

AGRARSENSE

Smart, digitalized components and systems for data-based Agriculture and Forestry

Challenges and objectives

Food security faces global challenges from climate change, supply chain disruptions, labor shortages, and more. The EU's agricultural value chains not only ensure food security but also support global exports, driving economic growth, resource efficiency, and reducing hunger. Agriculture and forestry are vital for a sustainable future.

The AGRARSENSE project advances agricultural technology and productivity by leveraging the capabilities of European corporations, SMEs, research organizations, and start-ups.

Technical goals

The project develops IOT sensing (VOC, water, microfluidics sensing, lidar and radar, hyperspectral, optical & photonics, soil and environmental sensing and 3D camera advanced sensors, packaging and housing) and software (data acquisition & transfer, data fusion & analytics, edge and cloud computing, data interfaces, algorithms & AI/ML, simulations, mobile apps & user interfaces). These components are integrated in seven use cases with additional System Level Developments.



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UC1: Greenhouse	UC2: Vertical Farming	UC3: Precision Viticulture	UC4: Agri-Robotics	UC5: Forestry	UC6: Optimal soil & fertilisers	UC7: Water
Improving greenhouse automation using sensors, algorithms and other means based on plant health and needs	Developing a more productive vertical farm system using AI, improved data collection and sensor technology	Improving yield quantity and quality by improving disease and pest detection & optimising irrigation and fertilization	Developing a highly automated vineyard robot platform	Developing an automated forest harvesting operation system to increase forest operation efficiency	Improving monitoring of organic soils' moisture and nitrate levels to control greenhouse gas emissions	Developing a modular water quality assessment capability with water sensing technologies and ICT tools

Expected impacts

Greenhouse Operations: Enhanced plant health, irrigation efficiency monitoring, and robot automation (UC1).

Vertical Farms: Reduced fertilizers and water usage, minimized losses, and increased energy savings (UC2).

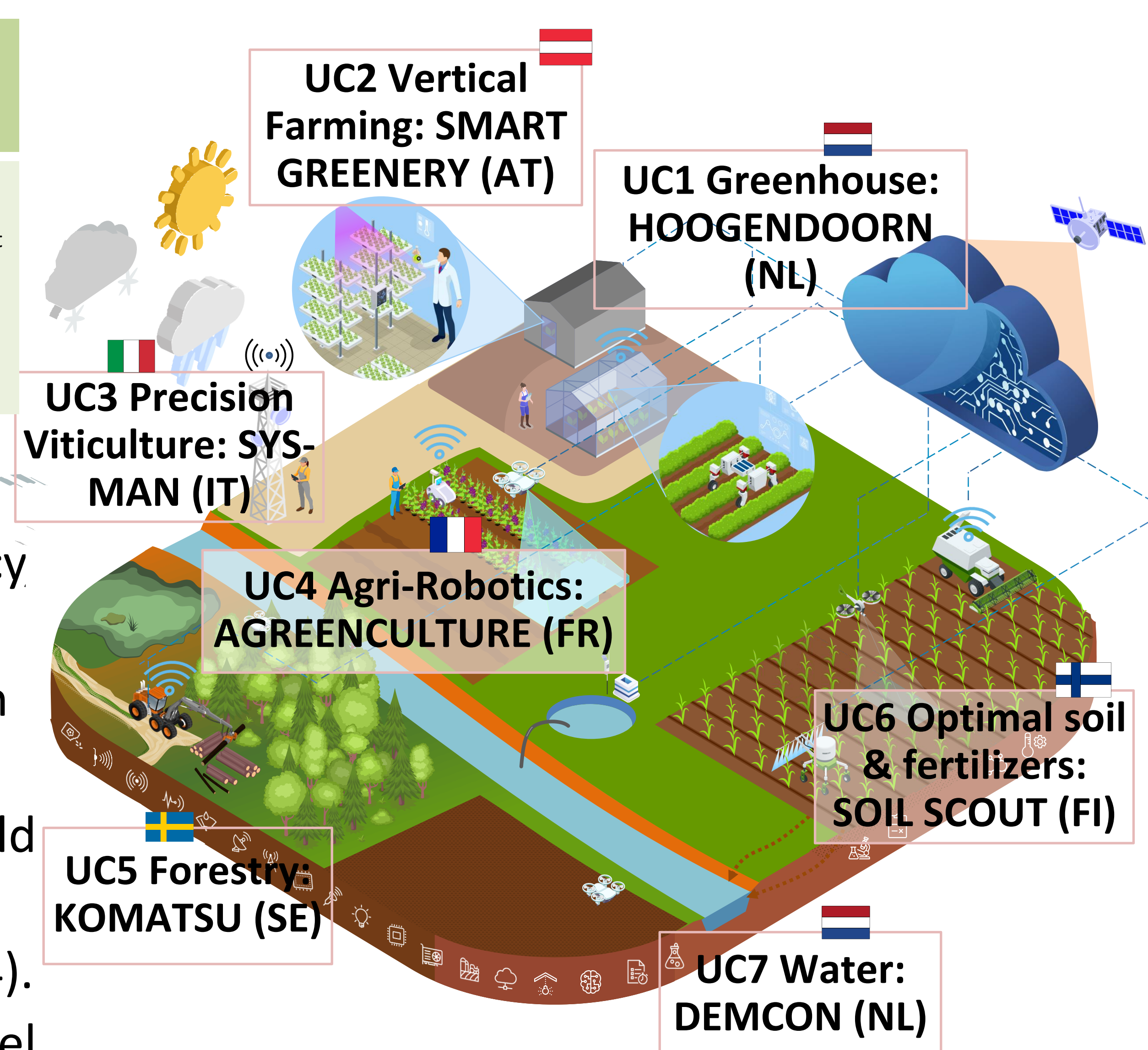
Vineyards: Better disease/pest detection, irrigation automation, yield forecasting, and quality assessment (UC3).

Agricultural Robots: Improved disease/trait detection & automation (UC4).

Forestry: Enhanced environment awareness, reduced CO2 and fuel consumption (UC5).

Organic Soils: Low-maintenance sensors, drone-based emission sensing, and optimized fertilizer use via mobile apps (UC6).

Water Pollution: Improved water quality sensing, irrigation management, and pollution insights (UC7).



Additional information

Start: 1. Jan 2023 Number of partners: 50
 Duration: 36 months Number of countries: 14
 Total budget: 51 M€

Contact us if you are interested!

- All industrial partners expect to introduce new products
- 180M€ of new partner turnover by 2030
- 200 new positions at partners

Project funded by