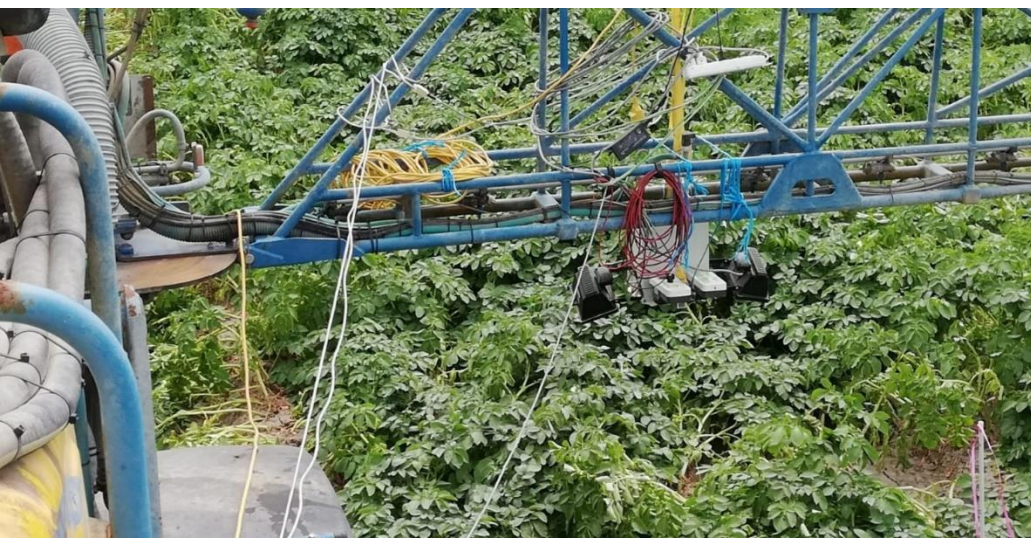


POSHMyCo - Potential of selective harvest based on mycotoxins content assessment in cereal crops

Abdul M. Mouazen



**Kick-off cofunded Projects Seminar
17-18th March 2021**

Goal and context

Problem:

Fusarium head blight (FHB) induced mycotoxin in cereal crops impacts food and fodder safety, and economic return.

Goal:

Evaluate the potential of a multi-sensor, data fusion approach for detecting and forecasting FHB and mycotoxin spread in the field for reducing the risk of mycotoxin contamination in wheat and barley grains by preventive site specific spraying (PSSS) and selective harvest (SH)

Question:

Can the risk of mycotoxin contamination in barley and wheat grains be mitigated by PSSS and SH?



POSHMyCo
SMART FARMING FOR HEALTHIER CEREALS

Main project activities / challenges

- Development of **on-line measurement system of FHB** in barley and wheat canopy.
- New **algorithms to quantify mycotoxin** in barley and wheat grains based of infield measured FHB.
- Developing a **fully automated decision supported loop for PSSS and SH**.
- Developing a **cloud-based framework** for extracting hidden patterns of data.
- Developing a **user-friendly interface platform**.



What will your project do?/ Objective and Hypothesis

Objectives:

- Collect data on soil, crop, topography and microclimate conditions
- Map the spatial variability of key attributes including FHB and mycotoxin
- Develop recommendations for PSSS and SH using data fusion modelling
- Provide optimal route planning for combine harvesters to perform SH
- Assess socio-economic, environmental and agronomic impacts and adoption potential
- Communicate with key stakeholder groups to promote adoption

Whetton (2017), PhD project on FHB measurement and mapping with HSI



What is your project contributing to? Potential impact

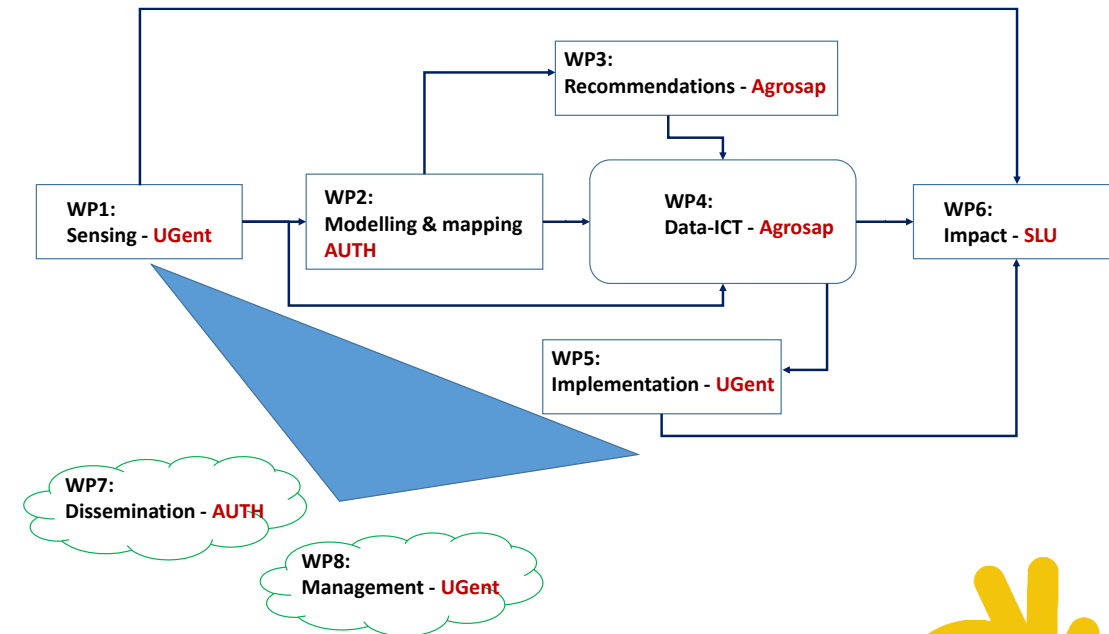
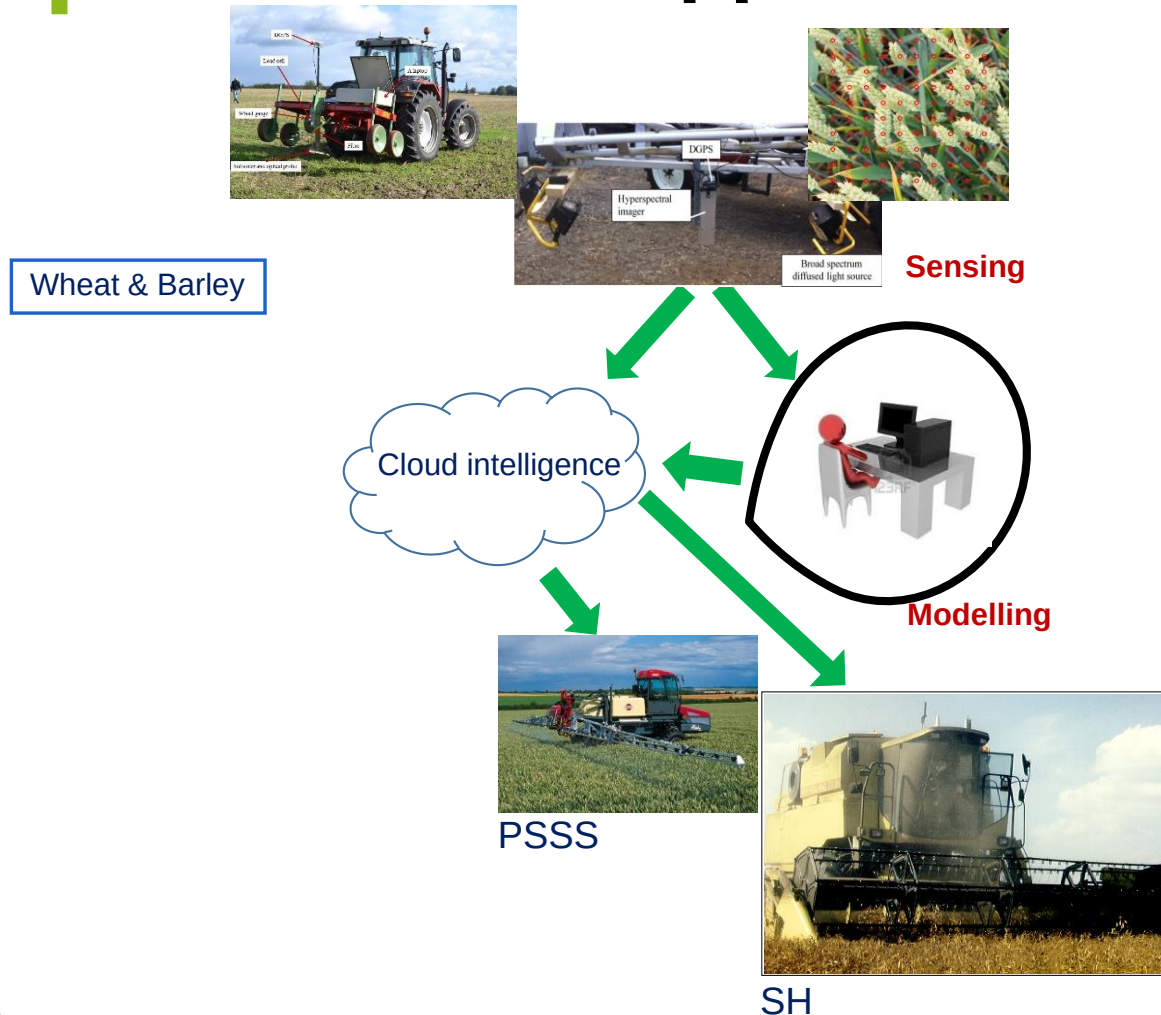
The integrated ICT solution of sensing, modelling and control will decrease the human and livestock risks to mycotoxin exposure, while increasing the farmer profitability.

↑ Yield & profit (10%)
Food safety
↓ Pesticides (15%)

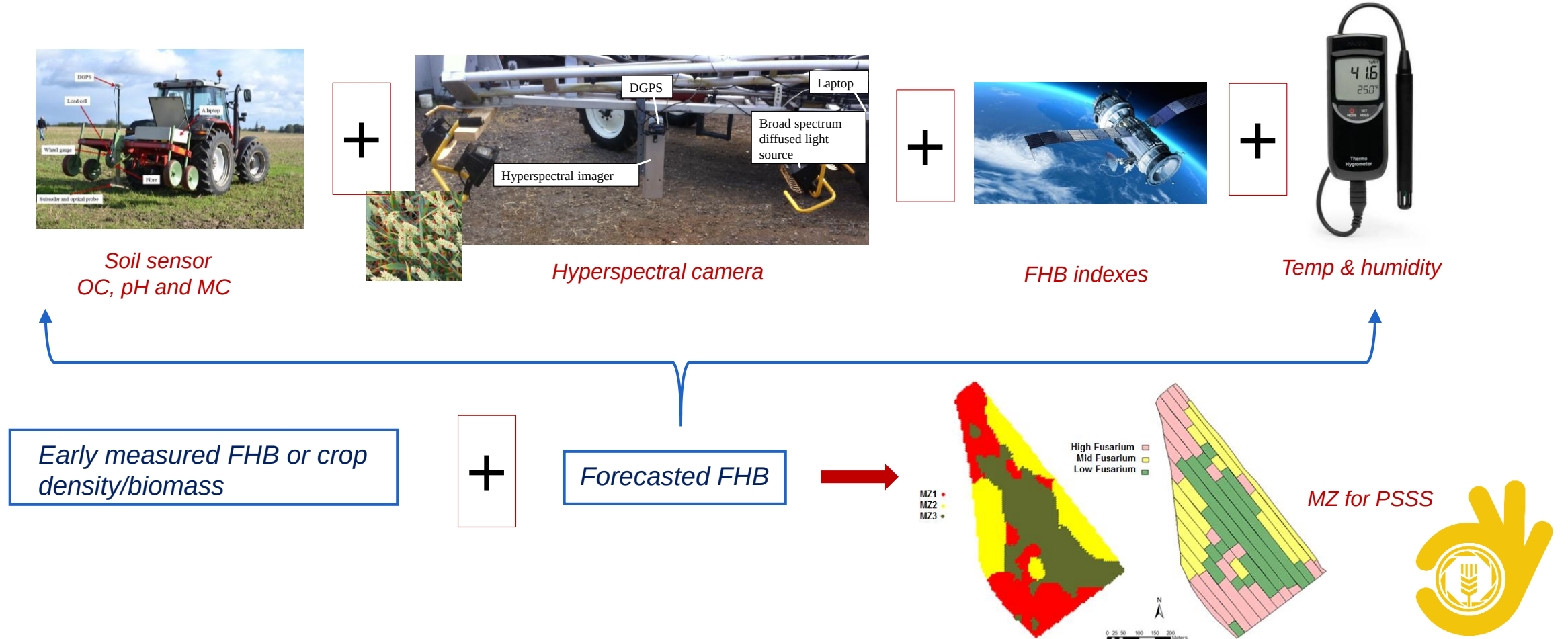
Fully automated transfer of data
and recommendations to and
from the cloud



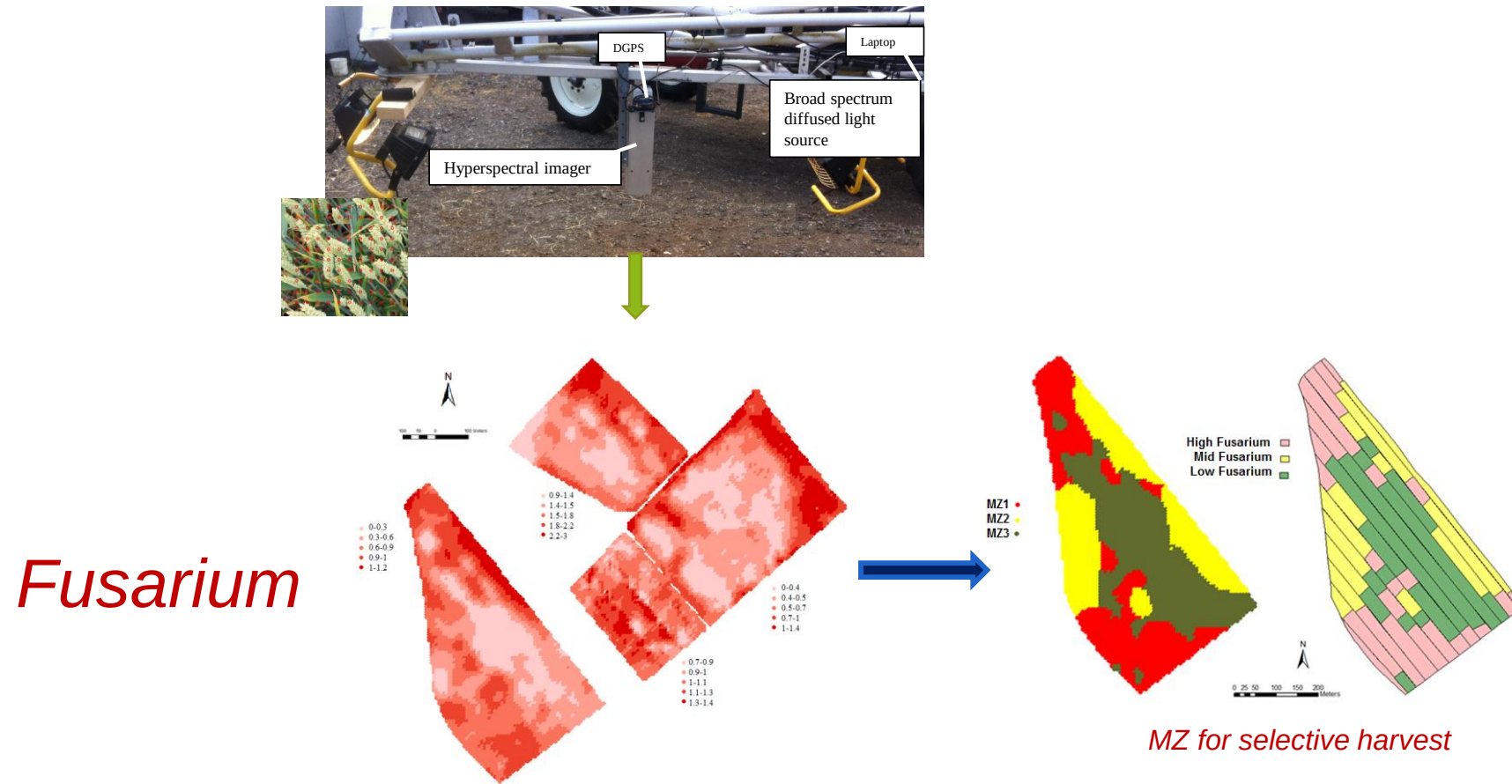
The selected approach / Research approach & activities



The selected approach / Research approach & activities



The selected approach / Research approach & activities



After: Whetton (2017), PhD. Thesis, Cranfield Uni. UK



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SMART FARMING FOR HEALTHIER CEREALS

Cooperation with Stakeholders

- Laura Masilionyte Farm (LT – Pilot Farm)
- Romas Majauskas Farm (LT – Pilot Farm)
- Laima Kamaitiene Farm (LT – organic Pilot Farm)
- UAB, Precision Farming (LT – Company)
- AGROVEGETAL S.A. (ES – Research Company)
- Cooperativas Agro-Alimentarias Sevilla (ES – Farmers' Cooperative)
- AgroApps P.C. (GR – Agricultural Software Developer for Agri-ICT applications)
- THESGI (GR - leading Agricultural Cooperative).



Dissemination and outreach

- Scientific Publications
- Present findings at relevant exhibitions, conferences and workshops
- Project website
- End project workshop with stakeholders and end users
- A collocated workshop with other ICT-AGRI-FOOD related projects
- Findings will be made available for commercialization including a spin out of UGent



Partners

UGent, BE
Coordinator



AUTH, GR



SLU, SE



VMU, LT



AGROSAP, ES



USE, ES



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LET'S KEEP IN TOUCH!

Please feel always free to reach out to us.

EMAIL

Abdul.Mouazen@ugent.be

Thank you for your attention!