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Accelerating circular bio-based solutions
integration in European rural areas

Use of satellite data for land monitoring

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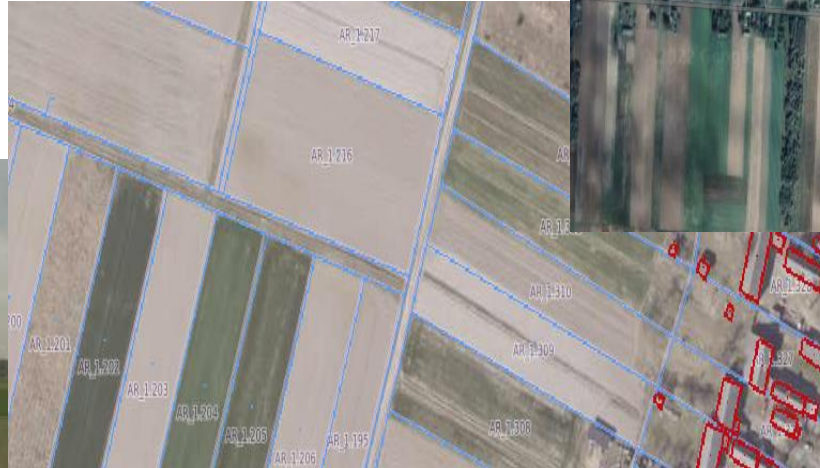
RS definition

Remote sensing is the process of **detecting or monitoring** the physical and chemical characteristics of tested objects *(soil, crops, land cover, weather elements, infrastructure)*



It is a non-destructive method!

RS methods



Satellite

Aerial

Low-altitude

Remote measurement!

Terrestrial



RC methods

Passive



Measurements



Active



Spectral or radar images

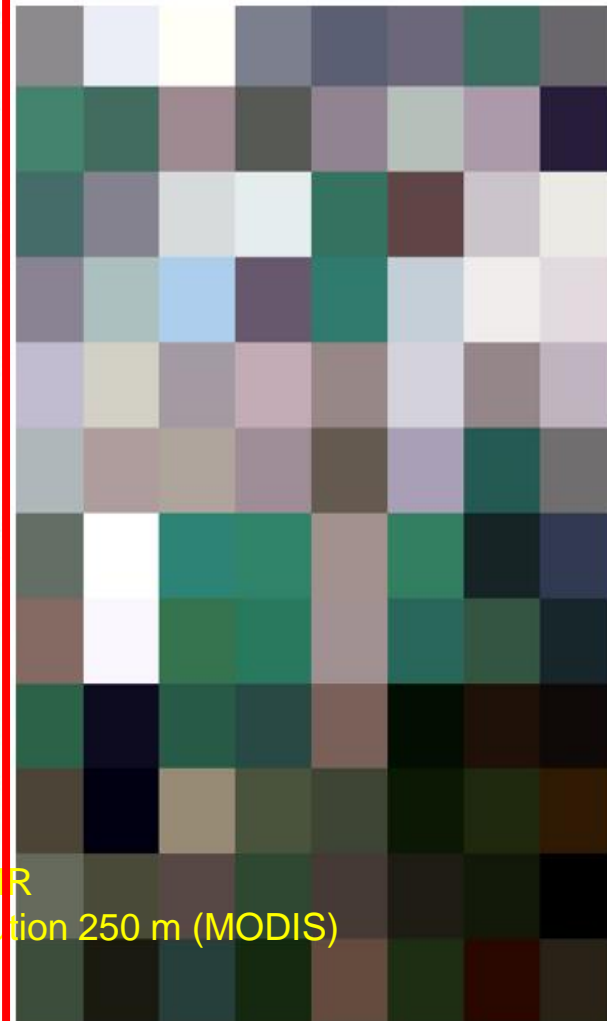


H-/M-/ Spectral images



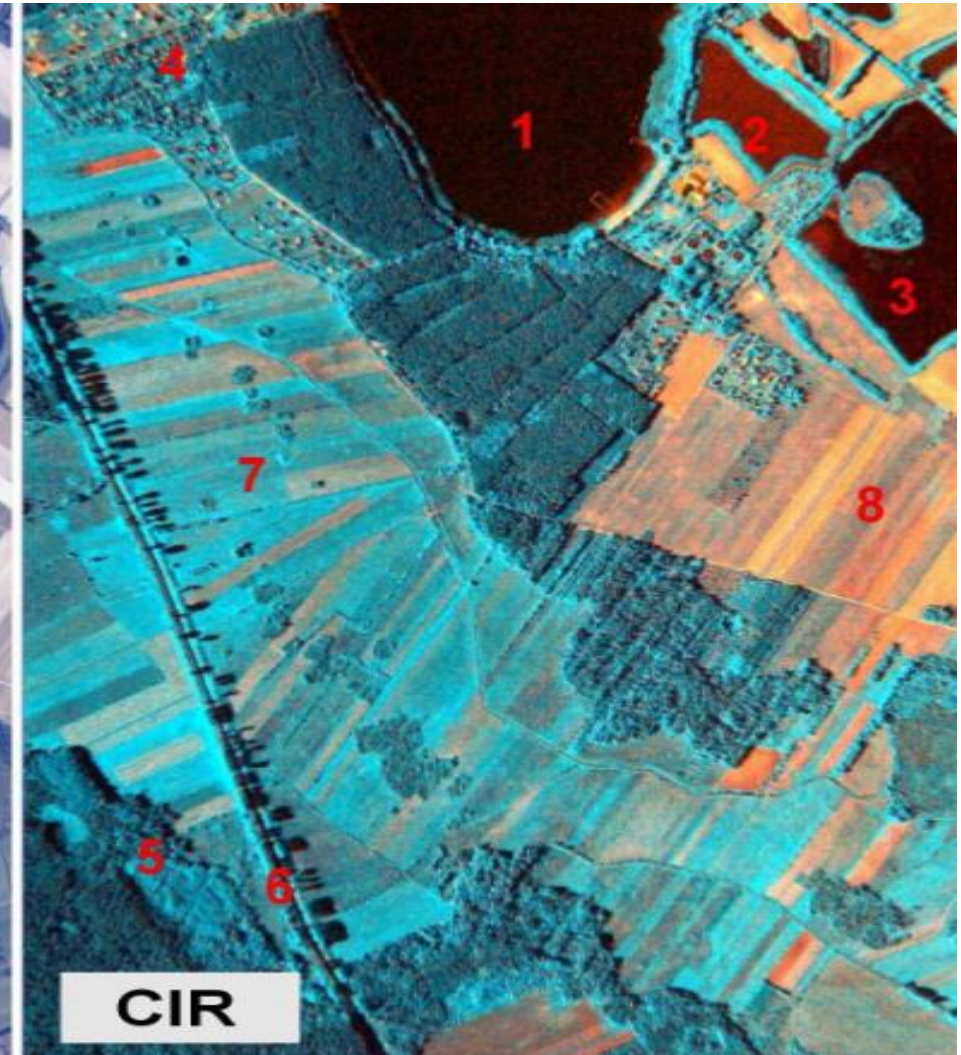
Examples of the resolution impact

Resolution !!!
=
pixel size



Mutlispectra observation

satellites see
what we cannot
see

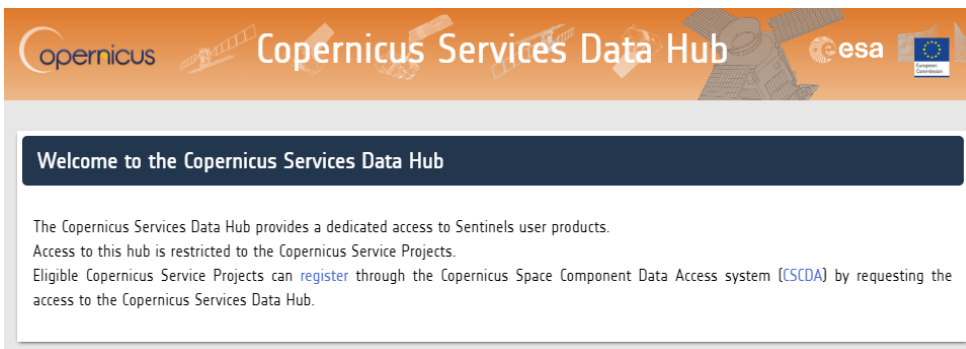




Data

Is RS relevant to agriculture now?

2015/2016:
ESA has publicly made available Sentinel images



<https://cophub.copernicus.eu/>



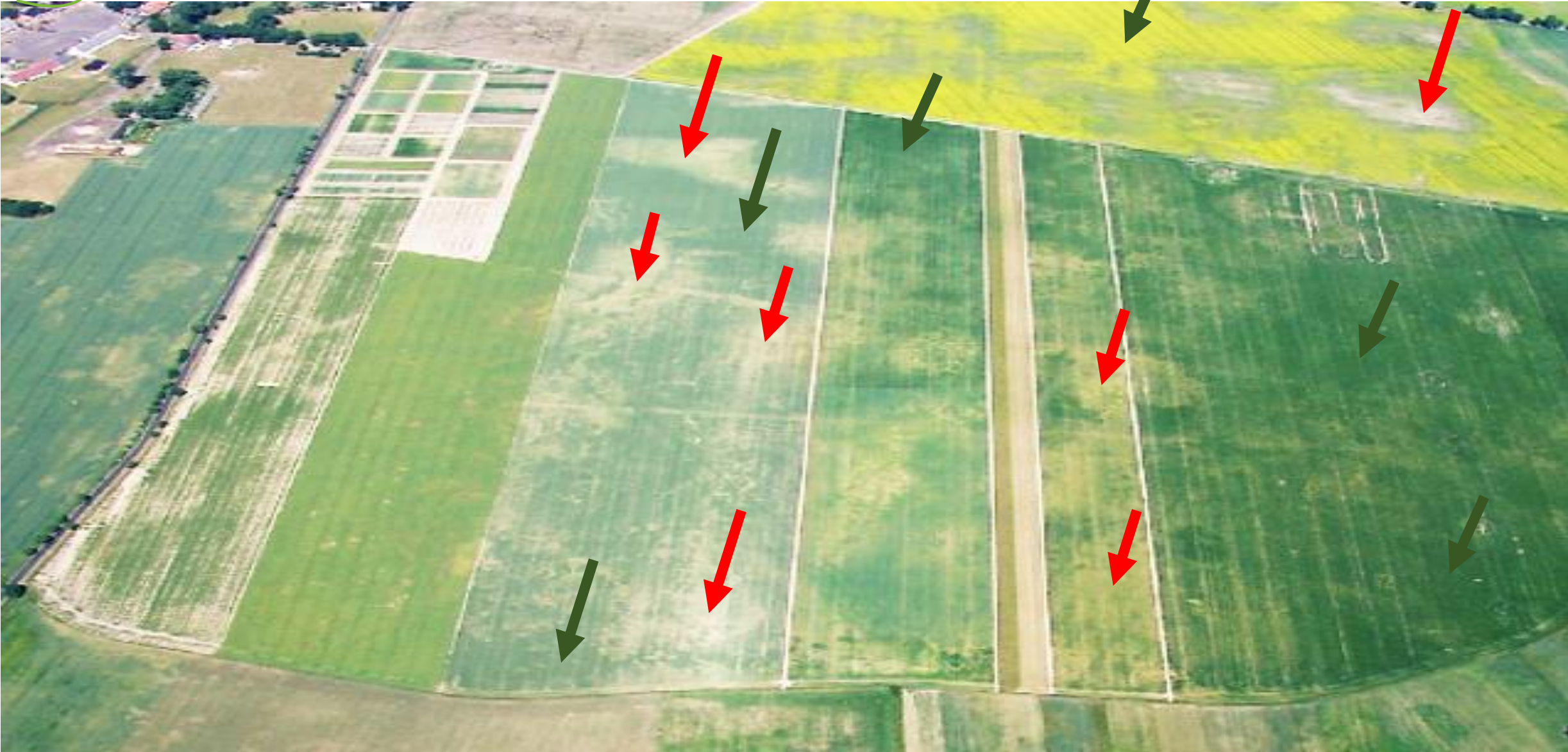
HR
Resolution 10 m (Sentinel)



Remote sensing in agriculture

- Plant development monitoring
- Drought – flood – Frost -hailstorm effect
- Precision agriculture support
- LU and LUC mapping
- ...

Example of detection



Example of monitoring

Triticale

Monitoring of the development of vegetation

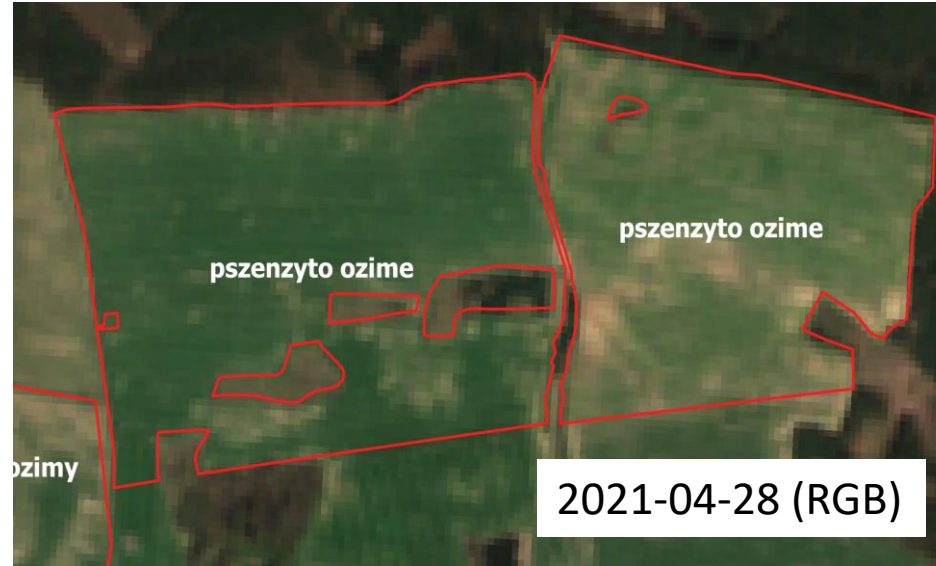
Correctness of the sowing date

State of vegetation before winter

Condition after wintering

The effects of :

- Drought / hail / frost
- Spring drench / frost
- Disease / pest shock
- Bad fertilisation
- Etc...





RS for bioeconomy

how can remote sensing help?

- **by supporting and developing precision agriculture and advisory systems**



How can remote sensing support advisory systems and agricultural policy?

FaST is an EU-supported digital service platform where capabilities for agriculture, environment and administrative simplification are made available to farmers, EU Member State Paying Agencies, farm advisors, and researchers through a user-friendly experience



Fast platform





Institute of Soil Science
and Plant Cultivation

Thank you for your attention

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