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# SEFARI Fellowship to Support the Development of a Scottish Agricultural Knowledge and Innovation System



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# Executive Summary

Through SEFARI Gateway, the Scottish Government has commissioned research into the opportunities to align Scotland's Agricultural Knowledge and Innovation System (AKIS) policies with their European counterparts. Over the past decade, the European Commission has invested in a series of measures designed to support innovation in agricultural systems through mobilisation and networking of the range of AKIS actors, including farmers, advisors, supply chain members, NGOs and researchers. This research focuses particularly on the outcomes of the requirement for each European member state to include an AKIS plan within their strategic plans for the 2023-2027 Common Agricultural Policy (CAP).

Literature review and focus group discussions were held with representatives of 10 European countries (14 workshop participants, representing Austria, Belgium - Flanders and Wallonia, Finland, France, Italy, Norway, Sweden, Spain, The Netherlands, and the Republic of Ireland).

## Key Impacts of CAP AKIS Strategic Plans

- Establishment of AKIS Coordination Bodies in all member states represented in the research (except Norway). These bodies have had highly variable levels of resourcing. Their coordination function is located within existing government departments in most countries (with the exceptions of Austria and Finland).
- Increased understanding at national government level of the processes of innovation in agriculture, and of the range of actors included in the AKIS.
- Increased prioritisation of AKIS measures and activities in some countries.

- Increased profile and collaboration between the range of actors involved in AKIS (farmers, advisors, NGOs, supply chain members, researchers).
- European policies in general have led to increased peer-to-peer learning activities promoted by AKIS actors.



## Key Issues in Advancing AKIS

- AKIS is not well known as a term: It has been popularised amongst a cohort of participants in Horizon Europe projects, but until it was introduced as a required chapter in the national 2023-2027 Common Agricultural Policy (CAP) Strategic Plans, it was relatively unknown amongst most AKIS actors, including farmers and policy makers.
- The European Commission requires ongoing assessments of AKIS, in order to identify the effectiveness of investment, and ongoing needs. [Useful guidelines for assessing AKIS](#) have been developed by the EU CAP Network.
- Private advisors, who offer advice on a fee for service basis, and some cohorts of farmers (e.g. older, more remote locations) were identified as the most difficult actors to involve in AKIS coordination activities.
- Bridging the gap between research and practice (both advisory services and farmers) remains a common problem; there is a demand for more applied research linked directly to farming practices.

# Executive Summary

## Options for developing Scotland's AKIS in line with European policies:

- **Establish** an AKIS coordination body, to better integrate the various actors, identify gaps and reduce duplication:
  - Empower this body to agree strategic direction.
  - Map the AKIS actors in Scotland at regular intervals, reflecting the dynamic nature of AKIS, to ensure inclusivity of viewpoints and activities.
  - Undertake periodic assessments of the AKIS to inform ongoing investment.
  - Build on existing structures, e.g. utilise and designate staff within existing government departments or organisations.
  - Include representatives of all relevant government departments to ensure their activities are coordinated, as well as ensuring coordination within departments.
  - Build on the [Scottish Rural Network](#) or [FAS platform](#) to mobilise actors and promote activities.
- **Align** other policies from other sectors with the overarching AKIS strategy.
- **Hold** regular 'AKIS gatherings' to enable participants to network and learn from each other.
- **Establish** topical hubs to develop the AKIS on strategic topics.
- **Support** peer-to-peer learning, and associated facilitation skills development for agricultural advisors.
- **Consider** internationalising Scotland's AKIS, through cross-visits of both advisors and farmers to other countries.



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# 1.0 Introduction

The Scottish Government's ambition is to become a global leader in sustainable and regenerative agriculture, aligning measures and policies (where possible), with the European Union. Through its Vision of Agriculture Support Package Beyond 2025 – currently expected to come into operation by April 2027 - Scottish Government is developing four Tiers of support, which will help deliver the outcomes of the Agriculture and Rural Communities (Scotland) Act (2024). Tiers 1 through 3 of the Support Package comprise the basic payment, enhanced payment and elective payments. The Tier 4 measure is a complementary support measure that focuses on people development. Within Tier 4, the Scottish Government is considering how to improve cooperation and collaboration between the diverse actors within the AKIS (Agricultural Knowledge and Innovation System).

To inform the development of Tier 4 support, the Scottish Government has commissioned through SEFARI gateway this present research. The research aims to evaluate the implementation and emergent outcomes of the AKIS measures identified in European member states' CAP Strategic Plans (2023-2027). Where practical, the Scottish Government seeks to align supports for Scottish agriculture with EU measures and policy developments.

This present research has the following objectives:

- To assess and analyse the current and emerging issues experienced by EU Member States in the development and implementation of their AKIS under the CAP. This is in relation to issues and considerations (both positive and negative) that have the potential to affect and shape the Scottish AKIS.
- To identify the policies, including best practices, that should be considered in the development of the Scottish AKIS.
- To identify suggestions for options that could be used to implement these developments.

The research follows two recent studies, which identified the [potential opportunities and threats to Scotland's AKIS](#) and the preference of Scottish stakeholders for AKIS policies to be aligned with those in Europe.



# 2.0 Agricultural Knowledge and Innovation Systems

The call text defined Agricultural Knowledge and Innovation Systems (AKIS) as follows:

“An AKIS is represented by the combined interactions, knowledge flows and innovative practices instigated between persons, organisations and institutions in the agricultural sector. Key stakeholders in the AKIS include supply chain actors, farmers, crofters, farm advisory services and advisors, land-based business organisations, and research and education providers, including research institutes, universities and colleges.”

AKIS as a concept has a lengthy history, emerging in academic circles in the 1980s as ‘Agricultural Knowledge and Information Systems’. The term was used to describe knowledge exchange in the agricultural sector as an interactive system. It countered prevailing notions about the linear flow of knowledge from academic specialists to advisors to farmers and other land managers, i.e. ‘top down’ information flows. The concept was revived in the 2010s by European policy makers, who redefined it as ‘Agricultural Knowledge and Innovation Systems’, in line with European priorities around innovation as a driver of economic development. Around this time a number of measures were adopted to promote innovation on farm: the Farm Advisory Services measures (EC Regulations [N° 1782/2003](#) and EC [N° 73/2009](#)) made establishment of a Farm Advisory Service (FAS) mandatory from 2007. The European Innovation Partnership for Agriculture ([EIP-AGRI](#)) was established in 2012, which promoted a series of activities which facilitated interaction between farmers and other stakeholders (including academics). These activities included: research or innovation projects with a multi-actor approach, [Operational Groups](#) (groups of farmers and other stakeholders who worked together on specific topics with the aim of developing and testing solutions), and an ongoing series of Thematic Networks and transdisciplinary research and coordination projects on various aspects of the AKIS (e.g. on-farm demonstration, the role of technology in advancing the AKIS, the role of advice in on-

farm innovation, and networking for various AKIS actors). The decision to require each member state to include AKIS in their Strategic Plans for the 2023-2027 Common Agricultural Policy was thus the latest in a series of actions intended to support on-farm innovation through the mobilisation of different forms of expertise.



# 3.1 AKIS Across Europe

The different institutional configuration of countries means that some have the competence for agriculture at national level, while others hold these powers at a regional level. This influences whether a centralised or decentralised approach to AKIS and its governance is adopted. Countries with centralised AKIS governance include Ireland, France, Finland, and Netherlands. Decentralised AKIS are found in Italy, Spain, and Belgium, although the AKIS organisation is in principle at the national level in Italy, the nine regional governments actually organise their own AKIS (Birke et al. 2023). Austria and Sweden are characterised as centralised with a tendency of decentralisation (Birke et al. 2023). Countries also vary with regard to how strongly the public sector is involved in AKIS (Table 1). For example, Sweden follows an approach where regional clusters and private platform organizations play a critical role in governing knowledge generation and development activities in the green sector without active national coordination mechanisms or policies in place; yet the coordination level is classified as ‘national’ (Birke et al. 2023).

The [EU CAP Network](#) replaced the ENRD ([European Network for Rural Development](#)), including the Evaluation Helpdesk and EIP-AGRI network. It was launched in October 2022 with the aim of assuring more streamlined support in implementing the new CAP and CAP Strategic Plans.

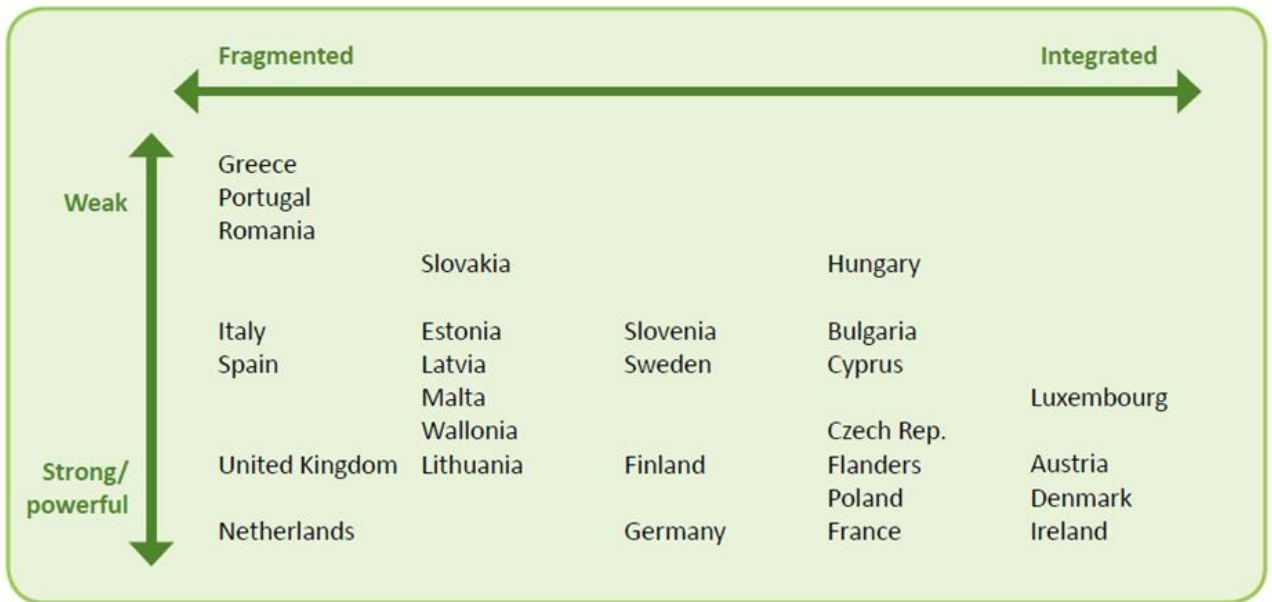
*The EU CAP Network with the support of the EIP-AGRI Support Facility, connects farmers, foresters, advisors, researchers, business representatives, environmental groups, NGOs, consumer interest groups and other innovators in the EU CAP Network. Its ultimate aim is to help build robust knowledge flows and speed up innovation in agriculture, forestry and rural areas. (...) helps to bridge research and practice by sharing results from research and innovation (R&I), best practices and innovative solutions with farmers, foresters, advisors, rural communities and innovative projects.”*

Thus, the national CAP networks also (officially) replaced the national rural networks. For example, in Ireland the national rural network website (<https://nationalruralnetwork.ie/>) explicitly states that it is now called the CAP Network Ireland. In some countries, the term ‘rural network’ is still commonly used. Close ties and overlap in personnel are likely, for example the Austrian national CAP network sits within in the Agricultural Chamber. Scotland has maintained its Rural Network (<https://www.ruralnetwork.scot/>). A characterisation of Scotland’s AKIS can be found in Appendix A.

	High public sector engagement	Medium public sector engagement	Low public sector engagement
Centralized AKIS: at the national level	Ireland	France Finland	Netherlands
Centralized AKIS with tendency to decentralization	Austria	Scotland	Sweden
Decentralized AKIS: at the regional level	Spain Italy Belgium		

**Table 1: AKIS organization at Member States** (based on Birke et al. 2023)

A consistent pattern that emerges across all countries is the strong collaboration between advisory service providers, public authorities and farmer-based organisations, which in some countries are occasionally supplemented by the presence of third-party actors, such as vocational education institutions (for instance, in Austria and Sweden). In 2015, Austria and Ireland in particular were assessed to have very well integrated AKIS, with France and Flanders exhibiting slightly less integration (Figure 1). In a recent study, only a few countries reported relatively strong linkages among all AKIS actors. Amongst them are France at the national level and at the regional level, Belgium, and Italy (Birke et al. 2023), suggesting considerable change has taken place in Italy. For a summary of the CAP Strategic Plans see: [CAP Strategic Plans - European Commission \(europa.eu\)](https://ec.europa.eu/eip/agriculture/cap-strategic-plans).



**Figure 1: Characterisation of AKIS by level of coordination (integrated/fragmented) and investment (weak/powerful) (Knierim & Prager 2015)**



# 4.0 Research Methods

The authors undertook a literature review of recent advances to the AKIS in Europe. There are a number of recent European Commission funded projects which have evaluated the AKIS in Europe, which have proven useful for this research. They then compiled a list of approximately 30 potential key informants from member states in western Europe, which were deemed to be most likely to have relevant actions, pressures and achievements to the Scottish AKIS. These key informants represented a range of stakeholder types, and are described in Table 2. From these, 20 were invited to participate in focus group discussions. Fourteen accepted, and each participated in one of three workshops held online in September 2024. The workshops were transcribed in full and analysed in relation to the research questions. The research protocols were approved by the steering committee, and the James Hutton Institute Social Research Ethics Committee; these are appended to this report (Appendix C). All participants have been provided with information on the project and have signed informed consent forms.

## 4.1 Study Participants

Study participants represented 10 European countries: Austria, Belgium (both Flanders and Wallonia), Finland, France, Italy, Norway, Sweden, Spain, The Netherlands, and the Republic of Ireland (Table 2). Of these, Ireland, Sweden and Belgium were deemed to have the most similar size (Ireland and Belgium), land capability (Ireland and Sweden) and structure of AKIS (Ireland and Belgium) (see also Sutherland et al. 2023), so multiple representatives were included in the analysis. Norway was included as a ‘counterfactual’: like the United Kingdom, it is not integrated into the Common Agricultural Policy. The Norwegian participant indicated that Norway is not seeking to align its policies with Europe but offered observations on the recent evolution of AKIS in Norway (see also Klerkx et al. 2017). Collectively, the participants represented the following interests: AKIS coordination bodies (4), advisory services (5), academic institutions (6), and government departments (4). Some of the participants represented more than one of these interests. Multiple participants had held leadership positions within the SCAR AKIS strategic working group, and/or leadership positions in Horizon Europe projects relating to aspects of AKIS.

Country	Number
Austria	1
Belgium – Flanders	2
Belgium – Wallonia	1
Finland	1
France	1
Italy	1
Norway	1
Sweden	2
Spain	1
The Netherlands	1
Republic of Ireland	2
<b>Total</b>	<b>14</b>

Type of participant	Number
AKIS coordination bodies	4
advisory services	5
academic institutions	6
government departments/ agency	4

*Note that some organisations match multiple types, hence the total is more than 14.*

**Table 2:** Overview of countries and types of affiliation of workshop participants.

# 5.0 Key Impacts of the CAP AKIS Strategic Plans

The workshops and literature review identified a number of key findings, which are elaborated here with associated implications for Scotland.

## 5.1 Discussion of the meaning of AKIS was the first outcome of the inclusion of AKIS in the CAP Strategic Plans

To identify a priority set of AKIS measures, government officials tasked with this responsibility first needed to understand what is an AKIS.

*“I think already the discussion before already brought some change because we were all, all the organizations and actors were much more aware of the fact that we have to cooperate better with each other.”*

These discussions were helpful for raising awareness of on-farm innovation processes, and the range of actors involved in agricultural research, advice provision and facilitating peer learning i.e. increasing consciousness that AKIS is more than the Farm Advisory Service (FAS). Discussion of the member state’s AKIS structure and membership was a useful starting point for consideration of how these organisations and their actions could be better coordinated, in cases where this was not already underway. In many cases, SWOT analyses were undertaken. Through the ClimateXChange Centre of Expertise, Scottish Government commissioned an options appraisal for the development of AKIS in Scotland (2023), which included a [SWOT analysis of the identified options](#). In some cases, the act of including AKIS in the CAP strategic plans meant that it increased in priority for the national government

**Implication:** Establishing an AKIS plan is beneficial for increasing awareness and understanding of agricultural knowledge exchange and innovation processes. A SWOT analysis of options for improving the AKIS in Scotland has recently been undertaken.

## 5.2 Coordination bodies have been established in all of the member states which were represented in the research (except Norway).

This was the most substantial change noted in response to the inclusion of AKIS in the CAP Strategic Plans. Establishment of AKIS coordination bodies was one of the requirements of the 2023-2027 CAP Strategic Plans. Coordination bodies seek to identify and integrate the various actors at a national level, though some have also done so at a regional level, such as Italy with its 20 regional coordination bodies (in addition to its national AKIS coordination body). Activities include identifying policy priorities for AKIS support at a national level, undertaking mapping of AKIS actors and organising meetings of AKIS actors to facilitate collaboration and integration. In some cases, the strategic coordination tasks and operational coordination tasks are allocated to different units.

In all but two cases, these coordination bodies were located within an existing government ministry or department. In Austria, the CAP network is not run by the ministry but outsourced to a consortium of organisations including the Agricultural Chamber and EIP broker, with a function to support the coordination body and the AKIS cooperation platform within the CAP network (see AKIS diagram in Knierim & Birke 2023).

*In Finland:*

*"The Ministry of Agriculture and Forestry in Finland put together a virtual hub called Agrihub, which now aims to bring together all the AKIS actors in the Finnish scene and enable a virtual collaboration platform/ opportunity for us to discuss, or set priorities (...) in practice, it's a department within the Finnish Natural Resources Institute. They have two people working, full time. They're now who coordinate the AKIS and on top of that, it's also a virtual platform on the Finnish Rural Network."*

A study participant from the Republic of Ireland described their AKIS coordination body as a 'coordination group':

*"Yeah, so the AKIS coordination group is led by the Department of Agriculture along with ourselves in the CAP network, Teagasc and the private agricultural consultants. And then the group itself is made up of about 60 members representing industry, the university, the research sector and then also agricultural media and representatives then from the agricultural advisory services as well. And we hold two face-to-face meetings a year. And then following that then the next stage and the next plan for the AKIS in Ireland is to actually have on-site visits and bilateral meetings as well, possibly Ireland AKIS to visit other places and to have people come to Ireland as well just because I suppose it's been identified that while we have a fairly successful AKIS currently I think we could learn from other territories as well."*

A review conducted by the ModernAKIS project (Cristiano et al. 2023) identified two different models for AKIS coordination bodies. These were a managerial model and a networking or collaborative model. In the managerial model, all functions are maintained under the responsibility of the Managing Authority (usually the respective Ministry of Agriculture) and run by an existing unit or a newly established unit (e.g. an AKIS coordination committee or group) but staffed by public servants. In the networking/ collaborative model, the AKIS coordination body shares the function with (mostly) newly established, collective bodies such as the CAP network, or consortia (Cristiano et al. 2023, 4f).

AKIS coordination bodies or groups typically comprise of a small steering committee of key players, and a larger group of interested parties. Several study participants reported that their coordination bodies were mapping their AKIS actors in order to ensure inclusivity. Research participants suggested that if Scotland were to establish an AKIS coordination body, building on existing structures would likely be more effective than establishing something new.

The AKIS coordination bodies have highly variable levels of staffing. They are typically staffed by existing members of staff who are reoriented towards this work. The level of resourcing varies from one to five members of staff, but is typically modest. Study participants agreed that an effective AKIS coordination body needed to have authority to set and implement strategy, and be appropriately resourced.

**Implications:** The establishment of AKIS coordination bodies has been important for advancing AKIS. The key principles for establishing a successful coordination body are:

- **Empower** this body to agree strategic direction
- **Map** the AKIS actors in Scotland on an ongoing basis, reflecting the dynamic nature of AKIS, to insure inclusivity of viewpoints and activities
- **Build** on existing structures, i.e. utilise and designate staff within existing government departments or organisations
- **Allocate** sufficient resources to these activities.
- **Include** representatives of all relevant government departments to ensure their activities are coordinated, as well as ensuring coordination within departments
- **Build** on the Scottish Rural Network or the FAS platform to mobilise actors and promote activities.

### 5.3. The inclusion of AKIS in the CAP Strategic Plans was the next step in a series of actions designed to promote the farm advisory services and peer learning

Study participants indicated that recent changes to their national AKIS not only reflected the inclusion of AKIS in the CAP Strategic Plans, but also the large number of Operational Groups, thematic networks and research projects that had been funded by the European Commission. Some study participants therefore found it difficult to disentangle the specific outcomes of the inclusion of AKIS in the CAP Strategic Plans.

*“It is too early to speak about that [the impact of the AKIS plans]. But these changes [on the ground] obviously are related to the European policies, especially they are related to the introduction of the EIP-AGRI and the Operational Groups within the CAP policy.”*

European Commission AKIS policies over the past decade have emphasised to support the development of ‘interactive innovation’ (innovation through collaboration and peer learning). The concept of interactive innovation

recognises the role of farmers and other land managers as innovators. Within this approach, agricultural advisors become facilitators on-farm innovation, and enablers of farmers to learn from other farmers. This role requires strong facilitation skills, which are often different from the skills of advisors who have traditionally provided advice ‘top down’ i.e. as experts on particular topics.

Common peer-to-peer learning support includes discussion groups, monitor farms and group visits to farms. These approaches were very positively viewed by study participants. Recent workshops in Scotland have demonstrated the demand for increased peer-to-peer support (Sutherland et al. 2023).

**Implications:** Advancing Scotland’s AKIS would benefit from multiple policies integrated across government departments. Peer-to-peer supports (e.g. for farmer discussion groups, monitor farms, on-farm demonstrations hosted by farmers) are in line with European supports.





#### 5.4 The practical impact of AKIS measures was strongest in countries with a weak AKIS

The study participants reported very different levels of influence from the CAP strategic plans on AKIS in their countries. Participants from France and Flanders (Belgium) reported very little change, which they attributed to a highly developed AKIS already in existence in the countries (Figure 1). In countries with a weakly integrated AKIS, or few resources allocated to Farm Advisory Services, more substantive changes have been noted. For example, the participant from Finland reported that the CAP Strategic Plans had led to a completely reworked approach to AKIS at national level. In Italy, CAP actions had previously been devolved to 20 regions; the formation of a coordination body at national level and at regional levels had led to greater awareness of the role of agricultural advisors and other AKIS actors. Spain implemented a single national AKIS coordination body across its 17 regions.

**Implication:** Scotland's AKIS includes a centralised FAS (SAC Consulting and Ricardo Consulting) but a diverse array of academic and research institutions, NGOs, membership organisations, supply chain members and charities are involved in innovation and facilitating innovation. There is both a need and opportunity to better integrate these actors within AKIS.

#### 5.5 Implementation of CAP Strategic Plans led to an increased range of actors involved in AKIS

By definition, the AKIS involves a broad range of actors. These include farmers, agronomists, representatives of producer associations, supply chain actors and research institutions. Actively recognising this range of actors through AKIS coordination bodies and their activities has led to these actors becoming more involved in knowledge exchange processes. For example, they have been included in AKIS networking meetings and have been inspired to undertake more knowledge exchange activities. This increase in action is the outcome of a range of measures, not solely the coordination bodies. However, the coordination bodies appear to play a key role in raising the profile amongst AKIS actors, and in organising events and networks which enable this broader range of participants to play an active role in the organisation of the AKIS.

**Implication:** The establishment of an AKIS coordination body in Scotland would likely increase the resource available to support innovation in the agricultural sector.



## 5.6 Increased collaboration and alignment were identified as outcomes of the coordination bodies

Increasing collaboration and aligning activities to reduce duplication were primary activities and outcomes of the AKIS coordination bodies. However, it was recognised that there is a considerable amount of work to be undertaken before the AKIS at national level is well coordinated. The increase in Thematic Networks and Operational Groups in addition to the Farm Advisory Services has led to complex and constantly changing configurations of actors and activities.

**Implication:** AKIS coordination bodies are important for establishing stronger links between members of the AKIS. This process takes time and requires resourcing, as AKIS is constantly in motion.

## 5.7 The formalisation of AKIS into the CAP Strategic Plans has yielded an understanding of AKIS focused on the identification of actors.

AKIS as an academic concept has a substantial body of associated academic theory and critique, particularly relating to processes of innovation. The operationalisation of the AKIS as a set of actors (e.g. advisors, farmers, NGOs) requiring coordination and support measures represents a new way of thinking about the concept of AKIS.

**Implication:** There is a risk that use of the term AKIS will lead to an overemphasis on the different participants in the AKIS, to the detriment of understanding how innovation occurs at farm and industry levels.



# 6.0 Key issues in Advancing AKIS

## 6.1 AKIS is not well known as a term

Across all of the countries in the research, the study participants reported that the term 'AKIS' was not well known outside of the European projects which study and seek to promote it. Over the past decade, the European Commission has invested in over a dozen major AKIS related projects. These projects include FP7 [SOLINSA](#), FP7 [FarmPath](#), FP7 [PRO AKIS](#), FP7 [VALERIE](#), H2020 [AgriSpin](#), H2020 [PLAID](#), H2020 [AgriDemoF2F](#), H2020 [NEFERTITI](#), H2020 [AgriLink](#), H2020 [I2Connect](#), Horizon Europe [ModernAKIS](#) and Horizon Europe [Attractis](#); there are also several dozen 'thematic networks' of stakeholders on specific topics (e.g. H2020 [Newbie](#) on New Entrants to Farming). These are all 'multi-actor projects' and are often 'collaboration and support' rather than 'research innovation actions', meaning that they undertake activities across Europe to compile existing knowledge and bring together a range of stakeholders working in this area. This ongoing programme of research and collaboration actions has created a community of practice which is knowledgeable about and skilled in supporting the development of AKIS. Outside of these circles – particularly in government departments but also amongst farmers and the stakeholder organisations which have not engaged in these projects - the term is largely unknown.

**Implications:** In order to effectively advance the AKIS in Scotland, it will be important to first decide what is the appropriate term to use (e.g. AKIS or a variation). It will then be important to increase understanding of the term, and maintain consistency in its usage.



## 6.2 Ongoing assessments of AKIS are required by the European Commission

Under [Regulation \(EU\) 2021/2115](#) member states are required to assess the impact of their CAP Strategic plans on an ongoing basis; this includes AKIS measures. The EU CAP network has proposed a [six-stage process for evaluating AKIS](#). Mid-programme and *post hoc* evaluations are recommended.

Annex 1 of [Implementing Regulation \(EU\) 2022/1475](#) identifies the following indicators of success for evaluating AKIS:

- An increasing number of farmers participate in training programmes and/or make use of farm advice
- Farmers change farming practices after participating in training programmes and/or making use of farm advice
- An increasing number of farmers are supported for digital farming technology through CAP Strategic Plan
- CAP Strategic Plan Expenditure supporting the creation of innovation and knowledge sharing is increasing.

**Implications:** Periodic appraisals may be an appropriate means of assessing the AKIS as it develops in Scotland. These appraisals could be undertaken by, or in collaboration with, an AKIS coordination body. The EU CAP Network recommendations may provide useful guidance for evaluation which can be adapted to the Scottish context.



### 6.3 Private advisors and some cohorts of farmers are the most difficult AKIS actors to involve

Private agricultural advisors operate on a fee-for-service basis. Time spent engaging in activities organised by the AKIS coordinating bodies thus represents a loss of income. Many of these advisors also operate under a top-down business model, whereby they charge for their expert services; facilitating peer-to-peer learning requires different skills and does not fit into their existing business model. Ensuring AKIS coordination activities have outcomes which are beneficial to these actors (e.g. opportunities to influence the types of support funded nationally) was identified as key to engaging these actors.

*“So really like there has to be a value to somebody to go. And one of the things is we kind of emphasized [was] the opportunity to inform future programming by participation in the AKIS in Ireland. So, you know, that the actors there feel that they are involved in decisions that are going to be made and that's kind of one of the key sellers (...) I think it's really important because it's the worst thing to do is to bring 60 people [to] Dublin like for a day and they don't feel like there's any benefit to their participation, and they also don't feel like they're being listened to as well.”*

Some cohorts of farmers were also identified as ‘difficult to reach’, in line with recent research on ‘hard to reach’ farmers. These cohorts include farmers who are younger, female and located in remote locations (see also Labarthe et al. 2022; Kinsella, 2018).

**Implication:** AKIS meetings and events need to be designed to include tangible benefits to private advisors and participating farmers and crofters. They also need to be designed with particular cohorts in mind (e.g. farmers and crofters who have off-farm employment or caring responsibilities). Advisors need to be both trained and incentivised to support peer-to-peer learning.

### 6.4 Bridging the gap between research and practice is a common problem

Although the increased awareness of AKIS has been beneficial for building connections between AKIS actors, the research participants agreed that there remains a gap between research and farmers which is important to bridge. There is some recognition that applied research is gaining respect in academic communities, and that research organisations are seeking to communicate directly with farmers for the purpose of disseminating research findings. In doing so, they increase the relevance of their own research to farmers, but circumvent the Farm Advisory Services, who then are unaware or do not have access to this research. This can lead to inefficiency and/or duplication of effort.

**Implication:** Bridging the gap between research and advice has long been recognised as an issue. Further investment in bridging this gap, for example through farm trials and Operational Groups, may be warranted. A more coordinated approach is needed within the AKIS to ensure that advisors as well as farmers and crofters have access to new applied research findings.





## 6.5 Many (but not all) of the countries represented noted a shortage of young people undertaking the training to become agricultural advisors and/or issues with recruitment and retention

This issue emerged from the first workshop and was considered in the subsequent ones. This may or may not be related to a shortage of young people entering the sector. For example, in some countries, young people were training in agriculture but were then becoming farm successors, rather than agricultural advisors.

**Implication:** There may be a shortage of young people becoming agricultural advisors in Scotland.

## 6.6 The skills needed by agricultural advisors in future are likely to be different

In one of the workshops, study participants talked about the changing structure of agriculture, and the implications for the AKIS. The capacity of farms and crofts to innovate, and the associated types of support needed, change as farms get larger and become more specialised. For example, some farmers directly seek out researchers to ask specific questions. Others seek specialist advice from experts in other countries.

**Implication:** It may be appropriate to undertake a scoping exercise to identify the future skills required of advisors in Scotland.

## 6.6 Funding of Horizon projects relating to AKIS has led to a multi-actor community of practice, but the impacts are not consistently distributed across Europe

Horizon Europe projects are awarded on a competitive basis to consortia representing at least three (but typically 10 or more) collaborators from across Europe. Not every country or region is therefore involved in every project. Most of these projects involve activities which seek to integrate AKIS actors between and within the countries and regions of consortium members. For example, several participants mentioned that the establishment of 'Communities of Practice' (CoP) as a direct result of the ModernAKIS project was seen as beneficial; these CoP were similar to the AKIS coordination bodies in their composition although they could include individual farmers and advisors instead of being limited to organisational representatives. Associated initiatives are short term – limited to the duration of the project, and the geographical reach of the consortium members.

**Implication:** Several research and stakeholder institutions in Scotland are involved in Horizon Europe projects relation to AKIS. These projects (past and present) can be an important source of contacts for mapping and mobilising the Scottish AKIS.



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Sweden follows an approach where regional clusters and private platform organizations play a critical role in governing knowledge generation and development activities in the green sector without active national coordination mechanisms or policies in place, yet the coordination level is classified as 'national' (Birke et al., 2023).

# 7.0 Options for supporting Scotland's AKIS

Data analysis has yielded the following options for developing the Scottish AKIS:

**Establish a coordination body for AKIS in Scotland, to better integrate the various actors and their actions**

- Provide long-term funding to ensure continuity and buy in
- Empower the coordination body to set strategy and act on it:

*"I would recommend you to aim for not only a good coordination between actors, but more trying to go for alignment and especially between applied research and advice. I mean you've got SRUC, you've got your own institution like James Hutton. So would that be possible for you guys to agree on a joint strategy for the [AKIS] and really aim for it, not only coordinate your activities but really aim for the strategy? That would be ideal."*

- Build on existing structures, i.e. utilise and designate staff within existing government departments or organisations.
- Include representatives of all relevant government departments to ensure their activities are coordinated, as well as ensuring coordination within departments. Build on the [Scottish Rural Network](#) or [FAS platform](#) to mobilise actors and promote activities. Participants were keen that Scottish Government did not 'reinvent the wheel' i.e. it is preferable to work with the organisations and structures already in place.

**Establish an annual 'AKIS' gathering to promote knowledge sharing**

- Increase events and situations where advisors and researchers can have conversations and exchange information
- Integrate private advisors and 'hard to reach' farmers through targeted action (e.g. which provide clear benefits to participation)

**Compile and maintain a 'map' or inventory of AKIS actors in Scotland, to ensure inclusion of appropriate actors in the above actions. This activity has been undertaken in a number of EU member states, through the Horizon Europe ModernAKIS project.**

*"Just in Ireland, mapping was kind of one of the first tasks that was suggested. And so that was that's currently taking place like. And it's the one thing we have kept, the map is a kind of a live document. So we've brought it to the last AKIS meeting with the stakeholders and the coordination group and we discussed it and then people were allowed to add new actors to it and so it's remained live to that point of view. And it's kind of updated constantly, but it's done on an organisational level as well, so there's no personal information."*

Ireland's AKIS map is included in Appendix B. Note the various benefits of visual graphic representations of AKIS but also the risks of using an outdated diagram as highlighted by Knierim and Birke (2023).

- **Conduct** analyses of the AKIS periodically, to assess the impact of changes and to identify needs and opportunities. The EU CAP Network's Guidelines for evaluating the AKIS strategic approach (2023) is a useful tool for structuring these evaluation processes.
- **Establish** and **promote** '[Operational Groups](#)', which bring together a range of stakeholders to identify and test practical solutions to a specific problem. Operational Groups appear to be widespread across the member states, and are highly valued for supporting innovation and peer learning.
- **Increase** support for peer-to-peer learning. Examples include on-farm demonstrations, farmer exchanges, monitor farms and mentoring.
- **Introduce** topical knowledge hubs to bring together expertise on specific issues.
- **Internationalise** the AKIS, through cross visits of both advisors and farmers to other countries.
- **Establish** a web platform which demonstrates innovative farm actions, like Finland's AgriHub. This may already be achieved through the FAS website.
- **Assess** whether there is a sufficient number of people training to become agricultural advisors, and what skills are needed in future advisors.





# 8.0 Conclusion

The inclusion of AKIS in the CAP Strategic Plans for 2023-2027 is the most recent in a set of steps undertaken by the European Commission to promote innovation in the agricultural sector. The support encourages a widening of the actors involved in innovation, and a recognition of the innovative capacity of farmers themselves. The support is encouraging a transition towards supporting peer to peer learning, which involves a different skillset to the traditional 'top-down', expert driven advice. At the same time, there is recognition of the need to more effectively bridge the

gap between scientific research and practice on-the-ground.

It is important to note that the investment in AKIS represents a small fraction of the total of the CAP budget in every member state.



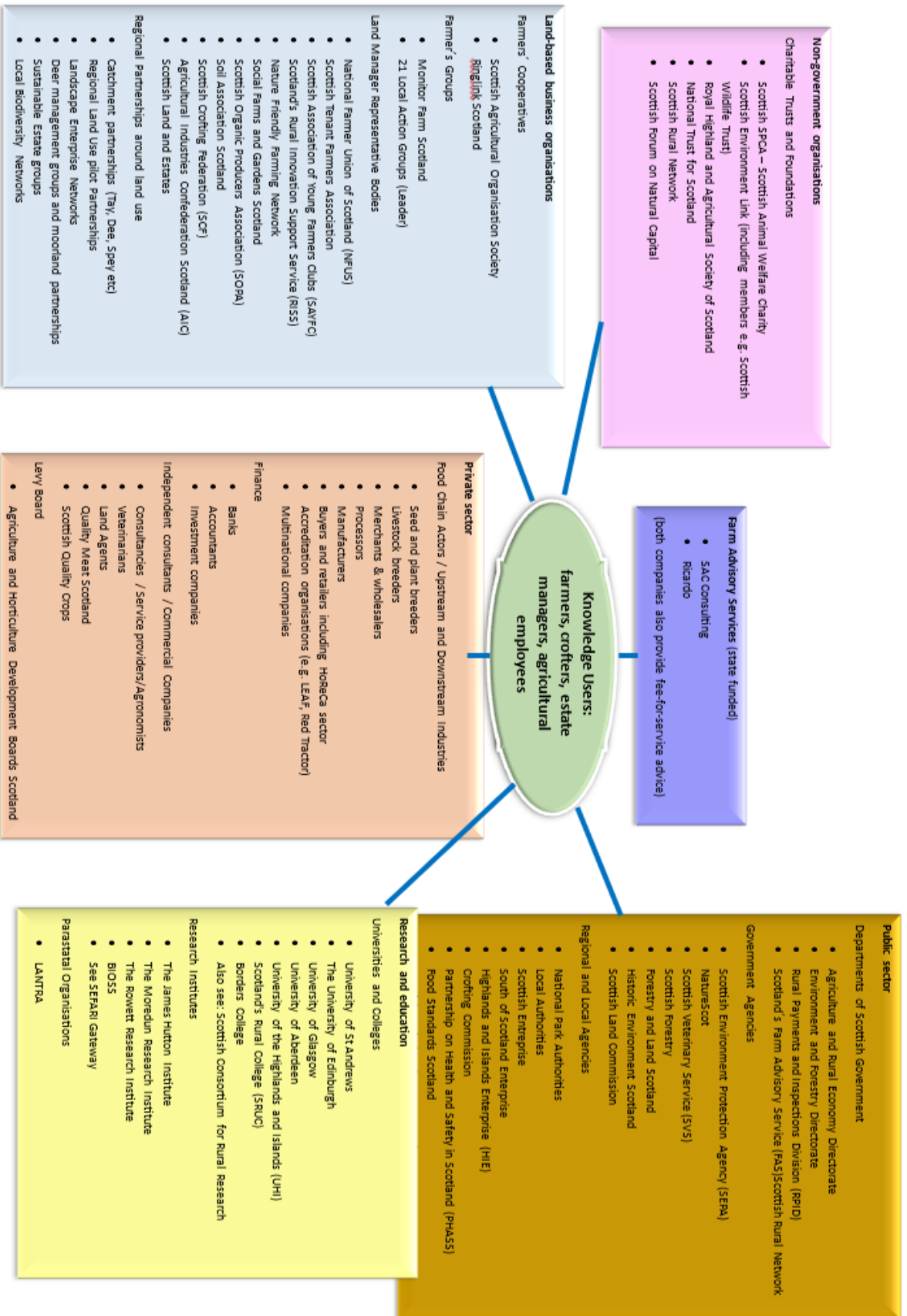


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# Appendix A - Scotland's AKIS

Please note: The diagram represents the range of information sources available to farmers and crofters in Scotland but is not intended to be comprehensive. Source: Sutherland et al. 2023.



# Appendix B: AKIS Map - Ireland

## AKIS Actors in Ireland (Draft v0.3)

AKIS stands for Agricultural Knowledge and Innovation System and includes farmers, advisors, researchers, and innovators. AKIS is the combined organisational knowledge, know-how, integration and interaction between public organisations and institutions that produce, disseminate and use knowledge and innovation for agriculture and rural development activities in the area.

The vision for the Irish AKIS is to better connect people and organisations through dynamic and consistent engagement to facilitate improved and specialist information flow. A successful AKIS will ensure actors have the training and skills to more effectively respond to societal challenges such as climate change and sustainable food systems and to the growing information needs of farmers, rural economy actors, advisors, researchers and other agricultural system and ecosystem stakeholders to address these challenges.



# Appendix C: AKIS Workshop Protocol

Welcome – explanation of Chatham house rules and the objects of the research. Affirm confidentiality and encourage open discussion. Affirm that this research has been specifically commissioned by Scottish Government to inform their AKIS policy development.

Conclude with a reminder of Chatham House rules, and that there will be a report forthcoming. Thank them for their time.

Introduction – of participants (affiliations, experience of AKIS)

## Questions for discussion:

1. Could you each describe one thing which has changed in the AKIS in your country as a result of the AKIS plan included in your country's CAP Strategic plan.

Note, it is possible that nothing has changed – if so, why not?

Recognise that changes have been happening for other reasons – record these too.

Probe: Has a coordination body/ AKIS networking centre or similar been set up? Which existing body is it affiliated with, and do you think that's a good place to have it?

Probe: Have there been particular 'knowledge exchange' related interventions?

2. What was the aim of this particular change? What steps were taken to implement it?  
If there appear to be a lot of changes, ask for examples.

3. What have the outcomes of these changes been? (positive and negative)

Probe on what supports for AKIS are particularly effective.

4. What changes would you like to see to your AKIS, that have not already been actioned? What would this achieve? Why hasn't it happened?

5. What aspects of your AKIS are particularly strong, which we might wish to consider implementing in Scotland?

6. At the second and third workshops, feedback findings from the initial workshop(s) for feedback.





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