



Case study linked to the theme of the FG on soil contamination

Vince Lang, PhD
Discovery Center, Hungary

EIP-AGRI Seminar 'Healthy soils for Europe:
sustainable management through knowledge and practice'

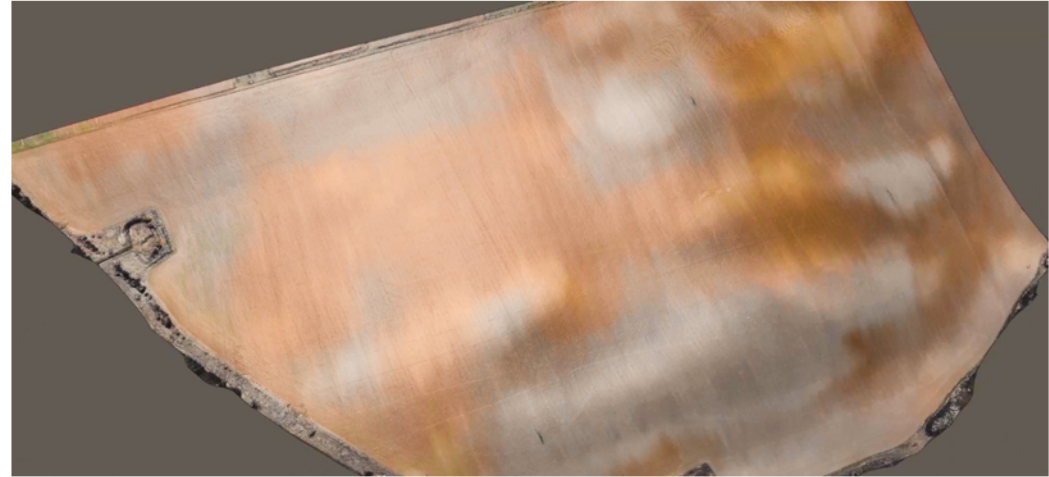
EIP-OG: Development of field soil test methods and rational cultivation techniques

Objective: analyze and compare field soil testing methods to identify within field variations and sensitive spots, affecting agricultural productivity under different soil and climatic conditions

Starting point: Many technologies and methods are available for farmers to assess within field variations, most are marketed as globally valid best technologies

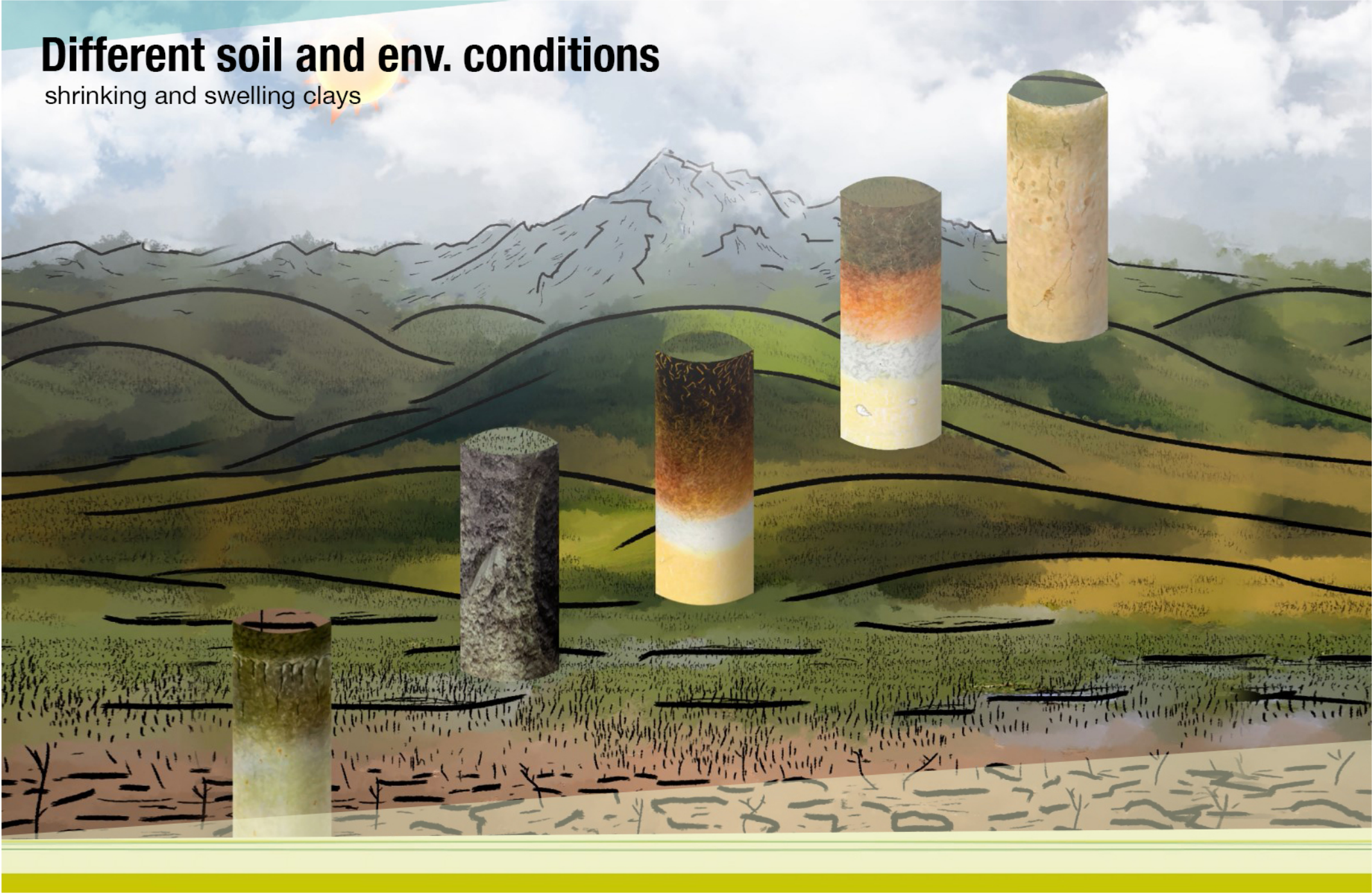
Motive: Farmers in need of an easy to understand description of advantages and disadvantages of technologies under their conditions

Expected output: guidelines for farmers to perform ag field survey and test methods under different soil and environmental conditions



Different soil and env. conditions

shrinking and swelling clays



Tested technologies

Grid soil sampling in 0.5, 1, 5, 10 hectare blocks
(depth 0-30 cms)

Grid soil survey (WRB) in 0.5 hectares
(depth 1 meter)

Soil EC + pH + OM scanner (contact)
Soil EM scanner (non contact)

Handheld soil scanner (EC, NIR+RED)

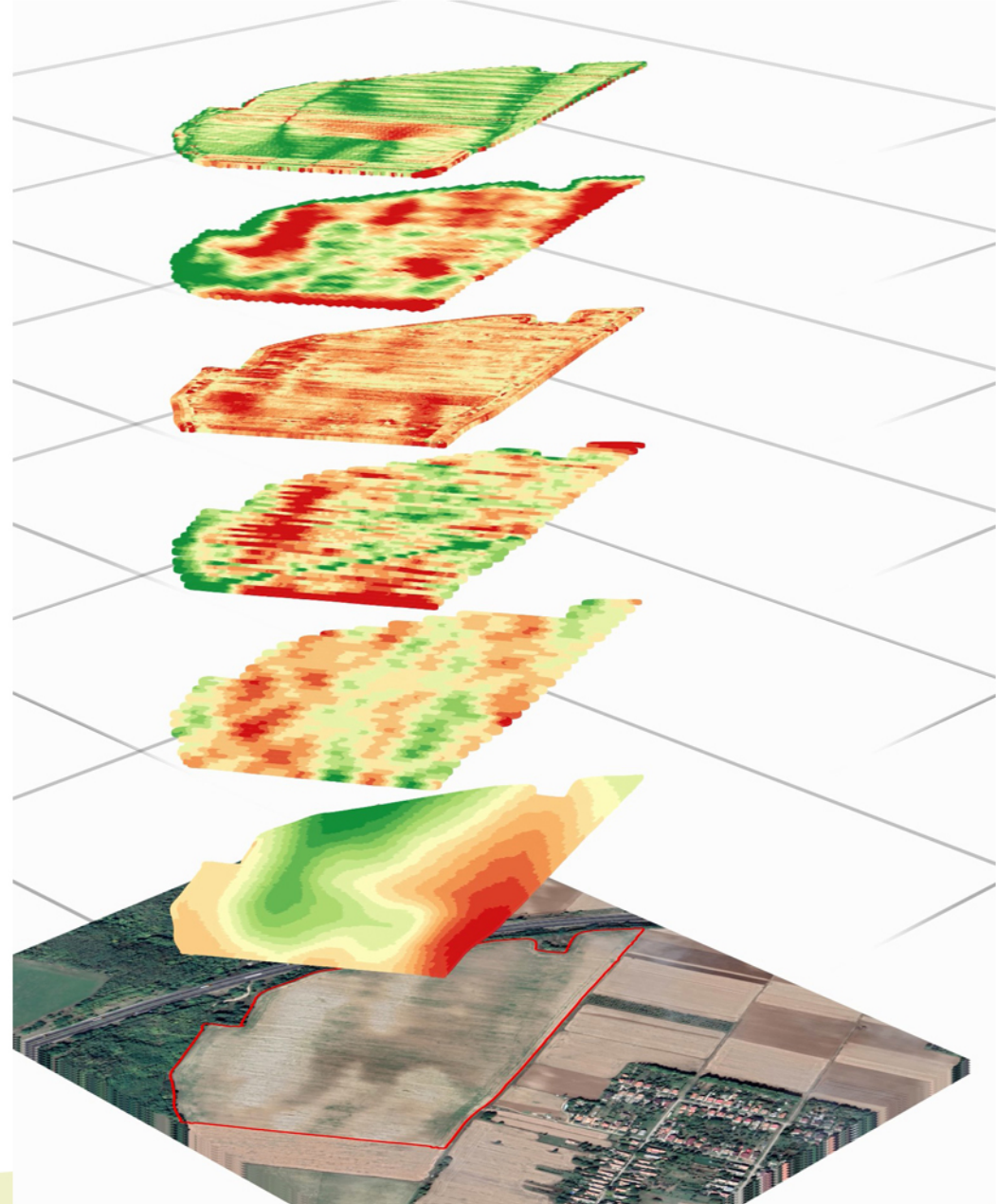
Yield mapping

Remote sensing using:
Sentinel satellites (time series and individual analysis)

UAV in RGB

UAV in NIR+RGB

Digital Elevation Model (3 sources) and derivatives



Validation and results

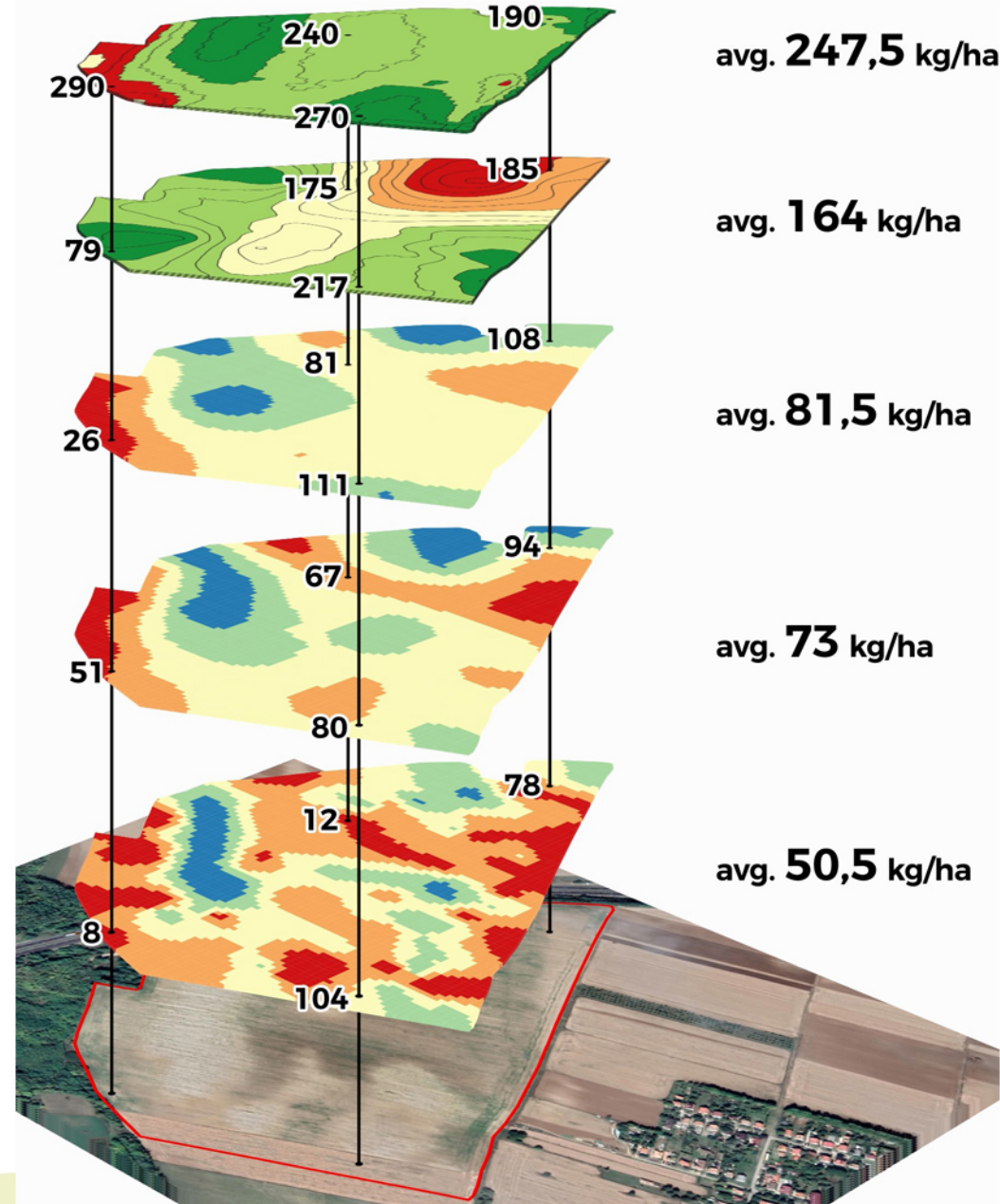
Methods were evaluated using the:
yield maps and the 0.5 hectare grid sampling results

The correlation coefficient between validation data
and survey methods showed high variability among
test fields

No universal method was identified

Methods identified different features on fields

Methods most suitable for certain soil and
environmental conditions have been identified



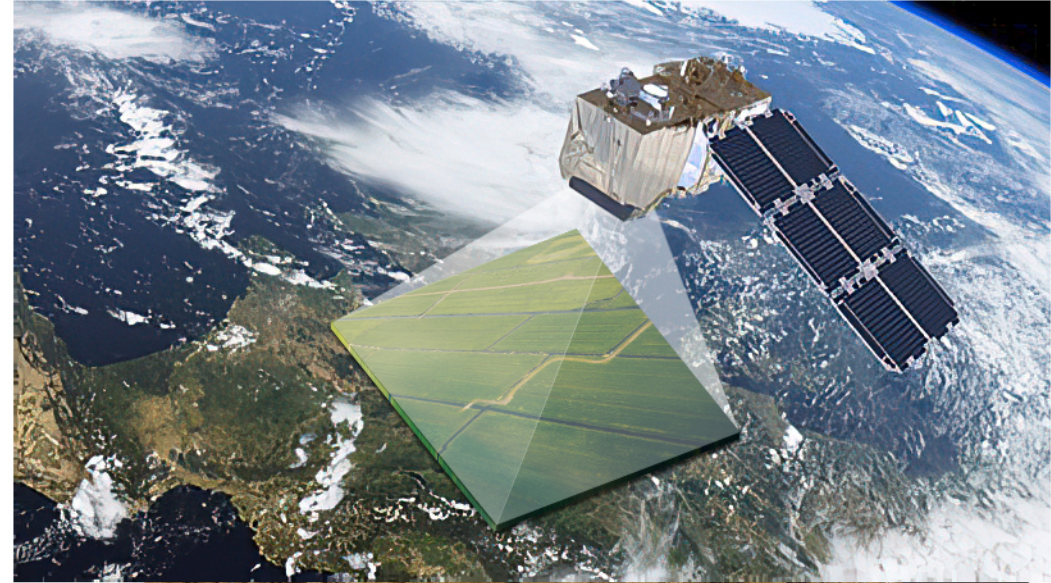
Key findings, yet

Quality soil survey and site specific applications are key to increase profitability and to decrease environmental impact

Site specific cultivation techniques based on low quality data can have heavy environmental impact with limited or no affect on profitability

Validation of different soil survey methods is essential, even for the „best” technologies

Not all kinds of within field variations can be managed by increased input material applications





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EIP-AGRI seminar

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Online – 13-14 April 2021

All information of the seminar is available on
www.eip-agri.eu

On the event webpage
<https://ec.europa.eu/eip/agriculture/en/event/eip-agri-seminar-healthy-soils-europe-sustainable>

