Demeter Project H2020

Name of the Organisations Involved

- DEMETER Project H2020

Challenges Identified

A top goal for the EU is to support sustainable agriculture and food production, protect natural resources and boost food safety. Smart farming via GPS, soil scanning, data management, and IoT technologies could help attain the EU goal of ameliorating the quantity and quality of farming production.

The EU-funded DEMETER is a large-scale project deployed in 18 countries, 15 of which are EU member states. The project analyses data obtained from a wide range of actors (production sectors and systems) to provide an integrated interoperable data model enabling optimal resource management in the European agri-food sector.

Source: https://cordis.europa.eu/project/id/857202/reporting

- The first challenge addressed by DEMETER is to make sure farmers feel secure and in control of the information they get from their data. Right now, farmers often feel like they're drowning in a sea of data. The goal of DEMETER is to change that and farmers to not just handle all that data but actually get useful insights from it.

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- The second challenge DEMETER takes on revolves around enabling farmers to seamlessly integrate new technologies with their existing farm machinery. The idea is that farmers shouldn't have to part ways with the reliable equipment they've already invested in. DEMETER is dedicated to safeguarding their previous investments while introducing them to the realm of technological agriculture and innovative solutions. It's a delicate balancing act between embracing the new and preserving the old.
- The third challenge is aimed at optimizing data analysis. To uncover valuable trends and patterns, it is necessary to work on large data sets obtained across multiple farms. To fully exploit the value of data, trusted collaborative spaces are created where data can be shared, navigating conflicting interests and competition. It is also a chance to empower farmers by giving them full control over their data rights.
- The fourth challenge entails overcoming market barriers, set against a backdrop where large players have strategically positioned themselves early on to secure dominant roles through supplier-operated technological and data platforms.
- The fifth challenge addressed is the interoperability and adoption of technological standards to ensure compatibility to have data exchange and communication standards that link the different systems together in a unified system covering all aspects of the agricultural exploitation.

Goals and Solution

DEMETER aims to put digital tools at the service of farmers:

1. Using a human-in-the-loop model that consistently focuses on blending human knowledge and experience with digital information.
2. Focusing on interoperability as a core digital tool, expanding the scope of interoperability between data, services, platforms, M2M (machine-to-machine) communication and online intelligence, but also human knowledge, and implementing interoperability by connecting farmers, consultants and suppliers of ICT solutions and machinery.
3. Transforming the sector by building a solution on a set of digital technologies: Internet of Things, Earth observation, big data, artificial intelligence, and digital practices: collaboration, mobility, and open innovation.

These choices are made with the help of DEMETER's large user base (approximately 6000 farmers) and extensive pilot coverage in 18 countries.

Actions Taken

- **60 partners in collaboration together**

The DEMETER consortium consists of 60 partners bringing together farmers and farmers' organisations, academic institutions, and small and large public and private organisations representing demand and supply sides. Led by project coordinator Walton Institute, the partners deliver a significant outreach capability globally, to cover a representative sample of the stakeholders needs and demands, thereby answering market potential and innovation

- **20 Use Cases**

The DEMETER pilot projects are used to demonstrate and evaluate how innovations and extended capabilities benefit from the interoperability mechanisms. The pilots, running across 18 European countries (Belgium, Czech Republic, Finland, Georgia, Germany, Greece, Ireland, Italy, Latvia,

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Montenegro, Norway, Poland, Portugal, Romania, Serbia, Slovenia, Spain, Turkey), are also used to monitor the evolution of the maturity in the stakeholders involved.

- **5 clusters**

The pilots are grouped into 5 clusters: arable crops, precision farming in arable crops, fruit and vegetable production, livestock (poultry, dairy, animal welfare) and the supply chain.

	Water and Energy Management related to Arable Crops	Example: Smart energy management in irrigated crops, or optimal rice irrigation
	Precision farming related to Arable Crops	Example: In-service agricultural machinery condition monitoring, or data brokerage / decision support
	Crop health and quality (fruit and veg sector)	Example: Decision support systems for olive growers
	Animal health	Example: Dairy farmers dashboard for the milk and meat production chain
	Cross sectoral	Example: Pollination optimization in apiculture or enabling transparency in the poultry industry supply chain

More information: https://h2020-demeter.eu/wp-content/uploads/2020/02/DEMETER_PilotBooklet_ENG.pdf

Benefits and Impact

DEMETER offers several advantages to farmers, whether they are "small" or "large" farmers; dairy, poultry, fruit and vegetable producers or farmer; young or older farmers:

DEMETER is a European-funded project which aims to empower farmers and farmer cooperatives in two main ways. First, by allowing farmers to use their existing machinery and platforms to deliver new, integrated knowledge to help decision-making. Second, by easing farmers' updating or acquisition of machinery, platforms and sensors ensuring technologies speak a common language meaning they can be easily connected, combined, and cooperate with each other.

DEMETER gives farmers control of their data opening up new business models and new possibilities in collaboration and cooperation.

Contact Information

Website: https://h2020-demeter.eu/contact/

Arclabs Research & Innovation Building, WIT, West Campus, Carriganore,

Waterford, X91 P20H, Ireland

Telephone: +353 (0)5130 292

Email: info@h2020-demeter.eu

Prepared by

Angela Ivanova (INI-Novation GmbH)

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