WALTON Institute for Information and Communication Systems Science

Walton Institute and EU Agri Data Spaces

IoTWeek 2022, June, Dublin

Kevin Doolin – Exec Director, Walton Institute

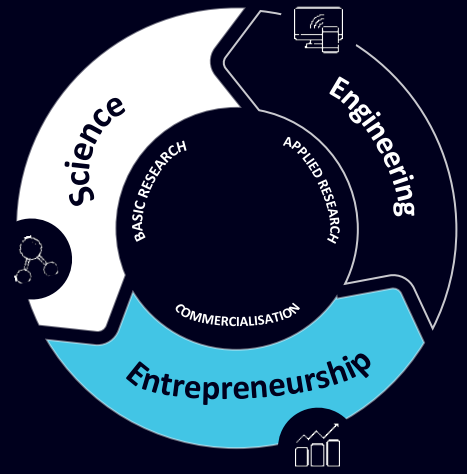
Walton

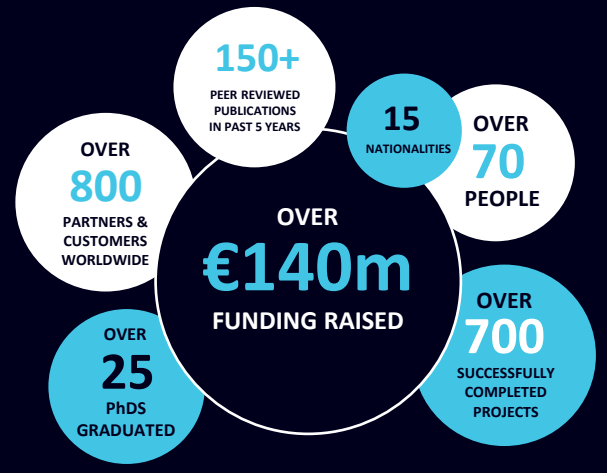
Institute for Information and Communication Systems Science

- International Research Institute hosted by SETU.
- Founded as TSSG in 1996 by Prof. Willie Donnelly
- Upgraded to Walton Institute in 2021
- Executive Director Kevin Doolin
- Director of Research Dr. Deirdre Kilbane
- 100% self-funded.

Fundamental Expertise

- Communications Networks and Wireless Systems
- Machine Learning and Artificial Intelligence
- Emerging Communication Technologies
- Pervasive Environments and Computing
- Molecular Communication Theory
- Quantum Technologies





EU Opportunities - Digitialisation

Digitising European Industry
Promoting adoption of digital technologies

Focus Area 'Digitising and transforming European industry and services', Platforms and Pilots Funded Under Horizon 2020

Next generation platform building and piloting through large scale federating projects

European Commission

EU Challenges - Digitialisation

Digital technologies as enabler for achieving the new CAP reform

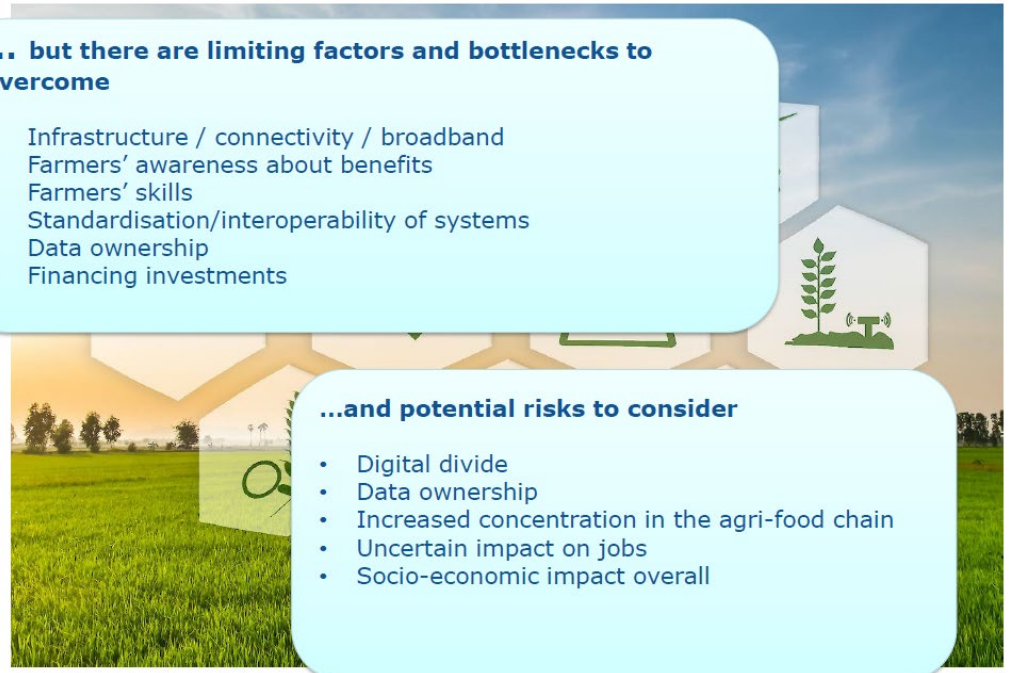
- *Precision farming (remote sensing & earth monitoring, IoT)*
- *Automation (IoT, AI, robotics, drones…)*
- *Agri-food chain (traceability, new business models, market organisation…)*
- *CAP administration*

Still Current challenges:

- ***Lack of interoperability between platforms/systems***
- *Digital applications are not bundled - **no flow of data between different apps***
  - *integration to be further improved*
    - *➔ platforms*
    - *➔ interconnection between platforms*
- *Limited availability of reliable cost/benefit analysis Show benefits ➔ pilots/use cases*

EU Challenges - Digitalisation

Digitalisation brings opportunities to the EU farming sector and rural areas…



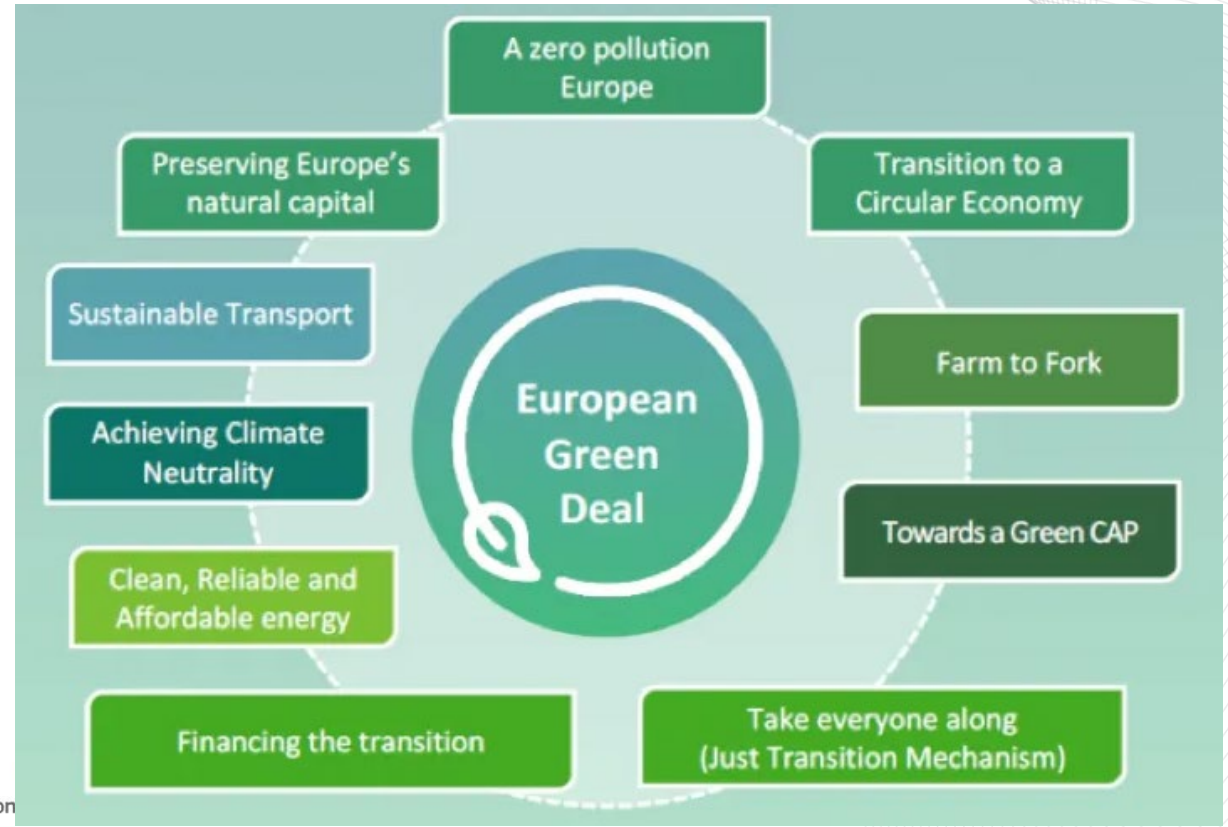
… but there are limiting factors and bottlenecks to overcome

- Infrastructure / connectivity / broadband
- Farmers' awareness about benefits
- Farmers' skills
- Standardisation/interoperability of systems
- Data ownership
- Financing investments

…and potential risks to consider

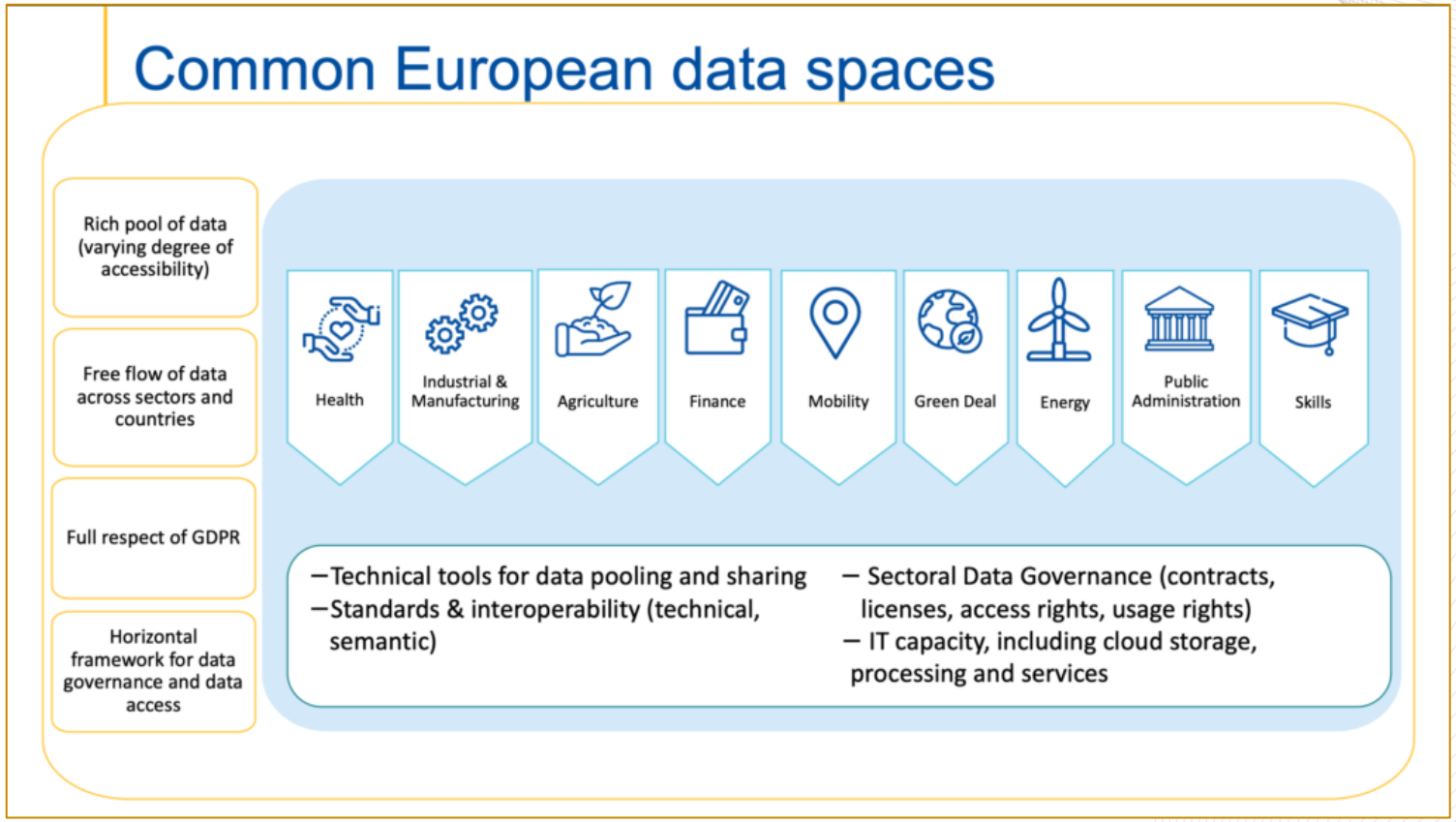
- Digital divide
- Data ownership
- Increased concentration in the agri-food chain
- Uncertain impact on jobs
- Socio-economic impact overall

European Commission



Addressing the challenges – data spaces

European Data Spaces: "…The European strategy for data aims at creating a **single market for data** that will ensure Europe's global competitiveness and data sovereignty. Common European data spaces will ensure that more data becomes **available for use in the economy and society, while keeping companies and individuals who generate the data in control.**
Data is an essential resource for economic growth, competitiveness, innovation, job creation and societal progress in general…"



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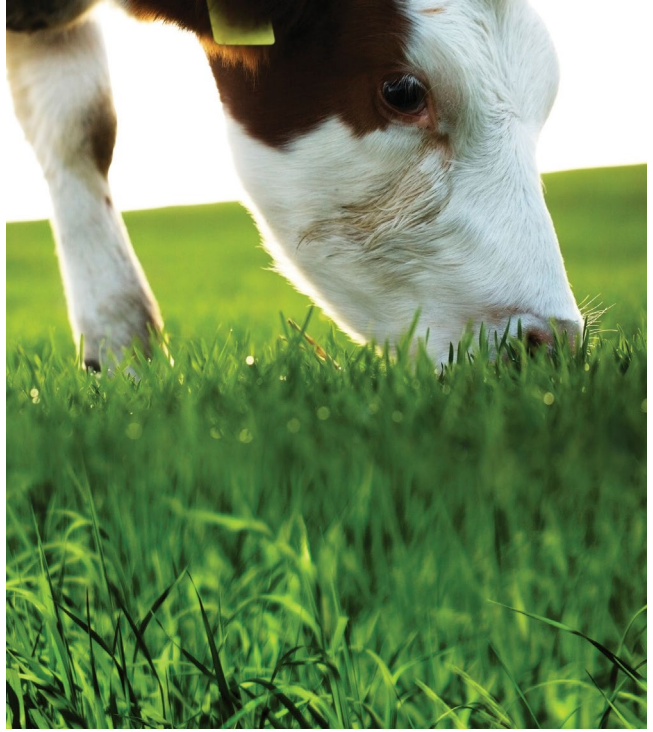
Addressing the Challenges

- DEMETER
- CYBELE
- NIVA
- VISTAMILK
- AGRIDISCRETE
- DIVINE
- AgriDiscrete
- SmartAgriHubs
- AgRoboFood
- …..

Topics

- Sensor networks and Fog Analytics
- Edge AI/ML
- Molecular Comms
- HPC Data Analytics
- Digitialisation of CAP
- Application/service development
- Interoperability papers
- ….

demeter

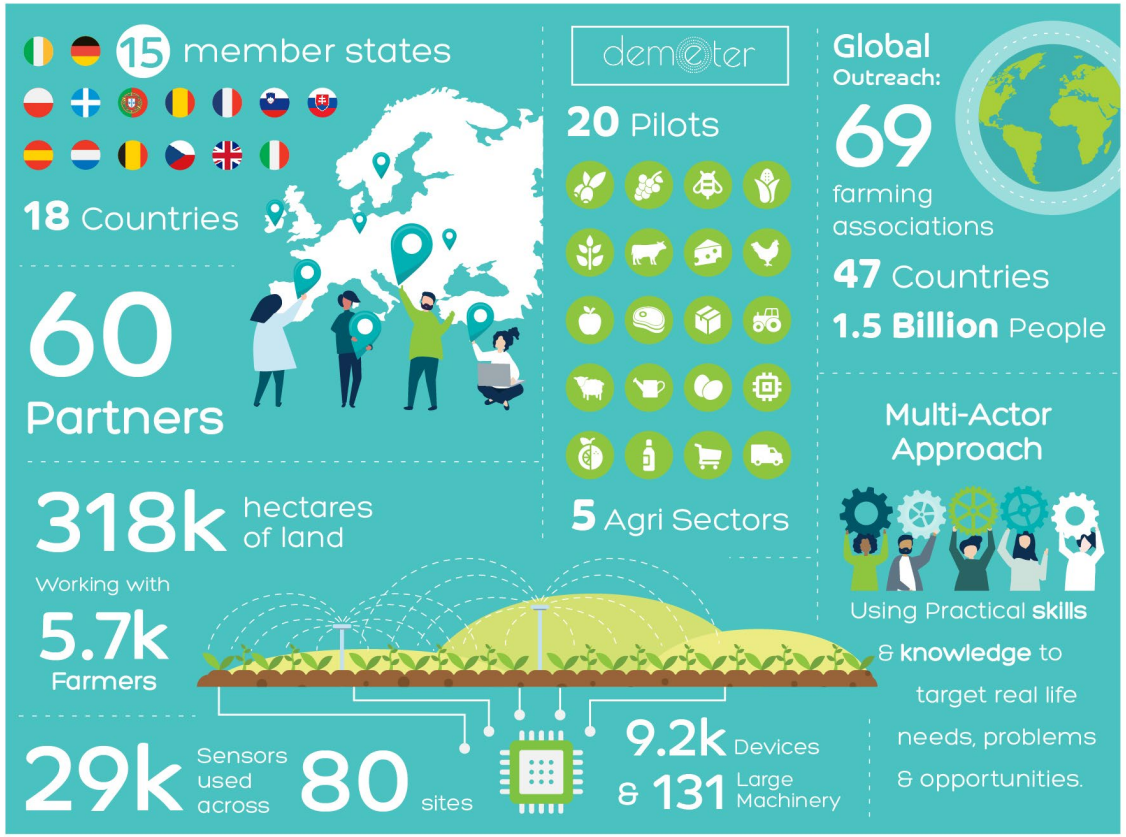


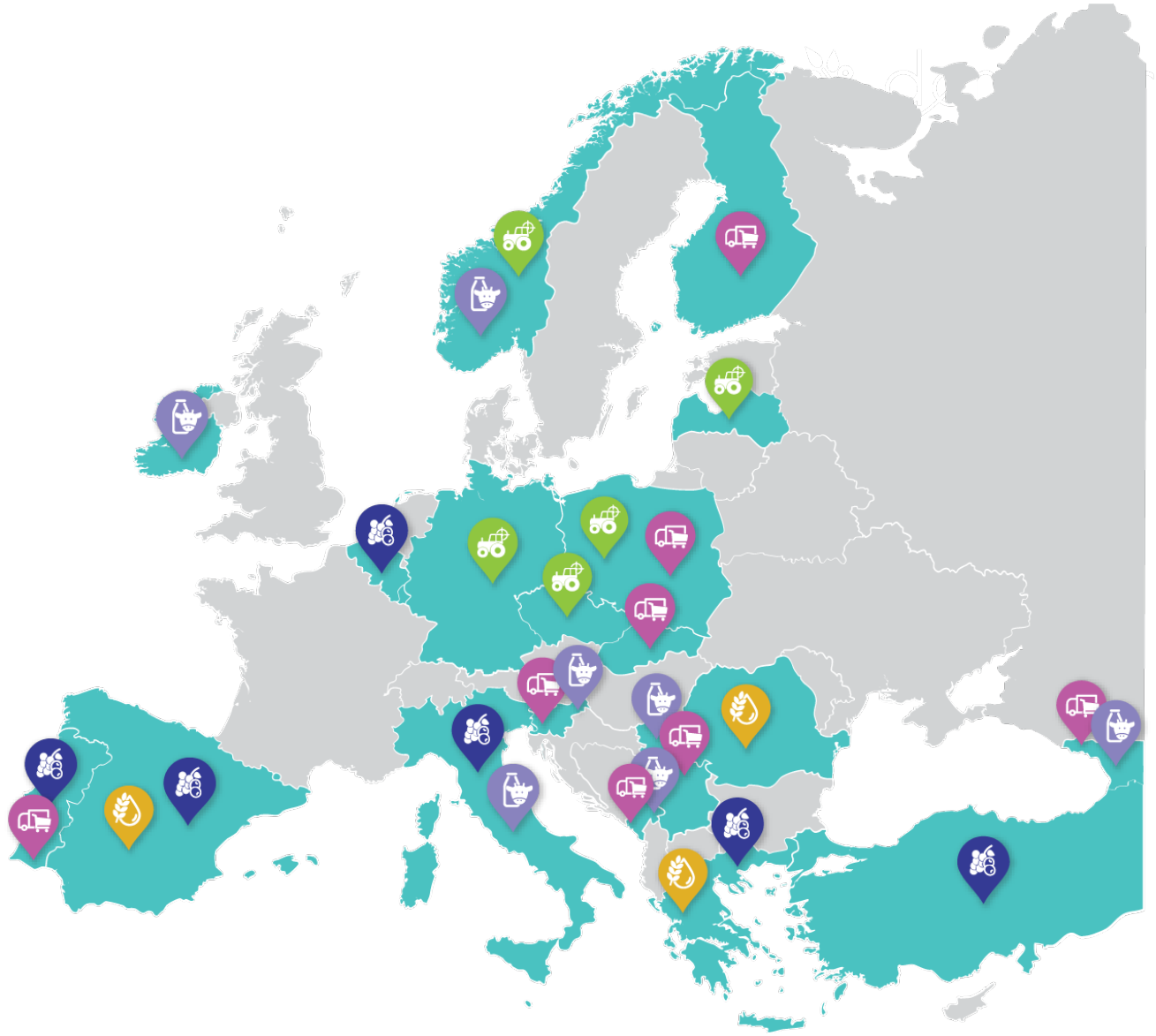
H2020-demeter.eu

European Union
European Regional Development Fund

European Commission
Horizon 2020
European Union funding for Research & Innovation

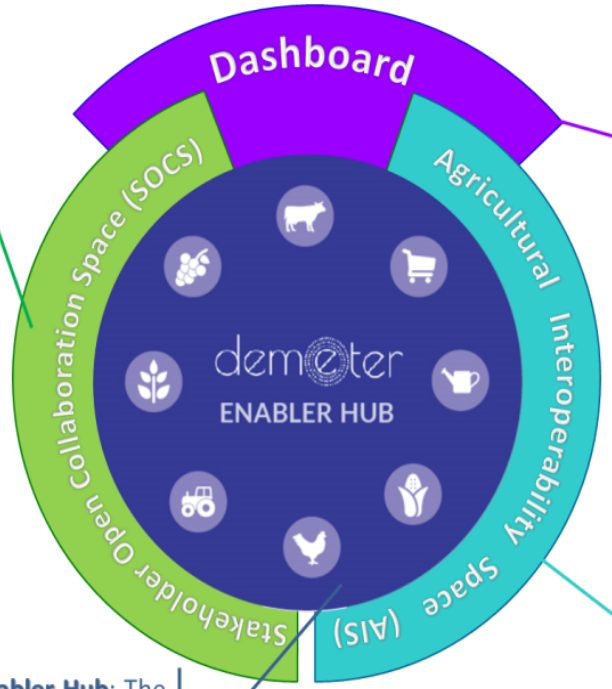
DEMETER - In a nutshell





The DEMETER Approach

Knowledge sharing and co-creation space where
- Farmers/service advisors express their needs and
- Service advisors and providers team-up to define the most appropriate combination of tools.



DEMETER Dashboard: Sole entry point to the DEMETER ecosystem for all DEMETER Stakeholders.

Implementation Space: A virtual space where providers team-up and interoperate to develop and deliver the appropriate combinations and customisations of tools to the farmers ensuring interoperability with existing solutions.

DEMETER Enabler Hub: The available collaboration spaces (SOCS and AIS) are built around this hub that enables access to all resources that are available for integration and deployment.

DEMETER MAA
- Co-creation of needs
- Co-generation of solutions
- Co-shared responsibility for efficient deployment
- Co-organise support for optimal adoption

Research Verification - Pilots Overview

DOWNLOAD OUR BOOKLET EXPLAINING ALL OUR PILOT PROJECTS

WALTON Institute for Information and Communication Systems Science

Thank you for your time.

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