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Standards, Digital Platforms, and the Twin Transition

AKIS Coordination Group Meeting
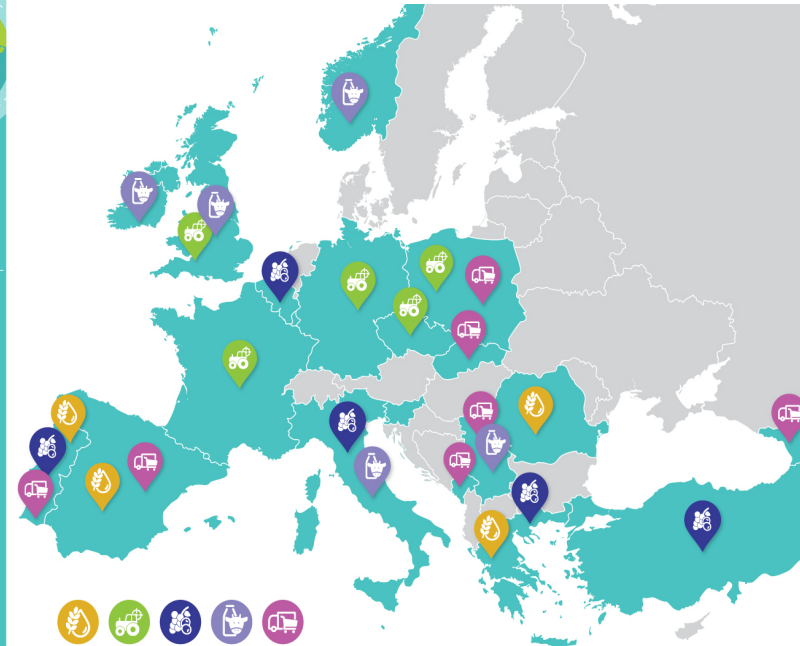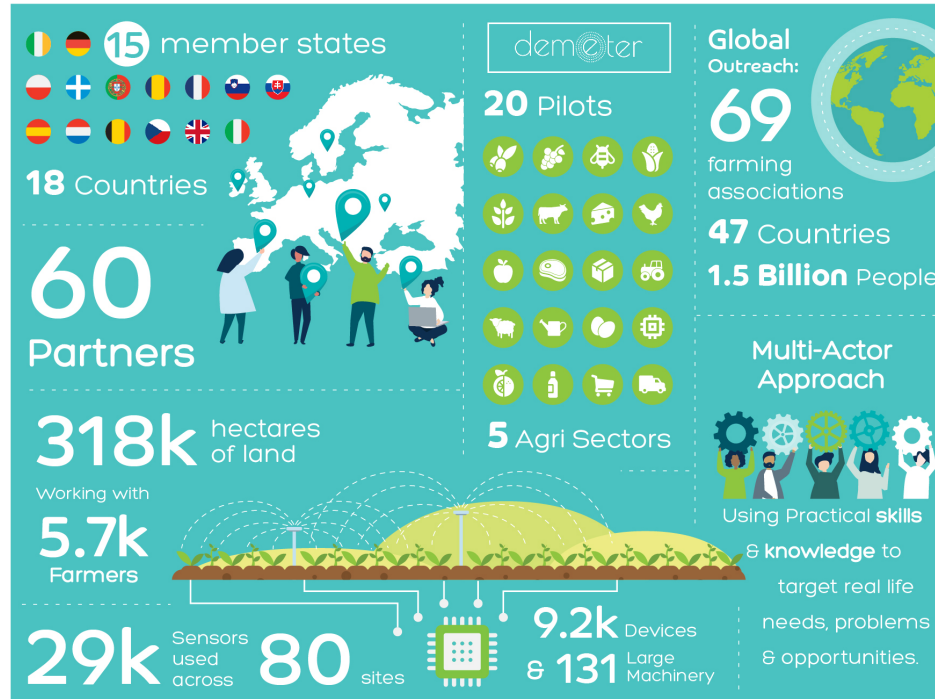
Kevin Doolin

21 January 2025

SE TU — Ollscoil Teicneolaíochta an Oirdheiscirt — South East Technological University

Standards, Digital Platforms, and the Twin Transition

Background

Large Scale Agri Digitalisation Project - DEMETER

H2020 DEMETER
Building an Interoperable, Data-Driven, Innovative and Sustainable European Agri-Food Sector

All info: https://h2020-demeter.eu
Pilots: https://h2020-demeter.eu/pilots-overview/
Open Calls: https://h2020-demeter.eu/open-call-develop/ & https://h2020-demeter.eu/open-call-deploy/
Agricultural Information Model: https://ec.europa.eu/enrd/evaluation/knowledge-bank/demeter-agricultural-information-model_en.html & https://h2020-demeter.eu/technical-components/#aim

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Standards, Digital Platforms, and the Twin Transition

Completed Report (public version):
https://digital-strategy.ec.europa.eu/en/news/standards-and-platform-development-enabling-innovation-agriculture-ecosystem-perspective

(**https://tinyurl.com/WaltonSPReport**)

SE
TU
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South East
Technological
University

Project Overview

Response to tender: Ref EC-CNECT/2024/VLVP/0016 Twin transition in agriculture.

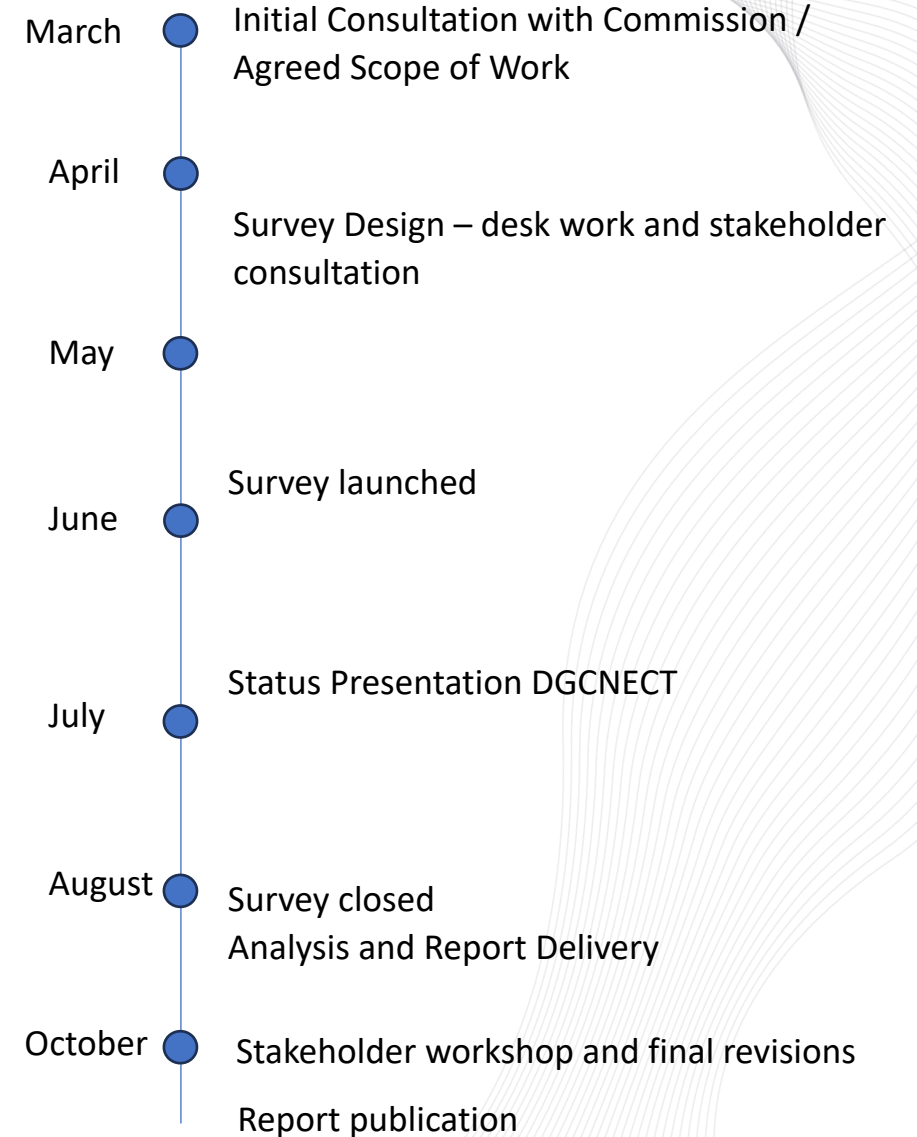Purpose of study, to get multi-stakeholder perspective on:

- Relevance of standards, quasi standards and platforms
- State of play, challenges and opportunities
- Links between standardisation and platformisation
- Stakeholder roles and power assessment
- Strategic measures for sustainable development
- Prioritisation of standards
- Addressing EU Legislation and Cyber-Security
- R&I and Deployment Actions
- Designing Public Support and Policy Recommendations
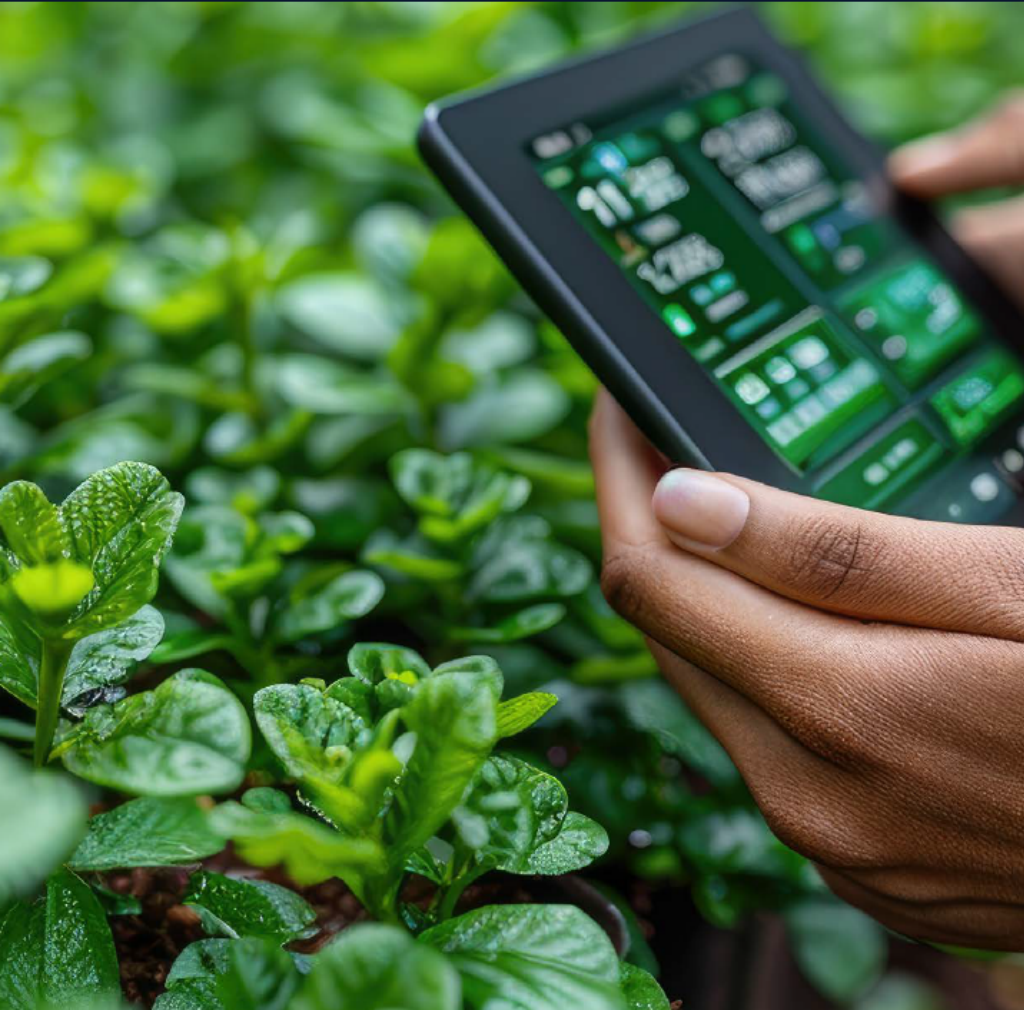
Survey:

- 124 Respondents

Stakeholder workshop:

- Copa-Cogeca, CEMA. AEF, AIOTI, OpenDEI, AgrifoodTEF, ETSI, FIWARE, AgriEDIH, ...

March — Initial Consultation with Commission / Agreed Scope of Work

April

Survey Design – desk work and stakeholder consultation

May

June — Survey launched

July — Status Presentation DGCNECT

August — Survey closed / Analysis and Report Delivery

October — Stakeholder workshop and final revisions

Report publication

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BOOSTING THE TWIN TRANSITION IN AGRICULTURE AND A RESILIENT INNOVATION ECOSYSTEM

Standards and platformisation in the spotlight

Executive summary

SETU — South East Technological University

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Relevance of Standards, Quasi Standards and Digital Platforms - Recommendations

1. **Promote Broader Awareness**: Additional awareness campaigns are needed in order to educate stakeholders on the benefits of adopting both formal and quasi-standards, particularly among those sceptical of their value relative to the costs associated with integration and/or deployment. This would suggest a series of demonstrable return on investment case studies/examples would be useful.

2. **Support SMEs in Standard Adoption**: Further financial and technical assistance could be provided to help SMEs in their efforts to adopt and implement/integrate formal standards and quasi-standards.

3. **Enhance Interoperability**: Prioritise initiatives that promote interoperability through the adoption of both formal and quasi-standards across the agricultural sector. *This can be achieved through a number of actions such as: development of flexible standards frameworks (where the adopt of quasi standards is encouraged as interim solutions while formal standards are being developed); promotion of cross-sectoral collaboration between AgriTech companies, regulators and standards bodies to ensure interoperability is prioritised; establishment of interoperability testing and certification processes (which could be particularly useful for digital platforms or integrated farm systems); fund additional pilot projects which are deployed in real world settings; and promote the development of open standards, unrestricted by proprietary technologies.*

4. **Leverage Digital Platforms for Standardisation**: Efforts are needed to encourage the integration of formal and quasi-standards into digital platforms in order to streamline adoption and to foster innovation. *For example: encourage and incentivise the integration of formal and quasi standards into digital platform architectures; use digital platforms to scale quasi standards adoption (to promote widespread adoption); encourage the integration of open standards in digital platforms (e.g. develop incentives that favour digital platforms that use open standards); and use digital platforms to test and pilot new standards.*

5. **Inclusive Standardisation Processes**: It must be ensured that the development and adoption of standards and quasi-standards includes input from a broad range of stakeholders, including SMEs, start-ups and smallholder farmers (for example, so that all standards are developed relative to all stakeholder needs rather than disproportionately benefitting larger farms or more tech-savvy individuals).

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State of Play, Challenges and Opportunities - Recommendations

1. **Enhance Coordination Among Bodies**: Strengthen coordination between standardisation bodies, RD&I initiatives, and industry consortia to reduce conflicts between competing formal and quasi-standards.
2. **Focus on Data Standards**: Develop robust formal and quasi-standards for data management and analysis to address the complexities of digital agriculture.
3. **Leverage EU Projects**: Utilise existing EU projects as platforms for piloting and refining both formal and quasi-standards, ensuring their practical applicability, but ensure a broad dissemination of the associated benefits.
4. **Identify and Address Gaps**: Target underdeveloped areas where quasi-standards could be established as precursors to formal standards, in order to drive sectoral efficiency.
5. **Align Standardisation with Strategic Goals**: Ensure that standardisation efforts, including those related to quasi-standards, are aligned with broader EU strategic goals, such as the digital single market and sustainability objectives. *Possible means to achieve this include: ensuring that new (quasi)standards support key EU strategies and sustainability objectives; collaborating with policymakers by engaging them early in the standardisation process; leverage multi-stakeholder inputs to ensure a balance between economic, digital and sustainability goals; leverage EU funded projects particularly to pilot and refine standards; regularly review and monitor standards to see that they evolve in line with emerging related EU policies.*

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Links between Standardisation and Development of Digital Platforms-Recommendations

1. **Integrate Standards into Platforms**: Advocate for the integration of both formal and quasi-standards into digital platforms to facilitate their adoption and scalability.
2. **Promote Stakeholder Collaboration**: Encourage collaboration between standardisation bodies, platform developers, and industry/research consortia to ensure alignment of formal and quasi-standards.
3. **Monitor Platform Evolution**: Regularly assess the evolution of digital platforms to ensure that both formal standards and quasi-standards remain relevant and effective. This applies in particular to digital platforms that emerge from EU funded initiatives.
4. **Use Platforms for Pilots**: Utilise digital platforms as testing grounds for piloting and refining both formal and quasi-standards based on real-world feedback.
5. **Develop Open Standards**: Promote the development of open formal and quasi-standards that can be easily integrated into various platforms, enhancing their adoption.

Stakeholder Roles and Power Assessment - Recommendations

1. **Increase Awareness Among Farmers/Advisors**: Develop initiatives to raise farmers'/advisors' awareness of the importance of both formal standards and quasi-standards, to ensure that their adoption aligns with technological advancements.
2. **Support for Technology Providers**: Provide incentives for technology providers (AgriTech and general technology providers) to align their innovations with both formal and quasi-standards, which can enhance sector-wide interoperability.
3. **Align Policy with Standards**: Ensure that policy frameworks are designed to support the development and adoption of both formal and quasi-standards, facilitating coherent digital transformation. *This may be achievable through, for example: integration of standards in policy development (embedding (quasi)standards) as foundational elements for digital transformation; further establishing public-private partnerships to foster collaboration between stakeholders to align policies with real-world technological developments and standardisation needs; incentivise relevant standards adoption through new incentive schemes or grants; create flexibility in regulatory frameworks that accommodate the rapid evolution of (quasi)standards in cases where continuous innovation is key.*
4. **Promote Balanced Innovation**: Encourage a balanced approach to innovation that leverages the strengths of formal standards, quasi-standards, and digital platforms.
5. **Foster Inclusive Collaboration**: Facilitate collaboration among all stakeholders, ensuring that both formal and quasi-standardisation efforts reflect the diverse needs of the sector.

Strategic Measures for Sustainable Development - Recommendations

1. **Align Standards with Sustainability Goals**: Ensure that both formal and quasi-standards are developed with a focus on sustainability, particularly in areas like resource efficiency and environmental protection. *As sectors like agriculture, manufacturing, and energy increasingly rely on digital technologies, it is crucial that these technologies: minimise environmental impact (through reduced energy consumption, optimisation of resource usage, and lowering of emissions); promote long-term resilience through sustainable practices in industry, which can respond to environmental challenges, such as climate change, resource scarcity, and biodiversity loss. This could be achieved through: introducing sustainability metrics into standardisation processes; collaborating with environmental experts and NGOs to ensure standards are informed by the latest knowledge on environmental protection and resource efficiency; encourage more public-private partnerships; embed circular economy principles in standards activities; aligning standards with EU sustainability policies.*

2. **Promote Sectoral Interoperability**: Develop and promote formal and quasi-standards that enhance interoperability across the agricultural sector, facilitating seamless data exchange. *As with a lot of the recommendations in this document, multiple actors have a potential role to achieve this: standards bodies should take the lead in promotion of relevant standards through data formats, communication protocols, and data security and privacy standards – currently significant fragmentation exists across technology providers, with data silos and limited cross-platform functionality – standards must be unifying rather than proprietary; industry/AgriTech providers could adopt more open source principles or open APIs to allow their technologies to easily integrate with other systems, and focus on development of more seamless communication between technologies – versus the proprietary mindset that is pervasive today; EU policymakers and regulators should focus funding on the development of interoperable systems, and could offer tax incentives to companies that adopt open standards.*

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Strategic Measures for Sustainable Development - Recommendations

3. **Support Resilient Growth**: Encourage the development and adoption of both formal standards and quasi-standards that contribute to a resilient green and digital economy. *To do this, the development and adoption of both formal standards and quasi-standards should focus on creating technologies, processes, and systems that are adaptable, sustainable, and capable of withstanding economic and environmental challenges.*

4. **Incorporate Regulatory Considerations**: Ensure that both formal and quasi-standardisation efforts are informed by relevant regulatory frameworks to avoid conflicts and promote compliance. *To do this, strategic measures could, for example: assess compatibility with existing regulations, to support innovation without violating current legal frameworks; establish collaboration between regulatory bodies, standards bodies and industry stakeholders to ensure standards development supports regulatory goals; make sure that regulatory frameworks are flexible enough to adapt to rapidly evolving technologies and (quasi)standards; provide clear guidance on how (quasi)standards can be integrated into specific industry sectors; continuously monitor and update regulatory frameworks to allow for continued support for standards and digital platforms.*

5. **Adapt to Evolving Needs**: Regularly review and adapt strategic measures to ensure that both formal and quasi-standards remain relevant and effective in promoting sustainable development.

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Designing Public Support and Policy Recommendations - Recommendations

1. **Launch Targeted Awareness Campaigns**: Develop campaigns that highlight the benefits of formal and quasi-standards in real-life agricultural applications, using social media to reach a broad audience.
2. **Align Policy Frameworks**: Ensure that digitalisation policies are aligned with a shared vision for the Twin Transition, integrating both formal standards and quasi-standards.
3. **Enhance Farmer Training**: Increase efforts to train and mentor farmers, emphasising the practical importance of both formal standards and quasi-standards relative to their work.
4. **Invest in Skills Development**: Prioritise investment in farmer training and skills development, focusing on the competencies needed for digital transformation.
5. **Harmonise with EU Strategies**: Strengthen efforts to link standardisation and digital transformation with EU strategic priorities, ensuring a cohesive approach across member states

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R&I and Deployment Actions - Recommendations

1. **Increase Financial Support**: Expand EU and national-level financial supports for third-party organisations to facilitate the adoption of formal standards, quasi-standards, and digital platforms.
2. **Promote Pilot Projects**: Continue to fund and promote pilot projects that can serve as testbeds for both formal and quasi-standards, ensuring they are scalable and transferable across the EU, and prioritise dissemination of the resulting outputs.
3. **Strategic Funding Allocation:** Prioritise funding for initiatives that address existing challenges in standardisation and digital transformation, before launching new projects.
4. **Support Innovation Strategies**: Provide targeted funding for new projects that specifically aim to support and enhance organisational innovation strategies, with a focus on integrating standards and digital platforms.
5. **Monitor and Adjust Resource Deployment**: Regularly review and adjust the deployment of resources to ensure they are aligned with strategic objectives, particularly in the integration of standards and digital platforms in AgriTech.

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