



Research & Innovation in support of Agriculture Technologies – Instruments under Horizon Europe, the Digital Europe Programme

Workshop of the Agricultural Engineering Community -
Achieving Visions with Horizon Europe

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Ambitions



GREEN DEAL



DIGITAL AGE



BETTER REGULATION



VIBRANT INNOVATION ECOSYSTEM



RESILIENT and COMPETITIVE AGRICULTURAL SECTOR



VIBRANT RURAL AREAS

Contribution to the Green and Digital transformation for resilient food system and rural areas

Policy cycle – An ecosystem perspective (AgData)



POLICY CYCLE



AGRICULTURAL SECTOR



R&I ACTORS



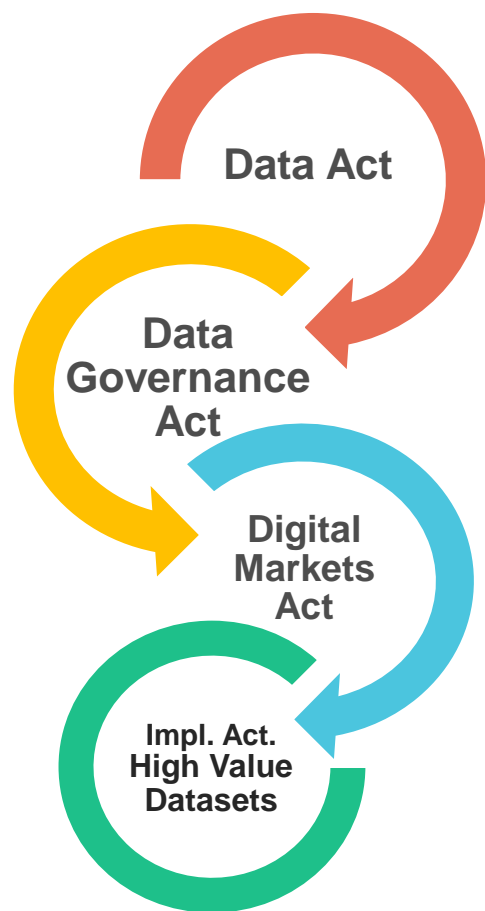
ACTORS ALONG VALUE CHAINS



PUBLIC ADMINISTRATION

POLICY-SCIENCE-INTERFACE

Cross-sectoral legislation to enable the EU Data Strategy



Aim
Ensure FAIRNESS in the allocation of data value among the actors of the data economy
Ensure TRUST in data transactions (adopted on 3 June 2022)
Tackle imbalances caused by the MARKET POWER of gatekeepers
Unleash the socio-economic potential of data as a raw material for INNOVATION , in particular for SMEs

GDPR: *The Data Act does not change or amend, but complements and builds on the rights existing under the GDPR.*

Sectoral legislation: *Further requirements on technical aspects, limits on the rights of data holders and aspects going beyond data access and use can be specified.*

Horizon Europe Strategic Plan 2021-2024



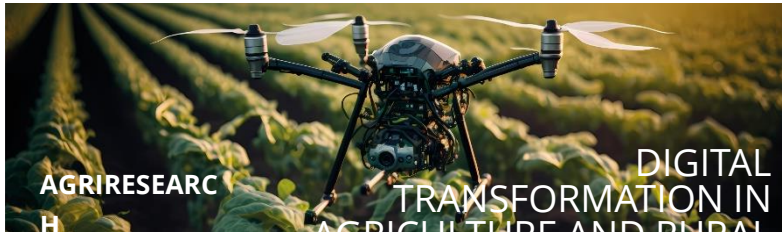
Key strategic orientations: **B. RESTORING EUROPE'S ECOSYSTEMS AND BIODIVERSITY, AND MANAGING SUSTAINABLY NATURAL RESOURCES**

R&I will be a key driver in accelerating the transition to **sustainable, low ecological footprint, healthy and inclusive food systems** – from primary production to consumption. Farmers and primary producers will be empowered to manage land, animal resources, soil, water and nutrients **in sustainable ways** [...] Efforts to boost **digitalisation** [...] will foster the development of tailored **digital technology**-based solutions enabling **sustainability and transparency**, as well as **enhance data generation capacities** and enhance **databases** increasing their effectiveness.

IMPACTS - Cluster 6 FOOD, BIOECONOMY, NATURAL RESOURCES, AGRICULTURE & ENVIRONMENT

- Food and nutrition security for all from **sustainable food systems** from farm to fork
- **Balanced development of rural**, coastal and urban areas
- **Innovative governance models** enabling **sustainability, environmental observation**

Digital transformation of agriculture and rural areas: Horizon 2020



Digitalisation, digital transformation, digital technologies, digital solutions

7 projects

€ 63 million*

- *EU contribution*

Examples of projects on digital & data technologies



- **NIVA** (2019-2022) [A New IACS Vision in Action](#)



- **DEMETER** (2019-2023) [Building an Interoperable, Data-Driven, Innovative and Sustainable European Agri-Food Sector](#)



- **ATLAS** (2019-2023) [Agricultural Interoperability and Analysis System](#)



- **MEF4CAP** (2018-2021) [Monitoring and Evaluation Frameworks for the Common Agricultural Policy](#)

Digital transformation of agriculture and rural areas: Horizon Europe



Digitalisation, digital transformation, digital technologies, digital solutions

15 projects

€ 75 million*

* EU contribution
@ includes part of the EU contribution to the co-funded partnership Agriculture of Data

Examples of projects on digital & data technologies



- **DIVINE** (2022-2025) Demonstrating Value of agri data sharing for boosting data Economy in agriculture



- **ScaleAgData** (2023-2026) Scaling Agricultural Sensor Data for improved Monitoring of Agri-Environmental Conditions



- **CrackSense** (2023-2026) High throughput real-time monitoring and prediction of fruit cracking by utilising and upscaling sensing and digital data technologies



- **AgriDataValue** (2023-2029) Smart Farm and Agri-environmental Big Data Space

Digital transformation – Sustainable Food systems and Data: Horizon Europe

Examples of projects on digital & data technologies

 <p>FNS - Cloud Food Nutrition Security</p>	<p>FNS CLOUD (www.fns-cloud.eu) 2019-2023, €10,2 M (Horizon 2020), IA, Food 2030</p>	<p>Food & Nutrition Security Cloud Overcoming fragmentation by federating data on diet, health, and consumer behaviour as well as on sustainable agriculture and on the bio-economy. Increase the exploitation and reduce knowledge gaps, support food industry, facilitate informed & healthy choices by consumers.</p>
	<p>Data4Food2030 (data4food2030.eu) 2022-2026, €10,0 M (Horizon Europe), RIA, Food 2030</p>	<p>Pathways towards a fair, inclusive and innovative Data Economy for Sustainable Food Systems Understanding the Data Economy for Food Systems in which data are not only a new economic asset, but a strategic good in the transition to sustainable food systems and to a fair and inclusive society.</p>
	<p>TITAN (titanproject.eu) 2022-2026, € 9,6 M (Horizon Europe), IA, Food 2030</p>	<p>Transparency solutions for transforming the food system Demonstrate the latest transparency related solutions to help the production and consumption of healthy, sustainable, and affordable food.</p>
	<p>DRG4FOOD (drg4food.eu) 2022-2025, € 4,0 M (Horizon Europe), RIA, Food 2030</p>	<p>Empowering a fair and responsible European Food Register, fostering citizen sovereignty and creating a data-driven food system. DRG4FOOD wants to achieve trust in a data-driven food systems by implementing Digital Responsibility Goals for the food sector.</p>
	<p>FOODITY (foodity.eu) 2023-2025, € 4,0 M (Horizon Europe), RIA, Food 2030</p>	<p>FOod and nutritiOn Data-driven innovation respectful of citizen's Data Sovereignty FOODITY wants to fund 12 industry and research collaborations to develop pilots demonstrating the potential of data-driven innovations in health and nutrition, engaging citizens.</p>

Partnership Agriculture of Data

What: Support sustainable agriculture in Europe as well as policy monitoring and implementation by using the possibilities offered by digital and data technologies in combination with environmental observation and other agricultural data

Who: Co-funded by EU, with Member States and Associated Countries, involving ministries, funding organizations, research organisations, and key stakeholders (policy makers, sectoral organisations, space agencies, industry, etc.)

How: Capitalisation of data through the development of innovative data-based solutions and services for the private and public domain, and scaling them up

Where: Europe-wide

When: (tentatively) from 2024; 7-10 years duration



Digital Europe is complementary to other programmes with investments in digital

EU-wide collective effort					Shared management			Financial instrument
Horizon Europe	Digital Europe	CEF	Creative Europe	Health	Cohesion	Agriculture Funds	RRF	InvestEU
Research Innovation	Strategic capacities: computing, data, testbeds, etc. Advanced digital skills EU-Wide deployment	Broadband and 5G roll out Connecting Communities	Creative industry Media	Telemedicine eHDSI	Digital connectivity in white and grey areas Support to enterprises in line with Smart specialisation Digital skills for all citizens	Making use of Big Data for CAP monitoring Broadband rollout in rural areas	Connect Scale-up Modernise Reskill and Upskill 20% digital	Leverage private capital for investments in SMEs, research, digital, infrastructure, skills...

Common European Agricultural Data Space

To provide a **secure and trusted data space to enable the agricultural sector to transparently share and access data**

Preparatory action (Coordination and Support Action)

- AgriDataSpace: 2M€ - 18 months from 1st October 2022 – 15 partners, representing 10 MS
- Inventory of data sharing platforms
- Development of approach towards data space
- Assessment of the Code of Conduct of agricultural data sharing by contractual agreement
- Multi-stakeholder governance scheme and achieving consensus
- Business models
- Development of a blueprint for the implementation of the data space

Implementation Action to be called in 2024 under the Digital Europe Programme



<https://agridataspace-csa.eu/>



Agrifood TEF

TEF Concept: **WORLD CLASS REFERENCE SITES FOR EXPERIMENTATION AND TESTING AI**

FBK coordinates a **consortium of 25 beneficiaries**

KPIs: 5000+ TEF users served throughout grant period
Min 75% SMEs
250+ different TEF services
1000+ AI and robotic solutions brought to market

Regulatory sandboxes: Developing framework for setting up supervised regulatory sandboxes, in particular for AI; possible contribution to developing codes of conduct, standards; builds on and links to dataspaces

Start offering services: 2024

Budget: 60€ million for 5 years



<https://www.agrifoodtef.eu/>



Interplay of key actions - Examples

RESEARCH → INNOVATION → DEPLOYMENT



Horizon Partnership AgData

COMMON EUROPEAN AGRICULTURAL DATASPACE



HORIZON PROJECTS

DIGITAL INNOVATION HUBS



Legend

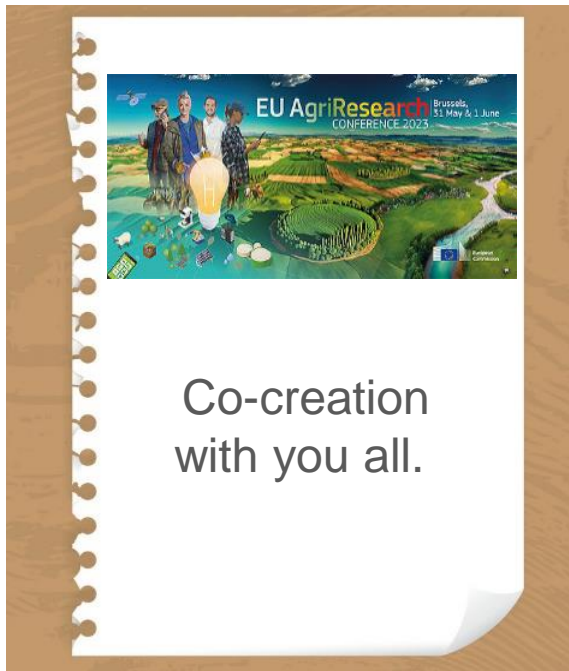
→ Inform/Scale up

→ Scale up

Note, no data flows are registered in this figure

Your views are essential!

e.g. for Horizon Europe Cluster 6 Food, Bioeconomy, Natural Resources, Agriculture and Environment



Strategic Plan 25-27

**Work Programme(s)
2025 to 2027**

**Next EU R&I Programme, and
other EU policies and programmes**

*Co-creation – not only at the R&I
Conference*



Selected results of the co-creation process

Identified R&I needs

- Gains in **standardization** of data formats and applications
- Increasing **interoperability**
- **European-wide** applicable approaches, structures, and governance
- **Incentives for data sharing** (including practitioner-oriented ones)
- Implementation of **data platforms and open data models**
- **Advisory services** “data SPIN doctor” for farmers, including new continuous training measures.

Concluding remarks

- **Key instruments**, including under Horizon Europe, Digital Europe and legislation, to **exploit the potential of innovation, digital and data technologies for agriculture** have been launched.
- For **being effective, instruments** need to be implemented systematically under consideration of **socio-economic, environmental, and legal framing conditions**.
- **Synergies between programmes, R&I initiatives, and countries are an asset**.
- **Jointly shaping the innovation ecosystem and using its potential for the agricultural sector**, requires an active science-policy interface, involvement of the sector (e.g. end users and advisors) and industry.

Thank you



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