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Tamburlu Sulama Sistemleri | Hose Reel Irrigation Systems

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Website: www.addferti.eu

Geo Data Portal: geoportal.addferti.eu

Data Portal: portal.addferti.eu

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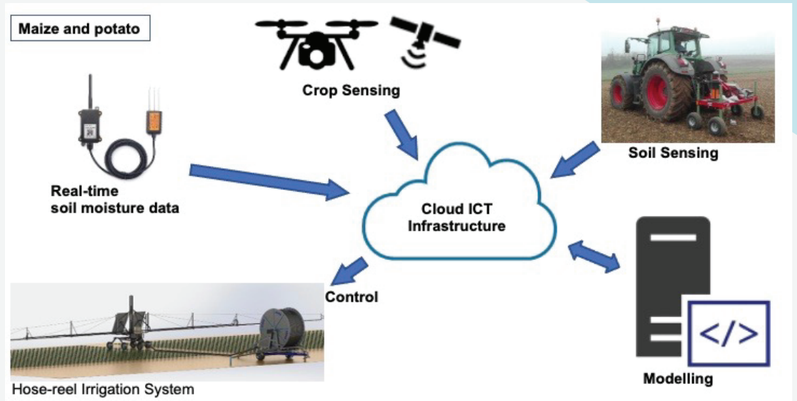
Harvest More for Less Water & Nutrients

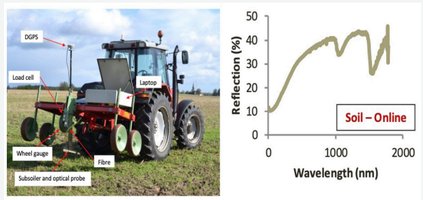
A Data Driven Platform for Site-Specific Fertigation

Project Overview

The aim of the project is to design and develop a fully-automated ICT-based data driven platform for variable rate fertigation (VRFI). The solution will attempt to account for all nutrients and water related limiting factors on crop yield by implementing advanced data fusion tools to derive VRFI recommendations. The integrated solution will be based on:

- A hose-reel fertigation system,
- Novel soil sensing technologies,
- ICT infrastructure, and
- Algorithms & decision support tools.





Online soil sensor

Soil moisture sensor

Research Question

Can nutrients (e.g., N, P and K) and water be combined during a VRFI process to maximize yield and reduce input cost, environmental footprint and water use in arable production?

Main Objectives

- Developing a Hose-Reel-Irrigation System for VRFI,
- Acquiring spatial information on soil and crop by exploiting IoT-based sensor technologies,
- Developing advanced computational methodologies for data fusion and decision-making in order to constitute a fully decision supported loop of VRFI,
- Developing a user-friendly interface platform,
- Developing a cloud-based framework for extracting hidden patterns,
- Visualizing data for faster actions and communicating findings in constructive ways.

Potential Impacts

Economic impact

Increased profitability by increased yield while using less N, P, K fertilizer and water.

Environmental impact

Reducing fertilizer runoff into water resources and greenhouse gas emissions by using less fertilizers.

Societal impact

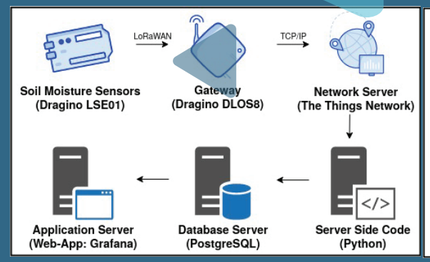
Conserving the available water resources by introducing a more sustainable fertigation technique.

Scientific impact

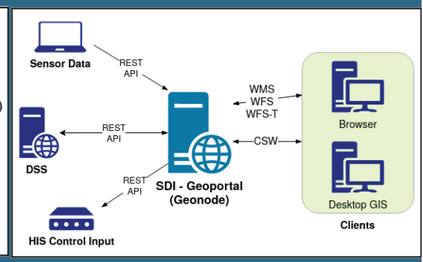
The integrated hardware and software infrastructure can be used for future research projects in the context of precision agriculture, soil and water management, and soil related environmental threats.

ICT Infrastructure

Development of a fully-automated ICT platform for data transfer, data storage, data processing and management, accounting for data stewardship and data standardisation.

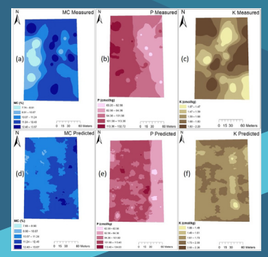


Soil Moisture Sensing Platform

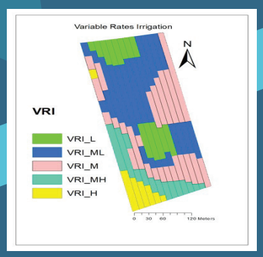


Automated VRFI

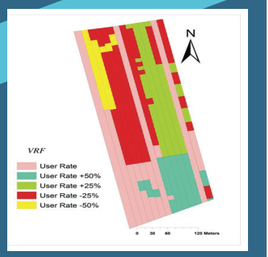
Management Zones & Application Maps



Nutrients Mapping



Variable Rate Irrigatiion Map



Variable Rate Fertilization Map

Fully Automated Fertigation Machine