AgriLink

Agricultural Knowledge: Linking farmers, advisors and researchers to boost innovation.

Deliverable D5.7

Policy Recommendations Report.

Strengthening farm advice for innovation and Sustainability

Planned delivery date (as in DoA): M53

Actual submission date: 30/11/2021, M54

Workpackage: WP5

Workpackage leader: WR

Deliverable leader: INRAE

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Version: 1.0

This deliverable is part of a project that has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 727577.	
Dissemination Level	
PU Public	**X**
CI Classified, as referred to Commission Decision 2001/844/EC	
CO Confidential, only for members of the consortium (including the Commission Services)	

Research and Innovation action: GA no. 727577

Start date of the project: June 1st, 2017

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List of Acronyms

AKIS	Agricultural Knowledge and Innovation Systems
BE	Belgium
CAP	Common Agricultural Policy
CCO	Cross-Cutting Objectives
CECRA	Certificate for European Consultants in Rural Areas
CZ	Czech Republic
DG AGRI	Directorate-General for Agriculture and Rural Development
EC	European Commission
EIP-Agri	Agricultural European Innovation Partnership
ES	Spain
EU-FAS	European Union regulation on Farm Advisory Service
EU FRAS	European Forum for agricultural and rural advisory services
FR	France
GR	Greece
IT	Italy
KPI	Key Performance Indicator
MS	Member State
NGO	Non-Governmental Organisation
NL	Netherlands
OG	Operational Groups of the EIP-Agri
PL	Poland
PRO AKIS	Prospects for Farmers' Support : Advisory Services in European AKIS
PT	Portugal
RDP	Rural Development Program
RMAS	Regional Multi Actor Seminar
RO	Romania
SCAR-AKIS-SWG	Strategic Working Group Standing Committee on Agricultural Research-Agricultural Knowledge and Innovation Systems
STS	Sociotechnical Transition Scenario
SWOT	Strengths, Weaknesses, Opportunities, Threats
TCM	Triggering Change Model
UK	United Kingdoms
WP	Work Package

Executive Summary

The aim of this deliverable is to present the policy recommendations of the research project AgriLink. The goal of AgriLink is to stimulate transitions towards more sustainable European agricultures by i) furthering the understanding of the roles played by a wide range of advisory organisations and other advice providers in farmer decision-making regarding the adoption of innovation; and ii) enhancing the contribution to learning and innovation by testing methods to co-design improved services (with advisors, researchers, policy makers and farmers' representatives). Our recommendations are based on a set of principles:

We propose four key recommendations derived from the research and innovation activities developed in AgriLink. This report has two main chapters.

Chapter 1 acknowledges the policy context in which we elaborated our policy recommendations. The policy recommendations presented in this report were drafted during Autumn 2021 at a time when the EU Member States were finalising their national CAP Strategic Plans 2023-2027 for formal submission to the European Commission by 1 January 2022. We have therefore dedicated a specific task to highlight the needs associated with farm advice in the AKIS section of the CAP Strategic Plans of the Member States where we implemented our research, namely: Belgium, Czech Republic, Greece, France, Italy, Latvia, Netherlands, Poland, Portugal, Romania, Spain. Appendix 1 highlights specific issues debated in each country.

Chapter 2 presents the 4 key recommendations developed in AgriLink. Each addresses an important challenge faced by farm advisors in Europe, namely: 1) independency, 2) life-long training, 3) inclusiveness, 4) integrated advice and sustainability. The presentation of each of these four recommendations follows the same outline. First, we propose a key message. Second, we refer to the empirical evidence of AgriLink supporting this message. Third, we present potential options concerning "how to implement" the recommendation. **The four key messages are the following**.

1. **About independent advice**: To avoid bias in the content of farm advice, it can be very difficult and it is not sufficient to delimitate the boundaries of who count as "independent and impartial" advisors. We consider that it is also necessary to take actions to enable "transparency and robustness" of the content of advice. To reach this objective, there is a key role for public actors in supporting, investing in, and controlling the back-office dimension of farm advisory services.
2. **About advisors' training**: A farmer-centric approach, based on an understanding of farmers' needs and personal networks, should be used to highlight gaps and needs in the supply of advisory services in specific contexts. There is a potential to better incorporate advances of social sciences on farmers' decision-making (e.g. Triggering Change Model, microAKIS) in education and training modules for advisors.
3. **About inclusive advice**: Our findings show that some profiles are not included in the beneficiaries of farm advice. A part of these "hard-to-reach" populations are well known (small farms, part-time farmers, new entrants, women). But we identified other rural and agricultural populations that are less often considered within the family work force but also beyond (salaried workers, contractors, posted worker). We consider that there is a need to better understand who the hard-to-reach populations are and what their needs are regarding different types of innovation.

4. **About integrated advice**: We need to invest in situations which are characterised by uncertainty, gaps, and controversy if we want to stimulate the provision of integrated advisory services that contribute to more sustainable agriculture within its wider social and political context. We consider that more insights from social sciences could be used to identify these situations and subsequently support transformative changes both at the farm level and at the level of the co-design of innovation support services.

Overall, **some transversal elements** can be highlighted between these four policy recommendations. The first one relates to the importance of public support to the back-office of farm advisory services. This is important not only to guarantee more transparency in farm advice but also for the three other dimensions of well-functioning advisory services highlighted in this report. A second transversal element stems from the potential to make more use of advances of social sciences in public policies dealing with farm advisory services. This is true both at the level of farmers' decision-making but also at the level of co-design of services for farmers.

Our recommendations have been drafted from the perspective of a research and innovation project. Hence, our goal is not to list best solutions regarding farm advisory practices and policies. Instead, we want to inform these policies, based on a series of concepts, empirical findings, and interactive activities implemented with advisors, farmers' representatives, researchers and policy makers. **Our recommendations are based on a set of principles**.

- **Our recommendations are based on explicit cross-cutting concepts**. AgriLink is based on a specific conceptual approach, developing a multi-level perspective grounded in a farmer-centric approach. We believe that the concepts we developed (including microAKIS and farm advisory regimes) can support reflexivity within communities of advisors and policy makers.
- **Our recommendations are based on extensive empirical evidence, but it is necessary to acknowledge their limitations**. However, the fact that we found some general trends across regions and cases gives strength and robustness to our results. Central to AgriLink is the principle to start analysing the provision of farming advice from farmers' perspectives. Our idea is twofold. First, there is a need to fill the knowledge gap on farmers' sources of advice in their decision-making. Second, we think that evidence of farmers' needs, practices and sources of advice could provide insights into some transformations of the (formal and informal) institutions regulating the relations between demand and supply of farm advice. In other words, starting from a farmer's perspective could render broader insights and provides an original perspective to contribute to debates about farm advice public policies.
- **Our recommendations aim to propose options, not solutions**. AgriLink started from farmers' perspectives to understand their practices, their networks to access advice, and then derive policy implications. We consider that there are no silver bullets or one-size-fits-all solutions regarding farm advice.
- **Our recommendations were drafted and validated by using a variety of interactive methods (including co-design methods)**. The integration and acknowledgement of contexts cannot be implemented by researchers alone: our aim is to inform public decision-making and/or support co-creation processes. This is the reason why we conducted a series of collaborative events with advisors and policy makers, so as to discuss the good-fit of advisory policies with concrete national or regional contexts and histories.

1 Introduction

1.1 Aim of the Policy Recommendations Report

The aim of this deliverable is to present the policy recommendations of the research project AgriLink. The goal of AgriLink is to stimulate transitions towards more sustainable European agricultures by i) furthering the understanding of the roles played by a wide range of advisory organisations and other advice providers in farmer decision-making regarding the adoption of innovation; and ii) enhancing the contribution to learning and innovation by testing methods to co-design improved services (with advisors, researchers, policy makers and farmers' representatives). **In this document, we propose four key recommendations derived from the research and innovation activities developed in AgriLink**.

1.2 Policy Context

The policy recommendations presented in this report were drafted during Autumn 2021 at a time when the EU Member States were finalising their national CAP Strategic Plans 2023-2027 for formal submission to the European Commission by 1 January 2022. This specific period is one of many important phases in the re-emergence of farm advisory services as a key public policy instrument in the European Union.

In June, 2021, negotiators from the European Parliament, the Council of the EU and the European Commission reached a final political agreement on the reform of the post-2020 Common Agricultural Policy (CAP). The new CAP, which starts in 2023, aims to foster a sustainable and competitive agricultural sector that can support the livelihoods of farmers and provide healthy and sustainable food for society, as well as vibrant rural areas.

Agriculture and rural areas are central to the policy objectives of the European Green Deal[1] and the new CAP encourages farmers and other actors to step up their efforts to enable and accelerate the necessary transition to a fair, healthy and environmentally-friendly food system by 2030[2]. In other words, CAP has broaden its objectives (including social conditionality for CAP beneficiaries).

The new CAP contains a number of policy reforms to support this transition including a **new cross-cutting objective** (CCO) that calls for the intensification of knowledge exchange and the speeding-up of innovation in order to help farmers, foresters and other rural businesses to meet the growing economic, environmental and social challenges they face.

Functional and effective farm advisory services are a central element of the CCO. All farm advisors are not only expected to play a key role in sharing new knowledge and ideas with farmers, foresters and other rural businesses, but to also engage much more directly with the co-creation, dissemination and embedding of innovation.

Farm advisory services are mentioned in several articles of the legislative framework of the new CAP and linked especially to the concept of strengthening the national or regional Agricultural Knowledge and Innovation Systems (AKIS) that are considered essential for the sustainable development of European agriculture.

[1] https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en
[2] https://ec.europa.eu/food/horizontal-topics/farm-fork-strategy_en

Box 1 on next page outlines these various articles of the new CAP legislation that oblige EU member States to target farm advisory services within the context of the AKIS – notably with reference to the so-called **AKIS Strategic Approach** that Member States are required to develop and implement in their national CAP Strategic Plans 2023-2027. This approach aims to ensure better, more regular, coordinated and effective knowledge flows between farmers and foresters, advisors, researchers, farmer organisations, cooperatives, NGOs, rural networks, retailers and suppliers for example.

This policy framework embodies an important change compared to measures implemented in previous reforms of the CAP which introduced a) the Farm Advisory System regulation (EU-FAS, see AgriLink Deliverable D4.1) and b) the knowledge measures of Rural Development Programmes (RDP, see ADE et al., 2020). We have identified three changes regarding the role attributed to farm advisory services in the post-2020 CAP regulation[3]:

- Firstly, there is a much more open view about who should be the advisory suppliers that contribute to CAP objectives and about how they should be selected. However, there are conditions about these suppliers, with an emphasis on their impartiality and independence.

- Secondly, how to select, fund and support these suppliers is largely left to Member States, following the subsidiarity principle.

- Thirdly, Member States should integrate the instruments supporting farm advisory services into the broader AKIS Strategic Approach elaborated in their CAP Strategic Plan (Section 8.1), beginning with the development of an intervention strategy based upon a SWOT analysis and assessment of needs. Our Policy Recommendations report comes precisely at the time when Member States are finalising the AKIS-related components of their CAP Strategic Plans. Although these Plans were not available in the public domain, we nevertheless tried to incorporate them as much as possible based on elements presented by Member States in meetings of the Strategic Working Group of the Standing Committee on Agricultural Research on Agricultural Knowledge and Innovation Systems (SCAR-AKIS-SWG).

We have therefore dedicated a specific task to highlight the needs associated with farm advice in the AKIS section of the CAP Strategic Plans of the Member States where we implemented our research - what we refer to as the **AKIS Strategic Plans** (or AKIS plans) of MS.

AgriLink is one of many FP7 and H2020 projects that contribute to the policy debate about AKIS and farm advisory services, including SOLINSA, PROAKIS, FAIRSHARE, NEFERTITI, LIAISON, I2Connect, among many others**. In this report, we clearly distinguish the specific perspective of AgriLink's recommendations from other projects. This specificity and unique contribution mostly stems from the farmer-centric approach of AgriLink**.

In order to explore the complementarity of our results with other projects, we presented them at a roundtable during the final conference of our project (organised online November 12, 2021)[4]. Inge van Oost (EC, DG AGRI, AgriLink's policy officer), Susanne von Münchhausen (coordinator of the Liaison project) and Sylvain Sturel (coordinator of I2connect) were invited and contributed to this roundtable.

[3] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2018%3A392%3AFIN

[4] Videos and presentations of the conference are available here: https://www.agrilink2020.eu/conference/

Box 1 - Presentation of the articles dealing with AKIS & farm advice in the CAP 2023-2027

The CAP 2023-2027 is founded upon 9 specific objectives and on Cross-Cutting Objectives (CCO) focused on "*fostering and sharing of knowledge, innovation and digitalisation in agriculture and rural areas, and encouraging their uptake by farmers, through improved access to research, innovation, knowledge exchange and training*" (Art. 5). The three key elements of this CCO are – (1) intensive knowledge exchange, (2) co-creating innovation and sharing it with advisors and trainers, and (3) using digitalisation as the motor behind many transitions in the sector. Hence, farm advisors are central to this CCO. The logic for the implementation of the CAP is summarised below and synthesised in Figure 1:

- The policy is based on the key idea that Member States develop and implement a strategic approach to strengthening their AKIS as a key component of their national CAP Strategic Plans (Art. 102). For the elaboration of a strategic AKIS approach, the points of departure are a SWOT analysis (Art. 103(2)), prioritisation of needs accordingly, and planning of interventions with stakeholders.

- This strategic approach is further broken down into targeted interventions through a series of specific articles.
    - Articles 72 and 113 enable MS to fund knowledge exchange and information as well as advisors' integration in the AKIS. Art. 72 enables MS to design funding schemes to support these knowledge exchanges. Art. 13 sets a list of requirements that need to be fulfilled by advisors and suppliers of innovation support services that will benefit from funds under Art. 72. These requirements include conditions about the independence and impartiality of advisors (Art 13(3)), the scope of themes to be addressed (Art. 13(2) and 13(4)) and the inclusion of services (Art 13(1)), as well as about the training of advisors and their integration into AKIS.
    - Articles 71 and 114 link the new articles with the initiatives already launched in the context of the Agricultural European Innovation Partnership (EIP-Agri), including Operational Group (OG) projects.
    - These interventions are complemented by a specific innovation strand of the national CAP network dedicated to speed up broad knowledge exchange and innovation (Art 113).

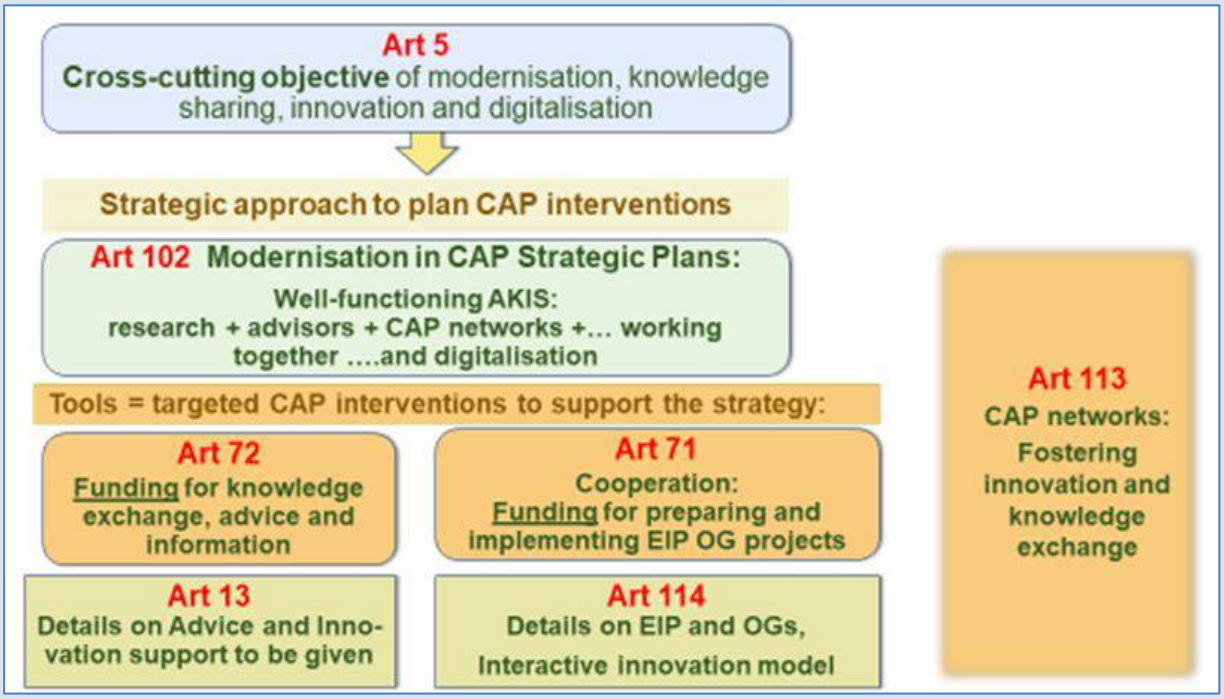

Figure 1 - Articles of next CAP dealing with AKIS and farm advisory services

1.3 Principles of AgriLink's recommendations

The aim of this report is to contribute to policy debates about farm advisory services from the perspective of a research and innovation project. Hence, our goal is not to list best solutions regarding farm advisory practices and policies. Instead, we want to inform these policies, based on a series of concepts, empirical findings, and interactive activities implemented with advisors, farmers' representatives, researchers and policy makers. The different activities of the AgriLink project are presented in Box 2 (page 12). Our recommendations are based on seven principles.

1. **Our recommendations aim to contribute to a sustainable development of European agricultures by enhancing the contribution of farm advisory services**. We consider that there is no assumed, systematic positive relationship between innovation and sustainable development. Hence, we studied advice in various innovation areas (technological, process, marketing, social) and analysed the role of advice in supporting farmers in situations characterised by complexity, uncertainty and controversy. This is also why we interviewed not only farmers who adopted certain innovations, but also non-adopters and droppers.

2. **Our recommendations acknowledge and address the European policy context (Box 1)** by 1) identifying the requirements that this policy sets for well-functioning farm advisory services; 2) flagging pitfalls and opportunities associated with these requirements based on our concepts and findings; 3) proposing concrete options supported by examples. Based on an analysis of policy documents, **we identified 4 dimensions that will be central to the recommendations presented in this report**.

   - **Dimension 1** deals with the **independence and impartiality of advisory services** delivered to farmers. The aim is to ensure that the content of advice supported by public funds is not biased by vested interests (e.g. related to selling pesticides, machinery, etc.) in order to best integrate societal issues.

   - **Dimension 2** deals with **advisors' education and training**. The aim is to ensure that advisors benefit from relevant education and life-long training to keep their knowledge and skills up-to-date. Such training should be adapted to farmers' changing needs in context, but also to societal expectations and challenges.

   - **Dimension 3** deals with the **inclusiveness** of farm advisory services. The aim is to give any farmer (and other person working on the farm) access to services and knowledge needed to develop their activities and comply with European environmental, social and health regulations.

   - **Dimension 4** deals with **the integration of advisory services into the broader AKIS**. Sustainable development often requires having to face complex problems and combine various types of knowledge. There is a need to foster mechanisms that will facilitate networking, knowledge flows and the co-design of innovation support services in multi-actor configurations (between advisors, farmers, researchers). **This integration is expected to support step changes in agricultural practices and contribute to sustainable development**.

3. **Our recommendations benefited from interactions with the SCAR-AKIS-SWG,** as was expected in the call and planned in our DOA. Hence, we organised E-workshops with the SCAR-AKIS-SWG, presented results of the project in various meetings of the SCAR-AKIS-SWG, including a discussion of our Policy Recommendations on November 24th, 2021. Our attendance at the SCAR-AKIS-SWG meeting was also an opportunity to gather the latest information, as MS made a series of presentations on various dimensions of their AKIS plans and advisory policies.

4. **Our recommendations are based on explicit cross-cutting concepts**. AgriLink is based on a specific conceptual approach, developing a multi-level perspective grounded in a farmer-centric approach. We believe that the concepts we developed (including microAKIS and farm advisory regimes) can support reflexivity within communities of advisors and policy makers.

5. **Our recommendations are based on extensive empirical evidence, but it is necessary to acknowledge their limitations**. A starting-point of AgriLink was from the observation that there is a large knowledge gap concerning the sources of advice in farmers' decision-making. Therefore, we collected extensive data, based on more than 1000 farmers interviews. **It is very important to note that our farm samples were purposive and not statistically representative**. **Hence, our results should be interpreted accordingly**. However, the fact that we found some general trends across regions and cases gives strength and robustness to our results.

6. **Our recommendations aim to propose options, not solutions**. AgriLink started from farmers' perspectives to understand their practices, their networks to access advice, and then derive policy implications. We consider that there are no silver bullets or one-size-fits-all solutions regarding farm advice. Hence, we aim to discuss the good-fit of advisory policies with concrete national or regional contexts and histories.

7. **Our recommendations were drafted and validated by using a variety of interactive methods (including co-design methods)**. The integration and acknowledgement of contexts cannot be implemented by researchers alone: our aim was to inform public decision-making and/or support co-creation processes. This is the reason why we conducted a series of collaborative events with advisors and policy makers. In total, we organised more than 40 events, with over 500 participants (Box 2). This allowed us to identify good-fit and gaps in the supply of advisory services, and to highlight various options to enhance their functioning.

1.4 Perspectives of AgriLink: a farmer-centric approach to advice

Central to AgriLink is the idea to start analysing the provision of farming advice from farmers' perspectives. This is evident in the conceptual framework of the project, which is grounded in a model of farmers' decision-making, the Triggering Change Model – TCM. We built on this evolutionary representation of farmers' decision-making to elaborate a multi-level analysis (Figure 2). Our idea is twofold. First, as stated earlier, there is a need to fill the knowledge gap on farmers' sources of advice in their decision-making. Second, we think that evidence of farmers' needs, practices and sources of advice could provide insights into some transformations of the (formal and informal) institutions regulating the relations between demand and supply of farm advice. In other words, starting from a farmer's perspective could render broader insights and provide an original perspective to contribute to debates about farm advice public policies.

Box 2 - AgriLink concepts, activities and interactivity

The AgriLink project was organised in the following set of Work Packages (WP):

- **WP1 aimed to build the conceptual framework** of the project which guided the data collection in all other WPs. The core of the analytical framework concerned farmers' decision-making regarding innovation adoption, based on the concept of microAKIS, and its implication in a multi-level perspective, including at the level of the farm advisory regime. The two key concepts of the project were defined as follows (see **Deliverable D1.3**):
  - **MicroAKIS**: *Knowledge systems that farmers personally assemble, including the range of individuals and organisations from whom they seek services and exchange knowledge, and the processes involved in the formation and working of the system, including the way farmers translate these resources into innovative activities (or not).*
  - **Farm Advisory Regimes***: Set of relatively stabilized institutions (formal and informal rules, norms and procedures) which frame the delivery of advisory services, concerning both their content and their form.*

- **WP2 collected data at a micro level, starting from farmers' perspectives** to understand their sources of services and knowledge throughout their decision-making process, and regarding various types of innovations. Quantitative and qualitative data were collected, derived from more than 1000 interviews with farmers (see **Deliverables D.2.2 and D2.5)**

- **WP4 collected data at meso and macro levels. The aim was to assess the transformation of the regimes framing advisory services**. We combined two perspectives. First, we analysed the models underlying advisory public policies, starting from an analysis of the EU-FAS policy (**Deliverable D4.1**). Then we analysed more gradual (or even hidden) institutional changes in farm advice related to the dynamics within various innovation areas (**Deliverable D4.2**). This work was based on interviews with more than 300 advice suppliers.

- **WP3 took a different perspective, by applying co-design thinking, in the context of Living Labs**. Six Living Labs were implemented with the aim to co-design innovative advisory services in relation to different innovation areas in farming. A participatory approach was used to bring together different AKIS actors (e.g. researchers, FAS, farmers) and create new links between them. The participatory group dynamic allowed the development of solutions to advisory challenges and testing innovative advisory services related to complex issues. Lessons were gathered through specific monitoring and evaluation tasks (**Deliverable D3.4**) and translated into online pedagogical material (**Deliverable D3.5**).

- **WP5 integrated results from WP2, WP3, WP4 on the basis of concepts provided by WP1 (Deliverable D5.5)**. Various activities were implemented in the course of the project to facilitate this integration, including joint seminars between WPs, and interactive sessions to identify cross-cutting findings synthetized into Practice Abstracts (**Deliverable D5.4**).

A second and important source of inspiration for our recommendations report drew from a strong interactivity with advisors, managers, policy makers and representatives of farmers' unions and associations. Interactivity was the backbone of AgriLink. First, we set up a series of collaborative events with advisors and policy makers. The first series of events consisted of **26 Regional Multi-Actor Seminars** (RMAS), with more than 500 participants, to whom we presented the results of WP2 (microAKIS surveys). The discussions allowed us to validate our findings and to derive some initial recommendations. Next, we organised a series of **13 Sociotechnical Transition Scenario** (STS) workshops to discuss potential pathways and steps for an evolution of advisory services that would best fit with a support for the sustainable development of various innovation areas. We also organised **4 E-workshops** (combining open discussion on Google docs and webinars) to discuss farm advisory policies at a European scale. At project end, **our final conference provided a roundtable** to present and discuss our policy recommendations with more than 100 participants from across Europe and internationally.

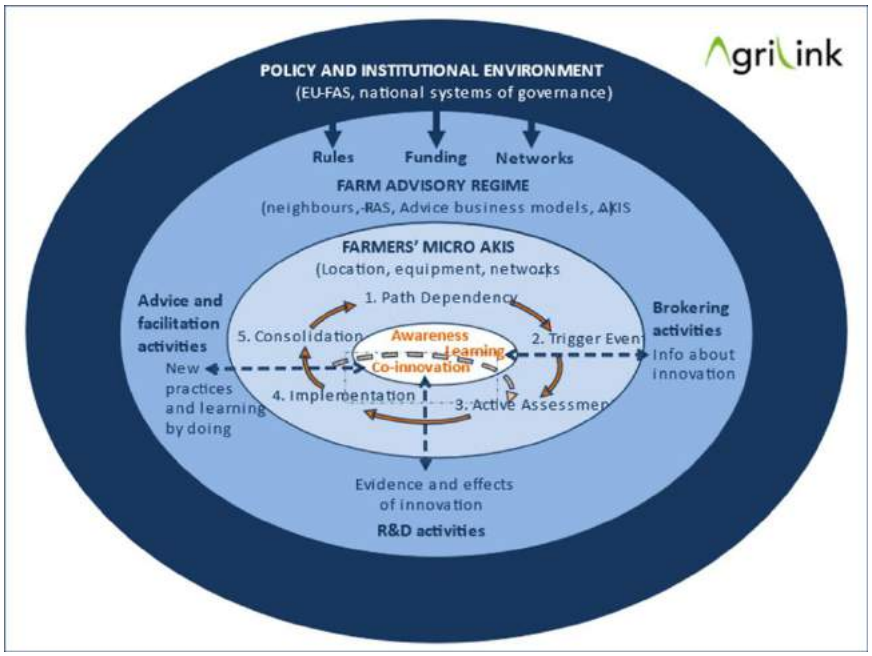

Figure 2 - AgriLink farmer-centric multi-level conceptual framework

We consider that our farm-centric approach is complementary to other perspectives on AKIS and advisory policies. This is typically true for the presentation of AKIS plans in the SCAR-AKIS-SWG. They provide national representations of AKIS, based on inventories of actors (for research, advice, innovation support) and on the infrastructural perspectives underlying projects such as PRO AKIS or I2Connect.

A corollary of the AgriLink farmer-centric perspective is that we shed a specific and original light on farm advisory services. We did not start with a pre-conceived definition of who the suppliers of farm advice are, and our analysis went beyond the actors usually acknowledged in farm advisory studies. We considered advice as an activity; we then integrated any supplier acknowledged by farmers as playing such a role in their decision to adopt an innovation or not. Box 3 (next page) presents AgriLink's **definition of farm advisory services as an activity**. It also distinguishes between **occasional** and **professional** advisors, and between **independent** and **linked** advisors.

1.5 Outlines of the report

This report is organised into two chapters.

Chapter 1 acknowledges the policy context in which we elaborated AgriLink's policy recommendations, and more specifically the AKIS plans that Member States have to prepare based on their SWOT analysis. The idea is to extract information on what draft presentations of these SWOT and AKIS plans tell us about the conceptions of Ministries of Agriculture vis-à-vis advisory needs in the MS where AgriLink was implemented, namely: Belgium, Czech Republic, Greece, France, Italy, Latvia, Netherlands, Poland, Portugal, Romania, Spain[5]. Appendix 1 highlights specific issues debated in each country.

[5] Field research was also implemented in Norway and UK. As these countries are not Member States of the European Union, they were not included in this chapter. Moreover, information about SWOT analysis and AKIS plans are rather scarce in certain countries. Hence, we could not provide the same level of details for all countries.

Chapter 2 presents the 4 key recommendations developed in AgriLink. Each addresses an important challenge faced by farm advisors in Europe, namely: 1) independency, 2) life-long training of advisors, 3) inclusiveness, 4) integrated advice and sustainability. The presentation of each of these four recommendations follows the same outline. First, we propose a key message. Second, we refer to the empirical evidence of AgriLink supporting this message. Third, we present potential options concerning "how to implement" the recommendation (discussed in Regional Multi-Actor Seminars & Sociotechnical Transition Scenario workshops).

Box 3 – The definition and conception of farm advisory services in AgriLink

- The starting point of AgriLink is to define advisory services as an **activity**, **which consists of using specific sets of skills to find solutions for farmers by transferring or co-producing knowledge for and with them.** This definition was already applied in the project PROAKIS and draws on institutional economics applied to services (Labarthe and Laurent 2013).
- **We distinguish between "professional" and "occasional advice suppliers".**
    - **"Professional advisors":** people whose main activity is providing advice.
    - **"Occasional advice suppliers"**: Next to these professional advisors, we also encountered in our research a range of agents who provide advice on a more incidental basis. These agents do not have specific skills in advice provision and for this reason we do not call them advisors but indicate them as 'occasional advice suppliers'. These may include:
        - Employees of various farming related businesses or other agents who, in their interaction with farmers, provide advice haphazardly. Unlike the linked advisors, they do not have advice provision as (part of) their profession.
        - Neighbouring farmers and other farmers; it appears that especially this 'peer-to-peer' form of advice is a very important resource for many farmers;
        - Farm workers;
        - Relatives and family members.
- **We distinguish between "independent" and "linked" advisors**.
    - "**Independent" advisor:** someone whose main occupation is to provide farming advice and who does not have a pre-existing or constraining commercial interest in what type of advice s/he provides. These advisors can either be publicly funded or they may receive payment from a farmer for their advice (fee-for-service or collective contribution).
    - **"Linked" advisor:** someone who provides farming advice on a professional basis but who also is restricted by having a commercial interest in what type of advice s/he provides, e.g. as an employee of a farming input provider (including certain farmers' cooperatives), an equipment and machinery dealer, a farming produce buyer, a bank, an NGO, etc. These advisors can either have advice provision as their main task or as part of their task. While they do have certain skills and possess specific knowledge that they advise on, they also have an interest in the advice they provide. They often provide their advice free of charge.

2 Chapter 1 - Policy context: What do CAP AKIS plans tell us about advisory needs and challenges

This section presents the findings from an analysis of the AKIS-related components of the CAP Strategic Plans of ten Member States (MS). The AKIS plans required from every MS as part of the strategic planning of the CAP are being developed throughout 2021. The development process has advanced to different stages in the MS. The analysis aimed to generate insights on the needs of selected MS, as derived from the strengths, weaknesses, opportunities and threats (SWOT) that the Ministries of Agriculture identified with regard to advisory services in the AKIS.

The material available for the analysis is drawn from SCAR-AKIS-SWG group member presentations (for the methodology of the analysis, see Box 4). As such, the discussions in this group over the different mandates and meetings will likely have shaped the content and focus of the presentations. SCAR-AKIS-SWG group members have had exposure to previous research projects on agricultural advisory services, in particular PROAKIS. This project was based on an infrastructural perspective to describe AKIS at a national level through inventories of actors (for research, education, advice) and an analysis of policies regulating their coordination. This project was influential in shaping the conceptualisation of AKIS and advisory services within the SCAR-AKIS-SWG. It also brought discussions of AKIS fragmentation and integration to the fore. This prior experience, overlaid with current developments in each MS and the key elements of the Cross Cutting Objectives, has shaped the SWOT analysis and prioritisation of needs. The key elements of the CCO emphasise (1) intensive knowledge exchange, (2) co-creating innovation and sharing it with advisors and trainers, and (3) using digitalisation as the motor behind many transitions in the sector. These elements are required to be integrated into CAP Strategic Plans and the description of a strategic AKIS approach.

In this context, the CAP Regulation places a number of **expectations on farm advice** for setting out the country's strategic AKIS approach (see Box 1). In order to contribute to the sustainable development of agriculture, farm advice is to be 1) independent and impartial, 2) delivered by well-educated and trained advisors, 3) inclusive and considerate of farm diversity, and 4) well integrated in the AKIS overall.

Box 4 - Data base and analytical process of AKIS plans

For this analysis, we had access to the following data:

- Presentations at the SCAR-AKIS-SWG (November 2019, October 2020, March 2021, June 2021) that provided information on Belgium (Flanders only), France, Italy, Netherlands, Poland, Romania and Spain.
- Information for the Czech Republic, Greece and Portugal from three contacts in their capacity as AgriLink partners and access points for stakeholders who are developing the AKIS plans in their country (e.g. Ministry of Agriculture).
- Note: this provided uneven information across MS, as some presentations focussed on only some areas (e.g. only planned interventions and priorities for Romania; no comparable material available for Latvia).

Information was cross-checked and complemented using the I2Connect country reports (available for all countries except Romania) and an internal document for use by DG AGRI, compiling extracts of CCO-relevant Commission's recommendations for CAP strategic plans, adopted on 18/12/2020.

The information was coded based on themes derived from the material, and themes revisited after the initial round of coding. Themes were consolidated and are reflected in the headings of the Results section. Norway and the UK do not prepare AKIS Strategic Plans as they are not MS.

2.1 Results of the analysis of AKIS plans preparations in MS

MS with a devolved structure (e.g. Italy, Spain, Belgium) face a considerable challenge to devise a strategic AKIS approach at the national level. The implementation of measures and EIP Agri OG is more complex in these settings, which has been described as a weakness. These countries also identify coordination between regions as an important need. Across all investigated MS, weaknesses and threats reflected structural issues in the AKIS on the one hand, and supply and demand issues for knowledge and innovation on the other hand.

Key themes emerging from the analysis relate to:

- information about the actors in the AKIS, their expertise, performance and needs;
- knowledge of different types of actors in the AKIS;
- coordination between AKIS actors;
- communication, interaction and cooperation between AKIS actors;
- funding and investment in the AKIS.

Each of these is elaborated in the five subsections below. A final section summarises the main findings by relating them to the four main dimensions described in the introduction to structure the AgriLink recommendations.

2.1.1 Lack of information about the actors in the AKIS

About half of the countries identified the **lack of information on AKIS actors (mainly farmers and advisors)** as a barrier or weakness in their attempt to improve the AKIS. With regard to farmers, ES and IT acknowledged the lack of data on the needs of agricultural holdings which was seen as a contributor to advisory providers not taking farmer needs into account. In BE, certain groups of farmers could not be integrated in the AKIS as they were harder to reach, and for PT it was likely that small-scale farmers' needs will be overlooked in the CAP Strategic Plan. Some countries expressed the aim for their strategy to properly address the needs of the agro-food system overall (GR) while others focussed more specifically on the needs of rural holdings (IT). In NL there was a recognition that farmers were well educated in agronomy and production related topics, but still needed further knowledge on cross-sectoral innovation, marketing, and management of data, risk and energy. A good understanding of different types of farmers and their needs provides the basis for ensuring that advice can be provided and tailored to make it accessible for all types of farmers.

Several countries expressed a **lack of information about advisors** in terms of numbers, location, expertise, specialisation and advisor needs e.g. in terms of training and life-long learning. This was seen to link to a lack of recognition of advisors (ES), and uncertainty about measures required to address the threat of an increasing generation gap (PL) and support intergenerational renewal (FR). GR identified an urgent need to halt further losses of expertise and human resources ('brain drain'). Many countries recognised the need for information about advisors' knowledge and skills, in order to ensure this is kept up to date via regular training.

The absence of an integrated information and monitoring system at the national level was stated as a weakness (ES, FR, CZ), leading to a lack of clarity about the AKIS, it's performance, suitable planning and intervention strategies. Linked to monitoring, ES identified the need to monitor the innovations developed, as part of strengthening the innovation ecosystem.

Many countries identified the accreditation or certification of advisors as a way to improve understanding of advisor numbers and existing expertise (ES, RO), to increase the integration of advisors into AKIS and enhance transparency (NL, BE). Some of the underlying motivation for accreditation may stem from a desire to understand whether advisors are independent and objective, and a need to avoid farm advice being coloured by vested interests of input suppliers. CZ identified the low and further decreasing number of accredited advisors as a weakness. BE expected to use the tool of advisor registration to address the threat of advisors with commercial activities not being integrated in AKIS and private advisors being difficult to identify.

2.1.2 Knowledge and skills levels of different actors in the AKIS

The lack of knowledge of farmers, advisors, and businesses was a key weakness and threat in many countries, resulting in the identification of needs linked to supporting and extending education, training, advisory services, and data availability.

A low level of **farmer education** was identified as a weakness in ES, RO and GR, and in CZ for small-scale farmers. In particular, farmers' digital know-how was seen to be lower than in other professions (FR), intertwined with an insufficient use of information technologies in communication (CZ). A lack of **farmer training** was highlighted for ES, RO, GR, coupled with a declining interest in agricultural education at all levels (PL). This resulted in countries suggesting various measures to address these weaknesses, ranging from an online platform with good practice examples (RO) to ensure the availability of training (PL).

In order to address the gaps in knowledge and skills, **increased back-office support and training of advisors** were seen as a priority in eight countries (BE, ES, IT, NL, PL, CZ, RO, PT). ES stated that an increase in back-office support and services tailored to needs was crucial. Similarly, IT expressed a need to ensure that available support services match the demand for knowledge and innovation. Some countries mentioned particular aspects, such as: a lack of training for 'mainstream' advisors who struggle to fit training into their heavy workloads and high client numbers (PT), the need for appropriate equipment such as laptops, mobile phones, and soil measurement devices (PL), or offering free advisor training to ensure widespread uptake (BE). A number of countries identified specific gaps in advisor expertise, ultimately leading to gaps in advisory services (linked to limited scope). These included insufficient development of advisory services in the field of technology, marketing and risk management (PL); insufficient coverage of business skills, risk management, marketing, new technology for reducing cost, precision farming, and others in education and advice (CZ); and lack of advice on the development of antimicrobial resistance and risk management (RO).

Issues around **accessibility and availability of advice to farmers** were identified in IT, FR, PL, CZ, RO, PT and GR. In particular, PL, GR and PT saw the limited scope of public advisory activities as a threat. FR acknowledged as a weakness that advisory services only benefit a minority of farmers who already tend to have a higher level of education, and CZ found that one-to-one advice needed by small-scale farmers, and on topics related to public goods, was insufficient. The unevenness of the availability of (public) advisory services was noted by IT, PT and CZ. All these countries clearly stated the need to improve the availability of advisory services and recognised that farm advisory services had to be more inclusive to ensure advice was not only offered to the more progressive, larger or commercial farmers. The other side of the same coin, however, is a low demand for advisory services, and farmers not being prepared to pay for advice (CZ).

Linked to these issues was the need for **new teaching and training methods**, and also **more targeted** advisory methods (BE, ES, IT, NL, PT, RO). BE discussed a need for modernising and tailoring the training system, including e-learning, in order to include harder to reach farmers. Some countries identified the need for a broader use of demonstration farms (PL, RO) and looked to setting up mobile advisory units as a priority (RO). A priority for NL is to set up digital platforms and interactive training sessions to connect advisors, researchers and farmers. Several countries highlighted the need to apply new methodologies allowing social innovation (ES), and the recognition of social innovation as integral to AKIS (NL). In this context, IT specified the low capacity of AKIS actors to use participatory methods.

Digital tools were seen as promising to address the availability of advice (IT, ES, NL, FR, PL), as well as the need for open data access for businesses (ES). This need was framed as a threat of limited access to e-services in agriculture in PL. Barriers to advancing digital tools came in the form of low interoperability between different tools and providers, poor digital infrastructure in remote areas (IT, FR), and the high costs associated with the purchase, maintenance and use. It became clear that 'digital tools' were used as a broad umbrella for various tools and applications, ranging from technology for precision farming to digital knowledge and advisory platforms including e-learning tools.

2.1.3 Coordination between AKIS actors

Coordination between AKIS actors suggests that actors are integrated in the AKIS and have strong links. In a fragmented AKIS, coordination is especially needed to enhance outcomes and avoid duplication.

The **limited coordination between AKIS actors** and different levels was identified as a weakness in BE, ES, IT, NL, PL, CZ, RO, PT and GR. A particular issue with the **poor integration of advisors** was identified in BE, and also the fragmentation of advisors in GR (certified agronomists have no representative bodies). ES planned to improve the coordination by setting up a platform of registered advisors. In other parts of the AKIS, weak coordination at some points in the administration was an issue (ES) linked to a need to strengthen the governance of AKIS. Similarly, IT stressed the support needed for coordination between the different parts of AKIS both at the institutional and operational level, with particular focus on advisory services. NL saw it as a role of the CAP network to better connect different activities. RO expressed the need to make a connection between farmers and institutions, seeing technology transfer centres at the regional and national level as a solution, while the existing competence centres in PT were seen to have both benefits and disadvantages. Fragmented research activities were mentioned explicitly as a problem in ES and NL, in the latter this was specified as the poor connection of different (temporary) projects and initiatives to benefit the AKIS. The integration of new actors in the AKIS to ensure coherence was a further need in NL.

The **lack of a regional and national strategy** was seen as a potential reason for the weak coordination between actors in the AKIS (reported in IT, GR and CZ). The latter two countries also highlighted the link to their economic situations and political instability which hampered the implementation of any long term strategy for supporting advisory services. There was a recognition that it was difficult to have public policy drive an advisory system that is partly linked to private economic interests, even if the system is highly dependent on public funding (FR), and even more difficult to coordinate where private economic interests are dominant (NL). Poor coordination may then lead to potentially conflicting advice being provided, e.g. when suppliers are driven by market competition.

Where the knowledge generated does not reach the end user, this was seen as a weakness of the AKIS (ES, IT, NL, CZ, GR). In GR this was perceived as a result of a lack of mechanisms for knowledge transfer to primary producers, while CZ attributed this to the fragmented AKIS and weak links, in particular impacting knowledge transfer from research to practice. The poor translation of research to the farm level and the multiple sources creating an 'information fog' was identified as another barrier in NL, accompanied by the stated need to involve 'supply chain parties'.

2.1.4 Communication, interaction and cooperation between AKIS actors

The interaction and cooperation between AKIS actors are interlinked with aspects of coordination.

The **insufficient cooperation between AKIS actors** was identified as a weakness in BE, NL, PL, CZ, RO and GR. Some linked this to a lack of communication (RO, PL) or the lack of networking between actors (BE). Missing interaction between universities and vocational training (BE, ES, RO) was identified as a barrier. Linking research to other AKIS actors was an important priority in NL, PL, RO and GR: connecting research to farmers via EIP OGs, knowledge groups, masterclasses and demonstrations (NL), as well as closer cooperation between research and advisors (PL), and research institutes and primary producers (GR). Several countries highlighted the need to strengthen the link between teachers and other AKIS actors (BE, ES), specifically involving the education sector in the training of advisors (NL).

Improved interaction and networking between farmers was discussed as a need in various forms (ES), ranging from motivating farmers and cooperatives to get involved in multi-actor projects to spread innovation (IT), to addressing the fragmentation of farmers (PL). A better understanding of how to improve knowledge flows between farmers (NL) and how to scale up collective and bottom up approaches (FR) was needed. Administration and ministries were mentioned in ES and RO, where a forum for facilitated debate was identified as a need.

Lack of trust, competition between actors, and administrative procedures were interrelated issues mentioned as a source of insufficient cooperation**.** FR noted that some members of the AKIS were reluctant to contribute to an open knowledge flow, and BE saw a specific threat in advisors and researchers not willing to share knowledge as they were competitors in some areas. BE had plans to address the reluctance of pioneers (farmers) to share knowledge by means of a top-up for innovative investment if the farmer disseminates the results. Competition between agricultural holdings and the resulting low willingness to cooperate was recognised as a weakness in ES. A low level of mutual trust and motivation to cooperate was a threat to setting up EPI OGs (PL) or already resulted in a low number of OGs (CZ).

2.1.5 Funding and investment in the AKIS

Funding and investment in the AKIS can come from a mix of public and private sources. A **low level of financial resources** overall was identified as a weakness (PL, CZ), and some countries saw the decline of public funding in R&D as a particular worry (ES) or felt more public funding was needed (NL). Some countries made the explicit link to political tensions (CZ, PT) and a stable macro-economic environment (GR) that was needed to ensure proper investment in AKIS.

In particular, funding for advisory services and innovation was discussed. An advisory system highly dependent on public funding was seen as a threat (FR). In settings where resources are scarce, it is a threat that advisory services could be neglected, and funding invested solely in innovation (PT). Other countries saw a low level of investment in innovation as a barrier (ES), in particular where there was a lack of companies large enough to invest in R&D and innovation for high value added products (GR). BE expressed that the lack of support for 'innovations with little chance of success but a lot of potential for the sector' was a weakness. The competition between different AKIS actors for the use of resources was highlighted as a threat (ES), as for example, the allocation of resources to competence centres rather than to advisory services (PT).

More broadly, **a high administrative burden** was described as a barrier that could affect research (ES), farmers and other actors (CZ, BE, RO), because complex administrative procedures may discourage potential beneficiaries from engaging or using new tools (FR). Complex administrative procedures for AKIS related measures were highlighted as a weakness (IT). In some instances, this was coupled with low trust in advisory services from the administration (CZ) or a low uptake of advice due to a required public procurement procedure (BE). The perceived high administrative burden may also further exacerbate a low level of interest in creating and disseminating innovative solutions (PL), with other entities involved in AKIS showing a low level of interest (RO) and low integration of innovation in the primary sector (GR). In some instances, this meant there was a threat that larger farms start to develop their own knowledge, independently of (publicly funded) research (BE).

2.2 Summary of needs identified by MS

A number of key issues emerged from the analysis that appear to be shared across countries, although the language that is used differs. What some countries identified as a weakness, others framed as a threat or barrier, and yet others specified interventions that targeted a particular problem. Sometimes, needs were not explicitly stated, but could be inferred from weaknesses or priorities. We can relate these needs to the four dimensions that are central to our recommendations report.

1. **Overall, countries shared the need to have a better understanding of who is offering advice (on what and to whom), and how advisors fit into the AKIS system**. Although publicly funded advisors were seen as impartial and independent from vested commercial interests, countries acknowledged that the advisory landscape was more diverse and public funding was not sufficient to offer the advisory services required by farmers. Registration, accreditation and certification were seen as ways to achieve an understanding of farm advisors, and provide proxy indicators for advisor independence and impartiality. Certification could also be used as a mechanism to ensure advisors maintain a required level of knowledge and training to keep their skills up to date and be prepared to advise farmers on the latest technology and sustainability challenges.
2. **Many countries acknowledged a need to improve the skills of farm advisors**. This had to build on better education for advisors, which would benefit from links to education and research. Making training accessible to advisors was seen as a challenge, not least because financial resources can shape the amount and quality of advisors' education and training, in particular where they are part of a publicly funded advisory service. The range of topics as well as the methods and tools that advisors are trained in needed to be broadened to include novel tools, digital technologies and topics of relevance to society. This would contribute to having advice be delivered by

well-educated and trained advisors, who are capable of delivering and tailoring advice to diverse target groups.

3. **There was also a recognition in several countries that a better understanding of the needs of farmers is required, which would contribute to making advice more inclusive and considerate of farm diversity**. Publicly funded advice can be tailored to those types of farmers who could not access other sources of knowledge, be it for technical or affordability reasons. Funding is key to achieving many of the outcomes, and countries recognise the risk of relying on public funding only. Therefore, efforts to broaden the range of funding sources are important, although the reduced influence of public policy over private investment is acknowledged.
4. **All countries highlighted the need to improve the coordination among AKIS actors, as well as the interaction and cooperation among them.** This applied to farmer cooperation and networking, as well as communication and interaction between research, advisors, trainers and educators. Working towards better coordination and cooperation will help to better integrate advisory services into the AKIS overall, and ensure advisors are well-educated and trained. The analysis also highlighted that funding availability determines the range of activities and mechanisms that can be put in place to facilitate participatory processes, co-design and knowledge flows in the AKIS.

The framing of some of the discussions around the importance of an integrated AKIS may stem from the categorisations introduced in previous research projects. There, an integrated system was juxtaposed with a fragmented system, and the latter was associated with weaknesses. However, even a system that is presented as a strong, integrated AKIS may only deliver effectively to a small set of farmers, and appear fragmented to those who are harder to reach or at the margins. Therefore, a differentiated view and explicit reference to specific AKIS actors, relationships and perspectives are important when making statements about a country's advisory services, needs and performance.

What emerged as a threat (or need) across almost all countries was the slow adaptation of both educational programs and value chains to societal demand and sustainability challenges, although this was not always explicitly stated. There is an expectation that the very existence of CAP AKIS plans will improve the AKIS organisation and structuring, as a common standard that all managing authorities and advisory services can refer to. There is also an expectation that EIP OGs will help further in supporting exchange and cooperation between researchers and advisors (as well as other AKIS actors). Especially in economically weaker countries, linking the access to funding to particular requirements such as AKIS strategies is considered an important lever for national and/or regional governments to prioritise investment and measures in this sector.

3 Chapter 2 - Four key recommendations

Based on an analysis of European public policies, we identified four dimensions for well-functioning advisory services that contribute to sustainable development: 1) independence of advisors, 2) advisors' training, 3) inclusiveness of advice, 4) integration of farm advice into broader knowledge and innovation systems.

Chapter 1, based on MS's presentations at the SCAR-AKIS-SWG, already illustrates some pitfalls regarding these dimensions. The design of concrete measures to achieve them, at a national or regional level, remains a very complex task, for instance, to identify and select relevant advisory organisations, or to assess changes in farmers' knowledge needs. This is especially true in a context of increased pluralism of suppliers of farm advisory services and/or where advisory services were privatised. This was confirmed in the various workshops organised in the context of AgriLink (see table in Annex 2 for an overview of the outcomes of these workshops organised in each of AgriLink's 13 countries).

Our empirical findings indeed show that it is very complex to describe and predict farmers' practices and personal networks regarding advisory services based on knowledge about the structure of national AKIS. To acknowledge this in this report, we build on AgriLink's innovative farmer-centric approach. We combine new concepts and our empirical findings to flag pitfalls and identify options in order to develop **new pathways for each of the four dimensions of advisory policy presented in the introduction** (Figure 3):

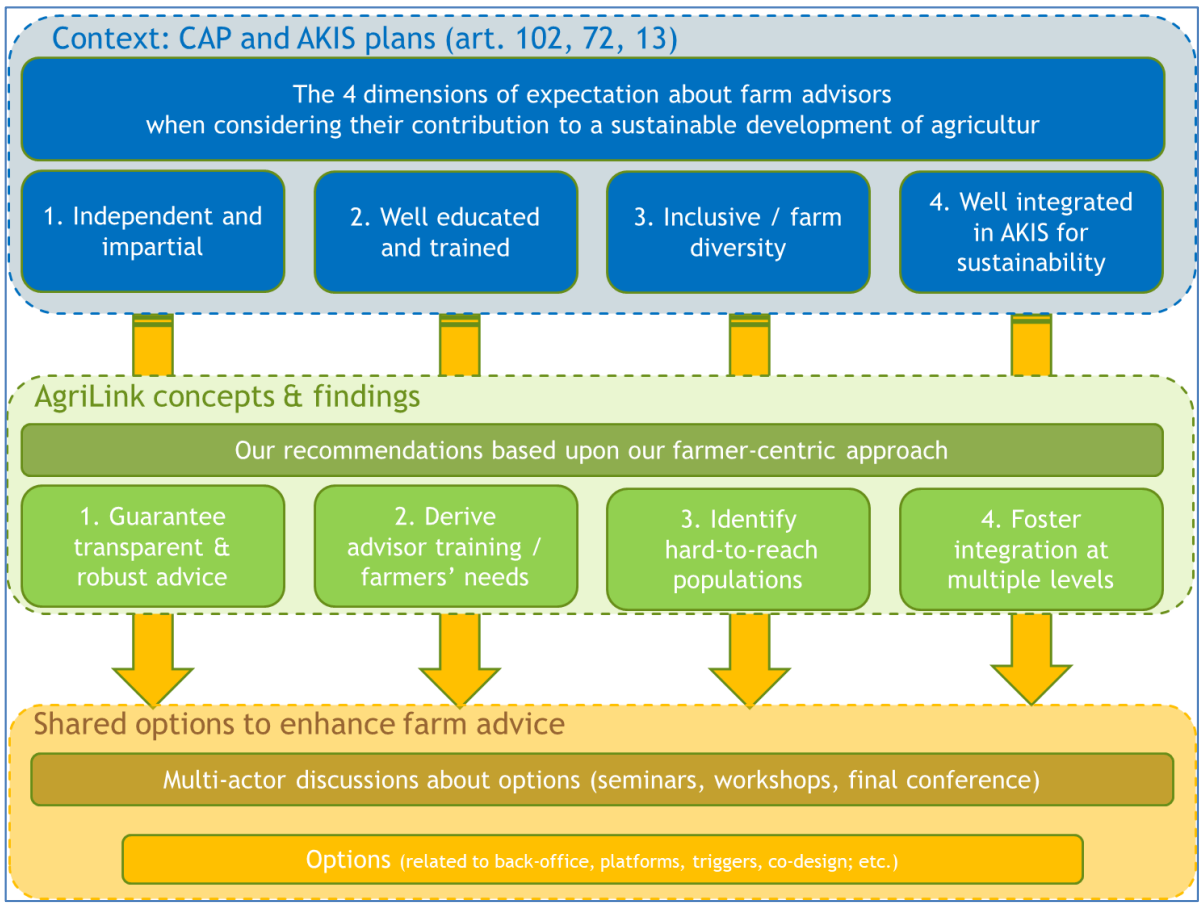

Figure 3 - General principles and key messages of AgriLink Policy Recommendations

- Dimension 1 **[independent and impartial advice]:** our findings show that it could be very difficult and insufficient to delimitate the boundaries of "independent and impartial" advice. **We consider that it is also necessary to take actions to enable "transparency and robustness" of advice.** We propose options in that respect, with a focus on the back-office of farm advice.

- Dimension 2 **[advisors' education and training]:** our findings show a series of gaps in the content, method and function of advice supporting farmers when deciding to adopt an innovation (or not). **We consider that a farmer-centric approach can be used to highlight these gaps and farmers' needs in specific contexts.** We propose options to design relevant training and education modules for advisors based on our concepts of microAKIS and Triggering Change Model.

- Dimension 3 **[inclusiveness of farm advice]:** our findings show that some profiles are not included among the beneficiaries of farm advice. Some parts of these "hard-to-reach" populations are well known (small farms, part-time farmers, new entrants, women). But we identified other rural and agricultural populations that are less often considered within and beyond the family work force (including salaried workers, contractors, posted workers). **We consider that there is a need to better understand who the hard-to-reach populations are and what their needs are regarding different types of innovation.** We propose some tools and approaches related to that perspective.

- Dimension 4 **[integration of advice in AKIS]:** our findings confirm that the integration of advisory services into AKIS remains a complex and sometimes abstract issues for policy makers. This is true at the farm level, where "integrated" or "holistic" advice is often lacking. But this is also true at a more regional or national level, where difficulties to coordinate between AKIS actors were often stressed**. We consider that insights from social sciences can be used to recognise and invest in situations that are characterised by uncertainty, gaps, and controversy.** At the farm level, we propose options based on a better understanding of a farmers' decision-making (through TCM and microAKIS). This could help prioritise public support to diverse forms of advice, at specific stages of farm trajectories. At a more global level, we propose toolboxes for co-design methodologies that can be tested and used to support learning and the development of integrated advice, based on our experiences with Living Labs.

The development of each recommendation uses the following structure:

1. We start by providing the **key message central to each recommendation**.
2. We continue by providing the **empirical evidence of AgriLink supporting the message, but also the limitations** of this evidence
3. We then present **potential options on 'how to implement' the recommendation**. These recommendations are partly based on interactive workshops that we organised with advisors and policy makers (the 26 Regional Multi-Actor Seminars, the 13 SocioTechnical Transition Scenarios Workshops and 4 E-workshops). It is important to stress the fact that what we present here are not solutions but options. We aim to open debates about their best-fit for different contexts and histories. We also try to provide links to other research and innovation projects that explore these options.

3.1 Recommendation #1 –Independent and Impartial advice

3.1.1 Key message

The objective to ensure independence and impartiality of advisory services delivered to farmers is central not only to the next CAP, but also to many national policies. The intent is to guarantee that the content of advice supported by public funds (information, data, and knowledge) is not biased by vested interest (about selling pesticides, machinery, etc.) that would hamper the integration of societal issues (e.g. reducing pesticides use). This objective seems to be largely agreed. However, the outcomes of the SWOT analysis show that it is difficult for MS to make sense of the complex configurations of the supply of advisory services (see chapter 1). The results of our farmer-centric approach confirm this difficulty and identify various pitfalls that might hamper this objective, and make it hard to implement and enforce from a national perspective. But that does not mean that there is no room for public policies in this area, on the contrary. We consider that there is a need for public policies to enforce more transparency in the supply of advice, through back-office support. Hence, our key message is the following (Box 5).

Box 5 - AgriLink's key message about independent and impartial advice

To avoid bias in the content of farm advice, it can be very difficult and it is not sufficient to delimitate the boundaries of who count as "independent and impartial" advisors. We consider that it is also necessary to take actions to enable "transparency and robustness" of the *content* of advice. To reach this objective, there is a key role for public actors in supporting, investing in, and controlling the back-office dimension of farm advisory services.

3.1.2 Empirical evidence

There are various reasons why we propose to focus on "transparency and robustness" of farm advice and not only on delineating independent advice. First, it can be very difficult to identify "independent" advisors. Second, independence might not necessarily be a criterion for farmers when choosing advisors. Third, bias in advice might come in many different (and sometimes hidden) forms that cannot be reduced simply to a question of independence of advice suppliers.

These arguments mostly relate to our fieldwork about farmers' microAKIS (WP2) and our analysis of the transformation of farm advisory regimes (WP4): see deliverables D2.2 (Synthesis country report), D2.5 (Synthesis report) and D4.2 (Farm Advisory Regimes). Our aim was to explore the diversity of microAKIS and farm advisory regimes. Since our samples of farms and advice suppliers were not meant to be statistically representative but purposive, we suggest caution in any extrapolation of our results. However, we are confident our findings are robust as we observed similar results in a variety of regional contexts and across innovation areas. We also organised regional seminars to validate our findings.

AgriLink did not start with an *a priori* conception of advisory suppliers. We started from a very open view and acknowledged any source of advice considered by farmers**. Our fieldwork reveals a limited role and/or availability of "independent" advisors in many of the contexts and case studies we analysed.** This is especially true for the assessment stage of farmers' decision making, i.e. the stage where they actively collect information about the positive and adverse effects of an innovation. In contrast, in many cases, "occasional" and

"linked" advisors play a very important role in various microAKIS. Examples include: input suppliers, nurseries and seeds suppliers, machinery dealers, associations of farmers, NGOs, consultants, high-tech companies, bookkeepers, research organisations and researchers. For certain actors, it is very difficult to identify to what extent they might be identified as "independent" based on their sole status (e.g. farmers' cooperatives that sell inputs to farmers and/or own a consultancy subsidiary company). Moreover, we found that some regions are lacking organisations that sell or provide only advisory services. Our interviews also reveal that the notion of independence is not central for farmers when they choose an advisor. This choice seems rather to be driven by trust relations with advisors, but also by the nature of trigger events in farmers' decisions. In other words, the local configurations of supply, path-dependency, contingency, timeliness and relevance play key roles in farmers' choices regarding advice.

As a result of this complexity in the dynamic relationships between demand and supply for farm advice, bias and partiality might come in many different forms in advisory services. For example, when advice is provided by linked advisors who may have a direct interest in the content of advice they provide. But there are cases where advice is biased even when delivered by independent advisors. For example, when the main sources of knowledge of consultants are linked to seed suppliers or chemical industries, as we evidenced in WP4 of AgriLink. Even in advice provided through peer-to-peer informal networks or occasional advisors, there is a risk of bias, as it is hard to trace back the practical and scientific knowledge upon which the advice is based.

3.1.3 Implementing the recommendations

In this section, we highlight the main contributions of AgriLink to the policy debate on independent advice (Box 6 below). We also propose some options for implementing our recommendations about the transparency of advice, with a focus on back-office. These options are partly drawn from the interactive events we organised with stakeholders.

Box 6 – Contribution of AgriLink to the policy debate on independent advice

The contributions of AgriLink to the policy debate on independent and impartial advice are the following:

1. **We proposed a definition of farm advisory services, and a classification of actors to make sense of the complex configurations** for the supply of advisory services. It can help to distinguish between "professional" and "occasional advice suppliers" and between "independent" and "linked" advisors (see Deliverable D5.5 – Integrated evaluation report).

2. **We provided tools to better understand the farm advisory landscape based on an understanding of farmers' microAKIS**. We consider that describing the sources of advice to farmers in various innovation areas can provide a complementary view on AKIS and advisory services vis-à-vis national or regional inventories (see Deliverable D2.1 – Research Protocol on microAKIS).

3. **We highlighted various concrete activities to support and control the back-office of farm advice and enhance the transparency and robustness** of farm advice (see Deliverable D2.3 – AgriLink Regional multi-actor Seminars and Deliverable D5.3 – Agrilink- Sociotechnical Transition Scenario workshops applications).

A first practical option is to encourage initiatives to understand changes in the structure of the supply of advisory services by starting from a farmer's perspective. AgriLink's methods to describe microAKIS might be simplified and replicated to explore changes in the advisory landscape, through collaboration with social scientists who could implement various farm sampling strategies (transect, surveys, etc).

A second set of options relates to the certification and control of advice. Various countries tried to set boundaries to guarantee that public money is funding independent and not linked advice. In most of these countries, these boundaries are set at the level of individual advisors, through certification schemes**. A complementary measure is to link this debate to transparent training schemes for advisors.** Training provided by non-linked actors and/or tied to public research could be made compulsory and/or transparent: advisors should be accountable for their training schemes. Information about such training could be publicly accessible. These compulsory training schemes could also be co-designed between the state and professional associations of advisors. Training requirements could be part of the ethical standards of these professional associations of advisors. European, national and regional funds might be used to support transparent training schemes for advisors.

A third set of options relates to multi-actor back-office activities that would strengthen the flow of information between a diversity of actors. These options were largely shared by actors participating in the various events organised in the context of AgriLink. They aim to compensate for the lack of support for farmers in assessing the positive and adverse effects of an innovation. Various options are available:

- joint farm demonstration activities and networks, where various agronomic solutions can be showcased with the support of diverse advisors;
- joint training activities where advisors from different types of organisations are trained together by public research or NGOs;
- specific public demonstrator bodies dedicated to comparing the effectiveness of various types of technologies (for farmers and for the environment);
- open knowledge platforms to share knowledge about technologies.

In other words, more control and robustness in farm advice can be achieved by supporting transparent back-office activities and supporting knowledge flows between public research, farmers and a variety of advisors. There is a lot of potential to use the next CAP policy framework in that respect. Options and opportunities are being considered by MS, as highlighted in chapter 1. Moreover, some options are already explored by other European research projects, for instance Plaid, AgriDemo F2F, and Nefertiti for the networks of demonstration farms, or Euraknos and Eureka for knowledge platforms.

3.2 Recommendation #2 – Advisors' training

3.2.1 Key message

The next CAP emphasises the necessity to invest in advisors' education and training to ensure they can support farmers with relevant knowledge and pedagogical methods. Recent projects already highlighted the need to update advisors' soft skills to adjust to new innovation processes and dynamics (Solinsa, I2Connect). This is also shared by some communities of advisors (e.g. the CECRA training of EU-FRAS). This movement has led to various definitions of the set of skills that advisors should acquire. Our findings are complementary, starting from farmers' perspectives. They highlight gaps in farm advisory services which are linked to the nature of a variety of innovations. We suggest that AgriLink's methods, which were developed to analyse farmers' personal networks (microAKIS, Triggering Change Model), can be used (in a simplified version) in modules for advisors' education and training. Hence, our key message is the following (Box 7).

Box 7 - AgriLink's key message about advisors' training

A farmer-centric approach, based on an understanding of farmers' needs and personal networks, should be used to highlight gaps and needs in the supply of advisory services in specific contexts. There is the potential to better incorporate advances of social sciences on farmers' decision-making (e.g. Triggering Change Model, microAKIS) in education and training modules for advisors.

3.2.2 Empirical evidence

There are two main reasons why we propose to ground the elaboration of advisors' training on a better understanding of farmers' personal networks: 1) we identified gaps in advisors' knowledge, skills and functions in a variety of innovation areas; 2) we consider that an understanding of farmers' microAKIS and an application of the Triggering Change Model of farmers' decision-making has potential to frame novel training modules.

These ideas are based on our field work on farmers' microAKIS (WP2). Some caution is needed when interpreting these results as our farm sample was not statistically representative, and we have not tested concretely the possibility to operationalise our concepts for advisors' education and training. However, exchanges with advisors during our interactive events highlighted that our approach could induce reflexivity and serve as a basis for training modules.

A first finding that supports this recommendation relates to a variety of gaps that we identified in the supply of advisory services, dealing both with methods and content of advice, including:

- **gaps related to very new technologies** (e.g. digital, new crops to adapt to climate change, etc.). Advisors tend to be less informed than pioneer farmers or technology providers and, as a consequence, lack the capacity to support a farmer in critically assessing the proposed innovation in their context;
- **gaps in advice on public goods related issues** (such as water conservation, animal welfare, agroecology, organic farming, etc.) but also **social, health and labour issues**;
- **gaps related to communication and trust building** (social skills, not only soft skills);

These gaps are even more significant in contexts where value chains are less profitable and generate less added-value to be invested in farm advice.

A second finding is that farmers' decisions do not follow a linear process. These ideas are based on our fieldwork about farmers' microAKIS (WP2). This method is based on the triggering change cycle according to which farmers' decision-making follows various steps: path dependence, trigger, active assessment, implementation, consolidation or return to active assessment, and path dependency (Figure 4). AgriLink research, with over 1000 farmers across Europe, asked participants to identify their sources of advice at different stages in the cycle.

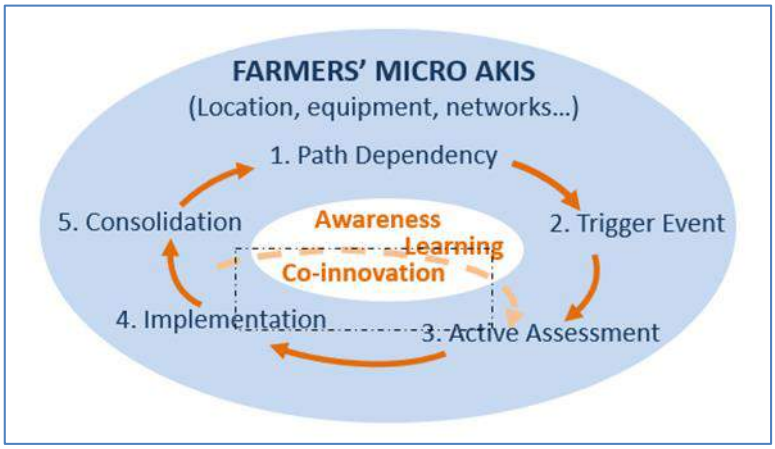

Figure 4 - Triggering Change Cycle

The research identified the following patterns in the provision of advisory services:

- Overall, farmers' microAKIS – all sources of knowledge they use to be informed on an innovation – do not increase in heterogeneity during decision-making processes. In most cases, farmers' microAKIS were actually very small – typically only 2 to 3 different sources.
- There are a number of gaps in advisory service provision, especially for certain innovation areas (digital technologies, social innovation related to labour) or certain stages of farmers' decision-making (especially in implementation and assessment).
- Family events were identified as one of the most important 'triggers' for innovation. Advisors were also identified as an important trigger for innovation, but these were often minor innovations.
- There was often a substantial time span between when farmers became aware of an innovation, and when they actually implemented it on-farm.
- 'Droppers' of agricultural innovations are farmers who tried out an innovation, but then stopped. These farmers often had smaller microAKIS i.e. fewer sources of advice, than adopting farmers. Often they critically lack advice during the assessment and implementation stage and/or identified lack of advice as a reason for dropping the innovation.
- Non-adopters often relied on their peers for advice, suggesting that they had less access to advisory services. However, sometimes these individuals had a larger microAKIS, implying that they had consulted a wide range of sources and come to an informed decision that the innovation was not right for their farm.

3.2.3 Implementing the recommendations

In this section, we highlight the main contributions of AgriLink to the policy debate on advisors' training (Box 8 below). Some options are proposed about how to implement recommendations and develop new types of advisors' training, with a focus on advancement in the social science of farmers' decision making.

Box 8 - Contribution of AgriLink to the policy debates on advisors' training

The contribution of AgriLink to the debate on advisors' training are the following:

1. Our approach enables us to identify advisory gaps specific to innovation areas. Some gaps are related to hard science (e.g. new crops), others to advisors' soft skills.
2. We explored the heuristics of microAKIS and Triggering Change Model of farmers' decision-making on innovation uptake. There is the potential to train advisors to pay more attention to triggers and better understand farmers' personal networks. There is a need to better connect advisory services with social sciences about farmers' decision-making (economics, sociology, psychology, ergonomics. See D1.3 Conceptual Framework).
3. We highlighted gaps at specific stages (assessment and implementation stages). This requires better integration in AKIS through concrete back-office activities.

A first set of options relate to the multi-actor dimension of advisors' education and life-long training. This is all the more important when innovations require the integration of new knowledge bases. Several options were pointed out.

- Stimulate exchanges between advisors from different regions or countries on novelty issues (including digital), considering that something can be new in a certain area but not elsewhere. The concept can be applied to operational groups but also to long-life learning programs such as Erasmus+ or regional plans.
- Create spaces for reflexivity and exchange between advisors, researchers and actors beyond AKIS (e.g. NGO and civil society), with the aim to support advisors' capacity to "critically assess" innovation.
- Specific training on soft skills is still needed, or training that combines soft and hard skills, by bridging generalist and specialist advisors.

A second set of options aim to connect advisors' training to academia through scientific knowledge engineering. This would enable advisors to draw a shared understanding of the positive and negative effects of an innovation, and help advisors to support farmers' assessments of an innovation. There are various options where the role of public actors in funding and controlling networks and knowledge bases would be crucial (as in recommendation #1):

- create networks of demonstration farms, pilot farms and field trials;
- rely on secured and anonymised farm data bases about the uptake and effects of innovation.

A third set of options relate more directly to AgriLink's contribution to the advancement of social sciences to explain farmers' decision-making. There are good possibilities to directly incorporate the microAKIS approach or the TCM model within reflexive modules for the education of the next generation of advisors or for advisors' life-long training. This includes:

- Modules for a fast appraisal of farmers' personal networks using a microAKIS approach;
- Modules to raise advisors' awareness of the triggering change cycle model, and how they can work with it (e.g. common triggers, points at which farmers will be seeking information). Reflecting upon how to identify triggers can be important points of entry for communication with different groups of farmers;
- Modules to develop specific skills for the assessment stage (critical search and evaluation of information, digital skills, development of demonstration activities, etc.).

3.3 Recommendation #3 –Inclusive advice

3.3.1 Key message

Increasing social cohesion is a key objective of European agricultural and rural policies. Reducing the inequalities of access to advisory services and relevant knowledge provides an important target to strengthen social cohesion within the European farming community. Hence, the ability to define target groups of beneficiaries is a key dimension of European advisory policies. It opens the possibility for Member States to reduce inequalities of access to services. However, in former policies such as the EU-FAS regulations, only a few countries activated such processes. Those that did most often focused on small farms and young farmers as key target groups. The question of farmers' access to services was also raised in MS SWOT analysis presented in Chapter 1. Based on AgriLink's findings, we argue that the situation of unequal access to advice is more complex and requires detailed attention. Hence, our key message is the following (Box 9).

Box 9 - AgriLink's key message about inclusiveness

Our findings show that some profiles are not included in the beneficiaries of farm advice. A part of these "hard-to-reach" populations are well known (small farms, part-time farmers, new entrants, women). But we identified other rural and agricultural populations that are less often considered within the family work force but also beyond (salaried workers, contractors, posted worker). We consider that there is a need to better understand who the hard-to-reach populations are and what their needs are regarding different types of innovation.

3.3.2 Empirical evidence

There are two main reasons why we propose to disentangle the notion of hard-to-reach farmers: 1) the fact that our results highlighted some uncommon features of hard-to-reach populations in a context of rapid and abrupt structural changes in the agricultural sector; 2) our concepts of microAKIS could have value providing insights into and finding options in designing better services with a good-fit for these populations. As for previous recommendations, these ideas mostly relate to our field work about farmers' microAKIS (WP2) and similar caveats on the sample apply. The field studies of AgriLink were based on regional studies and do not cover the whole diversity of farmer profiles.

Our findings confirmed results of previous studies on the specific difficulties faced by certain categories of farms in accessing advisory services, including small farms (in Scotland, Latvia, Romania, Norway), but also farms run by women, older farmers, or part-time farmers that have a specific agenda, norms and practices that do not correspond to advisory routines. Hence, our findings also confirm that financial aspects and the cost of advice are not the only reasons for the difficulties in accessing advice. Theycould also be a result of path-dependence in the social construction of the relations between demand and supply for advice.

A more original result of AgriLink is to shed light on other categories that are less documented in the international literature. This is typically the case for farm workers (salaried workers, posted workers) **and contractors**. We identified these populations in dedicated case studies on new labour arrangements, for instance in France. We found little evidence of advice specifically dedicated to these populations even though there are more people in this category than in the "family work force" category in several countries including Spain, France, Belgium or Poland.

This might be linked to the fact that our representation of farmers' decision making is still partly framed by Western European perspectives and conceptions of family farms. This representation is challenged by the rapid and abrupt structural changes in European agricultures. In AgriLink, this challenge was explicit with certain profiles of farms we investigated, for instance in the Czech Republic. There, some of the pioneer farmers can also be "hard-to-reach" populations for suppliers of advice. These farms are often enterprises employing dedicated staff with high-levels of education and qualifications who are directly in contact with public and private research organisations rather than with advisors.

This relates to another significant finding of AgriLink. Our method consisted of purposively looking for farmers with different profiles regarding adoption - including pioneers, as mentioned above, but also non-adopters and droppers - following an 'evolutionary' perspective. Although the situations of non-adopters often reveal some gaps in the delivery of advice, some non-adopters have more original profiles. Their decisions not to adopt or to drop an innovation can be related to different advisory networks that might transcend local boundaries. In other words, these farmers cannot be systematically considered as laggards or as resistors to changes. It is possible to learn from them about their rationales and experiences.

3.3.3 Implementing the recommendations

In this section, we highlight the main contributions of AgriLink to the policy debate on inclusive advice (Box 10 below).

Box 10 - Contribution of AgriLink to the policy debates on inclusiveness of advice

The contributions of AgriLink to the debate on inclusiveness of advice are the following:

1. Our bottom-up approach to farmers' decision-making enables a better understanding of who are the "hard-to-reach" populations for advisory services.

2. Among these populations, we highlighted some categories of actors that are often overlooked in innovation studies. Some of them relate to structural transformations of agriculture (farm workers, contractors). Others relate to farmers who decided not to adopt or to drop innovations.

3. Financial support can be necessary, but it is not a sufficient condition to promote access to advice for hard-to-reach populations. There is a need to connect advisory services to research in social sciences to engage with these populations, understand their needs and design services for them and with them. Here again, AgriLink's key concepts of microAKIS and TCM could support advisors in exploring needs for new advice and in designing new services.

Establishing an advisory service of advice that caters to the diversity of users requires a better knowledge of the needs and practices of hard-to-reach populations. A prerequisite is to understand who these populations are. But here again, the advisory context and history matters. We distinguish situations where there are suppliers of advice actually willing to engage with "hard-to-reach" populations, and other situations where this might not be the case.

At various AgriLink workshops, some advisory suppliers admitted they lacked knowledge on important parts of the farming population. Some of them (mostly public actors and some

farmers' organisations) were willing to find solutions to engage with these farmers and farm workers. The following options were suggested **to identify these populations and understand their needs**:

- **Use random sampling techniques to select farmers to interview** (e.g. geographical transects).
- **Use a simplified microAKIS tool to understand farmers personal networks and design advisory services on this basis**. This could, for instance, help understanding whether digital technologies could provide enabling tools to better integrate specific groups into advice, or whether there is a risk to widen gaps. This could also help to consider different models of giving advice, adapted to specific needs. For example, organizing workshops or meetings with a different timetable could attract part-time farmers who are not available during office hours. A better understanding of microAKIS can also contribute to better understanding of and support for the peer-to-peer networks of various populations. This could help to reinforce information flows beyond the limits of local leadership and to imagine original mentoring schemes.
- **These ideas could be directly applied in advisors' education and training**. In France, for instance, an agricultural vocational school systematically uses pedagogical modules whereby students (and thus potentially future advisors) have to engage with randomly chosen farmers.

There are other situations where there might be no actor willing or able to take steps towards including hard-to-reach populations. **In such configurations, other options were discussed to identify conditions, momentum or procedures that could offer opportunities to engage with hard-to-reach farmers and farm workers**. For instance:

- Make use of "compulsory interactions" with farmers (bookkeeping, CAP declaration for subsidies) to understand their situations and needs, and then propose farm advice to them.
- Make use of knowledge about triggers to identify momentum when these populations might be willing to look for advice, such as farm succession. This point is also developed more extensively in the next recommendation on integrated advice.

Irrespective of particular options, there is an important role for public actors to support growing connection with hard-to-reach populations. Potential roles discussed during our workshops go beyond financial support. They include the production of evidence and the support of specific services for hard-to-reach populations, including:

- Support of training schemes offering new advisory skills (soft skills, relational competences);
- Coordination of advisory services at a regional level to provide statistics and surveys of the beneficiaries of advice to inform policies (introduction of a supervisory/controlling body);
- Contracting actors with the specific task of collecting information and bringing it to hard-to-reach populations through specific services;
- Creating special support schemes, with minimal transaction costs, for very small farmers. Involve them in the peer-to-peer learning networks with other farms of a similar type (size or business model). Create examples to be followed ("small lighthouses") spread across the country;
- Use specific tools to provide advice to remote areas (digital tools, online training), to allow the same expert to advise several farms in the scarce (and expensive) time available. Online webinars will allow specialists to spread their knowledge and avoid too much travel costs for the farmers.

3.4 Recommendation #4 –Integrated advice and sustainable development

3.4.1 Key message

An assumption upon which AgriLink is based is that there is not an automatic, systematic and positive relationship between innovation and sustainable development. Some innovations will have positive impacts on certain dimensions of sustainability while others will (also) have negative impacts. This calls for holistic advice provision that enables an assessment of the various dimensions of an innovation and that brings together different types and sources of knowledge. This is in line with the CAP 2023-27 promoting an integration of advisory services into broader Agricultural Knowledge and Innovation Systems (AKIS), based on multi-actor networks. It is also in line with first drafts of AKIS plans that emphasise the needs for coordination between advisory suppliers and other AKIS actors (Chapter 1). This objective, which is grounded in theoretical representations of AKIS at the national level, is thus largely shared and consensual. However, our analysis in Chapter 1 shows that this issue remains complex to implement for MS. The coordination of fragmented AKIS and pluralistic advisory landscapes indeed is a significant challenge and we cannot propose general or simplistic solutions. The contribution of AgriLink is to help managers of advisory services and policy makers to identify situations where the integration of advice could be pushed forward and contribute to the transformative change of farmers' practices for sustainable development. Hence, our key message is the following (Box 11).

Box 11 - AgriLink's key message about integrated advice and sustainable development

We need to invest in situations which are characterised by uncertainty, gaps, and controversy if we want to stimulate the provision of integrated advisory services that contribute to more sustainable agriculture within its wider social and political context. We consider that more insights from social sciences could be used to identify these situations and subsequently support transformative changes both at the farm level and at the level of the co-design of innovation support services.

3.4.2 Empirical evidence

There are three main reasons why we propose a recommendation on the issue of integrated advice. 1) We evidenced a lack of integrated and holistic advice in a wide variety of cases. 2) Advances in the understanding of farmers' decision-making could help to identify momentum where farmers would more actively seek such advice. 3) We tested the potential and limitations of co-design methods that could support the design of more integrated advice through our Living Lab experience.

In AgriLink's case studies, we found that farm advisory services are able to meet farmers' advice needs around technical and agronomical issues, and in many cases also economic needs. However, sustainable innovations come with more complex needs such as tailoring an innovation to local conditions, (cost-benefit) assessments or learning how to create added value through implementing an innovation. Therefore, integrated farm advisory services are needed that include advice on domains such as agronomy, technology, economy, environment and society. Such an integrated farm advisory approach links up to concepts of integrated farm management, where it is similarly argued that to achieve sustainable, resilient agricultural systems, economic, environmental and social aspects all need to be taken into account (e.g. Rose et al., 2019).

Similar to findings by Rose et al. (2019), we found in AgriLink that advisors rarely offer integrated advice for sustainable innovation. Instead, advisors are often specialized in specific topics that mainly respond to farmers' direct and specific needs, for example, needs related to fertilization, crop health, finance and short term farm management. Farmers' needs often focus on short-term problem solving rather than long-term solutions for a more sustainable farming system. While sustainability issues are a problem for society at large, they are often not given priority and urgency by farmers (and therefore advisors) due to this focus on short-term problem solving. For a single advisor it is challenging, or even impossible to offer a complete and integrated farm system view. To move to a more integrated and long-term farm advisory services requires advisors to reassess their purpose, their roles, and to develop their knowledge and skills. **These skills need to include the ability to recognize triggers that might lead farmers to look for more integrated advice.**

Although our farm sample was not representative, the data reliably demonstrated that for major innovations, many farms typically followed the steps of the Triggering Change Cycle: path dependence, trigger, active assessment, implementation, consolidation or return to active assessment, and path dependency. For more minor innovations, simple awareness of the new innovation led to active assessment or even implementation (with little apparent review). Confirming the tenet of the triggering change model, major, transformational changes require considerable active deliberation, while incremental changes occur on an ongoing basis, often with limited reflection. To enable transformational change in farming, advice needs to be targeted at key change points in farming trajectories. These include farm succession, disease outbreaks and financial downturns in particular commodities. There is also a need for advice to support farmers to evaluate their options, and to help them embed the innovation into their farming practices. AgriLink research found a clear shortage of advisors at the later stages (i.e. implementation) of new innovations.

At a more global level, multi-actor settings and co-design methodologies hold a premise to support advisors in developing new forms of more integrated advice, commensurate with our experiences in AgriLink Living Labs. However, these methods are not easy to implement, and come with a variety of pitfalls and challenges from the level of farming practices up to policy levels: how do policy makers support open innovation processes; how do we design indicators for co-design methods acceptable for policy-makers; how do we link to co-design projects of NGOs which are realising impacts (Social Return on Investment) as a KPI; how do we tailor these approaches so that they are meaningful and relevant for farmers, while still being policy directed?

3.4.3 Implementing the recommendations

In this section, we highlight the main contributions of AgriLink to the policy debate on integrated advice (Box 12 below). We also propose some options to implement our recommendations at two levels: at the farmers' decision level and at the level of the co-design of farm advisory services.

Box 12 - Contribution of AgriLink to the policy debates on integrated advice and sustainable development

The contributions of AgriLink to the debate on integrated advice are the following:

1. We identified and analysed a number of concepts and tools that can help advisors and policy makers to identify favourable conditions to support transformational changes. [Deliverable D1.3]

2. At the farm level, we propose to use the TCM model to identify triggers as entry point to develop integrated advice with farmers.

3. At a more global level, we identified conditions where co-design might be applied, based on reflexively following the Living Lab methodology [Deliverable D3.4]. We developed a tool and a pedagogical module that can be used to support training for advisors willing to launch or be involved in Living Labs. [Deliverable D3.5]

A first series of options discussed aim to better connect the support of advisory services to any momentum or cycles of farmers' decision making. Options include:

- Training advisors to be conscious of the triggering change cycle, and how they can work with it (e.g. common triggers, points at which farmers will be seeking information). These triggers could be a successor coming into the business, a disease outbreak or a period of low profitability. Advisors are much more likely to be effective in proposing integrated advice at these periods of time, and to facilitate farmers to make good decisions and then embed the new farming practices into their routine operations.
- Making flexible funding available, so that advice can be targeted towards emergent triggers (e.g. disease outbreaks, commodity market downturns). Target advisory supports to phases when succession or generational renewal occurs.
- Better training of advisors to support innovations during implementation and assessment stages, as stated already in former recommendations (e.g. through multi-actor back-office settings, through training advisors to up-skill in implementation support).

At the level of the design of advisory services, it is necessary to identify the conditions under which co-design methodologies such as Living Labs are appropriate, and rely on the variety of existing of toolboxes. This is highlighted in AgriLink's online pedagogical module.

The first step from our findings and set out in the tool and pedagogical module is to assess the conditions under which co-design methodologies might be applied. This includes:

- Time, energy, inclination to join; sense of urgency; awareness of gap / problem;
- Resources: time, facilities, facilitators, monitors and evaluation processes;
- Accepting of open process (co-innovations do not have pre-definable or closed outcomes);
- Problem with pre-determining accountabilities, milestones, deliverables.

The pedagogical module also presents a variety of tools tested in the context of AgriLink (including conversation mapping, peer-to-peer mentoring, monitoring and evaluation procedures).

Conclusions

Our policy recommendations are based on extensive empirical evidence relying on a farmer-centric approach. They acknowledge the current CAP policy context and provides four key messages:

- **About independent advice**: To avoid bias in the content of farm advice, it can be very difficult and it is not sufficient to delimitate the boundaries of who count as "independent and impartial" advisors. We consider that it is also necessary to take actions to enable the "transparency and robustness" of the content of advice. To reach this objective, there is a key role for public actors in supporting, investing in, and controlling the back-office dimension of farm advisory services.

- **About advisors' training**: A farmer-centric approach, based on an understanding of farmers' needs and personal networks, should be used to highlight gaps and needs in the supply of advisory services in specific contexts. There is the potential to better incorporate advances of social sciences on farmers' decision-making (e.g. Triggering Change Model, microAKIS) in education and training modules for advisors.

- **About inclusive advice**: Our findings show that some profiles are not included in the beneficiaries of farm advice. A part of these "hard-to-reach" populations are well known (small farms, part-time farmers, new entrants, women). But we identified other rural and agricultural populations that are less often considered within the family work force but also beyond (salaried workers, contractors, posted worker). We consider that there is a need to better understand who the hard-to-reach populations are and what their needs are regarding different types of innovation.

- **About integrated advice**: We need to invest in situations which are characterised by uncertainty, gaps, and controversy if we want to stimulate the provision of integrated advisory services that contribute to more sustainable agriculture within its wider social and political context. We consider that more insights from social sciences could be used to identify these situations and subsequently support transformative changes both at the farm level and at the level of the co-design of innovation support services.

Overall, some transversal elements can be highlighted between these four policy recommendations.

The first one relates to the importance of public support to the back-office of farm advisory services. This is important not only to guarantee more transparency in farm advice but also for the three other dimensions of well-functioning advisory services highlighted in this report.

A second transversal element stems in the potential to make more use of advances of social sciences in public policies dealing with farm advisory services. This is true both at the level of farmers' decision-making but also at the level of co-design of innovation support services for farmers.

4 References

ADE, CCRI and (2020). Evaluation support study on the CAP's impact on knowledge exchange and advisory activities. https://op.europa.eu/fr/publication-detail/-/publication/67034571-7718-11eb-9ac9-01aa75ed71a1

Labarthe, P., & Laurent, C. (2013). Privatization of agricultural extension services in the EU: Towards a lack of adequate knowledge for small-scale farms?. *Food policy*, *38*, 240-252.

Rose, D. C., Sutherland, W. J., Barnes, A. P., Borthwick, F., Ffoulkes, C., Hall, C., ... & Dicks, L. V. (2019). Integrated farm management for sustainable agriculture: Lessons for knowledge exchange and policy. Land Use Policy, 81, 834-842.

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6 Annexes

The aim of these annexes is **to present synthesis of debates about farm advice public policies at a national level**. **Annex 1** is based on a analysis of countries' strategic AKIS approach mostly based on documents presented in the context of the SCAR-AKIS-SWG (Chapter 1). Annex 2 presents key dimensions discussed in AgriLink's interactive workshops in partner countries (Regional Multi-Actor Seminars and Sociotechnical Transition Scenarios workshops)

In both annexes, we make references to the 4 key dimensions of advisory policies mentioned in the introduction of the report.

- **Dimension 1 deals with the independence and the impartiality of advisory services delivered to farmers**. The aim is to ensure that the content of advice supported by public funds is not biased by vested interests (e.g. related to selling pesticides, machinery, etc.) in order to best integrate societal issues.
- **Dimension 2 deals with advisors' education and training**. The aim is to ensure that advisors benefit from relevant education and life-long training to keep their knowledge and skills up-to-date. Such training should be adapted to farmers' changing needs in context, but also to societal expectations and challenges.
- **Dimension 3 deals with the inclusiveness of farm advisory services**. The aim is to give any farmer and other person working on the farm access to services and knowledge needed to develop their activities and comply with European environmental, social and health regulations.
- **Dimension 4 deals with the integration of advisory services into the broader AKIS**. Sustainable development often requires having to face complex problems and combine various types of knowledge. There is a need to foster mechanisms that will facilitate networking, knowledge flows and the co-design of innovation support services in multi-actor configurations (between advisors, farmers, researchers). This integration is expected to support step changes in agricultural practices and contribute to sustainable development.

6.1 Annex 1 – Factsheets presenting national synthesis of debates about CAP implementation in 11 Member States

This annex presents outcomes of the analysis and synthesis of debates about CAP implementation, with an in-depth analysis of the countries' strategic AKIS approach as described in the CAP Strategic Plans of 11 Member States of the European Union. The eleven countries are the following.

1. Belgium (Flanders)
2. Czech Republic
3. France
4. Greece
5. Italy
6. Latvia
7. Netherlands
8. Poland
9. Portugal
10. Romania
11. Spain

6.1.1 Belgium (Flanders)

The AKIS in Belgium is structured very differently in its two regions, Flanders and Wallonia. **While it is more integrated in Flanders it is still rather fragmented in Wallonia**. Public policy in both regions is characterised by a delegation of services, where the respective governments support their AKIS with institutional support and competitive calls. There is very little independent agricultural advice provided by the government. This country brief will focus on Flanders only.

In Flanders, the AKIS is centred around the experimental stations that provide a link between applied research, the production sector, and farmers' unions. Another important actor is Innovatiesteunpunt, an organisation focusing on knowledge brokerage and innovation support. Innovatiesteunpunt maintains strong links with many actors in the Flemish AKIS and is often involved in EIP OGs. **The various organisations are all interlinked to some degree, which is why the Flemish AKIS has been considered as strong and integrated**. However, **issues have been raised regarding the weak links between the advisory system and agricultural research**, and missing links between research, advice, vocational training (in particular between teachers and other AKIS actors), and innovation support [dimension 4].

Advisory services operate mostly on a regional scale. The main change in public policy over the last years impacting agricultural advisory services was the implementation of the KRATOS system in Flanders. With the KRATOS system, the Flemish government tries to support a broader range of topics of agricultural advice (beyond economic and business advice) [dimension 4]. This includes agri-environmental stewardship, nature conservation, and innovation projects. The RDP supports the creation and activities of EIP OGs. However, although a good number of OGs have been set up, not all were implemented, and the budget per project was very low. A particular threat to the uptake of advice and engagement in innovation projects is the administrative burden for farmers and other actors, and the complex public procurement procedure.

There is currently no obligation for advisors to engage in training activities in order to get selected as an advisor for the KRATOS-system. As a possible intervention to encourage advisors to keep their knowledge up to date, Flanders plans to offer free training of advisors [dimension 2].

Amongst the weaknesses identified for advisory services is the fact that not all advisors are very well integrated in AKIS. This applies especially to those with commercial activities. It is seen as a threat that private advisors are difficult to identify. The registration and certification of advisors are proposed as steps to address this [dimension 1].

There is a recognised need to modernise the training system [dimension 2], as well as an awareness that certain groups of farmers cannot be reached and are not integrated in AKIS [dimension 3]. Improvements to the training system should include better tailoring to the needs of different client groups and utilising e-learning opportunities, to ensure advice is provided to harder-to-reach farmers. Even progressive, larger farms may be hard to reach; some are known to start developing their own knowledge independently of research and advisory services. Flanders identified as a priority to increase networking activities among AKIS actors, for example by means of a platform where actors can be located and ask questions. A general barrier to increasing knowledge sharing and networking is the high competition in the sector: On the one hand, advisors and even researchers may not be willing to share knowledge as they are competitors in some areas. On the other hand, pioneers farmers may also be reluctant to share knowledge for fear of giving up their competitive advantage. A possible intervention considers a top-up for an innovative investment if the farmer commits to disseminate the results.

6.1.2 Czech Republic

The Czech AKIS has been described as relatively strong. Yet its full potential to stimulate innovation on the ground, and therefore support the transition to a more sustainable food production is hampered by the slow roll-out of interactive innovation projects that fully involve farmers in the knowledge building, exchange, and innovation process.

Although the Czech AKIS has previously been described as integrated, **the fragmentation of advisory services and unsatisfactory links between public and private advisors have recently been cited to question the level of integration displayed in the system**. The need for increased integration and cooperation of AKIS actors, as well as the coordination of their activities, has been emphasised in the SWOT analysis [dimension 4]. Long-term links between AKIS actors who should support knowledge transfer from research to practice are described as weak.

Advisory services in the Czech Republic are currently financed exclusively from national sources. There is a need for stronger and more interconnected advisory services, better links between public and private advisers and investment in their training and skills [dimension 2], and the involvement of farmers in developing innovative projects that help them meet their needs. The future role of farm advisers should therefore include providing tailored advice on sustainable management choices, including support for preparing and implementing European Innovation Partnership (EIP) projects [dimension 4].

The uneven coverage of regions by advisors in relation to farm numbers, and the insufficient provision of one-to-one advice (in particular for small-scale farmers) has been identified as a weakness. In addition, there is insufficient coverage of certain topics in agricultural education and advice; these topics include business skills, risk management, marketing, new technology for reducing cost, adaptation to climate change, precision farming, processing, alternative sources of financing, and more. Information technologies are not used sufficiently in communication. There is also a need to further develop digital technologies in agriculture (e.g. precision farming) and enhance their uptake.

In general, training of advisors is available and of high quality. The skills of some advisors need to improve with regard to the quality of presentations they deliver at workshops [dimension 2]. It was identified as a weakness that the specialisation of advisors is not recorded (for planning purposes) but only very broad topic categories. In addition, there is a low number of accredited advisors, with a trend of further declining numbers.

While rural development programme funding planned for knowledge transfer, advisory services and cooperation (EIP) was just above the EU average, the uptake is rather low. There was only a small number of OGs operating in the country. The reasons for this are varied: there is a low motivation for cooperation, there are bureaucratic barriers to cooperation, and the support of OGs was linked to investments, which limited the range of support of innovations. In particular, the support is not targeted at social, organisational, process and other types of innovations.

The education levels of farm managers in the Czech Republic are comparatively high, with almost 40% having completed full agricultural training. However, the low level of education among small-scale farmers remains a weakness.

The fact that policies are not stable and not sufficiently implementing a long-term strategy in advisory services support was highlighted as a particular weakness. There was also the observation of low trust in advisory services, including from the administration side.

6.1.3 France

The important role of the agricultural sector for the economy, employment, and development of rural areas in France is recognized through long-standing and substantial public investment in this sector. Strategic orientation has been provided by the state, coupled with the provision of funding. Increasingly, various public services are delegated to professionals.

The French AKIS is characterized by a rich and diverse set of actors, strong involvement of public authorities, and arrangements to promote synergies and achieve common objectives. **The AKIS is considered to be strong and relatively well integrated**. Despite this assessment, the issue was raised that the **French AKIS lacks clarity, monitoring, and evaluation**. A concern was discussed that with the delegation of public services and multiplication of groups, it was important to ensure coherence in the AKIS. Other barriers to a well-functioning AKIS were seen in some actors being reluctant to share knowledge, and complex administrative procedures discouraging potential beneficiaries.

Farm advisory services play an important role, with organisations often led by farmers. Agro-ecology is increasingly used as a lever for addressing current challenges in the farming sector and is seen to be aligned with societal demand and farmers' needs for transitions [dimension 4]. Various mechanisms are already used to stimulate field innovation and cooperation between actors. It was recognised as a weakness that advisory services only benefit a minority of farmers, specifically those who already have a higher level of education [dimension 3]. This points to a need to increase the accessibility of advice for all types of farmers, with arguments put forward that the power of some lobby groups needs to decrease to make independent advice accessible to all.

Over time, **there has been a shift from a co-management model between the State and the farmers to a model based on service delegation and contracting**. The division of roles between advisory services is likely to change further in the coming years as a result of the recent decree on separating the sale of plant protection products from advisory services which was a move to guarantee the neutrality of advice. A recognised benefit of farm advisory services being led by public institutions is that they can ensure access to advice for all farmers at an affordable cost. However, with the French advisory system both highly dependent on public funding and partly linked to private economic interests it is difficult for public policy to be driving change in the intended direction.

Although farmers have shown a renewed interest in bottom-up and collective approaches (beyond the historical organisation as cooperatives), and the benefits associated with farmer groups, there is a stronger push for this to be complemented with individualised support to farmers. The scaling-up of collective and bottom-up approaches is still a challenge, especially with regard to fostering systemic transitions on farms. Farm managers in France are generally well educated and there is a good agricultural education network. This has the capacity to provide both initial and lifelong training. However, opportunities for continuous training are used less by farmers than by other professionals, and less by those with a lower level of training. In addition, farmers' digital know-how is lower than that of other professionals. The high average age of the farmer demographic is as seen as a weakness, and the slow intergenerational renewal could work as a barrier to innovation.

Regarding connectivity as a whole, France is close to the EU average. However, territories are not equal in terms of broadband access, and coverage in rural areas remains a challenge. For some remote areas, digital tools are hard to access not only in terms of digital/ broadband infrastructure but also in terms of price and complexity. In addition, careful implementation needs to ensure that digital tools are at the service of farmers, and not at the service of other stakeholders.

6.1.4 Greece

The Greek AKIS is highly fragmented with actors at national and local levels having very little connection. In recent years, little financing was made available for AKIS. Additionally, the re-organisation of research and farmers' training from the Ministry into semi-autonomous organisations exacerbates the **extremely weak linkages among the main public AKIS components** [dimension 4]. Agricultural Research and Innovation are characterised by a high concentration of research and competencies in universities, with little or no interest in the needs of farmers and insufficient interest from the private sector, due to difficult access to finance.

Although in the last Rural Development Programme significant allocations were made to the measures of knowledge transfer, farmer training, advisory services and cooperation, the recent figures on spending indicated significant delays leading to under-implementation of the planned amounts and measures. This means there is currently little done to address the need for farmers' and advisors' training [dimension 2], and the mechanism for cooperation and innovation transfer that OGs could provide is underutilised.

The inadequate provision of agricultural education and training, including vocational training, exacerbates the barrier that a low level of farmer training poses to the adoption of innovative and sustainable agricultural practices. An additional weakness is an inadequate structure for providing independent and impartial advice to farmers [dimension 1]. Currently, active advisors (agronomists) have no back-office function or support and are largely funded through fees and operate with a top-down ethos. Thus large groups of farmers are not served or are served through non-impartial input shops with regard to their pressing everyday needs. Although 3,000 agronomists are certified, these advisors are not organised, therefore there is no contact for negotiating or involving this group at regional or national levels. **The fragmentation of advisors is counterproductive to developing adequate advisory services that address the needs of different types of farmers** [dimension 3].

Amongst the weaknesses identified are the insufficient cooperation between AKIS actors, in particular the lack of cooperation between productive sectors and research institutes, as well as the lack of mechanisms for knowledge transfer and dissemination to primary production [dimension 4]. This leads to a low integration of innovation and specialised knowledge in the primary sector. There is also a lack of companies large enough to invest in research, development, and innovation for high-value-added products.

The following needs have been highlighted for Greece:
- Overall strategy (including resource allocations) for a) production, dissemination, and utilisation of innovations, b) agricultural education and training, and c) provision of advice, with a view to meet the real needs of the agro-food sector
- Enhance dissemination of innovations, especially through cooperation.
- Increase the resources devoted to research and innovation in the agro-food system
- Stable macro-economic conditions allowing the further enhancement of investments (natural and human capital) and innovativeness
- Halt further losses of highly trained or high potential human resources.

A lack of combined performance of advisors, agricultural training, researchers and farmers' organisations largely accounts for the underperformance of AKIS in Greece. There is also a need for impartial advisors with sufficient digital knowledge and access to data in order to accelerate the smart, green and digital transition in agriculture in Greece and avoid the digital divide [dimension 2 & 3]. This should better interlink actors and organisations (users and producers of knowledge and innovation) bridging the gap between research and practice.

6.1.5 Italy

The **fragmentation of the Italian AKIS** and the lack of strategic coordination among its components **negatively affect the flow of knowledge and innovation** [dimension 2]. In order to implement the latest scientific findings and innovations on farms, advisors need to be supported both in receiving training and in providing innovation support services. Currently, the support services offered are often not appropriate to the demand of knowledge and innovation, with poor links between available innovations and the needs of agricultural holdings and territories. Although Italy has the highest number of OGs, they are not balanced well across the regions, and the share of advisors involved is very low (3%). There is also a particular need to motivate farmers and cooperatives to participate in multi-actor projects to spread innovation, which is hampered by competition between agricultural holdings and low willingness to cooperate.

Particular weaknesses are the relatively low education level of Italian farmers. Training for farmers has not been fully supported by public policies. Associated with the lack of data on the needs of agricultural holdings, is a lack of providers' consideration of farmers' needs and the weakness that training methods are not always targeted to objectives and users [dimension 3].

The level of digitalisation of Italian farms and rural areas now lags behind in comparison to other MSs and in comparison to non-rural areas of the country. In order to encourage the use of digital tools, the poor (digital) infrastructure in remote areas and the high cost of digital tools need to be addressed.

A further weakness is the uneven availability and presence of advisory services across the national territory [dimension 3]. Public advisory services are only provided by a few Regions. Private services, provided by self-employed advisors, employees of farmers' organisations, or by private agribusiness companies, are not always available or affordable everywhere. Strong advisory networks are present only in a few high value-added sectors (e.g. organic agriculture, wine). Although the AKIS has the potential to deliver innovation, the lack of strategic coordination often impacts negatively vertical and horizontal flows of knowledge and innovation in the Italian AKIS [dimension 4].

Training for farm advisors has not been supported by public policies, and only part of the advisors are systematically exposed to updated knowledge and innovation through regular training courses [dimension 2]. In this context, advisors may need to pay personally for their training and may have limited access to knowledge and innovation resources. It is an identified weakness that AKIS actors have a low capacity of using participatory approaches.The fragmentation of research activities and initiatives is a concern that is exacerbated by the gradual reduction of public funds for R&D. This comes with the threat of competition between actors for use of resources which is not conducive to cooperation.

Finally, it should be noted that the overall efficacy of the actions supported by the CAP in Italy is hindered by several obstacles in the functioning of the public administration. For example, complex admin procedures for AKIS-related measures represent a weakness. It is necessary to improve the administrative and bureaucratic system, increase its level of digitalisation and coordinate different, complementary policies.

Overall, **support is needed for the coordination and collaboration between the different parts of the AKIS** [dimension 4], both at an institutional and operational level, with a particular focus on advisory services. This could potentially be addressed by a national and regional strategy, complementing the existing National strategy on digital skills.

6.1.6 Latvia

Currently, there is untapped potential in the Latvian AKIS for the creation and dissemination of knowledge. There is a need to put more emphasis on the development and financing of AKIS, by training advisors, developing innovation support services, and making sure that knowledge flows cover also downstream farming and rural activities.

Although there are numerous connections between different AKIS actors, there is a need to tackle the AKIS fragmentation and improve coordinated intervention by all. In particular, links between farmers, public and private advisors, and researchers need to be strengthened. In addition to stronger links, the coordination between AKIS actors needs to be improved to better connect science and practice to boost knowledge exchange and innovation. To improve planning and coordination within the AKIS, a national AKIS contact point will need to be established, as a platform to share information between various AKIS actors including farmers. The contact point would be managed by the National Rural network. In terms of broader AKIS governance, the Ministry of Agriculture is looking to create an AKIS sub-committee that would include representatives of AKIS organisations, would have an advisory function on agricultural knowledge and innovation, and would provide recommendations for improvement.

Agricultural advice in Latvia can be described as decentralized. Although the main agricultural advisory organization (Latvian Rural Advisory and Training Centre, a public, commercial provider) covers a large share of the market, there is an increasing number of public, private, and third sector organizations, which provide direct or indirect advice. Farmers and cooperatives rely heavily on advice and technology from private advice providers. There is no coordination between organizations providing agricultural advice, nor common certification system or similar, which could indicate the most suitable advisors [dimension 1 & 4]. In this context, there is a need to ensure that farms and cooperatives can all benefit from coordinated advice, knowledge exchange and targeted information. This can help in particular in making sure that in addition to pure technical advice, they are also kept updated on solutions for societal challenges.

Farmer education with regard to basic agricultural training is generally at a good level, and the share of farmers that attained full agricultural training is high in Latvia. However, in terms of current knowledge, gaps remain and suggest a need to make both formal and non-formal lifelong learning widely accessible, including financial support to access such learning. Currently, an ‘innovation voucher’ is available as a support tool to all sizes of companies. Provision of advice to farmworkers is the least serviced area [dimension 3].

In terms of the training of advisors, large organisations support the education of their advisers, while independent consultants and small consulting firms leave their advisors to look after their own training. It is perceived as a weakness that there is currently no coordination of advisers’ training, something which should feature in a stronger AKIS [dimension 3]. There is also a need to encourage a new generation of advisors to enter the system.

There is the potential for a stronger AKIS to support a greater digitalisation of farms and rural areas in Latvia. For example, by training farmers in the use of smart digital technologies. Although Latvia has rather good overall broadband coverage and performs well in digital public services, additional efforts could be encouraged as private investment in last-mile connections remains a challenge.

6.1.7 Netherlands

The Dutch AKIS has been characterised as a strong and well-supported system. Given the high level of resources invested**, current efforts aim for the system to reach its full potential and benefit all actors involved**. At its core, **this means addressing the fragmentation of the AKIS to further enhance knowledge and innovation**. There is a need for social innovation to be recognised as integral to AKIS.

One of the main challenges facing the Dutch AKIS is to organise the system in such a way that private and public interests are well balanced in the transition to a sustainable circular agriculture, and that knowledge developed in the field is applied as fast as possible. Considerable efforts are therefore needed to make knowledge widely applicable and apply it in order to support the necessary transitions in the field and towards sustainable food production systems [dimension 4]. It is essential to ensure training and skills of private advisers reflect public policy priorities whilst ensuring the impartiality of advice [dimension 1].

Despite the Dutch AKIS being described as strong, it remains fragmented because the various types of AKIS actors collaborate insufficiently, and they operate at different levels (national and provincial). This is the result of long-term public-private investments and the collaboration between research, industry, and governments, creating a highly innovative and technologically advanced agricultural sector. However, this approach may also create a lack of local and publicly available knowledge and a low farmers' involvement. A related challenge is how to support knowledge flows between farmers. While more large-scale firms and intensification provide for more private research and innovation investments, public funding for research and advice continues to be reduced. This has led to a gradual shift from knowledge as a public good to knowledge as a marketable product [dimension 1].

Concerning the role of advisory services, privatisation has led to a disintegration of the knowledge distribution system and a lack of throughput of knowledge towards farmers. Currently, there are no publicly funded advisors and the Netherlands do not make use of rural development funding to support advisory services. In general, Dutch farmers are close with many advisors and have their own networks for obtaining the knowledge they need. However, this adds to the complexity of the Dutch AKIS system and creates barriers to SMEs that do not have the resources to pay for private advisory services [dimension 3]. A further barrier to a well-functioning AKIS is the poor translation of research to farm level. This process also needs to involve 'chain parties'. Currently, multiple sources of research and advice generate an 'information fog' that is not sufficiently translated to farm level. It was put forward as a priority to set up digital platforms and interactive training sessions to connect advisors, researchers, and farmers. More efforts are needed to provide impartial advice for example related to societal challenges [dimension 1 & 4].

A further weakness associated with the lack of public advisors is that the market competition in advisory services linked to suppliers leads to potentially conflicting advice being given to farmers [dimension 1]. There is a need to better connect to private advisors by using the certification system; this would help increase the transparency and certification in the chain, for example, of independent agricultural advisors. In terms of training advisors, there is scope to increase the involvement of the education sector [dimension 2]. Dutch farm managers have a high level of agricultural training. However, this high level of education tends to apply to agronomy, whereas they are insufficiently educated on cross-sectoral innovation, marketing, energy management, risk management, and data management [dimension 4]. Given the advanced digital infrastructure and technologies in agriculture, the Netherlands identified as a priority to further support the digital transition in agriculture by means of precision farming and digital knowledge platforms.

6.1.8 Poland

The AKIS in Poland is described as strong and relatively well integrated.There is a wide range of training and advisory services available for farmers, offered by public advisory centres, agricultural chambers, and private advisory companies. **Among advisory providers, a decentralized public agricultural advisory structure is dominant**. It consists of 16 Regional Agricultural Advisory Centres, that are supported by the central Agricultural Advisory Centre. Although this structure ensures coverage of the whole country and availability of advice and training to all farmers, the limited scope of public advisory activities was recognised as a threat. There was also a recognition that reliance on public advisory services put the system at risk from insufficient levels of financing.

Since 2006, the number of full-time posts in provincial advisory centres has declined. The growing generation gap in advisory staff is seen as a threat. In this context, the qualifications and skills of staff involved in knowledge and innovation transfer need to be improved [dimension 2]. This applies in particular to the currently insufficient advisory services in the field of technology, marketing, and risk management. Overall, there is still a need to develop the back office for all advisors, in order to ensure both, the availability of professional training for advisors, and the availability of advice on new topics. In terms of enabling public advisors to do their job well, it was recognised that they needed to be provided with the necessary equipment including laptops, soil measurement devices, weather stations, and more.

The integration and cooperation between providers of advisory services were described as still too weak. Further involvement and integration of public and private advisors within the AKIS are needed. Cooperation between advisors could be improved by addressing the fragmentation of advisors, and by improving the motivation, skills, and openness to new subjects and types of advice. Advisory services need to be diversified and tailored to the requirements of small farmers regarding business developments and new production systems [dimension 2].

Although a high share of farm managers in Poland has either basic or full agricultural training, the declining interest in agricultural education at all levels was noted. Given this trend, it is even more important to ensure the availability of professional training for farmers. The number of farms and their fragmentation was seen as a weakness, hindering the efficient transfer of knowledge and innovation. In order to address this, the broader use of farm demonstrations, the development of a demonstration farm network, and thematic networks were seen as a priority.

Further efforts are needed to strengthen cooperation among all AKIS actors, in particular, to achieve closer cooperation between advisors and researchers. A current weakness is the lack of appropriate mechanisms to stimulate this cooperation and to address the communication barriers between scientists and agricultural practice. Although a number of OGs have been set up, and more are planned, the EIP activities need to be further strengthened and diversified. Low levels of mutual trust and readiness to cooperate have been identified as a barrier to increased cooperation, which also affects the establishment of OGs. There is a need to identify ways to address the low level of interest in creating and disseminating innovative solutions.

The development of an ICT-based (advisory) platform and the increase in the use of ICT tools in knowledge exchange were seen as essential to improve the effectiveness of advisory services and knowledge exchange. As part of these efforts on digitalisation in agriculture, the limited access to satellite data and e-services in agriculture still needs to be addressed.

6.1.9 Portugal

The Portuguese AKIS is characterised by a large number and diversity of actors, as well as **an organisational fragmentation and relatively low coordination by the State**. The AKIS in Portugal has been described to have low influence, low resource allocation, and low access and benefits to farmers. This is especially evident with advisory services that tend to be delivered by many different farm-based organisations, and with knowledge and information providers that are mostly supported by small private companies [dimension 1]. The other AKIS actors are within research and education, and national and regional directorates, both of which are coordinated by the State.

Knowledge networks within the AKIS operate with little cooperation and coordination [dimension 4]. This is particularly pronounced in the weak links between the advisory sector and other AKIS actors, as well as the weak interaction of the research and education sector with other AKIS actors. However, according to the I2Connect country report (p43), "the creation of knowledge is closely linked to all AKIS participants, and there is a transfer of this knowledge between all of them. There is currently a logic of knowledge flow between the different links, between science, political actors, industry and farmers." Nevertheless, the different sources acknowledge weaknesses in passing on research results and scientific knowledge to farmers and advisors in an accessible and applicable format. There is therefore a need to better communicate and disseminate this knowledge.

The Portuguese advisory system is traditionally based on farmer-based organisations, while public advisory services have a limited presence. The weak role of public advisory services is due to the low amount of resources invested in this sector, which is not seen as a political priority. Funding dedicated to the Farm Advisory System (FAS) is being reduced further and shifted into innovation. This means that Competence Centres are gaining in resources and importance, in particular for distributing money from central funds to go to farmer organisations. These centres were established as intermediaries between research and advisory services. In the past, they were structured around sectors. The multiple layers and institutions can be perceived as a weakness as they take up resources that could be invested into advisory services directly.

Although there is a good number of OGs set up in Portugal, a representation of advisors as partners in these groups is lacking. This points to weak networking and coordination between farm advisors.Private consultancy firms are well established across Portugal. These private organisations are micro and small private advisory companies. Most of them also provide advice and support to farmers in the interior of Portugal and regions of low density.

Although a farm advisory structure is present there is a need for it to be improved, as it does not meet the needs of all types of farmers [dimension 3]. A general challenge is the low education level of farmers and farm managers, particularly amongst older farmers, combined with low broadband access and digital skills. There is also a risk that the needs of small-scale farmers will be not be catered for by the present advisory system.

There is a need to ensure that all advisors' knowledge is kept up to date. There is little funding for training advisors dedicated under the Rural Development Programme. Although progressive advisors are able to secure training, the mainstream advisors are very time-constrained due to looking after a high number of clients. These advisors have little time for advising in the field, and no time to take formal training courses. Therefore, there is a lack of competence to advise farmers on innovative practices and technologies. A further weakness is that most advisors do not have a certification, and only a minority has qualified with training for specific advisory topics.

6.1.10 Romania

The AKIS in Romania is considered weak and fragmented, resulting in insufficient linkages among its various actors. There is no coherent policy targeting the development and functioning of the AKIS, which results in its subsystems being largely under the influence of sectoral policies. For instance, agricultural higher education institutions remain separate from agricultural research institutes. It is, therefore, a priority to link research more effectively to other AKIS actors.

Overall, cooperation between agricultural research centres, farmers and advisors needs to be strengthened [dimension 4]. Currently, there is a lack of cooperation between agricultural research centres and agricultural stakeholders to implement research results. There is an urgent need to make connections between farmers and institutions that promote mutual learning. Here, the establishment of technology transfer centres at regional and national levels is seen as an important step. A major weakness at the core of insufficient cooperation between AKIS actors is the lack of interest from the other entities involved, and a lack of communication in general.

A key weakness of advisory services in Romania is the limited coordination and cooperation between public and private advisors [dimension 4]. Consultancy and vocational training to farmers is predominantly provided by the public consultancy network operating at the county level and by the agricultural consultancy centres operating at the level of rural municipalities. These bodies also provide support and technical assistance for accessing EU funding, managerial consultancy, information and refresher courses. However, access to these services is fragmented and participation in training is low. The development of a life-long vocational training system is at an early stage [dimension 2]. Private agricultural consultancy mainly deals with drawing up financial applications for EU funding and there is little co-operation with agricultural consultancies providing direct training to farmers. There is a need for a database of advisory service providers.

There is recognition that existing advisory services benefit only minorities [dimension 3]. A number of measures are seen to have the potential to address this, including setting up mobile farm advisory units and establishing an online platform with examples of good practice to support farmer training. The uptake of the planned funding for training, knowledge transfer and advisory services under the Rural Development Programme remains limited and the implementation of these measures is delayed. In addition, the setting-up of the EIP-AGRI OGs promoting innovation in agriculture is at an early stage.

There is a need to step up the competence of all advisory services and broaden the offer in terms of advisors and topics covered. This requires improving the training and skills of all advisors [dimension 2]. For example, advisors need to be skilled to provide advice on topics that are currently not sufficiently covered such as the development of antimicrobial resistance and risk management. With a broader skillset, advisory services would be better placed to organise innovation support and co-creation of innovative solutions, e.g. in OGs, and to address farmers' needs. Currently, the low level of education of managers of agricultural holdings is a major weakness. In terms of education, there is a need to involve high schools with an agricultural profile and agricultural universities, and to ensure implementation of vocational training on agricultural and cross-cutting topics. This would serve to upgrade farmers' skills and improve the implementation of innovative solutions. In terms of digitalisation, coverage and connectivity in rural areas are much lower than in urban ones and in other EU countries, even though Romania has the highest internet connection speed.

6.1.11 Spain

Key challenges that currently hamper both the competitiveness and long-term sustainability of Spanish farms are the low level of investment in research and innovation in the agri-food sector, the low uptake of new technologies, and the low level of digitalisation. This process needs to be supported by an acceleration of broadband coverage, an increase in basic digital skills, and progress to increase the interoperability of digital tools.

At the same time, there is a **need to address the current fragmentation of the Spanish AKIS**, reduce the administrative burden and improve the performance of the existing farm advisory services. This would include in particular better coordination and cooperation between its actors and organisations [dimension 4]. This can be achieved through better interaction between information, knowledge, advice, innovation, training, education, and research. For example, there is a need to strengthen the links between teachers and other AKIS actors, and to address the lack of interaction between universities and vocational training.

As regards farm advisory services, there are significant variations across the Spanish territory. There is an **ongoing evolution from a public extension model to a heterogeneous public-private mixed model for advisory services**. For example, Cataluna has a private model with cooperatives, federations and farmer organisations working closely with public authorities. In Navarra, the advisory system is centered around the public advisory organisation INTIA, with strong links to applied research, universities, agricultural education and training. Private companies provide advice mainly on agricultural inputs, hence making it a mixed system.

The high administrative burden is limiting the implementation of improvements to the advisory system. The support from the rural development programme in the period 2014-2020, has been focussed mainly on advising farmers and (to a lesser extent) on the training of advisers. **Given the fragmentation of advisors, there is a need to increase networking and advisor coordination** [dimension 4]. Although there is a good number of OGs, the share of advisors involved is very low (<3%).

It is essential to support better links between public and private advisers [dimension 1] and to invest in their training and skills to cover economic, environmental and social aspects [dimension 2]. Advisor accreditation and co-financing have been identified as a particular need. If met, this can potentially address the lack of recognition for advisors [dimension 1]. An increase in the back office support is necessary to provide tailor-made services and meet the needs of farmers. However, the lack of information about the needs of different groups of farmers continues to be a barrier that stops the knowledge generated from reaching the end-user [dimension 3]. The low uptake of new technologies may be linked to the low training levels of farm managers (the share being well below the EU average). New teaching and training methods were identified as a further need to improve the training of both, advisors and farmers [dimension 2]. To allow for social innovation, new methodologies need to be applied.

Concerning coordination in the AKIS, the coordination between agents and levels as well as the coordination at some points in the administration has been identified as weak [dimension 4]. Facilitated debate forums for administrative actors may help address this barrier to improved knowledge exchange. A further potential was seen in establishing an integrated information and monitoring system at a national level, and increasing the level of investment in innovation.

6.2 Annex 2 – Key dimensions discussed in AgriLink's interactive workshops in partner countries

The various events that we organised to solicit input from stakeholders on farmers' advice needs and advice supply (RMAS and STS workshops) enabled us to deepen the understanding of these discrepancies between farm advisory policies and our findings (especially in the 26 RMAS). It also allowed a discussion on pathways that acknowledge the context and histories of advisory policies (especially in the 13 STS).

The main outcomes of the debates organised in each country are presented in the table below, which was prepared for the integrated assessment of AgriLink's results (Deliverable D5.5). It is important to note that the rows of this table do not represent national situations per se. They are rather a synthesis of the debates organised in these countries, based on our findings in various innovation areas presented in chapter 1 and in section 2 of this chapter (above). The columns represent 1) the issues raised when actors reacted and commented on our findings (for instance about gaps in advisory services); 2) the global recommendations proposed and discussed (needs and aims); options and examples to provide pathways to reach recommendations (how to?).

The first very important point debated deals with the consequences of the increasing pluralism of identities and profiles of suppliers of farm advice. More precisely, there are concerns related to the fact that advisory services embedded in other commercial activities play a key role in many contexts. This was for instance reported in workshops organised in Belgium, France, Greece, Latvia, Netherlands, Norway, Romania, and the UK. This was related to different debates about the quality and impartiality of advice. **[Dimension 1]**

This pluralism of actors engenders a lack of coordination between advisors with different specialties, but also between public actors and private suppliers (Poland).

The connexion between research and advice remains an important problem. Advisors' knowledge is often not up-to-date, which leaves a gap for linked advisors, who are sometimes better connected with new technologies (Czech Republic). In some cases, there are broader (Romania, Italy).

A second topic related to the definition of the attributes of farm advice, in both front-office and back-office dimensions. Related to front-office, the main issue is the lack of 'holistic' or 'integral' advice, with different terminologies being used (for instance in Belgium, France, Latvia, Netherlands). **[Dimension 4].**

In parallel, the methods of advice were discussed (Romania, UK) and special attention was raised concerning groups meeting and their potential advantages. **[Dimension 2]**

The practitioner highlighted the existence of a network of informal advice, such as the advice collected from peers (Belgium, Czech Republic, Greece) and the strong need to integrate the peer knowledge within the advice system. The current system lack places where farmers meet and share their experiences. **[Dimension 3]**

But most of the issues discussed relates to the back-office dimension of services. Concerns emerged relating to the training of advisors: who gives the training? How is it funded? Is there a way to ensure the impartiality of advisors' training? Finally, it was pointed that there is a need for long-life training and not only focused on short terms. **[Dimension 2]**

Training topics were often described as too narrow and short-term oriented **[Dimension 4]**. Practitioners revealed a gap of knowledge in certain topics, especially regarding certain innovation areas (Romania, Greece, France). There is sometimes too much focus on economic aspects (Spain).

In many contexts, there were clear statements about the existence of hard-to-reach populations (e.g. in France, Norway, Poland, Portugal, Romania, Spain). Interestingly, the definition of hard-to-reach populations varies significantly.

The information, both regarding farmers' needs and advisors' services, doesn't flow homogeneously amongst all stakeholders. It may stick in the hands of local leaders. It might also be poorly distributed to end-users. **[Dimension 1]**

Advisors lack tools to better know their public and their characteristics. There is a need to make farmers' data available for advisors (possibility to make a comparison between regions, to organize meetings, and to better comprehend the needs of the service user). **[Dimension 1]**

It is especially the case for newcomers, who were mentioned as actors with a specific lack of information. They struggle to enter the networks in place. In certain countries (Portugal, Romania, and SCT for example), there is also a strong dichotomy in advice access between small and big farms. Remote areas are not well covered by advisors. **[Dimension 3]**

The participatory workshops finally highlighted the need to learn from other countries and to build on European experiences.

Table 1 - Outcomes of interactive workshops in partner countries

Context	Issues raised / our findings (gaps)	Global Recommendations (needs/aims)	Ideas/Pathways to reach recommendations (how to?)
Workshops organised in **Belgian regions**	- Predominance of embedded advice - Lack of support in assessment stage - Importance of informal networks	- Develop critical thinking and holistic advice - Support peer-to-peer - Promote alternatives to embedded advice	- Extend Operational group - Find procedures to propose a follow-up of projects
Workshops organised in **Czech regions**	- Lack of knowledge of certain independent/private consultants (e.g.digital) - Importance of informal networks (including with researchers)	- A role for public actors to support training needed for advisors - A role of public actors to support connexion between research & advice	- Link public financial support to certification process that includes training - Public investment in training - Develop long term perspective /planning
Workshops organised in **French regions**	- Huge heterogeneity of microAKIS - A lack of holistic advice vs. embedded - Lack of support to assess & implement stages for certain innovation (tech, labour) - Strong gaps in certain innovation areas	- A need to reconnect with “hard-to-reach” farmers. - A need for public policies to support uptake of holistic advice - Public requirements in terms of life-long training	- Better knowing farmers' needs and practices (Transects, random samples, ambassadors, mandatory procedures…) - Joint back-office activities (collective training, shared technical factsheets…) - Keep better track of the changes actually implemented by farmers benefiting from services.
Workshops organised in **Greek regions**	- Predominant role of embedded advice - Importance of informal networks - Strong gaps in certain innovation areas	- Professional advice is needed by advisors who engage in life-long learning - Reliable advisors should be ‘independent’ - More Collaboration among all stakeholders	- Certification & training schemes - Make use of European funds for a better coordination/networking within AKIS
Workshops organised in **Italian regions**	- Lack of advisor for collective innovation (land management or direct marketing) - Expertise lacking (e.g. legal, logistic, commercial, communication matters) - No coordination of service provision → farmers had to search for specialised advice	- Reduce the bureaucracy of projects. - Farmers may receive many and sometime contradicting information → support is needed - Training in the missing topics (e.g. managerial), including for facilitators (collective coaching…) - Support networking and valuing ownership	- There should be an actor, who collect and evaluate information and bring that to those who need them. - A need for specific coordination bodies at regional level. - To use projects’ evaluation as a learning tool. - Create collective learning communities of advisors through joint training experiences - Field trials at pioneer farms supporting by public funds - Online training & coaching effective for remote areas and small farms (learning from Covid experience)
Workshops organised in **Latvian regions**	- Organisations with an advisory function are prominent in knowledge-intensive innovations, but less for direct marketing. - Commercial motivation of input providers caused concerns among AKIS experts.	- Public Support for knowledge transfer projects - Educational programs should be considered. - Advisors should adopt a holistic approach to advising farmers.	- Involving advisors in demonstration projects - Primary school courses on horticulture and attempts to popularise horticulture among young people. - Training for advisors at public Universities
Workshops organised in **Dutch regions**	- A form of paradox: Independent holistic advisors play a key role for awareness/assessment but lack knowledge for the implementation and there is not an explicit demand for such services. How to co-construct such services is a challenge	- An integral approach of advice is needed. - Better link research institutes, advisory organisations, farmers and other stakeholders. - More attention on financial aspects of innovation - There is a need for publicly funded advisors to support societal missions.	- Advisors could work in teams consisting of both specialists and generalists (higher cost → group advice). Extend groups to dissenting views and/or stakeholders from the agro-food value chain. - Make knowledge better available (e.g. via knowledge platforms and codes of conduct for data sharing) - Training about how to search for what they need when knowledge and information is very scattered.

Workshops organised in **Norwegian regions**	- Traditional advisors have a limited role as a trigger and stimulation whereas suppliers are crucial, especially for technological innovation - Various groups of advisors have important but specific roles in the process of assessing and implementation of innovations.	- Framework conditions and policy must be adapted to smaller farmers who cannot pay - A need to take into account of newcomers - More advice is needed in general, important topics are buildings, economy, choice/decision on technologies... - A need for holistic advice	- Mentoring is one way to support newcomers. - Make all knowledge and competence available across geographical and professional boundaries - Information flow needs to be increased beyond the board or leadership of local groups. - Cooperation between various advisors
Workshops organised in **Polish regions**	- State advisors play an important role but have difficulties with speed of technological change - Growing importance of Input suppliers, especially for technological innovation - Little cooperation between public actors and inputs suppliers.	- A need for advisors to demonstrate long-term benefits of different innovation. - More attention should be put to information technologies for data collection and storing. - Enhance technical knowledge of advisors and strengthen info flows between groups of interest	- Transparent training scheme covering missing topics, involving a diversity of actors to reflect the complexity of innovation (e.g. research organizations, private entrepreneurs, innovative brokers, input suppliers) - Set up methods that enable frontrunners to help mainstream farmers was mentioned.
Workshops organised in **Portuguese regions**	- Strong concern about a dichotomy between small vs. big farm in accessing advice - Strong role of FBOs but debate about potential role for public (e.g. for small farms) - Effectiveness of combining personal face-to-face and group work based on farmers' field experiments but lack of availability of farmers	- Use regional funding to support advice and the role of FBOs (eco-schemes, smart-tech…) - Stimulate advisor's training and skills oriented towards developing their ability to supply customized advice, meaning advice accounting for local agro-ecological specificities of the farms and the farmer characteristics	- Create special support schemes,for small winegrowers by relying on small lighthouses spread across villages - Support to living labs that built on existing partnerships and networks - Promote transnational operational groups that address shared problems (e.g. mountainous vineyards - "teaming" approaches to reinforce FBO with scares resources
Workshops organised in **Romanian regions**	- Low numbers of advisors and hard access in remote areas/small farmers. - Lack of independent and high-quality advice. - Some topics are not sufficiently covered by advisory services (e.g. agronomy, innovations assessment, marketing skills).	- Enlarge topics (e.g. food hygiene standards, marketing). - Cooperatives should have multiple skills for its members (agronomy, marketing, logistics…). - Review curriculum at agr. high schools & univ. - Advisors should assist small farms (e.g. digital).	- Advisors should be locally based and easily accessible - Spread information by different media (e.g. whatsapp) - Rethink demonstration activities (e.g. bring machinery, involve mayors, focus on young and even kids, etc.) - Train farmers to share their knowledge with others. - Provide non-formal training to coop. managers.
Workshops organised in **Spanish regions**	- The advisory landscape is rather fragmented. - Advisors play an important role especially during the evaluation process. - Advisory needs in retro innovation and direct marketing are not well covered. - Although all aspects of sustainability matter, economic results are considered most important.	- Improve conditions to access information - A need for integral farm advice and better link generalists and specialists (incl. sanitary issues). - A need for continuous training of advisors - Integrate smaller-scale and more diverse crops - Improve advisors' knowledge of alternative forms of farmers collaboration for direct marketing	- Assign more resources to advisory services (both technical and human resources). - Support young farmers on direct sales implementation and sharing knowledge with other colleagues and farmers. - Rethink advisors' training, with more practical experiences (including reasons for innovation success or dropping innovations, farm visits, demonstration, etc.)
Workshops organised in **UK regions**	- Newly technology tends to remain prone to malfunctioning. Lower quality of public advice / private & commercial precision farming specialists. - Disctinction between facilitation and advice not always easy to find - Groups provide an important space for farmers to talk about other issues.	- A need for advisors to demonstrate long-term benefits of different innovation. - Facilitate access to data handled and stored within each company (e.g. on soils) - Charging a fee helped in the sense of ownership over the group's identity and aims.	- Design a generic tool which would allow advisors to make comparisons across different regions; - The need for a system which mentors graduates who are entering agricultural advice; - The implementation of monitor or demonstration farms that focus on technological innovations, - Reintroduction of trade groups to support peer-to-peer learning