



OPENDEI

## Synergy Days 2022

In the context of SmartAgriHubs Final Event  
(Lisbon, 27-28 September 2022)

Action Line “Policy Recommendations”

# POSITION PAPER



**Synergy Days 2022**  
**In the context of SmartAgriHubs Final Event**  
**(Lisbon, 27-28 September 2022)**  
**Action Line “Policy Recommendations”**

## Position paper

### 1. Foreword

This position paper is part of the consultation process carried out in the context of “Synergy Days” event, organised in Lisbon on 27-28 September 2022 along SmartAgriHubs Final Event [1].

Actors from science and practice contributed, in a fair and well balanced representativeness of experiences and opinions. Expressed views, however, are those of the researchers involved only and do not necessarily reflect those of all the scientific community operating in the field.

1

### 2. Introduction

Compared to other domains (such as healthcare, manufacturing, mining, automotive, energy, etc.), agriculture is one of the slowest ones in the digital transformation [2, 3]. Even if the attempt to introduce innovative solutions is growing, there are still few concrete applications around Europe, and mainly applied by large farms. It is less common to see application of digital and technological solutions at small-scale farms. Different projects funded in the last three-four years by DG AGRI or DG CNCT have approached the agricultural or rural world, whether they were CSA, RIA or IA. Many of these projects have developed new digital/technological solutions (IoT, AI, robotics, ICT, blockchain), tested/validated them through Pilots (or ‘experiments’ or ‘use cases’, as we want to call them) and/or have increased the test benches with cascading funding. Such strict contact with farmers allowed researchers from Academia or research centres as well as other no-profit or private organisations all around Europe to understand more deeply the sector’s issues, dynamics, perceive the gaps and make an own opinion how can be overcome.



### 3. Backstory, and relevance of the initiative

Usually the tentative to provide policy recommendations is done at project's level: after the experience carried out along the whole project's lifespan, researchers are able to sum up. Sometimes, in a co-creation effort, such conclusions are shared in advance with some other experts for obtaining consensus building before publication. However, as said, the limit of such exercise is the restricted vision of one single project.

Policy makers receive numerous policy recommendations, and need to weigh them or give them a priority value.

In the context of SmartAgriHubs Final Event, Wageningen University and Research [4] – in its quality of project coordinator – under the aegis of DG AGRI, proposed to organise a two-day meetings where most of the ongoing funded projects in Agriculture and rural areas were able to synergise. At such scope, the event 'Synergy Days 2022' was launched as a pilot initiative at EU level.

**350 actors from science and practice** belonging to **23 funded projects** have jointed efforts to organise common Sessions on topics of interest and met on 27-28 September 2022 in Lisbon.

In this context, OPEN DEI [3] played a strategic role. As a "Coordination and Support Action" (CSA) funded for coordinating and supporting Large Scale Pilots, leveraging synergies, sharing best practices, reinforcing cross-sector relationships as well as communicating and exploiting achievements, through its Ambassador (Tecnoalimenti S.C.p.A) it took the leadership of the **Action Line on "Policy Recommendations"**.

The following preamble guided our exploration: *"There is a discrepancy between digital growth expected from policies and its current concrete adoption in Agriculture and rural areas. Let's try to understand the reasons behind"*.

In order to avoid duplications, thinking that all projects are already oriented towards generic recommendations, it was decided not to stop at providing general recommendations, but to finalise the final Policy Recommendations towards new topics for future R&I calls for the decade to come.

Along the Synergy Days, two Sessions were organised to discuss:

- Session 1 focused on *"Knowledge gaps in digital innovation Agri-food"*. In this session, experts coming from different EU Agriculture and rural financed projects joined forces to identify those knowledge gaps related to digitalisation and contextual application in such domain which need to be urgently faced for guaranteeing that the potential of digitalisation is fully exploited. Considering «farmers» as our Target, they have a knowledge gap when they have a task to complete, but they don't know how to complete it (unable to perform such task);



- Session 2 started from the following question: *“How can government policies and programmes appropriately facilitate the adoption of digital technologies by the agriculture and food sectors?”* Once understood the factors affecting technology uptake, it has been possible to identify those R&I interventions targeted to overcome a specific gap.

The methodological approach was the following:



The wide audience, the multidisciplinary and the number of experiences brought have allowed to cross-match ideas and views. The effort has been that to make ‘converge’ all of them towards a shared opinion on this facet, as a unique and aligned voice in the domain towards policy makers.

This Paper presents the results of a discourse analysis during the two-day in person conference and the decisions jointly agreed.



#### 4. General Recommendations

##### **Takeaway #1: Some systemic problems need to be solved at the basis**

There are some basic conditions that must exist for the use of digital technologies and therefore for digital transformation of the Agriculture and food sector. These include infrastructure and connectivity (mobile subscriptions, network coverage, internet access, and electricity supply).

##### *4.1.1. Connectivity and broadband, especially in rural areas*

The capacity to create value in the food system or to create better policies using digital technologies depends on connectivity infrastructure (hard infrastructure). Indeed, even if an estimated 70% of new value created in the economy over the next decade will be based on digitally enabled platform business models, currently 47% of the world's population remains unconnected to the Internet.

If such issue is generally applicable, it is even more evident in the rural areas, as confirmed by the Commission's communication on 'The Long term vision for rural areas' [5], which reports as "Europe's countryside is at the heart of our agricultural production, our deep-rooted traditions and rich natural resources. Yet rural areas all across Europe continue to lag behind when it comes to fast and quality broadband coverage. For remote communities, such a challenge translates into a lack services and widespread unemployment".

##### *4.1.2. Digital infrastructures*

Digital devices and sensors, such as satellite remote sensing, UAV imaging systems, Internet of Things (IoT) sensing systems, and ground-based robotic systems, are rapidly becoming more common in agriculture for collecting high-resolution temporal and spatial big data of crops, animals, environment, and farm equipment. With the advance of big data analytic technologies and artificial intelligence, digital data are able to be used to monitor production, improve efficiency, and increase agricultural sustainability. To successfully adopt and implement these advancements, wireless connectivity is an enabling technology. However, the wireless network infrastructure for data transfer in agriculture is still lacking as well as the network coverage in rural areas remains limited.

**Takeaway #2: Identifying the right interlocutor is fundamental.** Who is the best interlocutor for Agriculture policies and related actions? Farmers or Associations of farmers? The latest have major capability and skills to invest. Clarified the usefulness of digital/ICT solutions at that higher level, then it will be easier to transfer the message at farmers' level.



**Takeaway #3: Take into consideration in policy development the main interest of farmers.** Analysing the EU's new Common Agricultural Policy, it seems that too much attention is posed to concepts «far from the direct main interest» of farmers (e.g. environmental protection and environmentally friendly production methods; landscapes and biodiversity to be preserved). The shift in EU agricultural policy towards more sustainable agriculture and the much-needed attention to social justice is valuable, however the main interest of farmers is in 'food production' and everything turns around it. Efforts from policies should be finalised to support farmers in guaranteeing such result first, all the other related concepts will follow.

**Takeaway #4: Farmers need financial support.** Farmers work at very low margins; in addition, their activity is very much dependant from externalities (e.g. plant diseases, weather conditions, scarce work force in the harvesting phase, etc.) which endanger the crop, its yield and the related earning. Any investment represents for the entrepreneur a great commitment, which not always is able to sustain on his own. Subsidies on one side, but also resources for carrying out R&I activities (intended as testbeds for testing new solutions) are fundamental to speed up the process of embracing the technology and the digitalisation transition, in particular in small-scale farms.

**Takeaway #5: Policies need to provide to farmers a support oriented to acquire services.** To date, public financing support to farmers is mainly provided for the acquisition of digital solutions "per se". Resources are allocated to machinery/technology's purchase, which very often the farmer is not able to use it, neither integrate it in existing processes and procedures or understand it all the way through, therefore making it a poorly worthwhile investment not able to provide growth and competitiveness to its business.

Policies should do a step forward; however we choose to define it, it is an important process: the one that marks the transition from the pure purchase of a product according to traditional transactional logics, to the purchase of a solution that gives rise to a prolonged relationship with experts in the field, able to valorise the value of the technology and to provide awareness and practical assistance. We can call it "service transformation", which from the manufacturing domain is now – slowly – moving towards the Agriculture domain as well.

A service represents *a means of delivering value to customers by facilitating outcomes that customers want to achieve*. In this new paradigm, services become a central element related to the sale of a product.

With the term "service" we mainly refer to "**accompanying measures**". Because of the lack of digital skills from farmers, actors such as DIHs (Digital Innovation Hubs) or technology/service providers play an important role in this service-deployment.



In this effort, all the policies oriented to support EU farmers need to be aligned among them and march in the same direction: stop to subsidies «product/equipment» oriented, but more space to subsidies «process/service» oriented (equipment, plus advice/service/assistance/maintenance).

#### **5. Suggestions for new R&I topics for the Strategic Agenda for the decade to come**

Once clarified the above-mentioned needs, it is desirable that the following aspects are taken into consideration in drafting the future calls for the decade to come (Horizon Europe and following R&I programme):

- Support DIHs improvement, integrating them in territories and in the R&I framework programmes of EU (e.g. create new ones in uncovered areas, consider rewarding/mandatory the inclusion of DIHs in specific Topics)
- Sustain projects at high TRL (7-9) for a quick market uptake of digital solutions
- If the backbone of the digital economy is hyper-connectivity which is catalyzed by the growing interconnectedness of people, organizations and machines that results from the Internet/mobile technology, it is fundamental to study new business and operational models
- Re-use and replication can be Innovation: approved solutions need to be facilitated in their reuse and replication in other countries/crops, etc (referring to processes and methods behinds). Developed solutions and components should not remain tied to a single project, but should be accessible to new projects so as to take advantage of their reuse, without necessarily having to start over (reinventing the wheel) but making progress in new case studies and innovative applications
- Favours Pilots/demonstrations/experiments for testing new digital solutions (these can be more complex based on AI, IoT, drones, blockchain, robotics, but also simple innovation/tools – not always is needed to push too much), asking for collaboration between small-scale farmers and service provider
- Ask for assessing and demonstrating the effects of innovative solutions inside the project, to increase technology's effectiveness
- Launch more Topics with FSTPs mechanism (from CSA to IA) specifically user-oriented, with a high TRL. Open Calls play an important role for increasing distribution of funding to companies and as testbeds for testing in real conditions new technological solutions



- Assessment of benefits, costs and risks related to technology's applications should be included into the proposals. CBA, in particular, should play an important role; indeed, where the lack of trust in the new digital technologies and the investment scare the small-scale farmers, the capability to show in concrete terms and with real values the economic return of the investment can assume a motivational boost
- From farmer to digital farmer: a cultural and behaviour change (education, capacity building and training pathways for improving awareness in digital and technological applications) should be supported, in parallel to the previously listed points. Digitalization creates demand for digital skills and for people who are competent in using digital devices, understanding outputs and developing programmes and applications, but also data handling and communication skills. Alongside investment in technology, there is therefore a growing need for investment in the development of multidisciplinary digital skills and knowledge.

In addition, if the current problem is the lack of transparency along the supply chain, as well as the lack of trust in data sharing, some efforts need to be done in this direction.

Accordingly:

- The whole food system needs to be supported in this digital transition. Agriculture represents the first ring of a complex network of interconnected players. It is important to launch topics where the food system (F2F) and its complexity is approached, involving all the actors of the whole chain in experimenting digital/ICT solutions able to reinforce the cooperation among them, the transparency along the value chain and the trust in data sharing.
- Supporting actions for implementation of data spaces and interoperable solutions
- Facing the issue of interoperability in data spaces (towards "inter data spaces interoperability") along the supply chain
- Towards a robust standard for building semantics and Agri-food specific vocabularies/ontologies for data sharing and data spaces
- Development of new technical solutions facilitating trust in data sharing



## 6. Conclusions

Following the experience of the practitioners involved in 23 funded projects, it is a common view that future R&I programmes for Agriculture should:

- ✚ Increase funds for sustaining small-scale farmers in their digital transformation pathway,
- ✚ Favour accompanying services to farmers (DIHs and technology/service providers play a strategic role in such process),
- ✚ Increase farmers' awareness on opportunities offered by digital transformation and related skills, through capacity building and training pathways,
- ✚ Support the implementation of data spaces and interoperable solutions as good practices for increasing trust and transparency along the supply chain.

The contents of this Position Paper emerged from two Sessions carried out in Lisbon, moderated by OPEN DEI, at the presence of different projects; conclusions were put under discussion during the Coordinators' meeting of the Conference where it was approved on the **28 September 2022**, and presented to the whole Conference audience the same day during the Plenary Session.

### Signed on behalf of:

George Beers, Sjaak Wolfert - IoF2020 and SAHs  
George Beers, Grigoris Chatzikostas - DATA4FOOD2030  
Grainne Dilleen, Srdjan Krco - DEMETER  
Stefan Rilling - ATLAS  
Marianna Faraldi - OPEN DEI, TRUSTyFOOD  
Kees Lokhorst, Erik Pekkeriet - agROBOfood  
Kamila Olchowicz, Pedro Maló - AURORAL  
Silvia Rolandi, Mar Delgado, Lucía Garrido - DESIRA  
Marianna Gkavrou, Spyros Fountas - PLOUTOS  
Adrien Guichaoua - NEFERTITI  
Ahmad Issa - SmartAgriHubs, agROBOfood  
Carolina Ramos - HIBA  
Rui Alemida - FAIRSHARE  
Emilio Gil Moya - INNOSETA  
Carmen Cotelo, Tamara Rodríguez - VINIoT  
Piero Scrima - AgriBIT  
Dannie D. O'Brien - iFishIENCI

Thanks to many others that kindly contributed and participated in the discussion.



## 7. References

- [1] [https://smartagrihubs.h5mag.com/final\\_event\\_2022/home](https://smartagrihubs.h5mag.com/final_event_2022/home)
- [2] SO Araújo, RS Peres, J Barata, F Lidon, JC. Ramalho, Characterising the Agriculture 4.0 Landscape—Emerging Trends, Challenges and Opportunities, *Agron*, 11 (2021), p.667, 10.3390/AGRONOMY11040667
- [3] Rabiya Abbasi, Pablo Martinez, Rafiq Ahmad, The digitization of agricultural industry – a systematic literature review on agriculture 4.0, *Smart Agricultural Technology*, Volume 2, December 2022, 100042, <https://doi.org/10.1016/j.atech.2022.100042>
- [4] <https://www.wur.nl/en/newsarticle/wageningen-university-research-connects-the-dots-during-smartagrihubs-event.htm>
- [5] [https://rural-vision.europa.eu/index\\_en](https://rural-vision.europa.eu/index_en)

Lisbon, 28 September 2022