

Strategic dialogue on the future of EU agriculture

Input from AIOTI

31 July 2024

Background

The EU Commission launched in January the Strategic Dialogue on the future of EU agriculture with the aim to shape a shared vision for the EU farming and food system¹.

AIOTI wants to contribute to the dialogue. In particular, shedding light on the following question, focused on digital technology:

How can we make better use of the immense opportunities offered by knowledge and technological innovation?

Digital technology is revolutionizing farming by enhancing productivity, efficiency, quality and sustainability. Precision in agriculture, driven by data analytics, sensors, satellite and applications enable to work with maximum precision on the field².

The use of digital technology allows farmers to monitor animal and crop health, soil conditions, weather patterns in real-time, and even predict plagues and diseases in advance. This leads to improved yield and productivity while optimising the use of resources like water and fertilizers, reducing the use of pesticides, antibiotics, waste and energy consumption. Digital technologies, in short, are allies of the EU farming sector in achieving its objectives for decarbonisation and sustainability.

However, even if official statistics are not readily available, the current reality in EU farming still points to a small rate of adoption of digital technology. Consequently, the impact is behind the expectations. Among the different reasons for this situation, we can find the following.

1. **New regulations** -derived from new CAP- **are coming too fast**, imposing the adoption of new digital tools which are neither sufficiently known by the farming sector, nor sufficiently tested in real conditions. In addition, new tools are perceived both as an extra burden and as new means for increasing the control over farmers activity, when they were intended to be the opposite: tools for making farmers' life easier. As a result, waivers and extensions for tools deployment are being granted^{3,4}, delaying the expected benefits of adoption as well.
2. **The benefits of digital technologies and their real performance in farming are not always clear or well understood**. This could be partially due to the ag-tech sector still acting in overselling mode, but it is true that measuring and comparing different technologies is not straightforward, making difficult to estimate the Return on Investment, which in turn acts as a barrier to adoption.

¹ https://agriculture.ec.europa.eu/common-agricultural-policy/cap-overview/main-initiatives-strategic-dialogue-future-eu-agriculture_en#purpose-of-the-dialogue

² <https://belgium.claas.com/cl-pw-en/products/digital-solutions>

³ https://agriculture.ec.europa.eu/news/commission-continues-simplify-common-agricultural-policy-eu-farmers-2024-07-11_en

⁴ <https://www.agrometodos.com/en/entry-into-force-of-the-digital-farm-notebook/>

3. **Digital technology and farming are still two worlds apart.** Although the gap has been decreasing in the last years, technology providers -coming mainly from ICT sector- and farmers still speak different languages. Together with a generalized lack of awareness of digital solutions, the “technology push” bias and the risk-averse tradition of the farming sector makes difficult to translate technology features into tangible benefits and, conversely, to translate pain points into product requirements. This is also related to the lack of usability of the technology offerings.
4. **Lack of interoperability.** The proliferation of proprietary solutions and the lack of standards adoption lead, among others, to vendor lock-in, difficulty of integrating data from different tools, and scalability issues. Non-interoperable systems lead eventually to higher complexity and higher costs. These problems are specially relevant for small farms, with less financial resources and technical expertise to face the technical challenges.
5. **Lack of wireless network coverage in rural areas.** We cannot ignore the current situation in which the connectivity needs of a large proportion of the farming areas in the EU are inadequately served. This is seen commonly as one of the main barriers for the adoption of [digital technologies in farming](#), not only of advance services but even the basic ones.
6. **Poor usability or ease of use.** The current offering by technology companies may seem appropriate for the highly digitally literate but often there is a lack of effort to build easy to use interfaces and workflows. This further frustrates farmers/farm employees who are perfectly familiar with slick interfaces from Facebook and others.

Considering the previous aspects, we propose the following measures to help in accelerating the adoption of digital technologies, in order to achieve the expected benefits in the farming sector.

1. Envisage a **smoother transition of regulation enforcement** for the adoption of digital tools. A transition period should be established, incentivising voluntary adoption before it is made compulsory. In the meantime, the farming sector should be supported to get acquainted with the new tools and obtains hands-on experience in their use.
2. Support mechanisms and instruments to **bring digital technology closer to farmers**. This could include the following:
 - a. More efforts to involve farmers in the co-creation of new digital tools and solutions together with the ag-tech sector.
 - b. Enable ag-tech companies to test and validate their innovative technologies in real conditions, demonstrating performance and viability. In this regard, it is highly advisable to build on the TEF (Testing and Experimentation Facilities)⁵ model which is already being developed with help of the European Commission through the Digital Europe programme.
 - c. Provide training for farmers, as well as other key members of the farming ecosystem (e.g. digital advisors) so they can make well-informed decisions on the selection of tools and technology providers.

⁵ <https://www.agrifoodtef.eu/>

- a. Raise more digital awareness, specially at a local level, sharing good practices and real experiences (of real farmers)
 - b. Organise sessions providing overview of current innovation activities, projects, etc.
 - d. Build on the existing European network of Digital Innovation Hubs for accomplishing these tasks.
3. Accelerate the **adoption of standards** that make digital farming solutions truly interoperable. This includes, but is not limited to, the efforts being done on the European Agrifood Data Space⁶. The agri-food sector should be in the priorities considered within the Rolling Plan for ICT Standardisation⁷. There are also global initiatives concerning digital agri-tech, for example led by ISO, for which there should be more support.
 4. Accelerate the **deployment of connectivity solutions that work for farming areas**. This includes the deployment of next-gen connectivity technologies (5G) in rural areas and the design of future generation (6G) serving the real needs of the farming sector, but also the design of alternative connectivity solutions and/or business models.
 5. One crucial (and transversal) aspect for supporting the adoption of digital technologies, is to **measure and monitor their real use**. Currently it is challenging to find reliable statistics for the farming sector. On the one hand, we need standardised surveys with comparable data, at the EU level, on the adoption of digital tools (by technology, type of farming activity, etc). On the other hand, the current connectivity coverage statistics based on population coverage do not reflect well the reality in the farming sector. We definitely need to build a **EU Digital Index for the farming sector**.
 6. With the greater awareness of the importance of environmentally friendly agriculture, and the growth of **organic farming, agroecology and regenerative agriculture**, it would be important to support the development of solutions for these sectors. This may involve relatively simple uses of sensors to highly sophisticated digital models/digital twins and gamification of the agricultural transition. We need digital solutions focussed on the needs of an **agriculture that will ensure the transition to zero emissions**.

The points above need close cooperation between public (policy) and private side. Some of them are already being tackled by several stakeholders around Europe, including the EC, Member States and private organisations. The focus should be put in streamlining efforts and finding synergies between the different initiatives to drive all in the same direction.

⁶ <https://agridataspace-csa.eu/>

⁷ <https://digital-strategy.ec.europa.eu/en/policies/rolling-plan-ict-standardisation>

About AIOTI

AIOTI is the multi-stakeholder platform for stimulating IoT and Edge Computing Innovation in Europe, bringing together small and large companies, academia, policy makers and end-users and representatives of society in an end-to-end approach. We work with partners in a global context. We strive to leverage, share and promote best practices in the IoT and Edge Computing ecosystems, be a one-stop point of information on all relevant aspects of IoT Innovation to its members while proactively addressing key issues and roadblocks for economic growth, acceptance and adoption of IoT and Edge Computing Innovation in society. AIOTI's contribution goes beyond technology and addresses horizontal elements across application domains, such as matchmaking and stimulating cooperation in IoT and Edge Computing ecosystems, creating joint research roadmaps, driving convergence of standards and interoperability and defining policies.