NEFERTITI
Networking European Farms to Enhance Cross Fertilisation and Innovation Uptake through Demonstration
(Please add Title)

Ref. Ares(2022)915687 - 08/02/2022

THIS PROJECT HAS RECEIVED FUNDING FROM THE **EUROPEAN UNION'S HORIZON 2020 RESEARCH AND INNOVATION PROGRAMME** UNDER GRANT AGREEMENT N. **772705**

Analysis of EU regions S3 and RDPs funding capacities

Document Summary

Deliverable Title: **Analysis of EU regions S3 and RDPs funding capacities**
Version: Final version

Deliverable Lead: Mitchell Hendriks (Provincie Zuid-Holland)

Related Work package: WP6

Partners: Regione Toscane (RT), Wageningen University and Research (WUR), Gemeente Westland (GW) , Provincie Zuid-Holland (PZH), Seinäjoki University of Applied Sciences (SEAMK)

Authors/Contributors: Fabio Boscaleri (RT), Jose Vogelezang (WUR), Marga Vintges (GW), Mitchell Hendriks (PZH), Soila Huhtaluhta, Alessandra Gemmiti (RT)

Communication level: Public

Project Number: **7727053**

Grant Agreement Number: **7727053**

Programme: **NEFERTITI**

Start date of Project: **January 12, 2018**

Duration: **4 years (+ 9 months extension)**

Project coordinator**: Adrien Guichaoua**

The project

NEFERTITI promotes the creation of interactive thematic networks related to the agriculture sector to promote knowledge, learning and the adoption of innovative techniques through the exchange of information between different actors and live demonstrations.

Table of contents

A. Description of the deliverable

Deliverable 6.2 gives a general overview on both the positioning of demo farms in regionalised[1] innovation ecosystems and funding opportunities that are offered through regional Smart Specialisation Strategies (S3) and Rural Development policies.

Starting from general considerations about the classification of different types of on-farm demonstration activities in chapter C, with chapters D and E the document enters in a more detailed analysis of relevant European policies, including some Country specific analyses with relevant examples.

Chapter F provides an insight on regionalised support policies and funding opportunities, providing examples and references from European Regions.

Finally, chapter G elaborates on knowledge and information collected by NEFERTITI during its activities and presents some considerations to help policy and decision makers to improve and sustain DEMO Farm activities over the long term.

Methodology

Apart from knowledge generated through interviews and discussions with Network and Hub leaders within the NEFERTITI project, the document is also based on literature, desk research and discussions with experts and representatives of the AKIS system in different countries and regions.

The research team adopted a structured checklist for interviewing experts and organised the European webinar "*Public policies supporting Demo Farms - expectations and potentials*" on March 15th, 2021 (video recording[2]).

Credits

The authors are grateful with several colleagues from the different NEFERTITI Hubs and other experts who supported at different stages the development of this deliverable. Particularly, they wish to mention the important contribution that has been given by the following: Vér András, Lies Debruyne, Rebekka Frick, Adrien Guichaoua, Jendrik Holthusen, Terhi Korpi, Richard Lloyd, Marco Locatelli, Damiana Maiz Barrutia, Fleur Marchand, Mathieu Merlhe, Luis Mira da Silva, Tom O'Dwyer, Gianpiero Petruzziello, Leonor Santos, Herman Schoorlemmer, Mateusz Sękowski, Isidora Stojacic, Zlatko Tomljanović, Milica Trajkovic, Kleoniki Valleri, Dimitar Vanev, Franziska Weissoertel.

[1] In this document, with "regionalised" we intend both the subnational administrative division (es. Regions, Provinces, etc.) and broader macroregional initiatives (es. trans-national, interregional and cross-border initiatives involving Member States and Regions).
[2] https://www.youtube.com/watch?v=x2pktWB3h9s&t=6054s

B. Source of information (survey methodology)

To collect the information, we have used different channels and analysed the following sources:

1. Analysis “Are Member States reflecting on the role of DEMO Farms in their AKIS systems?” (Presented in Annual Meeting 2021, based on information of SWG SCAR AKIS 5 meeting, March 24-26, 2021)
2. Nefertiti Region Analysis + membership file (contact persons, S3-networks, ERIAFF)
3. A list of relevant ESIF projects (Deliverable 6.1)
4. Interviews of NEFERTITI Hub coaches, 2020, 2021.
5. Interviews of regional and national policymakers by WP 6 partners, 2021.
6. Relevant European programmes and policies

C. Public demo farms, private demo farms and experimental farms

Sustainable agricultural development (in economic, social and environmental terms) is today a relevant challenge that calls for farmer' empowerment. Usually, innovative agricultural **best practices** and knowledge remain locally placed, whereas farmers should be connected among them and to external experts and scientific knowledge. Demo farms partially provide for this, they are farms *"used primarily to research and demonstrate agricultural techniques, rather than to make a profit"* (Oxford dictionary). They grant **peer to peer learning** from **farmer to farmer**, which in Europe is a very efficient way of getting a farmer familiar with **innovations**, and get innovations implemented on a farm. As Gibbons and Schroeder state (1983) this approach allows to "*take new innovations out of the 'unreal', scientific realm of the research station and place them firmly within the bounds of a farmer's everyday experience*". They provide for both the **dissemination** of the results of new practices and the **practice** itself of new methods, but they also generate a space for **sharing experiences**. In the EIP AGRI Operation Groups, this is one of the most important ideas of working together. So, on-farm demonstrations also support the development and **co-creation of knowledge** granting the interaction between farmers and other actors of the sector. To add to this a link with research and scientific knowledge, Europe is investing in the promotion of **networks** aiming at enhancing and supporting demonstration activities, by connecting **innovation hubs** and **clusters** to farms that want to promote demonstration events, helping them in all the phases ranging from the designing and promotion to the implementation, as well as living labs. The latter are "*initiatives in which experimentation is conducted on real farms, in specific territorial and community contexts, with farmers and other actors involved from the beginning as equal partners in proposing ideas, testing them, improving them and promoting them further"*[3]. Some DIH are already doing that, but this aspect should be further enhanced. You may find some examples in the next paragraph.

There are different types of demonstrations, *they can range from one-off 'field day' events to multi-year 'monitor farms' where farmers, advisors and industry members come together at regular intervals to assess farming opportunities in situ, to permanent 'research farms' where researchers test and demonstrate innovative technologies and approaches*. Mainly we identify three types:

1. **Private farms** (private agricultural holdings for commercial purposes): a certain number of farmers decided to turn their holdings into demo farms, showing in a peer-to-peer setting the innovation they are applying and their way of farming. Usually, demonstration activities taking place in private commercial farms are also supported by CAP or EAFRD, as these farms are fully eligible to receive such European funds. They may also be active in innovation projects funded by other instruments (eg. ERDF; R&I programmes; other national/regional funds). In some cases, demonstration has the patronage and sponsorship of relevant industries which decide to partnering with the farmer as a living and functional "showroom".

   Even if in most cases farmers require some revenue or compensation from hosting the demonstration, it

[3] EC website, *European R&I partnership on agroecology living labs and research infrastructures. Outline of what the partnership entails, why it has been proposed and how it will be developed*.

may happen that the willingness to open the farm's gate is moved by philanthropic behaviour or as an opportunity to proudly show the results of their achievements.

BOX 1 – Two examples of private demo farms

Van den Borne Aardappelen, The Netherlands

Van den Borne Aardappelen is a Dutch family-run farming business that is situated on the Dutch-Belgian border. The farm cultivates high quality crops on 400-500 hectares of land with a particular specialism in potatoes, as well as sugar beets and maize.
Van den Borne Aardappelen began investing in high-tech precision farming technologies in 2006. The introduction of precision farming technologies was motivated by the need to achieve significant improvements in crop yield and quality.
The farm now uses a number of important technologies that include GPS, remote sensing, satellite navigation, soil moisture probes, humidity sensors, weather stations, soil scanners, drones and sensors on tractors.
The use of the above technologies has enabled the farm to determine and manage cultivation requirements per square metre, rather than by size of farming land, to increase production, become less labour intensive, and reduce the farm's consumption of water, fertilizers, pesticides and diesel.
In order to achieve these goals and to continually develop new farming techniques, Van den Borne Aardappelen has forged long-standing collaborative partnerships with universities, agri-tech institutions and private sector companies in the Netherlands and worldwide.
These experiences have prompted farm's owners to place great emphasis on knowledge and information sharing in order to give other farmers the opportunity to learn about the benefits of precision farming. More information can be found on the YouTube channel "Jacob Van den Borne" and the website (www.vandenborneaardappelen.com), where is explained the state-of-the-art farming techniques and tools they use.

Hof ten Bosch, Belgium

Hof ten Bosch is a 140 hectares farm located in Huldenberg, in the countryside near Brussels, and it has been managed by Peeters' family since 1890.The main crop cultivated are high-quality potatoes grown for the crisps industry. In addition, Hof ten Bosch (HTB) also grows wheat, corn, sugar beet, oilseed rape, and pears.
Quality requirements for the processing industry are high and HTB keeps a close eye on many factors such as soil fertility, water management, and quality seed selection. Thanks to its commitment to high quality standards, HTB has become a Demo Farm sponsored and patroned by Bayer.
Through several tailored solutions, like seeds and traits, crop protection, and digital tools, HTB offers farmers better answers to meet the specific needs of their farms, all while preserving the environment.
Among others the following cutting edge and time-tested practices are implemented:

a. Crop protection and integrated solutions that combine chemical and biological products to protect crop yield and quality.
b. Decision support tools that make use of the latest in - formation on weather conditions, research findings, as well as disease and pest management to ensure that important decisions are met with all available data.
c. Cross-border techniques like planting and ridging, as well as new tools like anti-drift nozzles, which reduce surface erosion and drift.
d. GPS navigation in tractors which enable planting, fertilizing and spraying activities to realize a four percent savings in the use of fertilizers and crop protection products.

2. **Public farms** (farms belonging to governments, schools or universities): these farms usually have research and educational purposes. The commercial viability is less relevant even if they may operate on the market and collect revenues from the production. Their activities are motivated by testing innovative techniques, teaching students or promote farmer-to-farmer learning. Because of their public nature, they are normally supported by public funds. They could be supported by CAP (particularly for advisory or training services) but the funding for demonstration activities is normally linked to some institutional mandate linked with other National/Regional funding streams (eg. R&I programmes; Technology Cluster policies; Digital Innovation Hubs and living labs; etc.). Public farms may also operate in partnership with industries but the process of this kind of partnership appear to be less attractive from the private perspective.

BOX 2 – An example of public demo farm

Tenuta di Cesa, Italy

Tenuta di Cesa is a public Demo-Farm of about 74 hectares located in the municipality of Marciano della Chiana (Arezzo), Tuscany, which for over 30 years has been engaged in various activities related to experimentation knowledge and innovation transfer and applied research in agriculture and forestry.
Its mission is to bring farmers closer to innovation, involving them both in the identification of priority topics that are of interest for the production system, including eventual stages of technological development.
To achieve these goals, over the years Tenuta di Cesa has specialised in conducting research, testing and technology transfer activities within the framework of national and European projects and it allocates about 60% of the surface to experimental activities, such as:

a. testing of new varieties of herbaceous crops within the National Experimentation Networks.
b. testing and transfer of agronomic techniques compatible with environmental and economic sustainability, including precision farming technologies.
c. the vineyard 4.0, designed to test the most advanced precision farming technologies, such as software, detection systems and sensors for monitoring activities, crops and the agro-climate.
d. Training facility for safety of farming equipment operators.

Thanks to these actions for the dissemination of innovations, and following a multi-stakeholder approach, through the involvement of farmers, technicians, researchers, entrepreneurs and students, Tenuta di Cesa Demo-Farm fosters peer learning and accelerates the innovation process in agriculture.
For that reason, it has become an important element of the regional AKIS and its competence is recognised by the Regional Government, which involves Cesa 'experts in the Regional Smart Specialization Strategy (S3) governance.

3. **Experimental farms**: these farms do not produce for commercial purposes, but are generally used by Universities, RTOs, Schools, governmental institutions and companies to conduct agricultural experiments for research or testing purposes. The earning model is generally fee-based. Their activities may end up in some form of demonstration events which are generally oriented towards researchers, students and technicians. Farmers can be involved but with lower or no commercial expectations. Even experimental farms can be a tool for Digital Innovation Hubs and farm labs (Fieldlab FreshTeq – Kansen voor West) and can be financed via ERDF projects.

BOX 3 –Examples of experimental farms

HAMK Mustiala

HAMK Mustiala is an educational and research farm located in Tammela, in southern Finland. The core activities are research and field trials, while the main production direction is represented by milk. The farm, in fact, has a robot free stall barn built in 2015 with more than 70 cows.
The farm is cultivated using organic methods. The sustainable production is based on well planned crop rotation of different grasses, legumes and cereals and good timing of cultivation actions. Moreover, feed maize, peas and broad beans are grown on the farm.
HAMK Mustiala gives a particular attention to the constant monitoring of weather and plants growing conditions. Development of soil temperature and humidity is monitored by sensors and the weather station measures temperature, air humidity, precipitation and wind. Results can be followed online real time while, at the same time, history information is formed.
The farm has modern machinery for crop production and geospatial information plays an important role: as an example, the farm navigator helps the driver and geographical data saves the driving route. This makes it possible to optimise work in the fields, manage resources and production inputs efficiently and ensure a high quality and a good yield.

Delphy, Vertify and Wageningen UR Greenhouse Experimental Farms

In the Netherlands the Greenhouse are, due to pest stress, sentenced to close their greenhouses to outsiders. Therefore there are experimental farms, public and private (Vertify & Delphy), that are active on applied research and in Demonstrations. October 7 and 8, a Nefertiti group (network water efficiency in Horticulture) cross visited the Wageningen UR business unit Greenhouse horticulture in Bleiswijk and visited the annual Water Event, which is a typical Demonstration event.

D. Support to DEMO farms in European policies

In the previous chapter we have introduced the concept of Demo Farm and the different approaches that demonstration activities may assume. This paragraph analyses how demo farms can benefit from relevant European policies, starting from the Common Agricultural Policy (CAP), which is the most sectorial targeted one, but encompassing also other policies which may valorise the role of Demo Farms and benefit from them.

i. Common Agricultural Policy

The Common Agricultural Policy (CAP) is one of the most relevant policies in the EU. With a share of about **380** billion € (**31**% of the 2021-2027 Multiannual Financial Framework[4]), it gives Member States a broad spectrum of intervention schemes to provide direct support to agricultural enterprises and the sector as a whole.

The importance of knowledge transfer and innovation has been growing over the different programming periods. Since the 2014-2020, it has consolidated in the so-called *European Innovation Partnership for Agricultural productivity and sustainability*, also known as EIP AGRI. This initiative has also introduced a new intervention logic in the form of "*Operational Groups*", which are multi actor partnerships aimed at implementing projects that introduce innovative solutions in the agricultural and forestry sectors.

With this improved approach at EU level, the relevance of Agricultural Knowledge and Innovation Systems (AKIS) has also assumed a different role and its proper description and functioning has become a clear horizontal priority for the Managing Authorities of CAP funds in the 2021-2027 programming period.

By combining the logic of the EIP AGRI and the AKIS, it appears that on farm demonstrations play a crucial role in accelerating the innovation capacity of the European agriculture.

Even if the policy gives a clear direction to the importance of innovation, yet there are no specific obligations to integrate the concept of Demo Farms in intervention mechanisms and the possibility to provide consistent support to actual Demo Farms depends on how Managing Authorities interpret and shape the policy.

While writing this document, the authors are not aware of dedicated measures to support and improve the capacity of farms to become actual "Demo Farms". Some Countries (eg. Poland) are moving in that direction but information is still limited (see chapter D).

It appears that the only CAP intervention that supports farmers investing to act as demonstrators towards other farmers is the Cooperation measure through the EIP AGRI Operational Groups. Nevertheless, this intervention

[4] https://ec.europa.eu/info/sites/default/files/about_the_european_commission/eu_budget/mff_2021-2027_breakdown_current_prices.pdf

is not directly highlighting the importance of Demo Farms and there are no minimum standards or criteria to evaluate the quality of demonstration and to identify the farms hosting the demonstrations as “Demo Farms”.

ii. Regional Development and Smart Specialization Strategy

With about **274** billion €, Regional Development and Cohesion policies are the second larger headline after Agricultural funds in the 2021-2027 European budget. Even if agriculture and farmers are not the target of these policies, the allowed intervention schemes can be extremely relevant when it comes to innovation and knowledge transfer.

Through the definition of **Research and Innovation Smart Specialization Strategies (RIS3)**, National and Regional Managing Authorities have demonstrated that agriculture and food (agrifood) are one of the main concerns in terms of innovation needs. More than **270** Managing Authorities have set agrifood (or agrifood-related) priorities in their RIS3 in the 2014-2020 programming period. This led the European Commission to establish a dedicated **S3 Agrifood Platform**[5] which support the thematic connection among European Regions to promote collaborations and the development of interregional and cross-borders innovation investments.

The policy is clearly targeting technology and industrial development. It means that innovative solutions have to be developed and scaled up along to the different levels of market maturity (the so-called Technology Readiness Level – TRL) and it requires necessary demonstration steps.

For the farming and agricultural sectors, this means that on-farm demonstration plays a crucial role and Demo farms may fit well the scope of support schemes proposed through this policy.

As for the CAP, while writing this document, the authors are not aware of targeted measures to support and improve the capacity of farms to become actual “Demo Farms”. There are a number of Countries and Regions which are supporting Technology Poles and Clusters which are active in the agrifood sector and some of them have demonstration or experimental farms that are part of public R&I facilities. Even in this case, there are no special requirement for acting and hosting on-farm demonstration and, because of the intervention logic of the policy, farmers may be compensated in quality of partners of innovation projects but they are not specifically compensated for the demonstration activities (eg. income loss, substitution time, etc.).

iii. European Framework Programme for Research and Innovation (Horizon)

The 9th European Framework Programme for Research and Innovation (2021-2027) has been named **Horizon Europe**. It has a budget allocation of around **86** billion € and supports practically every sector through a number of initiatives and intervention schemes. Agriculture is among the supported sectors and is the focus of **Cluster**

[5] https://s3platform.jrc.ec.europa.eu/agri-food

6 "Food, Bioeconomy, Natural Resources, Agriculture and Environment" under the second pillar of the programme "*Global Challenges and European Industrial Competitiveness"*.

It is the Programme that calls for demonstration farms in the most specific way. Its previous editions (eg. Horizon 2020) already supported projects that promoted the development of Demo Farms and their networking. (such as; AgriDemo Farm2Fork, PLAID and Smart Agri Hubs specialised for digitalisation in agriculture)

The concept of demonstration and Demo Farm is well established in Horizon Europe and it is mentioned since the programme inception in 2021 in a number of new initiatives:

- The **Mission on Healthy Soil and Food** calls for specific "*Lighthouses*" as demonstrators for farming practices that supports mission's objectives.

- The candidate **European Partnership on Agroecology, Living Labs and Research Infrastructures** is also calling for demonstration farms to promote best practices.

- Specific **topics** in the 2021-2022 work programme have a focus on Demo Farms (eg. *HORIZON-CL6-2021-CLIMATE-01-04: Demonstration network on climate-smart farming – linking pilot farms*).

Demonstration is an important factor in many projects and the participation of farmers with the capacity to show innovative solutions and host visits is a major issue and value for the overall project impact. Unfortunately, the number of farmers who are available for this kind of projects and with the necessary skills for showing innovative solutions and host visits is not very high and their participation frequently takes place through intermediaries (eg. Universities, RTOs, Farmers Associations, other innovation agents).

iv. Economic and technology development in Cluster policies and Digital Europe (DIHs)

Clusters are sectoral organisations that can develop at regional (more common) national or even interregional-European level. They bring together in a double, triple or quadruple helix, different stakeholders coming from the research field, the commercial (or industrial) one, from the institutions and sometimes also from the civil society. They play a crucial role in building bridges across Europe's ecosystems, by supporting innovation, collaboration at different levels, international partnerships; moreover, they can help the ecosystem with issues on policy (education policy, innovation policy, energy policy, digital policy, etc.) and they can foster virtuous processes of social innovation.

The European Union strongly supports clusters through some policies and concrete initiatives based on three main pillars: clusters as accelerators for innovation and industrial change, inter-regional and international cluster cooperation, and cluster excellence. These policies are then implemented through concrete initiatives

Figure 1 Credit: European Observatory for Cluster and Industrial Change

Digital Europe is a programme launched and financed by the European Commission to shape and support the digital transformation of Europe's society and economy. It has an overall budget of **€7.5 billion** (in current prices), aimed to build the strategic digital capacities of the EU and to facilitate the wide deployment of digital technologies. It identifies five key capacity areas in which boosting investments: supercomputing, artificial intelligence, cybersecurity, advanced digital skills, and ensuring a wide use of digital technologies across the economy and society.

Within this framework the European Union supports the development of **Digital Innovation Hubs**. They are organisations providing digital services, access to technical expertise, training, research, and innovation depending on the demand. They "*function as one-stop shops that help companies dynamically respond to the digital challenges and become more competitive*"[6].

Smart Agri Digital Innovation Hubs are often part of a cluster, "*they ensure the connection between the ICT and the farming communities by bringing together IT suppliers, the farming sector, technology experts, investors and other relevant actors*"[7].

To facilitate the exploitation of these means, an online platform has been made available to enable the mapping of all registered clusters at European level. The website allows users to search by entering different filters: Country, Evolutionary stage, technology, services provided, focus on TRL and of course the sector. It is possible to verify that within the "Agriculture and food" sector there are 239 DIHs among which 175 fully operational, and 64 in preparation.

[6] European Commission website: https://digital-strategy.ec.europa.eu/en/activities/edihs
[7] EIP-AGRI: https://ec.europa.eu/eip/agriculture/en/digitising-agriculture/developing-digital-technologies/digital-innovation-hubs

The Digital EU program aims to accelerate the economic recovery and shape the digital transformation in different economic sectors and segments of the European society, with particular attention to small and medium-sized enterprises. In this perspective within the Agri-food sector, a closer collaboration between the Digital Innovation Hubs and the demo farms is desirable, as it would allow the farms concerned to benefit from the services provided by the DIHs and then to show the results, contributing to their dissemination. National and regional authorities can play a key role in encouraging the setting up of DIHs but also in promoting this kind of collaboration, contributing to the creation of a regional innovation ecosystem. This practice is already taking hold in some regions, such is the case of Tuscany where Ente Terre Regionali Toscane is starting a collaboration between its public demo farms and a local agri-food DIH.

Some examples of virtuous projects, cluster and digital innovation hub supported by the EU are available at the following table.

DIGITAL INNOVATION HUB ON LIVESTOCK, ENVIRONMENT, AGRICULTURE AND FOREST (DIH-LEAF) *The initiative DIH-LEAF was launched in May 2021. It is focused on livestock, environment, agriculture and forest sector. It brings together universities, technological centres, companies, producer associations, and non-profit associations with the aim of improving their efficiency competitiveness and sustainability throughout the application of ICTs and digitalisation. It contributes to the development of both rural and urban areas.*	Regional initiative (Castilla y León, Spain)
SMARTAGRIHUBS *Smart Agri Hubs is a project under Horizon2020. It brings together a consortium of well over 164 partners in the European agri-food sector. The project aims to realise the digitisation of European agriculture by fostering an agricultural innovation ecosystem dedicated to excellence, sustainability, and success. A lot of regions or clusters have their own Smart Agri Hub for the technological development of their agriculture.*	Horizon Project
AGRIFOOD *DIH AGRIFOOD is a "One-Stop-Shop", providing digital transformation services to organizations (farmers, farmer associations, food producers, food supply chain actors, solution providers) through a Multi-Actor Approach (MAA) to provide safe, sustainable, and quality food, while considering economic, environmental, and social aspects and implications of food production and delivery. Research on their website is facilitated by interactive maps divided by organizations, projects, innovation networks, living lab, DIHs, start up, and DIH AGRIFOOD facilitator.*	National initiative (Slovenia)
EUROPEAN CLUSTER COLLABORATION PLATFORM *ECC is an online platform aiming to be the European online hub for cluster stakeholders (cluster organisations, policymakers, and other related stakeholders from the cluster ecosystem) and the reference one-stop-shop for stakeholders in third countries aiming to set up partnerships with European counterparts. The website also provides for an interactive map of many clusters all around Europe.*	Other EU funds (EU Commission initiative, under COSME)
GREENPORTS NEDERLAND *In the Netherlands there are 6 Greenports appointed by legislation of the national government. Greenports are clusters especially dedicated to the horticulture. Together they are federated in Greenports Nederland. Only one of the Greenports in the Netherlands, Greenport West-Holland, is ECCP related and member of Plant Inter Cluster.*	National initiative (The Netherlands)
PIC Plant InterCluster *A network of European Plant Clusters. Most agriculture related clusters are active in the field of technology and bioeconomy, there are not so many clusters active on primary production (farming).*	European Initiative

E. Country specific analysis

This chapter is intended to give an overview on how Demo farms are positioned in the policies and political debate of some EU Countries. The following table shows a synthesis of political orientations for 2021-2027 period. It was presented and discussed during the NEFERTITI annual meeting on April 13th, 2021.

Member State	***Comments***
PL	• *Poland has seriously put Demo Farms as an element of their AKIS.* • *Intentions to create a National Network of Demo Farms with a tender*
IT	• *Motivate single farmers and cooperatives to participate to multi-actor projects and to contribute to spread innovation.* • *A couple of projects are already established at National level, federating and valorising demo activities* • *A cluster of Regional Governments are discussing the identification of a specific interregional WG on Demo Farms*
SE	• *No evidence of specific activities dedicated to Demo Farms*
FR	• *No evidence of specific activities dedicated to Demo Farms*
AT	• *No evidence of specific activities dedicated to Demo Farms, but there is a strong interest in putting more emphasis on end-user experience within AKIS (dissemination of R&I results)*
DE	• *No evidence of specific activities dedicated to Demo Farms but a* ***Network of Living Labs*** *to create and test innovations in a multi-actor-approach (supporting EP Agroecology)* • *Stronger integration of practice and advisors in research and better dissemination of results. (Eg. Field days; transfer visits, demonstration activities, cross visits and more)*
BE	• *No evidence of specific activities dedicated to Demo Farms but a reference to "Modernizing training system: new forms of learning (e-learning,* ***learning networks****,...)"* • ***Incentives****: top-up for innovative investment support if the farmer disseminates the results* • *Advice for groups of farmers (e.g. area-specific approaches)* • *Demonstration activities targeting advisors and trainers*
EE	• *No evidence of specific activities dedicated to Demo Farms but a reference to joint study trips/bus seminars for mixed group of farmers/advisors/researchers to share information, gain new knowledge, build closer contacts*
CH	• *Not so clear, they talk about multi-actor but not directly about Demo farms;*
FI	• *It is not clear if smart farms concept is connected with Demo Farms or advanced farms that use digitization*
NL	• *Knowledge flow and advisors consider demo farms or project farms* • *Recognition of the importance of Demo Farms (Yet not clear how to financially contribute)*
IE	• *Opportunity of peer-to-peer learning that means they do have farmers contact in the knowledge flow.*
RO	• *Role of demonstration within cross-visits, holistic approach*
ES	• *Multi-actors events, network of demonstrative holding (probably a connections of farms), peer learning*

Sources*: SCAR AKIS SWG + NEFERTITI Webinar (15/03/2021) & Bilateral talks with experts and Nefertiti partners*

This table is the starting point for follow-up analyses taken by the NEFERTITI team. In the following pages the reader finds a more detailed analysis for some EU Countries. Each analysis concludes with a brief overviews of main strengths and weaknesses related with on farm demonstration activities. On the basis of such information, a global overview is then provided in the next chapter.

POLAND

In Poland, agricultural policies are defined and managed at National level. The main role is played by the Agricultural Advisory Center (national level) and 16 Voivodship Agricultural Advisory Centers (regional level). They are subordinate to the Ministry of Agriculture and Rural Development. The agricultural policy and its implementation are also influenced by the agricultural self-government units in the form of Agricultural Chambers. Already in the 2014-2020 programming period, Poland set up a support for on farm demonstrations through the RDP measure M01 (Knowledge transfer and information activities) and by setting up a number of thematic working groups in Poland. It involved the Voivodeships (Polish Regions), which have their own agricultural innovation and knowledge transfer systems.

In the CAP 2021-2027, Poland reiterates its interest in demonstration and reinforces it by establishing a dedicated National Demonstration Farms Network, which is built by advisors from 16 Voivodship Agricultural Advisory Centers and the national? Agricultural Advisory Center**.**
This Demonstration Farms? Network operates through shared governing principles and by establishing contracts with several entities (farmers, agricultural schools, research? institutes, universities and agricultural advisory centers) which are running demonstration farms. They set basic requirements for Demonstration? farms is accepted into the network.

The Demonstration Farms Network is used to exchange information, promote demonstrations, present innovative solutions, and support members of the network.
The following support tools are to be developed:

- website of the National Demonstration Farms Network - the main source of information.
- organization of training courses, conferences, study trips.
- training materials, instructions, information, videos from shows and demonstrations.
- co-financing of demonstration farms from the EU funds.

At the moment, the registration of demonstration farms with the National Network of Demonstration Farms database is in progress. Detailed information at the link: https://gospodarstwademonstracyjne.cdr.gov.pl/

In addition, across Poland it is planned to conduct 279 demonstrations on organic farms by the end of 2024. Demonstrations will focus on ecological plant and animal production and processing. This operation will be conducted under the action "Knowledge transfer and information activity" covered by the Development Program of Rural Areas for 2014–2020. The contractor for the operation will be selected through a public tender in the near future.

Regarding the demonstration activities at the regional level, the Wielkopolska Agricultural Advisory Center in Poznań already stands out with very good achievements. Based on many years of cooperation, there are established over 90 demo farms in this Region. An intervention ”Support for demonstration farms” is planned under the new EU’s budget for 2021-2027. Total amount of support: 21,97 million EUR.

Strengths	Weaknesses
- Public widely developed advisory services in Poland and their direct contact with farmers - Good cooperation between AKIS partners - Advisers' previous experience of working with demonstration farmers (Baltic Deal Project – 50 demonstration farms across Poland). Currently: NEFERTITI Project - Strong involvement of decision-making bodies in the promotion of demonstration activities - Financial support for activities under the new CAP is included - Existing National Demonstration Farm Network - Farm networking and demonstration activities ongoing. - Good regional initiatives (Wielkopolska Region)	- Low level of financial and in-kind support for demonstration farms - Insufficient knowledge of the use of electronic devices in communication (older farmers) - Not too high salaries of agricultural advisors which lead to ....? - Low level of mutual trust and willingness to cooperate among farmers

ITALY

The Constitution in Italy gives Regions and the two Autonomous Provinces of Bolzano and Trento the competence on agricultural policies. This translates in a quite regionalised structures of Agricultural Knowledge and Innovation Systems and related policy support tools. Among such policy tools, regionalised public demonstration sites (eg. Public farms and Experimental Farms) devoted to agriculture can be found in almost every Region.

While writing this analysis, the authors are not aware of any existing study that highlight specifically the role of Demo farms in the Country (or at a regional level). Recently, Italian Regions initiated a specific interregional focus group to identify all public infrastructures that are active in agricultural demonstrations, possibly leading to an interregional network of demofarms. The kick-off of this discussion happened on 1 July 2021 with a dedicated workshop organised as a parallel activity in the frame of the PIC2021 event and with the support of NEFERTITI project[8] .

Based on NEFERTITI connection with the Country, we observed that several Italian Regions have set initiatives that generate opportunities for on-farm demonstration activities. From a financial perspective, most of the Regions declared that EAFRD Measures 1, 2 and 16 are the best options for mobilising funds towards Demo Farms. In some cases ERDF Actions (eg. 1.1.4 in Tuscany and Veneto; I.1b.2.2 and 1.8.II.2.3.1 in Piemonte) are also considered as tools to support on farm demonstrations via innovation projects that indirectly target agriculture and farmers.
In general terms, EIP AGRI Operational Groups (GO) have been successfully implemented in Italy (638 GOs were activated, of which 107 were concluded). They provided a good opportunity for implementing demonstration activities, which have been included in several projects as a relevant step for the dissemination of results.

Italian Regions also indicated additional elements of their Innovation Ecosystem that may generate additional benefit for and from on-farm demonstrations.

- Regional and National agrifood technology clusters, technology parks and innovation poles
- Other agricultural and organic farming districts
- Private Farms available for organising demonstrations or act as demonstrators

Overall situation at Country level in view of the new programming period

Italian public administrations are discussing about how to improve and support DEMO Farms within the new EU programming period (2021-2027). Main drivers for the discussion are the following:

- Interest at National level with the establishment of two national projects funded through the National Rural Network:
    - FARMLAB: A platform to register farms that implemented innovative solutions and best practices and which are open to host trainings for other farmers. At the moment of the writing, 36 Farms are registered to the platform.
    - Innovainazione: A national catalogue of innovative solutions applied by farmers.
- The National Ministry for Agriculture is in the process of discussing with Regional Authorities about the establishment of a dedicated measure to support Demo Farms via the new CAP. Within this context, the Regions and Autonomous Provinces, during the editing of the National RDP (Dec.21), asked to include an intervention scheme to improve the links between agriculture and research and thus stimulate the modernization of agricultural activity by supporting the adoption of innovative solutions in public and private demo farms. The demonstration can be carried out at "demo farms" and at experimental centres.

[8] https://pic-2021.b2match.io/home

The intervention is aimed at supporting demonstration projects capable of promoting the strengthening and exchange of knowledge in favour of employees in the agricultural and forestry sectors, other public and private actors operating in rural areas and, more broadly, citizens and consumers. The intervention is an integral part of AKIS and can help increase the links between agriculture and research.

The demonstration activities consist in carrying out, for example, field and operational trials, experimentation activities, exercises aimed at the dissemination of technological, technical, process, product, organisational innovations concerning the agri-food and forestry sector in terms of production, social and environmental and actions related to the demonstration (visits, open days, seminars, etc.). The demonstration can be carried out "in the field" at "demo farms", at companies in real production situations and conditions and at experimental centres - or using virtual and "on-line" methods.

In order to promote the dissemination of demo farm experiences, agricultural and forestry farms will be involved in demonstration activities, also in network mode, with particular regard to farms that have participated in PEI Operational Groups. In addition, the demonstration activities carried out in the various regional territories are also made available through the innovation support and "back office" services at a national level and, therefore, are linked to the relevant Intervention and are open to recipients of other regional entities.

Strengths	Weaknesses
- Several public farms with a potential for demonstration are present all over the country; - Plenty of actors populates the national and regional AKIS; - Farm demo initiatives already in place at both national and regional levels (eg. A new training devoted to management of on-farm demonstration activities in Veneto Region; Tuscany promoting NEFERTITI approaches to other Regions, etc.)	- Fragmentation of AKIS - Lack of resources specifically aimed at sustaining demonstrations - Scarce perception by farmers of the benefits of demonstrations - Academic approaches still prevailing on practitioners needs - Lack of trainings

FINLAND

Agricultural Knowledge and Innovation Systems in Finland are based on cooperation and mutual development. Triple and quadruple helix networks are strong as well. Peer to peer learning and on-farm demonstrations are directly considered in AKIS and seen as one of the strengths of operations.

On-farm demonstration activities are supported in both national and regional scale through e.g. Ministry of Agriculture and Forestry and Centre for Economic Development, Transport and the Environment. The funding, however, is mainly project-based. On Farm -demo activities are common in different kinds of EAFRD projects (especially in educational projects) and other ESIF projects, and it is seen valuable in knowledge and best practices dissemination in agriculture.

There are some demo-farm activities in the educational and experimental farms of vocational schools, universities, Natural Resources Institute Finland (Luke), advisory and commercial actors of agri-food sector. For example the privately owned farm in cooperation with education of SeAMK and Sedu including also experimental activities. Another good example is Västankvarn Gård. However, the emphasis of peer-to-peer learning and demo activities in national scale is on the private farms. All demo activities are mostly organized as pilot activities of EU funded projects, mainly EAFRD. Peer-to-peer learning is realized well when the demo activities are carried out from a private farmer to another.

The general atmosphere, trust, and positive attitude for peer-to-peer learning, sharing, and networking are relatively good. Demo-activities are found important and appreciated by the participants and organizers. Frontline farmers are organizing demo -actions on their own premises. Agile EAFRD projects can ease this task side-by-side with farmers.
Interesting larger scale national initiatives with demo farm activities are:

- AgriHub Farm Business Competence Network Finland
- Carbon Action

Developing agrifood sector especially in digitalisation, innovations and climate actions is strongly emphasized in the new programming period in both national and regional scale actions and networks. It is expected that there will be different kinds of financing possibilities for activities such as on-farm demonstrations, that are advancing learning, cooperation, digitalisation and innovations in agriculture. The actors are also very much interested in organizing, sharing and learning by on-farm demonstrations.

Strengths	Weaknesses
- Good cooperation between AKIS partners - Flexible model of EAFRD projects enables active implementing of on-farm demos - On-Farm demo activities are common in different kinds of EAFRD projects (especially in educational) - Attitude: On-farm demo activities and networking are appreciated by the participants and organizers - Educational farms of VET & UAS have the infrastructure and facilities to carry out on-farm demos. The organisations are interested in cooperation. They have possibilities for different kinds of funding compared to commercial farms and potential to step up more in demo activities.	- Long distances – to be compensated with digitalisation - Lack of continuity – demo activities are mostly based on single projects (or commercial activities) - Lack of funding available for large scale public demo farms, leading to lack of permanent public demo farm activities

FRANCE

The France Government gives the competence on industrial, technical agricultural policies to *Pôles de Compétitivité.* French competitiveness poles or clusters operate in delimited geographic areas. They can be either regional or inter-regional. They are active in most activity sectors, including emerging technologies (for example, nanotechnology, biotechnology, eco-technology) as well as more established sectors (for example, automotive and aerospace).

French competitiveness poles or clusters promote the development of collaborative projects in research and development (R&D) that are particularly innovative. They also support the development and growth of their member companies thanks to the marketing of new products, services or processes resulting from research projects. To this end, they bring together large and small firms, research labs, specialised suppliers, educational and training providers, working in partnership in a particular field and in a specific region or territory. Public bodies (at local, regional or national level) are also associated to the poles. Competitiveness poles are recognised by the French government and defined in the 2005 Finance Law (loi n°2004-1484).

Linking industrial policy with research and innovation policies, they are formed to reinforce the competitiveness of the territory and the enterprises belonging to the pole, encourage innovation and stimulate the creation of new businesses in the area. Certain skills and competencies are sought out, and efforts are made to match training courses with skills required by companies.

The competitiveness poles are funded by the Inter-ministerial Unique Fund (Fonds Unique Interministériel), which is a financial programme funded by several ministries and managed by the public investment bank BPIfrance. Other public funding is dedicated to the governance structures of the poles, which is mainly funded by the state. They also benefit from the support of public entities such as the National Agency for Research (Agence Nationale de la Recherche) or BPIfrance, and various other measures such as tax exemptions. Regions are also a significant provider of funds for the projects developed by competitiveness poles.
Based on NEFERTITI connection with the Country, we observed that several France Regions have set initiatives that generate opportunities for on-farm demonstration activities.
The regions play also a very important role. Funding the *Pôles de Compétitivité* is one of their activities. The other one, especially in the agriculture system, is funding Chambres d'Agriculture , so that they can roll out an innovation policy by funding projects and demo-farms.

Photograph; Cross-visit in Bretagne, France

France has different sorts of demofarms. There are the public demofarms, where the farmer shows his or her new ways of producing to fellow farmers. There are also experimental farms, across the French territories, mostly managed by professional, advisory and technical bodies, for example, as mentioned before, the farm managed by Caté.

CATE is an experimental centre based in the heart of the vegetable and horticultural production area of Brittany. The station carries out regional, national and European programmes of experimentation on fresh vegetables, ornamental horticulture and cultivated mushrooms. These programmes seek to resolve technical issues which may be encountered in production and develop the diversification and segmentation of the products and shows these possibilities to the farmers. Founded in 1965 by professional organisations (SICA of Saint-Pol-de-Léon, cooperatives, Chamber of Agriculture, Technical Institutes), the experimental station is managed by the CATE (Economical and Technical Action Committee), professional union gathering vegetable and ornamentals organisations from Brittany region. Public demofarms are mostly managed by schools and universities. Also Cooperatives are Funding projects, research- and demofarms.

Strengths	Weaknesses
- Several public farms with a potential for demonstration are spread all over the country. - Initiatives already in place at both national and regional levels (*Pôles de Compétitivité*, Chambres d 'Agriculture.)	- Regions are not very active in the system (only by funding, and European representation, not by policies in the region itself) - Lack of resources specifically aimed at sustaining demonstrations - Academic approaches still prevailing on practitioners needs

Photograph; NEFERTITI Farm Demo at Les Culturales 2021

SPAIN

Until the end of programming period 2014-2020, the CAP in Spain was implemented by regional governments, having each their own rules and Rural Development Plans. This has changed in the 2021-2027 period, being these policies centralised in the national Government, with a common policy for all regions. Thus, if the on-farm demonstration funding should come from the AKIS plans, this would be in the hands of the Ministry of Agriculture of the Spanish Government.

In this context the Ministry set up a Focus Group on AKIS, that concluded that demonstrations, both on experimental and commercial farms, are an excellent tool for transferring practical knowledge to the sector, where "peer learning" is also encouraged through the participation of farmers and livestock keepers on the same level with researchers and advisors.

If the CAP funding framework has changed, the role of Regions in AKIS system is still very relevant. Here we have a couple of examples of how Spanish Regions have been dealing with this aspect.

Between 1999 and 2002 the Government of Navarra had a budget to finance visits and stays of advisors and producers to demonstrations, fairs, commercial operations and advisory bodies in other European regions of relevance for the Navarrese production system for example.

Public advice to farms is provided in the Autonomous Region of Navarra through the Navarra Institute of Agricultural Infrastructures and Technologies, S.A. (INTIA, S.A.). INTIA is the only advisory organisation accredited by the Government of Navarra to perform the advisory service. INTIA, as regional public company, has been involved in the PLAID project and now in NEFERTITI.

The outcomes of the project and the demonstration guidelines and their relevant for knowledge transfer have been shared with the regional government. Currently INTIA is also involved in IPMWorks and, in its quality of regional public extension service, the company strongly supports the demo approach.

Photograph; NEFERTITI Farm Demo Cross-visit in Almeria, Spain

The Andalusian Agricultural Research and Training Institute (IFAPA) is an organization of the regional government of Andalusia which carries out demo activities in their experimental stations and on some commercial farms. It is an important actor of the regional innovation ecosystem. Producer organizations have sponsored demo activities under the CAP policies. Coexphal, an association of producer organizations (APO) is already a member of NEFERTITI as a linked third party.

Strengths	Weaknesses
- Public extension service trained on demonstrations and using them as knowledge transfer tool. - Good participation of farmers in demonstrations organised by INTIA. - Well stablished AKIS.	- No specific budget at regional level for on-farm demonstrations. - Not always easy to involve farmers to carry out demonstrations themselves. - Peer to Peer activity is still low and can be better coordinated

THE NETHERLANDS

In The Netherlands, the well-known OVO triptych of research, education and advisory services has led in the past to a strong AKIS in the agricultural sector. After the privatization of advisory services and research field labs in the 1990s and the termination of the national levy boards (*Productschappen*), new forms of collaboration have emerged between the business community, knowledge institutions and government: the so-called Golden Triangle which is also part of the Topsector policy.

The public financed research and education systems are still strongly developed and vital. There is also a wide variety in private advisory services, knowledge brokers and intermediaries. However, the decrease of public finances for dissemination and field labs has led to a strong decrease of public demo farms in The Netherlands. There are only a few experimental farms left in The Netherlands as a place for farmers to go to, and most of them are for arable crops and dairy farming.

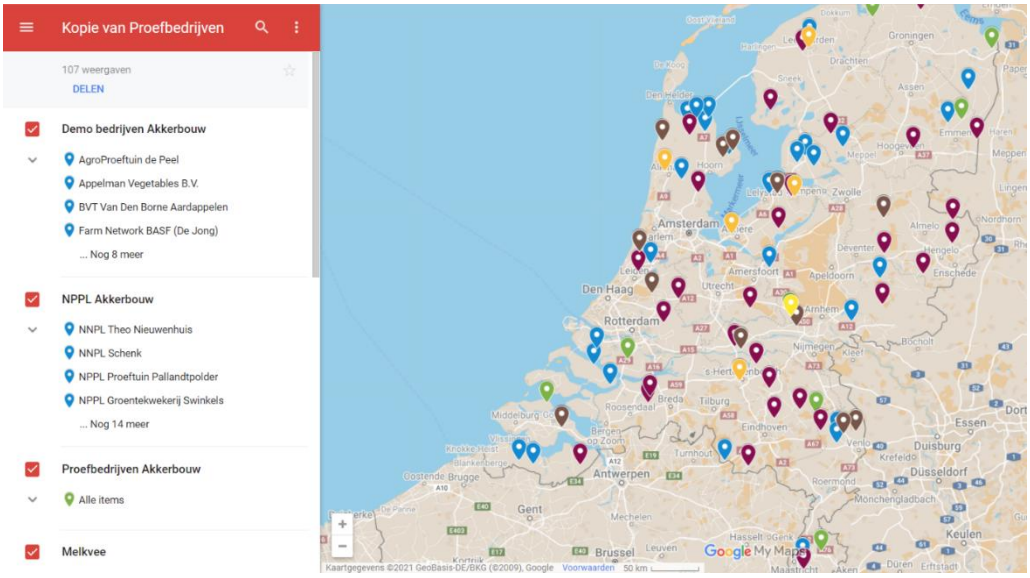
However, the new instrument for Operational Groups is well used by farmers in The Netherlands and has been evaluated by The Dutch Ministry of Agriculture[9]. 70 out of the 123 Operational Groups have reported that demonstrations and excursions are the most effective way of knowledge transfer. This result fuelled the discussion about realising a better infrastructure for knowledge dissemination in The Netherlands. Also a recent report on better use of field labs, as an instrument to further strengthen innovation, valorisation and market creation in SMEs, has led to recommendations for more national management and deployment of field labs[10].

It is therefore clear that, for the realisation of a future network of demo farms, it is important to arrange a structural financial instrument for organisation of events in The Netherlands. The Dutch Ministry has started a 3-year lasting Tender for demo networks, as a steppingstone for the Dutch National Strategic Plan in the new CAP which should provide a more stable financial instrument for such demo activities. The Dutch Ministry of Agriculture is also going to appoint an AKIS-coordinator for the new CAP.

Furthermore, the Dutch Ministry of Agriculture is also going to investigate the current state of the NL AKIS as a starting point for further discussions. They are convinced about the value of NEFERTITI and would like to continue. The PRO-AKIS study ‘Building stronger agricultural knowledge and innovation systems (AKIS) to foster advice, knowledge and innovation in agriculture and rural areas’ (April 2019)has revealed weak points of the Dutch system and they really would like to strengthen the AKIS-system. Furthermore, the Dutch Ministry of Agriculture is also going to investigate the current state of the NL AKIS as a starting point for further discussions. They are convinced about the value of NEFERTITI and would like to continue.

This figure shows a recent map of the (mostly) private demo farms in The Netherlands for arable crops and animal husbandry. Also regional authorities are financing demo farms, f.e. the province of Drenthe appointed eight dairy farmers as ‘coach’ for circular farming (soil, nitrogen, climate, biodiversity, water) stimulating more sustainable agriculture. Also other organisations like DAW Knowledge Programme, National Network Arable farming and the Applied University Meeting Points are setting op demo farms or demo activities.

[9] Evaluation of the RDP3 knowledge dissemination measure, released on behalf of the Ministry of Agriculture, Nature and Food Quality (LNV), Amersfoort, September 9, 2020
[10] Exploration EZK perspective utilization of field labs, Commissioned by Ministry of Economic Affairs and Climate (EZK), Utrecht, 15 oktober 2021



The horticultural sector in the Netherlands is regionally organized in so-called Greenports. In total there are seven Greenport regions in the Netherlands. In all regions different actors work together as a triple helix network, stimulating universities, entrepreneurs and government to work together. As a top-tier organisation Greenports Nederland is connecting these Greenports and represents the sector on national and international affairs. This includes partnerships in EU-platforms like ERIAFF and Plant Inter Cluster.

Strengths	Weaknesses
- Strong relationships between Research, Education, Advisory services and the farming community (the AKIS) - Agri&Food and Horticulture & Starting materials are appointed as 2 of the 9 so-calles Topsectors based on strong (international) economic position with extra financial support from the National Government (R&D). - The recent evaluations has shown weaknesses in the AKIS and the government is already taking actions. - Also regional and other farming organisations are taking initiatives for strengthening knowledge transfer.	- Privatization in the '90 has led to loss of a lot of public demo farms and advisory services. - Lack of structural finances for organisation of demo activities (at the moment it is mostly project based). - Fragmentation of the AKIS. - As a result of the fragmentation entrepeneurs are overloaded with information from many sources leading to an information 'haze'.

IRELAND

The Republic of Ireland is unique in that a substantial component of the Irish AKIS lies within a single organisation (Teagasc, the Agriculture and Food Development Authority). Teagasc undertakes activities in research, extension services and education. Teagasc is a national, publically-funded organisation with programmes delivered through seven research centres, seven agricultural colleges and 52 local advisory offices dispersed around the country. It provides an independent source of scientific based information for all Irish farmers (130,000) and professionals (circa 10,000 FTE) who provide services to the AKIS. It also facilitates over 120 demonstration farms (including its own research demonstration farms, commercial demonstration farms and farmer-owned demonstration farms) across a range of production systems. Through Teagasc, Ireland has retained a strong national advisory service, based on a mixed funding model, that recovers approximately 40% of the cost from farmers and industry partners.

A noteworthy feature of the Irish AKIS are Teagasc joint development programmes with industry partners; such programmes have been initiated and delivered by Teagasc for the past thirty years. Partners have included dairy processing companies and co-operatives, cattle market co-operatives and beef processors. The programmes focus on common areas of interest to all parties and increase the overall funding and advisory effort dedicated to meeting specific common objectives. One such joint programme is the Signpost Programme (www.teagasc.ie/signpost).

The Signpost Programme is a new five-year campaign to lead climate action by all Irish farmers, and achieve early progress in reducing gaseous emissions from Irish agriculture; it was launched in May 2021. Central to the delivery of the programme is a network of over 120 demonstration farms, representing all of the major farming enterprises (dairy, beef, sheep, tillage, pigs and poultry). It is a collaborative programme led by Teagasc, and involving over 50 industry partners (including all of the main milk and meat processors, farm organisations, industry representative bodies, the Department of Agriculture, Food and the Marine (DAFM), Bord Bia and four media organisations).

The overall budget for the programme is €17m over five years, including €7.5m industry funding, €7.5m Teagasc funding and €2m Department of Agriculture, Food and the Marine funding, DAFM (for a specific research project which is part of the overall programme). The provision of industry funding for the programme is essential to its delivery. Not alone does the funding indicate industry's commitment to the programme, and the sector's commitment to reducing GHG emissions from Irish agriculture, the funding also allows Teagasc to employ additional personnel to deliver programme activities (augmenting the activities currently delivered by Teagasc staff). The collaborative approach was also needed given the scale and complexity of the climate challenge, and the requirement for the adoption of available mitigation actions at pace and scale across the sector.

DAFM has also funded a number of projects under the European Innovation Partnership (EIP) which has provided an opportunity for farmers and advisors to work on challenges and projects of relevance and interest in their local region. 23 Irish EIP-AGRI projects were selected in 2019, with the projects being successfully developed by their Operational Groups. Demonstration events have been held on many farms participating in these projects. In addition, participating farmers have been empowered to become educators and leaders through their involvement in these projects. A further 24 locally-led projects were selected earlier this year (2021), following an open call for Farm and Community Biodiversity Initiatives. A key feature of these latest, small-scale projects will be the involvement of local communities in their planning and implementation.
Two further examples of funding for demonstration farm-based projects include:

1. EU funding e.g. the Marie Skłodowska-Curie Actions: Developing talents, advancing research fund has funded the European Industrial Doctorate (EID) programme for the Devenish Demonstration Farm research programme.
2. The Science Foundation Ireland (SFI) Zero Emissions Challenge fund supported interdisciplinary teams to develop disruptive solutions that accelerate progress towards net-zero greenhouse gas emissions in Ireland by 2050; the winning team was the FARM ZERO C project, led by Carbery (milk processor), and featuring their demonstration farm at Shinagh, Co. Cork (details available here).

The Farming for Nature (FFN) project celebrates and supports farmers across Ireland who are going that extra mile to support nature on their farms, and to share their stories and knowledge with other farmers and the wider public. As part of FFN's work, every year a number of exemplar Irish farmers are identified and the stories of these 'Ambassadors' and their practical knowledge are shared using short films, podcasts and media pieces; details available here. FFN hosts farm walks throughout the year, led by farmers for farmers, and has an active social media presence. An independent, non-profit initiative, FFN is supported by Bord Bia, the Department of Agriculture, Food and the Marine and the National Parks and Wildlife Service.

Public policy for Irish agriculture is summarised in the Food Vision 2030 strategy document (available here). This document sets out a future vision and ten-year strategy for the development of Irish agriculture. The strategy contains 22 high level goals, grouped into four missions. Under Mission #2 "Viable and Resilient Primary Producers with Enhanced Wellbeing", the strategy calls for continuous updating of education and training programmes to meet the changing needs of the sector and emphasises the importance of lifelong and peer-to-peer learning. Under Mission #4 "An Innovative, Competitive and Resilient Agri-Food Sector, Driven by Technology and Talent", the strategy highlights the requirements for new forms of knowledge exchange, with farmers playing a more active role, embracing peer-to-peer learning within a more dynamic knowledge exchange environment. The tailoring of peer-to-peer learning and advice to farmers in the local area is highlighted, as is the need to capitalise on the expertise and communication skills of farmers through more farmer-led talks, videos and other outreach activities.

Photograph: NEFERTITI Farm Demo Ireland

Strengths	Weaknesses
- A collaborative programme, led by Teagasc in collaboration with over 50 partners - Science based - Focus on farmer-to-farmer learning - Comprehensive data gathering to allow for benchmarking - All main farming enterprises included - Holistic approach to sustainability (economic, environmental and social)	- A monitoring and Evaluation (M&E) framework to evaluate the effectiveness of the programme is yet to be designed - The effectiveness of the programme in reaching and engaging all farmers will be difficult to measure - There is currently a lack of information on how farmers perceive the programme, and the climate change challenge - Costly to deliver in terms of staff resources (hence the importance of industry funding)

BULGARIA

The country is divided into 6 planning regions (NUTS 2), 28 administrative regions (NUTS 3) and 264 municipalities (LAU 1). In Bulgaria there is a strong polarization: there are many small-scale farmers with under 2 ha, 64.62% of the total agricultural holdings, who cultivate only around 1.8% of total UAA and a small number of large-scale farmers with over 50 ha, 4.7% who cultivate 85.22% of UAA.

The main institution for implementing policies which are relevant to on farm demonstrations are as follows:

- **Ministry of Agriculture** (MA). It is the main state organization that mainly works for implementing national agricultural and forestry policy, and Common Agricultural Policy (CAP) including policies which are relevant to on farm demonstrations. The MAhas strong linkages with its secondary state organizations as Regional Directorates "Agriculture", National Agricultural Advisory Services and Agricultural Academy, and also with farm organizations and NGOs and weaker linkage with the universities and private sectors. Rural Development Directorate (RDD) functions within MA. RDD is responsible for development and implementation of Bulgarian Rural Development Programme and future Bulgarian CAP Strategic plan 2023-2027. RDD is also responsible for development AKIS in Bulgaria,

- **Regional Directorates of Agriculture and their units at the municipal level** (28 Regional Directorate at the district level and 234 Agricultural Municipal Services at municipal level). They are specialized territorial administration units and secondary administrators at the MA. Their aims are to implement state policy in the field of agriculture, to provide information to the farmers, to provide statistical data and annual reports of the agriculture in the regional levels, to create system for registered farms for direct payments, to register farmers, etc. The employees of the Regional Directorates of Agriculture also take part in the seminars, events, trainings and demonstrations

- **National Agricultural Advisory Services (NAAS).** NAAS is the secondary administrator at the MA. The main office is legal entities funded with headquarters in Sofia and 27 regional offices in the country. The NAAS has provided advisory services, laboratory chemical service and technical assistance to farmers for implementing efficient and competitive agricultural practices in Bulgaria since 2000. The main mission of the NAAS is supporting the implementation of the state policy in the agricultural sector and achieving the MA priorities and objectives for implementation of efficient and competitive agriculture in Bulgaria. In 2007, Centre for Vocational Education at NAAS was established. Its aim was to provide a wide range of long- and short-term training activities in agriculture (in-depth theoretical and practical knowledge) to farmers and to make them acquainted with the latest development in agriculture. Regional offices support the transfer and application of scientific and practical achievements in the field of agriculture; providing specialised consulting in the field of agriculture; organising and conducting training and demo events for farmers; assisting by providing information; and providing a set of advisory services to individuals under the conditions and requirements of the RDP Measures. The regional offices, often, cooperate with government and non-government organizations in the field of agriculture for information, knowledge and organization of the common events science. NAAS is and will continue to be a major provider of advisory and consulting services at the district and municipal level with strong and lasting ties with the MA, as well as with scientific and academic organizations and farmers. NAAS is the only participant in AKIS that has expertise for knowledge transfer, maintaining the quality and capacity of its experts.

- **Agricultural Academy (AA).** AA is an autonomous budget organization in the frame of MA for research, service and support activities in the field of agriculture, animal husbandry and food industry. 25 Regional Scientific Institutes Scientific institutes carry out basic research

Universities. The universities mainly provide education and training to students at Bachelor, Master and Doctoral levels. There are 5 main agricultural universities in Bulgaria.

Policies and initiatives that can be relevant in view of reinforcing the role of Demo Farms and supporting their activities, with a specific focus on funding tools

The Bulgarian Agricultural Knowledge and Information System (AKIS) consists of diverse and numerous organizations involved in the process of generating, sharing, disseminating and implementing knowledge and innovation in the industry.

The different participants in the AKIS contribute in different ways to the management and financing, to the initiation, creation, dissemination and implementation of knowledge and innovation in the industry. Along with this, various hybrid structures are developing between academic, business, non-governmental, public, international and others. organizations and agents for creation, dissemination, implementation and wide commercialization of knowledge and innovations in branch, interbranch, territorial and transnational scale.

The development of the AKIS in Bulgaria is aimed at:

- Dissemination of knowledge and innovation, which play a crucial role in helping farmers and rural communities to meet the challenges now and in the future;
- Institutions responsible for agricultural policy, farmers, researchers, advisers, agricultural and industry associations and the media to join forces to support the development of new knowledge and innovative solutions in the field of agriculture;
- Creating an enabling environment for the more effective dissemination and implementation of innovations and for the better use of existing knowledge to achieve the objectives of the Common Agricultural Policy;
- Close cooperation with the European Innovation Partnership for Agricultural Productivity and Sustainability (EPI-AGRI) to support interactive innovative projects at local and transnational level;
- Stimulation, development and development of innovative projects and dissemination, use and widest possible application of their results.

The main tool for support of Demo farms for current programming period is Bulgarian Rural Development Programme 2013 – 2020 which is financed by the European Agricultural Fund for Rural Development (EAFRD) and Bulgarian National Budget. In the programme are included the main policies and initiatives which are relevant in view of reinforcing the role of Demo Farms and supporting their activities.

Specific targeted initiatives related with Demo Farms (eg. Networks, Budgetary lines, projects, etc.)

The main types of demonstrations are related to new fertilizers, plant protection products, new varieties, new machines, new technologies, new equipment, and there are also demonstrations on specific topics such as innovations in organic farming which are highly linked to sustainability (environmental, social, economic). The focus of demonstration is on single technologies not on whole farm approaches.

The main providers of demonstration are individual farmers, Bulgarian National Agricultural Advisory Service (NAAS), Agricultural Academy, Agricultural University – Plovdiv and Trakia University – Stara Zagora, Foundation for Organic Agriculture „BIOSELENA" and supply chain companies. In most cases in Bulgaria initiators are the same as organisers of demonstrations. The farmers' associations and other non-governmental organizations rarely organize demonstrations.

The Agricultural Academy organizes demonstrations in their experimental stations and experimental fields within its institutes.

NAAS organizes demonstration mainly through its regional offices.

Under the Bulgarian Rural Development Programme 2013 – 2020 it is included special Sub-measure 1.2 ,*Support for demonstration projects and information actions'* under Measure 1 '*Knowledge transfer and information actions'.* Under the sub-measure support is provided for demonstration activities in the areas of agriculture and forestry. **Any additional elements of the Country Innovation Ecosystem that may generate additional benefit for and from on-farm demonstrations.**

In 2019, the Government adopted the Strategy for digitalization of agriculture and rural areas of the Republic of Bulgaria until 2027. The main goal of the digitalization of Bulgarian agriculture and related agricultural business is to turn it into a high-tech, sustainable, highly productive and attractive area of the world economy, which not only improves the living conditions of farmers but also rural areas such as whole.

In the last draft version of National Recovery and Resilience Plan of the Republic of Bulgaria (under the Regulation (EU) 2021/241 of the European Parliament and of the Council of 12 February 2021 establishing the Recovery and Resilience Facility) it is envisaged the special project for Digital agriculture.

The overall situation at Country level in view of the new programming period

At the moment the new Bulgarian CAP Strategic plan 2023-2027 is developing. It is expected in February 2022 to be send to European Commission for approval. Under the plan many activities are related to support AKIS and demo events and demo farms.

The development of the AKIS in Bulgaria for 2023-2027 will also be directed to:

- Support for raising the knowledge and awareness of farmers and foresters by providing consultations and organizing training courses and information and training events, **incl. demonstration and on-farm exchange events;**

- Support and assistance for the successful implementation of projects under the Horizon 2020 program and the Horizon Europe program.

Strengths	Weaknesses
- Existing National Advisory Service (NAAS) which covers and organizes demo events to all Bulgarian territory; - Acquired experience in organizing demo events including through Horizon 2020 projects NEFERTITI and PLAID; - Existing and functioning research experimental stations under Agricultural Academy ; - Availability of a large number of research organizations and universities including Agricultural Academy - Availability of special RDP sub-measure 1.2. Support for demonstration projects and information actions' - Availability of EIP-AGRI operational groups	- Not well-developed demo farm networks in the country - Small number of demo projects - Applied research directions are not always based on the needs of farmers - Weak desire of farmers to participate in demonstration events. - Fragmentation and weak links between AKIS actors with some exclusions (NAAS-universities and NAAS-farmers) - Not enough resources specifically aimed at support on demo events including delay in the start of RDP sub-measure 1.2. Support for demonstration projects and information actions' - Academic approaches still prevailing on practitioners needs - The results of higher education and research are difficult to put into practice, inadequate cooperation

CROATIA

The Croatian Agricultural Knowledge and Innovation System (AKIS) is characterized by numerous public and private entities well experienced in education, research or advisory activities, but their connections are weak and there is no systematic and effective exchange of results, knowledge, data or innovation, which limits their impact to the economy. Research and applied research is happening to some extent but there is no system of transforming of acquired knowledge to the farmers or other stakeholders in the system. Croatian AKIS is moderately diverse with strong influence of public funded entities and, till recently, strong emphasis on public advisory service. Other significant contributions come from the food industry and input providers, who more and more invest in research and innovation and often include highly specialized advice to their cooperants or customers. Least developed part of the AKIS is the one related to the NGOs and farmers association, which is historically conditioned and typical for Croatia and neighboring countries.

The main bearer and coordinator of all activities on the (re)establishment of the AKIS system in Croatia is the Directorate for Professional Support to the Development of Agriculture within the Ministry of Agriculture, responsible for planning, managing and implementing advisory activities in agriculture, and providing expert advice on new technologies, innovations, knowledge and skills needed to develop and preserve the value of rural areas and the sustainable development of agriculture.
In addition to the competent body, other actors are included in the AKIS system (Scientific and educational institutions, Public institutions, Associations, Private sector).

Croatian AKIS operates directly and/or indirectly with public, private and EU funding. Financial institutions and some EU-supported networks (EIP- AGRI, LEADER, ENRD), media, info-channels (web sites, trade fairs, etc.), and the operation of non-governmental organizations (foundations, councils, associations) take part as well.

Directorate for Professional Support to the Development of Agriculture within the Ministry of Agriculture provide some basic advisory packages that covers key areas of production and enable farmers to meet the priorities, focus areas and topics set by the RDP. Although the number of advisers is limited and regularly below average, the advisory service and vocational training includes advice on cross compliance, a package of environmental measures, climate change and organic farming, advice on modernizing and increasing the competitiveness of farms, advice to young farmers, and vocational training of farmers (including topics related to the business of young farmers, farm management, etc.).

The implementation of activities concerning establishing the operational and functional AKIS system is aligned with the preparation for the programming period after 2020 and contribution to the objectives of the CAP, which relate to stable income of farmers, increasing the competitiveness of farmers, inclusion of farmers in short supply chains, the impact of agriculture on climate change, sustainable use of natural resources, protection of natural habitats, generational renewal, rural development and employment, and health and food safety.

Generally, advisors form the Directorate for “Professional support to the development of agriculture” take part in EAFRD programme, particularly in workshops (Measures M1: Transfer of knowledge and informations to farmers) and demonstration activities (Measures M2 Advisory packages).

The practical lessons always take place on a demo farm of one of the attendees of workshop or demonstration activities. The advisers will choose the demo farm based either on success rate of the farm thereby demonstrating good agriculture practice or unsuccessful farm thereby demonstrating examples of bad agriculture practice to the attendees. Sometimes it will be chosen lighthouse farm with progressive ideas in decreasing GHG emissions or some other advanced technology. There is no fixed number of demo farms and the choice is mainly influenced by the topic that the advisor wants to transfer to farmers. New farms with young farmers which have emerged recently are always welcome to be demo farms. Roughly there are between 250 and 300 demo farms in Croatia, in different areas of agriculture, run by family business or private companies.

Demo farms connected to NEFERTITI project

There are 16 demo farms currently included in the NEFERTITI project (11 farms in HUB 3 and 5 farms in HUB 10) in Croatia. Most of those farms were already used as demo farms in the EAFRD program. The owners and staff are quite familiar with the idea of NEFERTITI project thereby helping advisors organizing and taking place of demo events.

Experimental farms

At the moment there are three experimental farms in Croatia which are connected to NEFERTITI, but the intention is to include a few more. Two farms are placed in continental part and one is in the Mediterranean area of Croatia. All three are run by either Faculty or Institutes for Agriculture and carry out research related to animal husbandry and plant production and protection respectively. They are already involved in preparing experiments related to sustainable agriculture as well as implementing new solutions at farm level related to carbon mitigation and adaptation. Occasionally they organize demo-events for farmers with topics mainly related to their research and innovations in implementing good agricultural practice.

Strengths	Weaknesses
- Established farm networks - Knowledge base and experience in operating demo farms - Skilled Demo farm experts, researchers in agricultural higher education - Existing vocational training program for farmers covers topics: cross compliance, environment and climate change, organic farming, sustainable use of pesticides, young farmers (compulsory modules) and courses the field of crop production, animal husbandry, diversification, irrigation, farm management, digitalization, bioeconomy (optional modules).	- No substantial research and innovation in agri-food sector - Lack of cooperation and exchange between AKIS actors - Collected agriculture data is not easily visible and accessible - Most of the farmers are not in line with modern developments in agriculture - Weak perception of agriculture among the young

HUNGARY

The **Hungarian AKIS** has a heterogeneous structure. In addition to the ministries, actors in the advisory system, participants in education and research, professional chambers, advocacy organizations, farmers' organizations, media and information channels, NGOs and various EU networks play a decisive role. The Hungarian Chamber of Agriculture plays a key role in AKIS, especially in the field of protection of farmers' interests, as well as in the generation and dissemination of information. Advisory services, which are brought together by the National Advisory Centre (OSzK), have a prominent role in the transfer of knowledge and the practical application and dissemination of innovations. 1100 advisors provide advisory services in Hungary. The Hungarian Chamber of Agriculture employs 610 village agronomists, who, among other things, provide information and help chamber members regarding issues related to their activities.

At the **governmental level**, the Ministry of Agriculture (AM), the Ministry of Innovation and Technology (ITM) and the Ministry of Human Resources (EMMI) as well as the background institutions supporting the work of the ministries are the main AKIS actors.

Agricultural universities play an important role in AKIS, as they also function as knowledge transfer centres: they carry out research, education and advisory activities as well, thus playing a role in encouraging the young generation in the field of innovation. With the help of universities, there are **demonstration farms (model farms)** where students can get acquainted with new technologies and the latest research results. A good example of this is the **model farm network of Széchenyi University** (SZE), which consists of more than 60 model farms/model plants. The model farm network covers the entire agricultural production system and is an important tool for putting university research results into practice.

In order to increase the performance of Hungarian agriculture, the Government of Hungary intends to designate model (demo) farms that stand out for the more efficient use of available resources, rural employment, product line integration, the production of higher value-added and high-quality products, technological development and the highest possible level of conservation and use of genetic resources. As a result, Government Resolution 1585/2020 (IX.11) on the designation of model farms was established, which designates agricultural producer organizations as model farms.

Demonstration Farm Network of SZE Faculty of Agricultural and Food Sciences - The faculty has a network of 67 demonstration/commercial farms with complex practical demonstration and knowledge transfer infrastructure. The members of the network are innovative commercial farms and businesses, from specialized small farms to large companies spanning several sectors. Their field of activity covers the sectors animal husbandry and mix farming, arable farming, horticulture, food industry and also financial institutions. About 12% of the farms are organic.

The Szechenyi University is a member of a project called the **Digital Agricultural Academy**, whose declared goal is to provide farmers and other actors in the agricultural economy with the opportunity to learn about, try out and acquire the necessary basic knowledge of digital technology. Digital demonstration farms: https://www.digitalisagrarakademia.hu/digitalis-bemutato-gazdasagok
The **ÖMKi on-farm research network** is a system of innovative experiments carried out on Hungarian organic farms. It was established in 2012 and since then, the number of participants has been increasing continuously. This is the first research network in Hungary that is based on the active participation of farmers: the topics of our simple experiments carried out under realistic conditions are determined together with the farmers. https://www.biokutatas.hu/en/page/show/onfarm

AGRYA is a national organization that currently has relationships with more than 3,000 young farmers. AGRYA is an agricultural and rural development organization. One of its most important goals is to represent and show the interests of young farmers. Another prominent goal of AGRYA is to help prevent young people engaged in rural but non-agricultural production from leaving their village, achieving this with goal with demo programs and campaigns for young people. Agrya - Hungarian Association of Young Farmers https://agrya.hu
In 2019, the Government adopted Hungary's **Digital Agricultural Strategy (DAS**). The aim of the DAS is to contribute to the increase of the efficiency of Hungarian agriculture, to the increase of producer incomes, to the optimal use of environmental resources, and to the supply of healthy food to the population through the dissemination of digital solutions and the conscious data management of the sector.

The priority project of the DAS is the Digital Agricultural Academy (DAA), the aim of which is to prepare Hungarian producers for the application of digital solutions. DAA helps growers navigate digital solutions, help them plan for their own farm digital switchover, and select and use truly effective solutions.
At national level, a package of measures to address the complexity of the AKIS is being developed. The main directions of design are the digital switchover and generational change in agriculture, and the spread of precision farming among farmers. In order to achieve these goals, and due to the ongoing government measures (Government Resolution 1585/2020 (IX.11) on the design of model farms), the role of demonstration farms is expected to increase in the near future.

Strengths	Weaknesses
– Existing and functioning model farm networks in the country – The tradition of model farms in Hungarian agriculture (e.g the establishment of a model farm in Mosonmagyaróvár linked to the agricultural academy in the 1800s (the predecessor of SZE), a world-class agricultural farm in Bábolna in the 1970s) – Existing knowledge base and experience in operating demo farms – Demo farm experts, researchers in agricultural higher education – Government intentions and programs for the designation of demo farms and the operation of a demo farm network (Government Resolution 1585/2020 (IX.11) on the designation of model farms, Digital Agricultural Strategy)	– Fragmented networks, existing demo projects do not or do not properly work together – The results of higher education and research are difficult to put into practice, inadequate cooperation – Applied research directions are not always based on the needs of farmers – It is difficult for actors to recognize the potential of demo farms (from both sides: owners of demo farms and other farmers) – Government programs find it difficult to get into the widespread practice phase – Demonstration events are widely advertised, farmers are not sufficiently informed

GERMANY

Agricultural policy in Germany is part of the European Union's Common Agricultural Policy. Decisive policy areas are shaped by the EU; the individual member state, e.g. Germany, is responsible for implementation. The objectives of Germany's agricultural policy were set out in the 1955 Agriculture Act. Since the law is still valid today, these goals still apply today.

In the legislative sphere, the bodies that make agricultural policy decisions are the Bundestag and Bundesrat at the federal level and the state parliaments at the state level. Competing legislation is of relevance to agricultural policy. This applies in particular to laws on agricultural social policy (e.g. the law on old-age insurance for farmers), but also to framework regulations, e.g. in the field of nature conservation. Executive bodies of importance to agricultural policy are the federal and state governments and the ministries of agriculture at the federal and state levels with their subordinate departments. Within the federal cabinet, the Federal Minister of Food and Agriculture is responsible for all agricultural policy matters. In his decisions, however, he is subject to the control of the other cabinet members, whose approval he requires for all significant matters.

The Federal Ministry of Food and Agriculture (BMEL) has the following responsibilities:

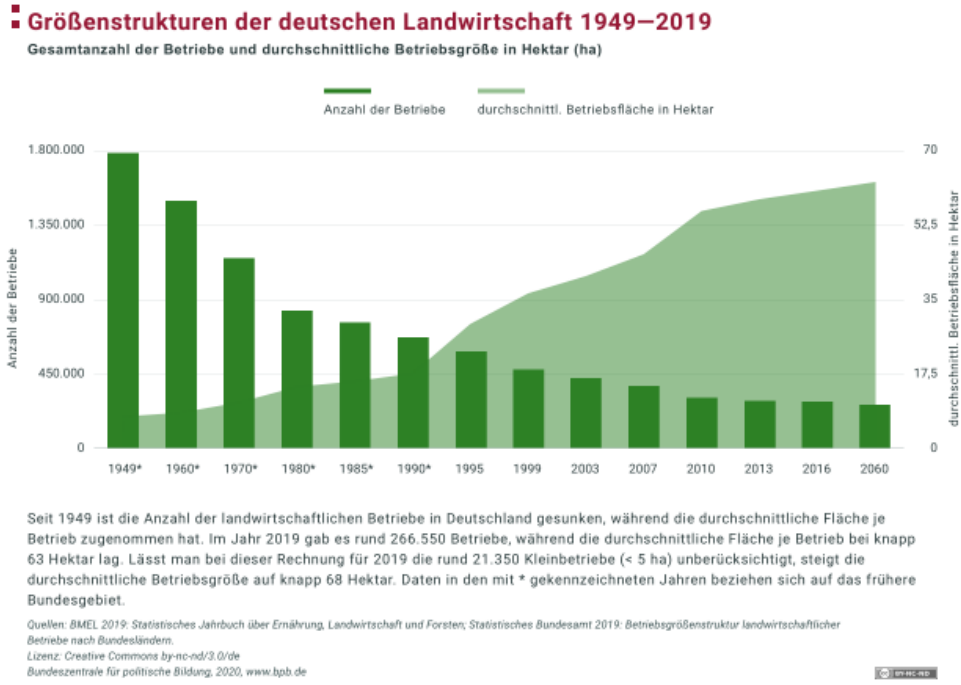
- Observing the development of agricultural policy
- Monitoring the proper implementation of enacted laws and regulations
- Preparation of implementing regulations for laws with legal force
- Preparation of draft laws
- Coordinating planned measures with other ministries.

The governments of the federal states perform the political leadership and management functions at the state level. They are made up of the prime minister and the state ministers. In a few federal states, there are independent ministries for agriculture and forestry. Often these are combined with food and consumer protection or rural areas (Baden-Württemberg, Bavaria, Lower Saxony), otherwise agriculture has been combined with other areas, e.g. with environmental protection or nature conservation, economics and transport or regional planning (Berlin, Brandenburg, Bremen, Hamburg, Hesse, Mecklenburg-Western Pomerania, Rhineland-Palatinate, North Rhine-Westphalia, Saarland, Saxony, Saxony-Anhalt, Schleswig-Holstein, Thuringia). Together with their subordinate departments, the state ministries responsible for agriculture are primarily responsible for implementing EU regulations and federal laws. However, since these generally leave the states a certain amount of leeway in their practical implementation, they are often able to take state-specific aspects into account, resulting in some considerable differences in implementation. In addition, the state governments have the option of adopting their own state policy measures within their scope of authority.

After World War II, chambers of agriculture (LK Schleswig-Holstein, Rhineland-Palatinate, LK Bremen, Saarland, LK North Rhine-Westphalia, LK Lower Saxony) or institutions like chambers (LK Hamburg, Berlin) were re-established in most of the federal states, following the corresponding pre-war institutions. In southern Germany, however, independent professional self-governing institutions were not established (Bavaria and Baden-Württemberg) or were dissolved after some time (Hesse). Chambers of agriculture have not been established in the new federal states either. As public-law corporations, the chambers of agriculture occupy an intermediate position between state bodies and professional organizations: on the one hand, they perform sovereign administrative tasks on behalf of the federal states (e.g. implementation of subsidy measures, participation in landscape planning), but at the same time they also act as agricultural self-governing institutions (e.g. consulting, vocational training).

The Overall Association der Deutschen Land- und Forstwirtschaftlichen Arbeitgeberverbände e. V. is the national umbrella organization of the agricultural state employers' associations existing in Germany. Through its membership in the state associations, the Overall Association represents the collective bargaining interests of agricultural and forestry companies with permanent wage employees. The central task of the association is to negotiate uniform, nationwide wage policy parameters with the trade union. The result of the negotiations is then submitted to the state labour associations as a federal recommendation for resolution, so that the state associations ultimately have collective bargaining authority.

The agricultural interest groups attempt to assert their goals vis-à-vis other groups in society by influencing the political will-forming and decision-making process, without themselves bearing direct political responsibility. Farm networking is often organized via the farmers' association at regional level, where it is also held as the farmers' political voice. In the recent past, farmers in Germany have joined together to form another unit (Land schafft Verbindung) and actively demonstrated. The organization of the masses of farmers was mainly done electronically (Facebook and Whatsapp) and showed how quickly farmers can organize. The background of the demonstrations was the price policy and ever-increasing demands on agricultural production.
In addition to the important political bodies of agriculture, there are also interest groups and associations such as ABL, BDM, Naturland, Bioland, Demeter, BDL, DLG, Water and soil associations. These are associations of farmers with a common interest to better organize, exchange or to centralize tasks. The cooperatives such as commodity cooperatives, livestock, meat, dairy and fisheries cooperatives, in which farmers bundle supply and demand in agriculture and thus strengthen the market position vis-à-vis trade and industry are an important part of the market situation and bundle common agricultural interests. In addition, there are advisory rings initiated by farmers to centralize advisory services. In the past, these have increasingly become a one-stop shop for bureaucratic tasks such as GAP applications or nutrient balances, as the bureaucratic work has become more demanding.



The figure clearly shows how the structure of farms has changed in recent decades, and with it the composition of networks in agriculture. Whereas in the past the local people were still responsible and counted 20 farms, today there are perhaps three farms. The old communication channels are therefore no longer up to date or need to be adapted. The increasing focus on bureaucracy and superior control tasks forces the farmers but especially the advisory rings, chambers of agriculture or associations to change the focus. The exchange of knowledge or the networking of farmers became through social media, but for a good exchange of knowledge you need the right methods and tools and therefore we need good communication moderators or facilitators in the future. This development is also visible and conscious in agricultural policy in Germany. In the recently drafted coalition agreement, the topics of transformation and territorial cooperation were included. Some of the individual states have already responded, such as the state of Lower Saxony, which has developed a joint strategy with environmental associations, the Chamber of Agriculture and farmers' associations. The Lower Saxony Way will appoint regional bodies for agricultural and environmental issues and implement the transformation process on the ground. What the concrete implementation will look like at the state and federal level has yet to be worked out, but the goals have already been defined.

Photograph; NEFERTITI Farm Demo Cross-visit Germany

Strengths	Weaknesses
- Existing network via the associations, chambers of agriculture or advisory rings as well as cooperatives (AKIS) - Projects with demonstration activities - Transformation projects and territorial cooperation in the political strategy	- Structural change and fragmentation of AKIS - Lack of funding specifically distributed to support demonstrations and facilitators - Academic approaches still outweigh practitioner needs - Lack of training

BELGIUM

Belgium is a relatively small country, characterised by a complex political organisation in which the regions have a lot of responsibility. Because of this decentralisation, agricultural policies are to be constituted at the level of the regions. Belgium can be perceived to have two separate AKIS, one in Flanders and one in Wallonia. Both AKIS are constituted by a large variety of actors, each having their own area of expertise. Both regions chose to implement a public policy characterised by a delegation of services, in which the Flemish and Walloon goverments support both AKIS' with institutional support and competitive calls.

In Flanders, the AKIS is centred around the experimental stations who provide a link between applied research and the production sector and the farmers' unions. There are many other organisations and institutions that all are interlinked to some degree, which is why the Flemish AKIS can be considered as strong and integrated. The weakest issue of the Flemish AKIS appears to be the advisory system which still has a weak link to agricultural research.
In Wallonia, the pilot centres, the *Collège des producteurs* and a large range of other organisations and institutions form the backbone of the AKIS. They have a lot of resources in terms of knowledge exchange and support services for farmers but because of the plurality of these service providers, the Walloon AKIS can be considered as strong but rather fragmented.

Photograph; NEFERTITI Cross-visit in Flanders

The main entity for agricultural policy making in Flanders is the Department of Agriculture and Fisheries (*Departement Landbouw en Visserij*). Together with the minister for agriculture, they design the policy for agriculture, horticulture, fisheries and the rural areas. The Department implements the policy, controls and evaluates it. Furthermore, the department manages the Rural Development Programme (RDP) budget and thus provides funding for training activities, demonstration projects, agricultural advice, support for innovation, etc. This funding is provided through the means of competitive calls, aimed at individual farmers, organisations, farmers' unions, etc.
More concrete, the Flemish and regional governments (mainly the Provinces) foresee institutional support through an operating grant to the research institutes and experimental stations. The latter are responsible for bridging the gap between research and practice. In total there are 12 experimental stations for crop production

and 5 for animal production as they translate existing knowledge in feasible solutions in a neutral manner. However, the grant they receive is not directly oriented to demonstration activities, although this is definitely part of their activities. We also have ddemonstrations by farmer networks, of which the most common examples are the organic farm networks ('*Biobedrijfsnetwerken*').

Furthermore, the Department of Agriculture and Fisheries supports and encourages the introduction and development of sustainable agriculture in Flanders. To this end, it subsidizes yearly, demonstration projects for sustainable agriculture (RDP measures - M01.2 demonstration projects). Only 'recognised centres for the sensitisation of more sustainable agriculture' have access to this funding, so applicants need to meet certain requirements. These demonstration projects encourage farmers and market gardeners to use more nature- and environmentally friendly production methods without negative economic or social consequences. Here, the activity of demonstration is supported and can be organised both on experimental research centres and stations as well as on commercial farms.

To conclude, in Flanders, the main 'models' for on-farm demonstrations are:

1) European and regional projects: mostly temporary demonstration farms. Examples are: Klimrek, BOVINE, NEFERTITI, IPMworks, …
2) Demonstrations by experimental research centres/farms. These experimental/research farms have several demonstration plots and sites, and often cooperate with local farmers to host demonstrations. A specific reference is worthwhile for PHAE (Experimental platform for Agroecology), located in Hansbeke, a collaboration between ILVO, organic farmer Felix de Bousies and consultant Alain Peeters. Together they generate and share expertise on the application of agroecological principles in practices.
3) Demonstrations by farmer networks: most common examples are the organic farm networks ('Biobedrijfsnetwerken').
4) Demonstrations initiated by commercial suppliers (of machines, seeds, plant protection products, etc), together with farmers on their farm. Hof ten bosch, is a quite unique private demo farm, of 140 hectares located in Huldenberg.

Agricultural policy making in Wallonia falls under the responsibility of the Walloon government. The regional administration offices involved in implementing the agricultural policy are *Service Public de Wallonie, Agriculture, Resource naturelles et Environment* (SPW ARNE) and *Service Public de Wallonie, Economie, Emploi, Recherche* (SPW EER).
Like in Flanders, the Walloon government offers financial support related to agriculture in the form of institutional support and competitive calls. Analogous to the experimental stations on crop production in Flanders, Wallonia has eleven approved Pilot centers (*Centres Pilotes*). They represent a certain production sector or particular theme and coordinate activities regarding that sector/theme. Furthermore they perform practical experiments and organize demonstrations.
As is the case in Flanders, Wallonia implemented a rural development program, managed by SPW ARNE. Measure M01.2 demonstration activities and information actions was implemented, this measure aims to support information actions and demonstration projects with a view to enabling micro-enterprises and SMEs active in the agricultural, forestry and forest-based sectors to acquire the skills needed to increase their competitiveness, innovate and improve their environmental performance.

Strengths	**Weaknesses**
- Strong AKIS - Renewed attention for on farm demonstration through regional and European projects - Plenty of actors populates the regional AKIS - Research on demonstration and learning is increasing	- Lack of trainings / facilitation skills - Lack of dissemination of European project findings to regional activities - Lack of resources specifically aimed at sustaining demonstrations activities, and certainly demonstration farms, on the long term

UNITED KINGDOM

The EU-project PROAKIS reported in 2015 that the current AKIS and advisory system in the UK is a mixed system involving public, private commercial and non-governmental actors. As such it is very fragmented. However, the UK AKIS is characterised by diverse arrangements in the four UK countries so the representation blurs the reality of increasingly separate knowledge systems in each country. Each country is governed by a discrete set of policy, government departments and agencies, and to a large degree also by discrete sets of NGOs, farmer organisations and private commercial actors. This is still the case.

At the UK level the government (DEFRA) supports the Agri-Tech centres which "support the development, evaluation and delivery of technology and data driven solutions to the challenges faced by the agricultural industry" and include a network of 24 satellite farms in its portfolio. However the focus of this network is more research and product development than exchange of knowledge between farmers. DEFRA acknowledges that more resource is needed in knowledge exchange (KE) and it is expected that more resource will be provided for farm demonstrations and peer to peer learning.

The farmer funded levy board Agriculture and Horticulture Development Board (AHDB) has historically around 16% of its budget on KE, including strategic and monitor farms, and 27% on research.
There are a diverse range of other organisations involved in UK AKIS, often commercial, and often with a narrow interest. These include government agencies, retailers, manufacturers, processors, consultants, farmers unions, charitable trusts, agricultural societies, research institutes, universities and colleges, accreditation organisations, veterinarians, environmental organisations, water companies and young farmer organisations. The range of organisations shows a large potential in the UK, but it is a fragmented system, with repetition and little collaboration.

Strengths	Weaknesses
- Diverse delivery of AKIS with many different approaches and specialisms in the four countries - Exists across all sectors including more novel systems like regenerative farming - Highly trained advisors involved - AHDB levy board have been and still are a key player for industry AKIS - Government are beginning to recognise bottom-up farmer led approaches more within AKIS and related funding	- Very fragmented with much repetition and reinvention of wheel by different actors - Some aversion to collaboration and joining forces due to commercial nature of many delivery partners - Very few actors practicing bottom-up approaches, still predominantly top down - Vets are technically part of AKIS but not very involved in with the rest of the industry, innovation and advisory services. - No agricultural specific formal facilitation training for advisors. - Farmers still perceived as hard to reach/laggards/progressives/engaged - Still frequent reliance on Theory of planned Behaviour and other outdated narrow behaviour change concepts.

SERBIA

The NEFERTITI network of DEMO FARMs in Serbia is not an easy task to establish since there are still a lot of uncertainties on the market regarding agricultural produce and irregular direct payments which are dedicated to agriculture producers and therefore a lack of uniformed policy bodies which oversee on-farm demonstrations. For instance, **organic agriculture production** is still a huge subject among the national regulative bodies, due to lack of infrastructure and knowledge which could be solved with demo farms around Serbia where the farmers could understand the benefits of organic production. Regulations on demo farms should provide advocacy, among diplomacy groups distributed across the country, focused on providing a platform for sharing resources, building relationships, and training the next generation of farmers and agriculture professionals to be pivotal voices on all levels of policy making.

The SWOT analysis in the AGRICULTURAL AND RURAL DEVELOPMENT STRATEGY OF THE REPUBLIC OF SERBIA FOR THE PERIOD 2014-2024. has shown the lack of development institutions and demonstration facilities as an important shortcoming[11]. Based on Article 64 of the Law on Environmental Protection, the Government issued a decision on establishing the National Environmental Protection Program in 2010. In accordance with the Program, the Fund's resources are used in particular for: protection, preservation and improvement of air, water, soil and forest quality, as well as climate change mitigation and protection of the ozone layer; remediation of landfills, encouragement of waste reduction, recycling and reuse of waste; introduction of cleaner production for plant operation and activities, as well as the introduction of an environmental management system; encouraging educational, research and development studies, programs, projects and other activities, including **demonstration activities[12].**

One of the main bodies in Serbia in charge of farm demonstration activities is the Agricultural advisory and expert service of Serbia (PSSS). Each PSSS in each region keeps records of 1-3 agricultural farms that serve as demonstration farms. These farms can also be existing selected agricultural holdings where the results of advisory work are visible. The demonstration farm serves for showing:

1) good agricultural practices;
2) economic success of farm management (presentation of successful bookkeeping records and farm management);
3) application of new and modern production technologies;
4) the effects of using advisory services.

The advisors from PSSS organize a tour of the demonstration farm for groups of agricultural producers and other interest groups[13]. In order to improve agricultural production, PSSS is obliged to carry out demonstration experiments in crop or livestock production. After the inspection, the agricultural service must organize the "Field Days", with the participation of eminent experts from certain areas of agricultural production. PSSS informs agricultural producers, the Ministry, the Institute for the Application of Science in Agriculture (IPN) and all interested parties about the date and place of the Field Day, through local newspapers and local TV stations, five days before the survey. The field trial should be set up and implemented in such a way as to ensure comparability of the obtained results.

The mission of the NEFERTITI project is to catalyse the engagement of farmers and agricultural producers in policy making by fostering community, training the next generation of leaders, and empowering advocates for the role demo farms in the agricultural society. Also, one of the main requirements for the Serbian agricultural market is optimizing agriculture with innovations which could be displayed on demo farms since some structures are still not regulated properly.

1. *Creating a community of demo farms in order to obtain useful policy tools* – We will use existing network(s) in order to create a joint structure, but also other stakeholders, such as farmer organizations, etc.

Connecting already established groups and organizations which have similar goals to share resources and stimulate collaboration within the IPM policy network.

[11] STRATEGIJA-2014-2020-.pdf (uap.gov.rs)
[12] Microsoft Word - Zastita zivotne sredine.doc (ekologija.gov.rs)
[13] demo.paragraf.rs/demo/combined/Old/t/t2011_09/t09_0085.htm

- The National association for development of organic production **"Serbia Organica"** is an independent, non-governmental and non-profit civil organization. It was established in 2009 on the initiative of the Ministry of agriculture and interested parties within the organic sector as the umbrella association that would support organic development and promote organic agriculture in Serbia. "Serbia Organica" joins a whole organic sector within the Serbian territory (producers, processors, distributors, certification bodies, associations, centers, educational and scientific institutions). Moreover, Serbia Organica is a strategic partner to governmental and foreign institutions in projects related to coordination and harmonization of compliance in the organic agriculture in Serbia. Therefore, this actor plays an important role in the policy building on Integrated Pest Managements since it possesses important knowledge within one of the agricultural sectors-the organic sector. "Serbia Organica" is a member of the international organizations like FOAM (International Federation of Organic Agriculture Movements) AVALON (Foundation for improvement of sustainable rural development of Central and East Europe) ISOFAR (International Society of Organic Agriculture Research).

- **SECPA (Serbian Crop Protection Association)** is a voluntary and non-profit organization founded in December 2009 to promote, harmonize, and promote common attitudes and activities of its members and create conditions that ensure stability and development in the field of plant protection in Serbia, with the application science, innovation and modern technologies in agricultural production that provide a high level of protection of human health and the environment. SECPA members are national branches of multinational companies leading in research and development, production, and distribution of quality and innovative plant protection products: SECPA Serbia has partially harmonized its legislation in the field of plant protection products with the principles established in the EU by adopting the Law on Plant Protection Products in 2009. National regulations based on the Law on Plant Protection Products have brought approximation to the basic concept valid in this area in the EU, especially regarding the chemical identity of active substances allowed by these means, as well as regarding the maximum permitted amounts of residues in food.

- **FAO Serbia:** In order to learn from the past and prepare for the future and to help the development agriculture in Serbia, FAO organized training workshops in Serbia within different aspects of agriculture production. Some 30 participants, including professionals from Serbia's Ministry of Agricultural and Environmental Protection, the acting assistant director for the Office of Reconstruction and Flood Relief and FAO experts, worked to define priority activities for disaster risk reduction and management activities in the agricultural sector when the floods in 2014. affected Serbia and its agriculture production. This will serve as a great reference point for the NPN to extend its influence in Serbia.

  In autumn 2016 a new series of trainings in Climate Change Adaption was launched in Eastern Serbia. In 42 trainings, farmers from seven municipalities were trained how to better adapt their cereal and fodder crops, fruit, livestock, and vegetable production, to better utilize their agriculture machinery and improve their farm management practices, and to be more prepared and resilient to negative influences of climate change on agriculture. This is a network which FAO still nurtures in their ecosystem and will help to encourage the promotion of demo farm activities in Serbia.

2. *Training leaders and empowering advocates of pest management*

   Equipping agricultural producers and other relevant actors with essential skills to inform and create public policy by providing training, networking, and opportunities for professional experience. In correspondence with the NEFERTITI project in Serbia we aim to promote research and development in firstly, organic farming and attract experts in the sector throughout demo farms, and in addition we also conduct various promotional, and awareness rising campaigns in order to develop, advance and disseminate the importance of demo farms by using the organic sector as an example.

   Supporting the inclusion of demo farm initiatives in the policy process and promoting the advancement farmers and co-creation in the agricultural sector engaging in public policy. The mission of the NEFERTITI project is to make sustainable IPM practices stable and competitive in Serbia. For instance, Serbia Organica will be a focal point when it comes to information on organic agriculture sector since it is something which is still underdeveloped in Serbia and the organization will provide matchmaking and B2B liaison opportunities as well. By virtue of the position of Serbia Organica, they have access to information related to the entire

organic sector of Serbia and it will be demonstrated during demo farm events. Their activities will be an integral part of the National Action Plan for Organic Production Development in Serbia. Serbia Organica, for instance, aims to encompass all the elements with the goal of promoting the values of organic production and the values of using an adequate amount of chemicals and pest management techniques.

3. *Added value to on-going activities in Serbia*

What is needed for the demo farm initiative, regulations and networking in Serbia is a body to create a provision of advice related to legislation, joint promotion of demo farm practices, brainstorming and exchange of experience, active participation in the training and provision of data to agricultural households related to importance and possibilities of optimized the subject of demo farm and on-farm activities etc.

Strengths	**Weaknesses**
- Several public farms with a potential for demonstration are spread all over the country - BIOS has a national network of users of its platform AgroSense which enables the organization to reach demo farms around Serbia - Network of actors (aforementioned, which have their own networks of demo farms and fields of activities)	- Lack of resources specifically aimed at sustaining demonstrations - Scarce perception by farmers of the benefits of demonstrations - Lack of infrastructure and state regulations

PORTUGAL

The GPP (*Gabinete de Planeamento, Politicas e Administração Pública*, translated **to Office of Planning and Policy**) is a government central administrative service, responsible for the governance and planning of actions related to Agriculture, Forrest, Rural Development and the Ocean. The main priority of this office is to support the building of strategic lines, priorities and objectives of the policies related to the governance of the mentioned sectors, to coordinate and evaluate the application of said strategies, as well as ensure its representation in the community and internationally. Also, to provide technical and administrative support to the offices of the members of the government and other services of the area.

The **National Rural Network** (RRN) is a national structure organized in regional groups formed by the regional delegacies of Agriculture and Fishing. Within the RRN there is a specific program, called **Action of Information** being prepared for on farm demonstration. The objective of this program is to share information, experience and knowledge, which implies the cooperation sorrowing the activities so that programs and measures from the rural development policy and the qualification and interventions, can be improved.
Also, within the RRN, there are **Competence Centres** dedicated to research and innovation within the agricultural and forestry sectors. There are currently 23 Competence Centres, organized by clusters.
INIAV, is the **National Institute for Agronomy and Veterinary Research**, who amongst other objectives, aims to promote demonstration activities by ensuring technical and scientific support in order to promote development and innovation, and to enhance competitiveness.

Photograph; NEFERTITI Cross-visit Alentejo, Portugal

Regarding the private sector, **The Calouste Gulbenkian Foundation**, an institution dedicated to the promotion of arts, philanthropy, science and education, created funding directed to entities with knowledge and experience in water management. The objective is to support peer demonstration and contribute to a more efficient use of water in agriculture. Currently, there is a national consultation taking place in order to assess the existing demonstration farms to start implementing a program in 2023.

Strengths	Weaknesses
- Strong rural and AKIS network - Robust sectoral associations - Culture of openness and debate in the farming sector - Strong national research institute with network of experimental farms (INIAV)	- Weak advisory services - Deficiency of specific incentives within the CAP - Lack of experience from farmers organizations - Too much bureaucracy with public incentives

SWITZERLAND

In Switzerland, on-farm demonstrations are a common and well-established format of knowledge exchange in the agricultural sector. On-farm demonstrations include a vast variety of events, incl. field days, stable visits, working groups etc. They are diverse in terms of topic, specificity, size, location, and participants. The providers of on-farm demonstrations include several organizations engaged in education, research and agricultural advisory services. Mostly, the events are organized by public institutions, i.e. cantonal advisors in close collaboration with research organizations, farmer associations and/or agricultural companies. Also, private companies (i.e. fodder, seed, machinery, and retail industry) or NGOs can be the organizers of on-farm demonstrations.

This variety of on-farm demonstrations is repeated in the policies that are relevant to on-farm demonstrations. Overall, funding from the federal and cantonal level plays a central role. But also funds by private companies are important. Demonstration farms are often owned by the canton and leased out to the farmers with the obligation to operate as a research and demonstration farm.

The Swiss AKIS is characterized by diversity and heterogeneity of institutions and funding schemes, being characterized by the federal structure of the Swiss cantons leading to decentralization. The cantonal level therefore plays a crucial role when it comes to the offer of basic agricultural training and public advisory services. At the federal level, the cantonal organizations network and exchange in a common forum Universities and research institutes play an important role in research, education as well as advisory services and also the program for further education of advisors is organized at the federal level. At intercantonal level, we have universities of applied sciences and the advisory organization AGRIDEA which support the cantonal advisors.

Agricultural Research, education and advisory services are to a large extent supported by public funds. Cantonal public advisory services for instance, which play a crucial role in agricultural knowledge transfer is fully funded by the Cantons. Figure 1 however shows that funding in the AKIS comes from all levels: Federal (Bund), Intercantonal, Cantonal and also private. When it comes to the private sector, farmer's associations, incl. sectoral organizations as well as the upstream and downstream industry play an important role.

In terms of methods of knowledge transfer, also in Switzerland a paradigm shift in the AKIS is happening: from pure information transmitters to facilitators who produce new knowledge together with different actors. The strength of the system relates to the diversity of actors involved, including both cantonal and federal level, as well as public, private and civil society actors. However, a common critique of the system is that knowledge transfer between research and agricultural practice is progressing too slowly. Finally, the diversity of actors involved makes it difficult to know who does what and to come up with a common strategy because of differing interests.

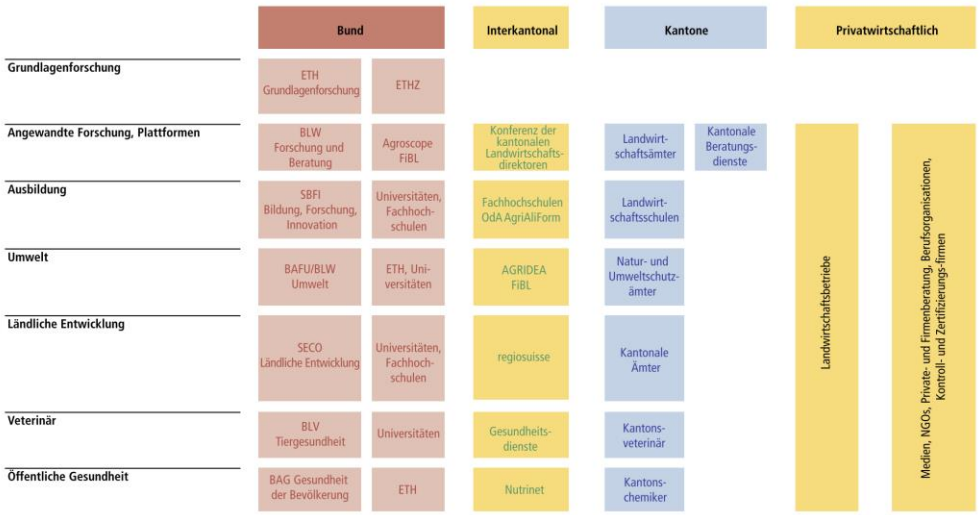


Figure 2: The Swiss AKIS broken down by source of funding (Obrist 2015 based on Barjolle 2011)

Policies and initiatives that can be relevant in view of reinforcing the role of Demo Farms and supporting their activities, with a specific focus on funding tools

- Federal and cantonal agricultural policy;
- Private initiatives by farmer associations, retail companies, environmental NGOs;
- Demo events (co)funded by the participants through event fees.

Specific targeted initiatives related with Demo Farms (eg. Networks, Budgetary lines, projects, etc.)

- Operational plans of cantonal agricultural advisory services, namely regulations affecting the offer of cantonal research and demonstration farms; Example of an initiative: Swiss Future Farm (Demonstration farm with focus on research and knowledge transfer related to new technologies, sponsored by cantonal agricultural centre and private companies)
- Advisory services by (cantonal) farmers associations; Example of an initiative: Advisory service "ProBio" by the Swiss Organic Farmers Association Bio Suisse and FiBL

Any additional elements of your Country Innovation Ecosystem that may generate additional benefit for and from on-farm demonstrations.

- Proximity to the needs of relevant actors thanks to the federalist system involving local offices and local interest groups. But lack of a general strategy for knowledge transfer through demonstration farms/events.

The overall situation at Country level in view of the new programming period

- Not relevant

Strengths	Weaknesses
- Involvement of a broad variety of actors - Proximity to farmers and knowledge of their needs - Both public and private funding schemes	- No or little coordination of demo-activities at federal level - Switzerland is not being part of the CAP, which results in different policies and makes it more complex to work together across Europe on policy level.

F. Conclusions on funding Demo Farms in European-, National-, and Regional ecosystems

Based on the information collected from the different analysed Countries, we may see some general features that are considered as positive contributors to the improvement and recognition of the role of Demo Farms in the AKIS and, hence, possibly influencing future funding streams devoted to such activities (Table 1 below).

Table 1 - Strenght / Countries	**TOT-15**
Plenty of actors populates national and regional AKIS	8
Farm networking and demonstration activities ongoing	8
Existing National Demonstration Farm Network	6
Good cooperation between AKIS partners	6
Public demofarms	5
Demo farm experts, researchers in agricultural higher education	4

The first two strengths are strictly related with the activism and vitality of AKIS actors in the majority of EU Countries. This has led to a relevant number of networking activities and the adoption of different models of demonstration actions involving farms and farmers. In some Countries (eg. Poland, Hungary, Croatia, Germany, Serbia, Portugal) there are already initiatives that aim at formalising Networks of Demo farms. Also important is the role that Public Demo Farms can play in the context of AKIS and knowledge transfer. This is seen as a strength in a number of Countries (eg. Italy, Croatia, France, Serbia and Switzerland). Finally, we can highlight the importance of having the right expertise and sensitiveness on the role and way to use demonstrations in higher education organisms.

If we look at indicated weaknesses (table 2 below), the lack of funding is perceived as the main one preventing the development and promotion of Demo farms role in the AKIS.

Table 2 - Weakness / Countries	**TOT-15**
Low level of financial for demonstration farms	10
Fragmentation of AKIS	6
Scarce perception by farmers of the benefits of demonstrations	5
Academic approaches still prevailing on farmers needs	5
Lack of trainings about demonstration methodologies targeting farmers and advisors	4
Lack of cooperation among actors when AKIS is too week	4

In any case, based on the full picture, it is not just a problem of directly financing the farm as an infrastructure to host demonstrations. The problem is multifaceted and it has to deal with the general fragmentation of funding among several actors, lack of training to bring the necessary skills, a scarce interest by farmers in demonstration, particularly when academic aspects tend to prevail.
If we look at existing funding sources, we may affirm that at EU level, Rural Development Programmes have incentivised the promotion of peer-to-peer learning among farmers and, with some measures, directly supported the cost of demonstration (eg. EIP AGRI Operational Groups). In few Countries there are examples of specific programmes that support on-farm demonstrations by positioning demo farms in relevant knowledge transfer or innovative actions.

In that respect, we may affirm that there is an urgency and raising interest in improving and innovating the farming systems, with agriculture and rural development policies which are better connecting with innovation and R&D instruments. The latter are at the core of several political initiatives (eg. Recovery and Resilience National Plans, Digital Innovation Hubs; Technology Clusters on Agrifood). Several Regions are active in

Europe and sensitive to establishing better interregional cooperation on this field: S3 Agrifood Platform; Interregional Cluster Collaborations (eg. Plant InterCluster), etc.

In general terms, the availability of funding that can be addressed to innovation in agriculture and rural development seems assured in the short/medium term, both at European and National level, but it is very difficult to identify its amount and how it fosters P2P learning and demonstration. The only funding source that seems to concretely demand P2P learning and demonstration is within the EIP AGRI measures in Rural Development Operational Programmes.

Some Member States have set specific programmes for agricultural R&I. In those programmes, there is not always a budget specifically devoted to "Demo farms" activities or improvement. It is fair to say that the funding of Demo Farm is taking place indirectly through the funding of specific R&I projects, which aims are connected to the project finding more than an actual improvement of the Demo Farm and the methodology behind the demonstration activity. In this regard, we may say that Demo Farms are not associated in R&I policies and ecosystems with a clear status of service infrastructures.

For instance in the Netherlands the Ministry of Agriculture created in 2019 new funding instruments ('Kennis op het Boerenerf') for knowledge transfer to farmers based on the fact that those farmers had indicated that they have difficulty understanding the enormous amount of, often complicated, information and translating it into practical and economically feasible perspectives for their own company. This knowledge transfer can take place in existing and new farmer networks, but also privately by independent coaches. These instruments are meant to be a steppingstone for measures under the new CAP. Another policy of the Ministry is to broaden the experimental Fieldlab on Agroecology & Technology with regional satellite demo farms.

In some Countries, such as Italy and Poland, efforts are in place to better support Demo Farm activities and their role in the AKIS. In both Italy and Poland, even with different Institutional configurations, National Institutions and Regions are collaborating to create intervention schemes that may generate opportunities for on-farm demonstration activities, such as dedicated measures under the new CAP and the new EU's budget for 2021-2027. In addition, both Countries are working to improve the links between agriculture and research while reducing the AKIS fragmentation in order to avoid a top-down academic approach and thus shaping farmer-oriented solutions.

In France the relation between Demofarms and demonstration supporting organisations and the regions finds its liaison in the regional Chambers of Agriculture. The Chambers support innovation, demonstration and peer-to-peer learning within the agriculture ecosystem of the region. Chambers of agriculture are very near to the farmers and are participating directly in the orientation of the funding tools together with the regional authorities.

Even if on-farm demonstration was already a way to proceed in several Countries, the Nefertiti project is seen as a major contributor to help increasing the quality of demonstrations and the peer-to-peer learning systems. At the same time, it may be relevant to keep implementing activities which are aimed at improving the level of cooperation between territories and actors and reduce the fragmentation of the AKIS.

For further reference, Annex A contains a broad list of actors, policy tools and initiatives that may provide direct or indirect support to Demo Farms in some Countries and Regions.

G. ANNEX - An overview of relevant competences and initiatives in European Countries and Regions

Country	Regio	National / regional innovation-instrument	Clusters	Plants/ Arable/ LiveStock spearheads	S3 Agrifood member	ERIAFF member	Smart Agri Hubs	Nefertiti member	Nefertiti Hubs	Future
NL	**Zuid Holland**	Topsector T&U and AgriFood and Greenport Holland	3 Greenports, GPWG, D&B and Boskook	Greenhouses and logistics, trees and ornamental plant,s bulbs	Province is member HTF, T&BD (GPWH) and Vanguard	Yes and PURPLE member	4 SAH: GHC, TNO, Bayer, WUR	Y	5	
NL	**Noord Holland**	Topsector T&U and AgriFood and Greenport Holland	2 Greenports: Aaalsmeer and Noord Holland Noord	Greenhouses and open air vegetables and bulbs. Also Dairy	HTF	Yes	N	Y	0	
NL	**Limburg**	Topsector T&U and Agrifood and Greenport Holland	Greenport Venlo; Brightlands	GlaGreenhouses, logistics, mushrooms	HTF, T&BD and Vanguard	Yes	N	N	1	
NL	**Noord Brabant**	Topsector T&U and Agrifood and Greenport Holland	Agrifoodcapital	Trees	HTF; Smart Sensors	Observer	2 SAH: AFC, ZLTO	Y	4	

Country	Regio	National / regional innovation-instrument	Clusters	Plants/ Arable/ LiveStock spearheads	S3 Agrifood member	ERIAFF member	Smart Agri Hubs	Nefertiti member	Nefertiti Hubs	Future
NL	**Gelderland**	Topsector T&U and Agrifood and Greenport Holland	Greenport Gelderland; Food Valley	All	HTF (Veluwe); Consumer involvement; Nutritional Ingredients	Observer ERIAFF	2 SAH: JD, WURDC	N	12	
NL	**Drente**	Topsector T&U and Agrifood and Greenport Holland	Greenlincs	all	HTF	observer	DataFarmer	Y	2	
NL	**Groningen**	Topsector T&U and Agrifood and Greenport Holland		all		observer		Y	0	
FR	**Pays de Loire**	Pôles de Compétitivité and Regional Chambers of Agriculture	Vegepolys	Ornamental plants, flowers, trees, seeds, ingredients cider, tobacco, wine	T&BD & HTF	Yes	8 SAH among them Vegepolys Vallee	Y	12	

Country	Regio	National / regional innovation-instrument	Clusters	Plants/ Arable/ LiveStock spearheads	S3 Agrifood member	ERIAFF member	Smart Agri Hubs	Nefertiti member	Nefertiti Hubs	Future
FR	**Auvergne-Rhone-Alpes**	Pôles de Compétitivité and Regional Chambers of Agriculture	Terralia	All	Smart Sensors	Yes and AREFLH	3 SAH	N	0	
FR	**Nouvelle Aquitaine**	Pôles de Compétitivité and Regional Chambers of Agriculture	Agri Sud Ouest	Wine	No	Yes and AREFLH	N	Observer	3	
FR	**Occitane**	Pôles de Compétitivité and Regional Chambers of Agriculture	AgriSudOuest	Wine	No	Yes and AREFLH	N	N	2	
FR	**Bretagne**	Pôles de Compétitivité and Regional Chambers of Agriculture	Vegepolys Valley	All	HTF and T&BD	Yes and AREFLH	N	Y	2	The Chambre Agriculture Bretagne will continue demonstrations as they did before Nefertiti. They have also some regional and national money for this purpose

Country	Regio	National / regional innovation-instrument	Clusters	Plants/ Arable/ LiveStock spearheads	S3 Agrifood member	ERIAFF member	Smart Agri Hubs	Nefertiti member	Nefertiti Hubs	Future
FR	**Centre Val de Loire**	Pôles de Compétitivité and Regional Chambers of Agriculture	Vegepolys Valley	All	No	Yes and AREFLH	N	N	2	
FR	**Provence Alpes, Cotes azur**	Pôles de Compétitivité and Regional Chambers of Agriculture	Innov'Alliance	All	S3 Nutritional Ingredients	Yes and AREFLH	FCU	N	2	
FR	**Burgundy Franche Comté , Ile de France**	Pôles de Compétitivité and Regional Chambers of Agriculture		livestock, Cheese	No	No	2 SAH: Vitagora, Agronov	N	no but there are interested farmers and demofarms	

Country	Regio	National / regional innovation-instrument	Clusters	Plants/ Arable/ LiveStock spearheads	S3 Agrifood member	ERIAFF member	Smart Agri Hubs	Nefertiti member	Nefertiti Hubs	Future
FR	**Normandy**	Pôles de Compétitivité and Regional Chambers of Agriculture	Vegepolys Valley, Pole Valorial	plants/food	No	Observer ERIAFF and AREFHL	N	N	Yes	The Chambre Agriculture e will continue demonstrations as they did before Nefertiti. They have also some regional and national money for this purpose
FR	**Grand-Est**	Pôles de Compétitivité and Regional Chambers of Agriculture		All	No	AREFHL	N	N	Yes, Arvalis	The Chambre Agriculture will continue demonstrations as they did before Nefertiti. They have also some regional and national money for this purpose
ES		No National scheme	Biovegen							
ES	**Andalusië**	Andalusian Plan for Research, Development and Innovation		(Plastic) Greenhouses	Leading T&BD	Yes and AREFLH	11 SAH among them ACT 7 of them in Almeria	Y	16	IFAPA. Coexphal, APO, UNICA

Country	Regio	National / regional innovation-instrument	Clusters	Plants/ Arable/ LiveStock spearheads	S3 Agrifood member	ERIAFF member	Smart Agri Hubs	Nefertiti member	Nefertiti Hubs	Future
ES	**Canarias (ES)**			All		No	N	N	0	
ES	**Catalunia**		FEMAC cluster	All		Yes	Synthesa + DIH Lleida	N	2	
ES	**Galicia**		Clusaga	All	HTF, T&BD, Nutricional Ingredients and Vanguard	Observer	2 SAH	N	3	
ES	**Castilla y Leon**		DIH-LEAF	All	No	Yes	1 SAH	VITARTIS	0	

Country	Regio	National / regional innovation-instrument	Clusters	Plants/ Arable/ LiveStock spearheads	S3 Agrifood member	ERIAFF member	Smart Agri Hubs	Nefertiti member	Nefertiti Hubs	Future
ES	**Murcia**			Plant/Greenhouses	No	Yes and AREFLH	N	N	0	
ES	**Navarra**			All	T&BD & HTF& Smart Sensors	Observer	1 SAH	Y	2	INTIA
ES	**Asturias**			All	Nutritional mIngrtedients and Smart sensors	No	N	N	1	
ES	**Rioja**			wine	Nutritional Ingredients	No	1 SAH	N	0	

Country	Regio	National / regional innovation-instrument	Clusters	Plants/ Arable/ LiveStock spearheads	S3 Agrifood member	ERIAFF member	Smart Agri Hubs	Nefertiti member	Nefertiti Hubs	Future
ES	**Aragon**			All	T&BD	Yes	1 SAH	N	0	
ES	**Extremadura**			All	HTF, T&BD and Vanguard	Yes	2 SAH	Science Research Centre	2	
DE		Federal Office of Agriculture and Food (BLE)						Federal Agency od Agriculture		In Germany there is already a good structure to finance demo events in organic farming. Demo events either take place within project which are funded by the BLE (within the framework for knowledge transfer). Regional authorities rather organise own demo events through their own institutions
DE	**Baden-Württemberg**	Federal Office of Agriculture and Food (BLE)			No	No and AREFLH	1 Bildungscentrum	N	2	

Country	Regio	National / regional innovation-instrument	Clusters	Plants/ Arable/ LiveStock spearheads	S3 Agrifood member	ERIAFF member	Smart Agri Hubs	Nefertiti member	Nefertiti Hubs	Future
DE	**Bayern**	Federal Office of Agriculture and Food (BLE)		Siemens autonomous Greenhouse Munchen	No	Yes	Frauenhofer + Lfl;	N	4	than funding external ones.
DE	**Niedersachsen**	Federal Office of Agriculture and Food (BLE)			No	No	11 SAH among them ACT 7 of them in Almeria	Y Lantages and Council Brake	11	
DE	**Weser Ems**	Federal Office of Agriculture and Food (BLE)			FTF	No	N	N	10	
DE	**Nordrhein westfalen**	Federal Office of Agriculture and Food (BLE)	Agrobusiness Niederrhein	growing greenhouse region	S3 Smart sensors	No	1 SAH	N	4	

Country	Regio	National / regional innovation-instrument	Clusters	Plants/ Arable/ LiveStock spearheads	S3 Agrifood member	ERIAFF member	Smart Agri Hubs	Nefertiti member	Nefertiti Hubs	Future
BE	**Prov. Antwerpen**	Competentionpole from keysector agrifood	West en East Flanders en Antwerpen. NB: active in KIC Food Best	greenhouses	No	No	Hooibeekhoeve	N	1	
BE	**(West + Oost-) Vlaanderen**	Competentionpole from keysector agrifood	Flanders Food. West en East Flanders en Antwerpen. NB: active in KIC Food Best	all	Leading S3 Smart Sensors and Nutritional,	Observer ERIAFF and AREFLH and PURPLE	4 SAH around Ghent,	Y	15	
BE	**Wallonie**	six competitive clusters created in Wallonia	Wagr**alim**	all	Leading Nutritional Ingredients & Leading Smart Sensors	No	3 SAH	N	4	
BE	**Limburg**	Competentionpole from keysector agrifood	Flanders Food. West en East Flanders en Antwerpen. NB: active in KIC Food Best		No	No	N	Y	2	

Country	Regio	National / regional innovation-instrument	Clusters	Plants/ Arable/ LiveStock spearheads	S3 Agrifood member	ERIAFF member	Smart Agri Hubs	Nefertiti member	Nefertiti Hubs	Future
IT	**Toscana**	- EARDF (M. 1, 2, 16) - ERDF (Azione. 1.1.4) - Public DEMO FARMS (Ente Terre Regionali Toscane) - Invest in Tuscany (www.investintuscany.com) - Open Research Platform (www.toscanaopenresearch.it/) - Community of Practice on Precision Farming (under development)	- Polo agroalimentare (Grosseto) - Distretto Florovivaistico: CESPEVI (www.cespevi.it) - Toscana Life Science (www.toscanalifesciences.org) - polo industriale e tecnologico di Navacchio - Smartagrilab UNIFI	All	Lead Region of S3 High Tech Farming partnership	Yes	Yes (Co-Lead Region in Big Data and Traceability Partnership; Partner in HTF, Nutritional and Smart Sensors partnerships)	Y + University of Florence Azienda Agricola	4	
IT	**Emilio Romagna**		Clust-ER Emilio Romagna. NB: active in KIC Food Best	All	Yes (Co-Lead Region in Big Data and Traceability Partnership; Partner in HTF, Nutritional and Smart Sensors partnerships)	Yes and AREFLH	7 SAH among them Clust-ER	Clust-ER	9	

Country	Regio	National / regional innovation-instrument	Clusters	Plants/ Arable/ LiveStock spearheads	S3 Agrifood member	ERIAFF member	Smart Agri Hubs	Nefertiti member	Nefertiti Hubs	Future
IT	**Sicilia**			All + Plastic greenhouses	No	Yes	DIH Sicilia	N	1	
IT	**Sardegna**	Aziende agricole sperimentali dell'Agenzia Agris	Agris Sardegna, Sardegna Ricerche, Porto Conte ricerche	Arb/Erb	T&BD	No	N	Y	0	
IT	**Lazio**	Sottomisure 16,1 e 16,2 del PSR gestite dall'Autorità di gestione, Arsial (www.arsial.it), LazioInnova (www.lazioinnova.it)		Ortofruttcolo, vitivinicolo, lattiero-caserio, carne, olivicolo, ovicaprino, cerealicolo, florovivaistico.	No	Observer	4 SAH	N	4	
IT	**Umbria**	1. Parco 3APTA (3A-Umbria Agrifood Technology Park) www.parco3a.org 2. PIU' - partenariati per l'Innovazione in Umbria (https://www.piumbria.com) 3. Sviluppumbria - Area Innovazione e trasferimento tecnologico	Cluster CL.A.N. (Cluster Agrifood nazionale) www.clusteragrifood.it Cluster SPRING (cluster Chimica verde Nazionale) www.clusterspring.it	All		SI				

Country	Regio	National / regional innovation-instrument	Clusters	Plants/ Arable/ LiveStock spearheads	S3 Agrifood member	ERIAFF member	Smart Agri Hubs	Nefertiti member	Nefertiti Hubs	Future
IT	**Veneto**	-EARDF (M. 1, 2, 16) -ERDF (Azione. 1.1.4) -Public Veneto Region's Agency for Innovation in the Primary Sector (Veneto Agricoltura https://www.venetoagricoltura.org/) -The Veneto regional company for applied research, innovation and technology transfer (Veneto Innovazione https://www.venetoinnovazione.it/)	-Reti innovative Regionali: RIBES, Cluster Biologico Veneto, Innosap, RIAV (https://www.venetoclusters.it/area-reti-innovative-regionali) -Distretti industriali: Conegliano Valdobbiadene Prosecco, Vini Veronesi (https://www.venetoclusters.it/area-distretti-del-veneto)	All	No	Yes	H Farm	N	2	
IT	**Friuli Venezia Giulia**		-Distretti industriali: Conegliano Valdobbiadene Prosecco, Vini Veronesi	Wine	HTF and T&BD	Yes	1 SAH	N	0	

Country	Regio	National / regional innovation-instrument	Clusters	Plants/ Arable/ LiveStock spearheads	S3 Agrifood member	ERIAFF member	Smart Agri Hubs	Nefertiti member	Nefertiti Hubs	Future
IT	**Marche**	ASSAM (Regional Agency)		All	HTF	Yes	N	N	0	
IT	**Lombardia**			All	Smart sensors	Yes	SCpA	N	1	
IT	**Piemonte**	- EARDF (M. 1, 2, 16) - ERDF (Azioni I.1b.2.2 e 1.8.II.2.3.1) - Cluster Agrifood Nazionale (https://www.clusteragrifood.it/it/) - Farm Sustainability Tool (FaST) Pilot (https://fastplatform.eu/about)	- Polo agrifood (https://www.poloagrifood.it/site/homepage) - Distretto floricolo del lago Maggiore - Distretto agroalimentare di qualità del settore orticolo (Alessandrino) - Distretto del riso (Comuni delle Province di Alessandria, Biella, Novara e Vercelli)	All	0	Observer	Agriculture Digital Innovation Hub (under development - Politecnico di Torino and Regione Piemonte)	N	0	

Country	Regio	National / regional innovation-instrument	Clusters	Plants/ Arable/ LiveStock spearheads	S3 Agrifood member	ERIAFF member	Smart Agri Hubs	Nefertiti member	Nefertiti Hubs	Future
			- Distretto del vino nord - Canavese, Coste Del Sesia, Colline Novaresi - Distretto del vino sud - Langhe, Roero e Monferrato							
IT	**Valle d' Aosta**	INSTITUT AGRICOLE REGIONAL che cura l'individuazione dei fattori che determinano tipicità, genuinità e sicurezza dei prodotti agro-alimentari di qualità; la conservazione delle peculiarità dell'agricoltura regionale e dei suoi prodotti per mantenere, oltre che uno standard elevato, un loro forte legame con il territorio e con la cultura locale; la ricerca di soluzioni innovative che rispettino le caratteristiche dei prodotti e non rompano il fragile equilibrio che nei secoli si è instaurato tra attività	N	All	0	N	Misure che coinvolgono il settore primario: i voucher per la digitalizzazione (verranno riproposti nel 2020) erogati dal Punto	N		

Country	Regio	National / regional innovation-instrument	Clusters	Plants/ Arable/ LiveStock spearheads	S3 Agrifood member	ERIAFF member	Smart Agri Hubs	Nefertiti member	Nefertiti Hubs	Future
		agricole, uomo, ambiente e prodotti stessi che sono i presupposti inderogabili per fare un'agricoltura ecocompatibile e sostenibile.					Impresa digitale: http://www.ao.camcom.it/pid.aspx			
IT	**Provincia Autonoma di Bolzano**	EARDF, ERDF, Interreg I-A, Interreg I-CH, fondi provinciali	Parco tecnologico NOI Techpark con i settori tecnologici Green, Food, Alpine, Digital e Automation.	All	N	Y	NOI Techpark	N		

Country	Regio	National / regional innovation-instrument	Clusters	Plants/ Arable/ LiveStock spearheads	S3 Agrifood member	ERIAFF member	Smart Agri Hubs	Nefertiti member	Nefertiti Hubs	Future
IT	**Campania**			All	No	Yes	IFC	N	1	
SE	**East Middle Sweden incl. Oster-gotland (SE123)**			All	S3 Consumer	Yes	2 SAH	N	5	
SE	**Skäne län (SE) Sudsverige**	Oresund Food	Oresund(.org)	Øresund Food	No	Yes	N	N	0	
UK	**Scottland**			All	No	Observer	2 SAH	Y + Lantra + Rural College	2	Possibly; there is a commitment in the Scottish Government's Programme for Government to support a demonstrator network within the agriculture and climate change policy areas.

Country	Regio	National / regional innovation-instrument	Clusters	Plants/ Arable/ LiveStock spearheads	S3 Agrifood member	ERIAFF member	Smart Agri Hubs	Nefertiti member	Nefertiti Hubs	Future
UK	**North Ireland**			All	T&BD	Observer	N	N	0	
UK	**Wales**		Wales	Horticulture Wales	No	Yes	N	N	0	
UK	**West Midlands**			All	No	Observer ERIAFF and PURPLE member	2 SAH	N	3	
UK	**East England**		deelnemer aan Interreg UF	All	No	No	Agri-Tech Cambridge	N	1	

Country	Regio	National / regional innovation-instrument	Clusters	Plants/ Arable/ LiveStock spearheads	S3 Agrifood member	ERIAFF member	Smart Agri Hubs	Nefertiti member	Nefertiti Hubs	Future
IER	**Ireland**	Ireland (national organisation) Department of Agriculture and Fisheries					28 SAH	Y	38	
FI	**(Oulu)**				T&BD	No	GrainSense	Y + Oulu University	1	
FI	**Sakatuna**	ERDF, EAFRD	-	poultry	T&BD	Yes	1 SAH	N	4	
FI	**Etela Savo**	ERDF, EAFRD	-	forest, bioenergy, organic	T&BD	No	1 SAH	N	0	

Country	Regio	National / regional innovation-instrument	Clusters	Plants/ Arable/ LiveStock spearheads	S3 Agrifood member	ERIAFF member	Smart Agri Hubs	Nefertiti member	Nefertiti Hubs	Future
FI	**South Ostrobothnia / West Finland**	ERDF, EAFRD	no regional clusters	arable (barley), meat	S3 Consumer involvement en HTF en T&BD and Nefertiti	Yes	N	Y Into Seinajoki Ltd.	1	
Fi	**North Ostrobotnia**	ERDF, EAFRD	no regional clusters	potato (high grade), dairy	S3 T&BD	N	N	N	2	
FI	**Lapland**	ERDF, EAFRD	non	dairy, hay, forest	N	Y	N	N	0	
Fi	**North Karelia**	ERDF, EAFRD	non	forest, bioeconomy	N	Y	N	N	0	

Country	Regio	National / regional innovation-instrument	Clusters	Plants/ Arable/ LiveStock spearheads	S3 Agrifood member	ERIAFF member	Smart Agri Hubs	Nefertiti member	Nefertiti Hubs	Future
DK	**MydJutland**	ERDF, EAFRD	Food & Bio Cluster	barley, wheat, dairy cattle	Consumer Involvement, Smart sensors and Nutritional Ingredients	observer ERIAFF	5 SAH	N	8	
DK	**Seeland (DK)**		no regional clusters. NB: KIC Food Best	All	No	No	N	N	0	
DK	**Funen south Danmark**		NB:	Greenhouses	No	No	N	N	0	
PL								Y Trade Union of farmers		

Country	Regio	National / regional innovation-instrument	Clusters	Plants/ Arable/ LiveStock spearheads	S3 Agrifood member	ERIAFF member	Smart Agri Hubs	Nefertiti member	Nefertiti Hubs	Future
PL	**Lodzkie**	ERDF, EAFRD	no regional cluster	Trees and ornamental plants	No	Yes	3 SAH	N	2	
PL	**Malopolskie**	ERDF, EAFRD	no regional cluster	all	No	No	N	N	0	
PL	**Mazowieckie**	ERDF, EAFRD	AgroBio Cluster	greenhouses	No	No	Agri Tech Hub VC	Y City Radom	1	
PL	**Wielkopolski**	ERDF, EAFRD	FIE cluster		No	NO	4 SAH, among them ADIH autonomous Green house	N	8	

Country	Regio	National / regional innovation-instrument	Clusters	Plants/ Arable/ LiveStock spearheads	S3 Agrifood member	ERIAFF member	Smart Agri Hubs	Nefertiti member	Nefertiti Hubs	Future
PL	**Lubelski/Lublin**	ERDF, EAFRD	no regioy: lubelski region and lublin provinceal cluster	all	No	Yes	1 SAH	Y: Lubelski region and Lublin Province	1	
PL	**Kuvayan-Pomeranian Voivodeship**									
PT	**Alentejo**		Agrocluster of Ribajeto		No	NO	Anima Forum	Y+ Winegrowing Commission	2	
PT	**Lissabon**		Agrocluster		No	No	Consultoria	N	1	

Country	Regio	National / regional innovation-instrument	Clusters	Plants/ Arable/ LiveStock spearheads	S3 Agrifood member	ERIAFF member	Smart Agri Hubs	Nefertiti member	Nefertiti Hubs	Future
PT	**Centro**		Agrocluster of Ribajeto		HTF	Yes	Tekever AS	N	1	
EL	**Kriti**				No	No	N	N	0	
EL	**Ipiros**				HTF	No	N	N	0	
EL	**Central Macedonia**				HTF and T&BD and Nutritional Ingredients	Yes	AIC	N	0	

Country	Regio	National / regional innovation-instrument	Clusters	Plants/ Arable/ LiveStock spearheads	S3 Agrifood member	ERIAFF member	Smart Agri Hubs	Nefertiti member	Nefertiti Hubs	Future
RO	**Nort-East**				HTF	Yes	N	Y	3	
RO	**North-Vest**		Transylvania cluster	Cluj	No	No	Yes	N	2	
RO	**Centru**		Transylvania cluster	Transylvania	No	No	2 SAH	N	2	
	Bucarest		IND.AGRO.POL		No	No	2 SAH	N	2	

Country	Regio	National / regional innovation-instrument	Clusters	Plants/ Arable/ LiveStock spearheads	S3 Agrifood member	ERIAFF member	Smart Agri Hubs	Nefertiti member	Nefertiti Hubs	Future
HU								Ministry of Agriculture + Chambre Commerce + Farmer Union		
HU	**Győr-Moson-Sopron**				No	No	N	Nature Protection Association	4	
HU	**Del Dunatul**				T&BD	No	N	N	1	
HU	**Frejer**				Nutritional Ingredients	No	N	N	9	

Country	Regio	National / regional innovation-instrument	Clusters	Plants/ Arable/ LiveStock spearheads	S3 Agrifood member	ERIAFF member	Smart Agri Hubs	Nefertiti member	Nefertiti Hubs	Future
HU	**Kozep Dunatul**				Smart sensors	No	N	N	1	
HU	**Hajdu Bihuar**				T&BD	Y	N	N	2	
BG		National Agricultural Advisory Service (NAAS)								After ending the project NAAS like national public advisory service will continue to finance demo events related to NEFERTITI NW topics.
BG	**Burgas**				No	No	N	y		

Country	Regio	National / regional innovation-instrument	Clusters	Plants/ Arable/ LiveStock spearheads	S3 Agrifood member	ERIAFF member	Smart Agri Hubs	Nefertiti member	Nefertiti Hubs	Future
BG	**Dobrich**				No	No	N	y		
BG	**Lovech**				No	No	N	y	2	
BG	**Silistra**				No	No	N	y	2	
BG	**Targovishte**				No	No	N	y	0	

Country	Regio	National / regional innovation-instrument	Clusters	Plants/ Arable/ LiveStock spearheads	S3 Agrifood member	ERIAFF member	Smart Agri Hubs	Nefertiti member	Nefertiti Hubs	Future
BG	**Velika Tarnovo**				No	No	N	y	2	
BG	**Gabrovo**				No	No	N	Y	0	
BG	**Pazardzhik**				T&BD	No	N	Y	1	
BG	**Montana**				No	No	N	Y	1	

Country	Regio	National / regional innovation-instrument	Clusters	Plants/ Arable/ LiveStock spearheads	S3 Agrifood member	ERIAFF member	Smart Agri Hubs	Nefertiti member	Nefertiti Hubs	Future
BG	**Sofia**				No	No	5 SAH	N	5	
EE					HTF		DIH Robotics	N	0	
AT					Smart sensors		Eurac	N	5	
SI					Smart Sensors		2 SAH	N	4	

Country	Regio	National / regional innovation-instrument	Clusters	Plants/ Arable/ LiveStock spearheads	S3 Agrifood member	ERIAFF member	Smart Agri Hubs	Nefertiti member	Nefertiti Hubs	Future
HR	**Kvarner**		only wood clusters			partly	3 Zagreb			No doubt that we will continue with the demo-events after its official ending because we will combine that with EAFRD programs.
HR	**Istrie**							Y		No doubt that we will continue with the demo-events after its official ending because we will combine that with EAFRD programs.
HR	**Slavonija**	EARFD	non	livestock all, cereal	partly Pozesko HR049	partly (Vukovar) HR04C	0			Either local goverments or local farmers federations will take over the idea of organizing demo-events.

NEFERTITI

Networking European Farms to Enhance Cross Fertilisation and Innovation Uptake through Demonstration

(Please add Title)

THIS PROJECT HAS RECEIVED FUNDING FROM THE **EUROPEAN UNION'S HORIZON 2020 RESEARCH AND INNOVATION PROGRAMME** UNDER GRANT AGREEMENT N. **772705**

NEFERTITI PARTNERS