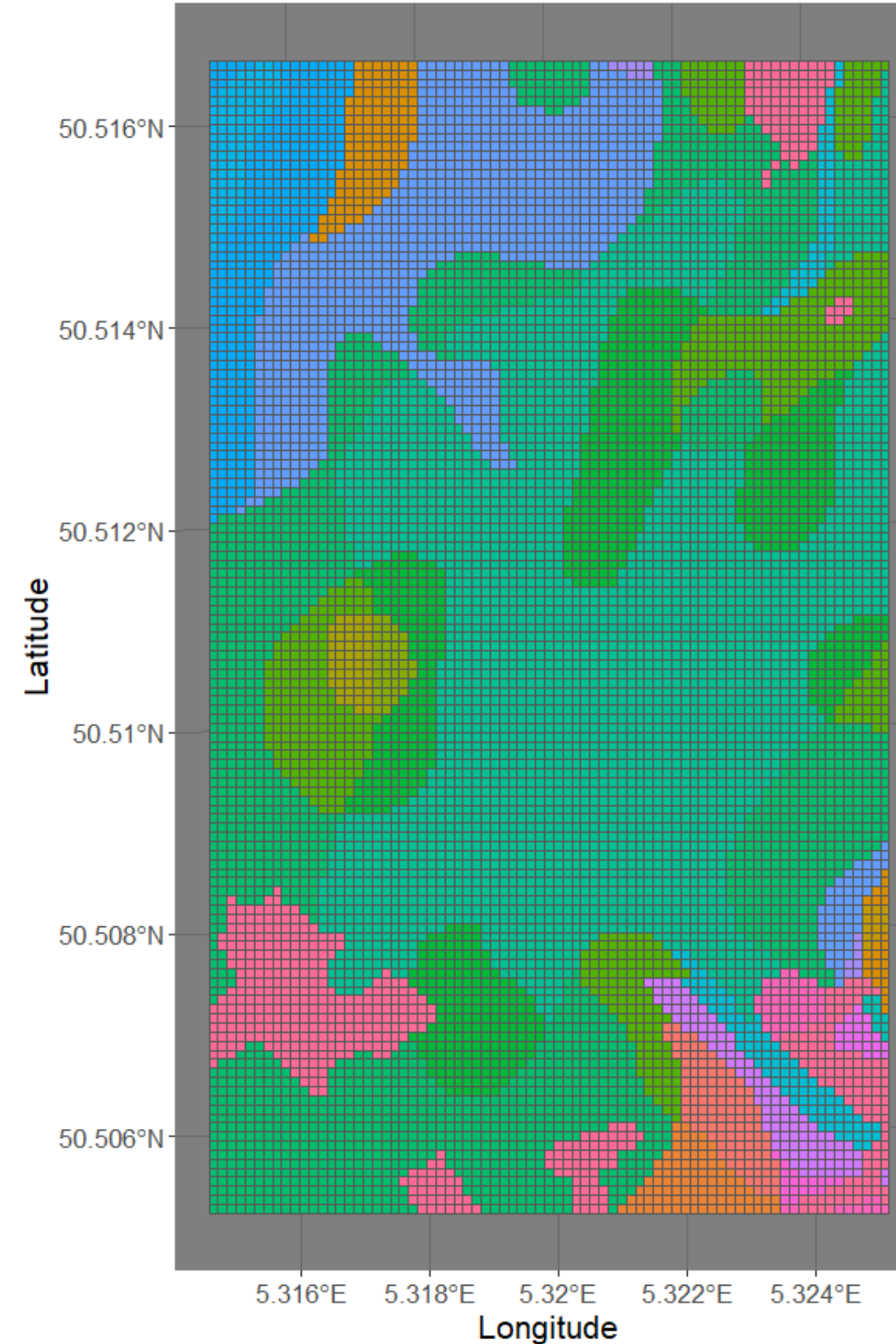
The pasture of the CTA (centre of agricultural technologies) in Strée



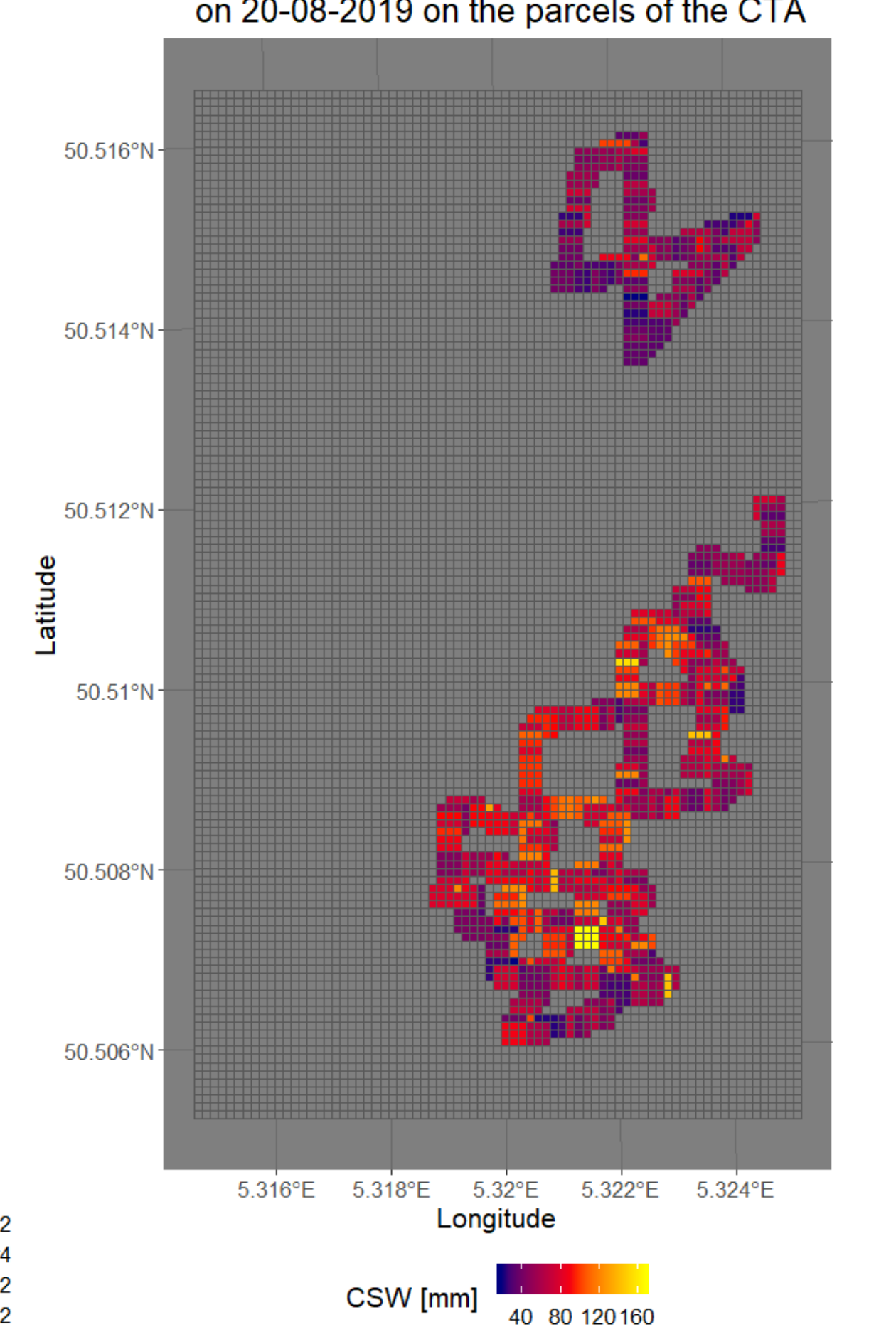
NDVI computed from Sentinel-2 data on 21-08-2019 above the CTA



Soil characteristics around the CTA



Compressed Sward Height measured (CSW) on 20-08-2019 on the parcels of the CTA



Principles:

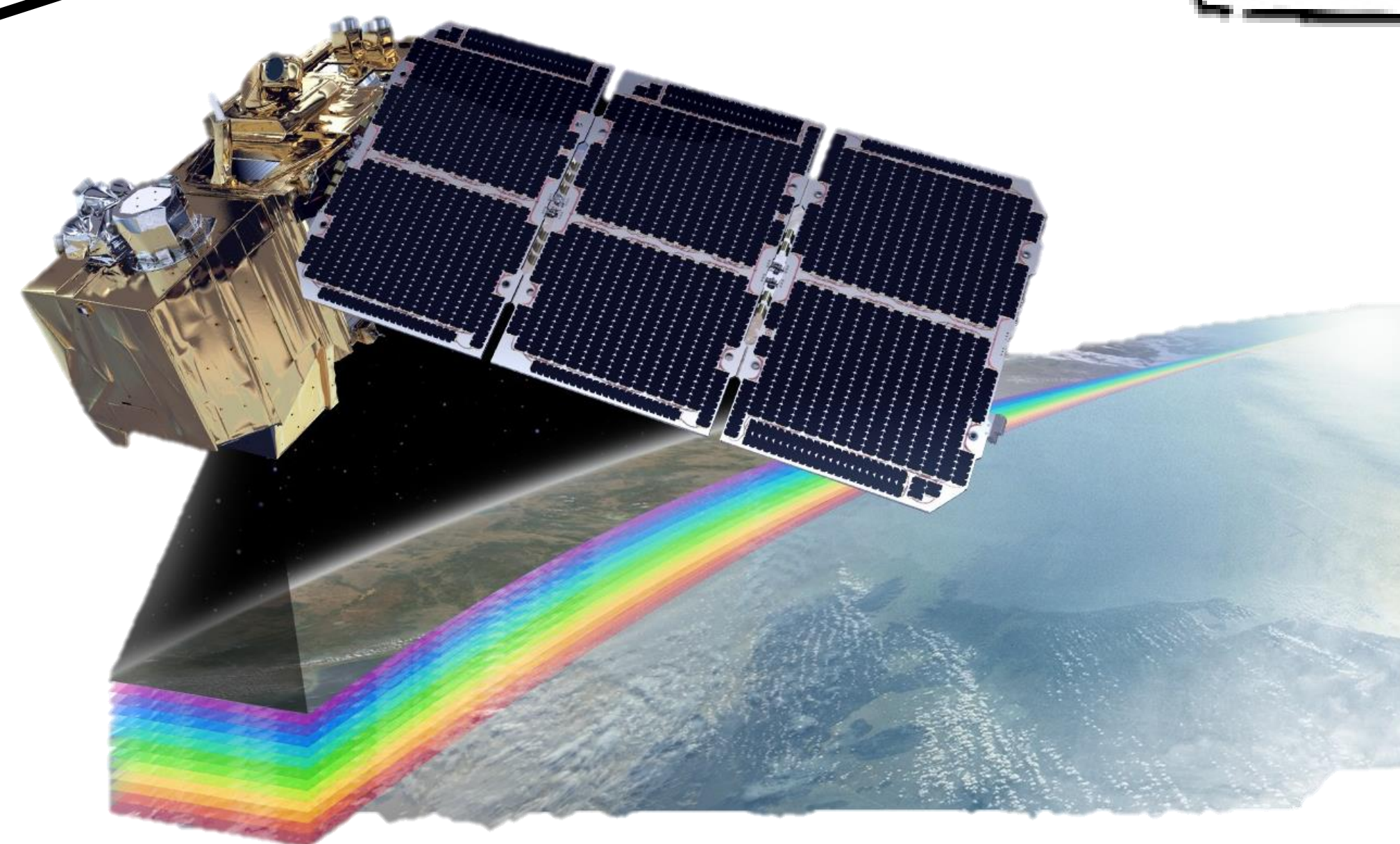
- Create « standards units » aka blocks
- Fill the blocks with values of variables that might be relevant
- Train and validate data mining models on independent datasets, using blocks as elementary units
- Apply the most performing model on
 - Images coming from Sentinel-2
 - Pasture management data
 - Climatic data
- Implement the results in a Decision Support System

Inputs:

- Sentinel-2 images
- Soil composition

WIP:

- Altitude, slope, aspect...
- Climatic data
- Pasture management



NO



YES

Is there enough food?

Model	RMSE	R ²	RPD	RMSEPr