

Advisory role in farmers' micro systems of agricultural knowledge and innovation (microAKIS)

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Abstract: This paper is part of the H2020 project AgriLink "Agricultural Knowledge: Linking farmers, advisors and researchers to boost innovation". It presents and develops the concept of 'microAKIS', i.e. the micro knowledge- and innovation-system that farmers personally assemble to manage their agricultural practices and ensure sustainability. It includes the range of individuals and organisations with whom farmers seek services and exchange knowledge, and the processes involved in the formation and working of this system, including the way farmers translate these resources into innovative activities (or not). Utilising the concept of microAKIS enables us to identify and assess the range of information sources and media through which new knowledge is generated and transformed. We can thus address more specifically the present knowledge-gap on the use of advisory services by farmers within the current context of deep transformations of both farm structures and supply of such services (Knierim et al. 2017). In a broader perspective, we will defend the idea that, at a micro-scale, it is necessary to combine both a process and an infrastructural view on microAKIS (Klerkx et al. 2012). The knowledge systems that farmers build to source knowledge and information might be specific to a given innovation area. At the same time, however, these systems might also be influenced by farm characteristics: size, access to ICTs, geographical location, etc. These factors could both induce path-dependency mechanisms and trigger change cycles for farmers (Sutherland et al. 2012).

Keywords: advisory services, microAKIS, knowledge, innovation, farmers, decision-making

Introduction¹

The aim of this paper is to present some key elements of the conceptual framework of the H2020 project AgriLink (*Agricultural Knowledge: Linking farmers, advisors and researchers to boost innovation*). The aim of the project is to better understand the role of advisory services in farmers' decision-making regarding different areas of innovation (technological, marketing, process and organisational) related to sustainable development of agriculture.

There are three main assumptions in AgriLink regarding the relations between innovation, farmers' decision-making, and advisory services. First, AgriLink acknowledges that there is no straightforward **relation between innovation and sustainable development** (Klerkx et al. 2010). Innovation can have positive effects on certain dimensions of sustainable development (e.g. environmental issues), but adverse effects on others (e.g. social issues). Furthermore, innovation can be positive for certain social groups of farmers but negative for others. Current debates about the development of digital farming or conservation agriculture are typical examples. AgriLink will analyse how advisory services can support farmers in assessing these trade-offs associated to innovation and in decision-making.

Second, AgriLink seeks to integrate **farm diversity** into the analysis. There have recently been significant advances in academic work that enables understanding of farmers' decision-making, and the role of collective learning and innovation networks. This research tends to

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focus on innovative farmers, or even on pioneers: farmers who are willing to engage in sustainable transitions, in group dynamics, etc. (Moschitz et al. 2015, Elzen et al. 2017). In AgriLink, we will investigate farmers with different profiles regarding innovation: pioneers, adopters (early adopters or followers), droppers, and non-adopters (either farmers who could not adopt an innovation, or farmers who decided not to adopt an innovation). Integrating farm diversity is all the more important as farm(ing) structures are facing dramatic changes: increase in economic size and hired labour, development of collective farming, new relations between labour and capital, etc. Such changes typically also impact the decision-making processes of farmers as well as the role played by advisory services for the different groups of farmers.

Third, AgriLink will take account of the **transformations of the landscape of advisory services**. There are different drivers of these transformations: commercialisation and privatisation of services, impact of new technologies, etc. (Prager et al. 2016, Knierim et al. 2017). Different studies have shown that these trends have led to a strong pluralism in the supply of services, which has even been depicted as a fragmentation in certain contexts (Garforth et al. 2003). The question is thus how these transformations affect the capability of advisory services to support farmers in taking good decisions regarding various innovation areas that could enable sustainable transitions.

AgriLink aims at contributing to knowledge on these issues. To this aim, interviews will be implemented with farmers and advisors in 26 focus regions in 13 European countries. Investigations will be carried out in various innovation areas: technology (e.g. drones, online platforms), process (e.g. soil improving cropping systems), marketing (e.g. crop diversification, direct marketing), and farming organisation (natural resources common management, contract farming). Field work will be carried out in 2018. The aim of this paper is to present the conceptual framework that will guide these interviews.

In this paper we discuss two major choices to explore the role of advisory services in farmers' decision-making:

- 1) Farmers' decisions can be described as a dynamic process, where phenomena of path-dependency are at stake. Farmers' decisions will also vary according to farms' context, structure and history.
- 2) Farmers' decisions are partly determined by the micro-level Agricultural knowledge and Innovation systems (microAKIS) in which they are embedded. Central to AgriLink is the idea that there is a need to combine two analytical perspectives on these microAKIS: an infrastructural and a process view on these systems.

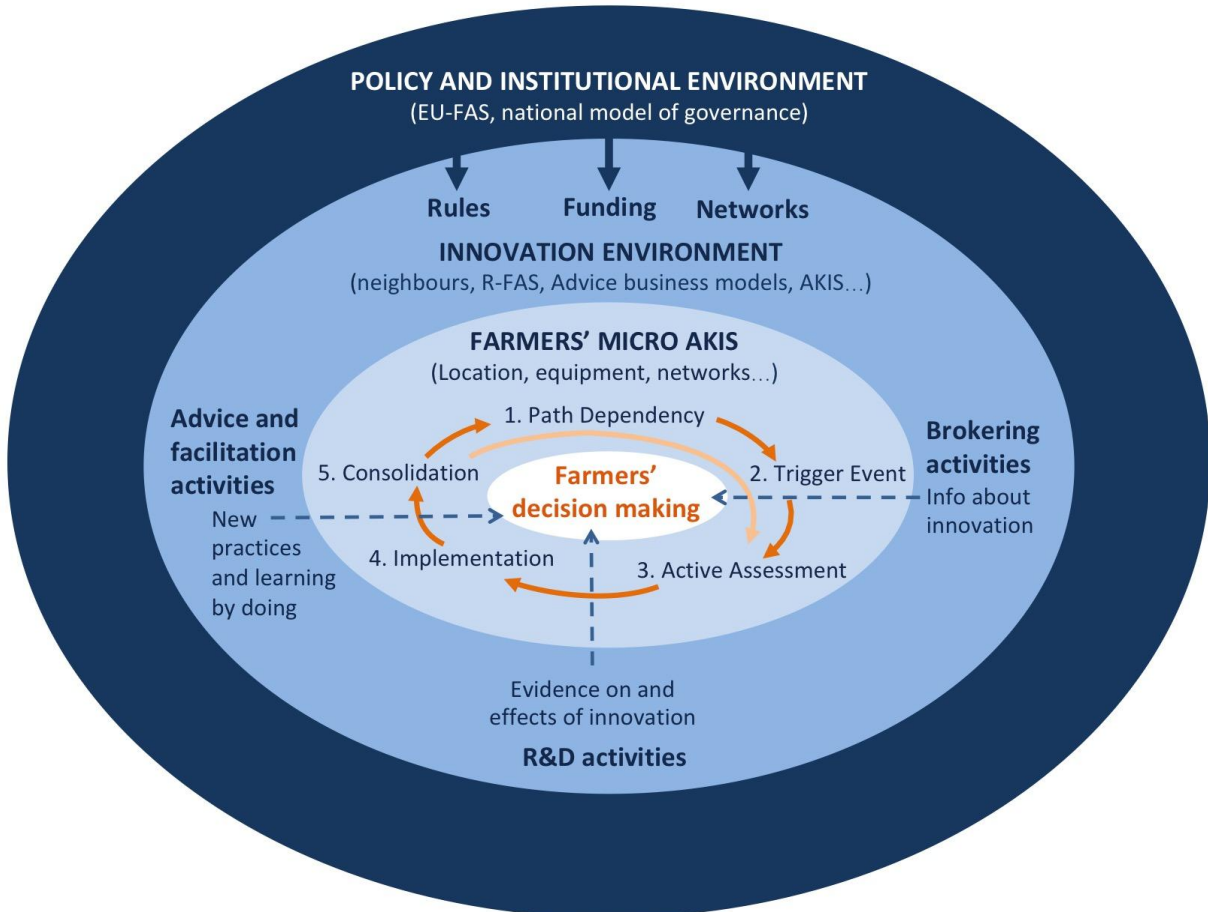
The structure of the paper builds on a multilevel perspective: starting from the farmers' perspective up to the level of regional farm advisory systems. The paper is organised as follows. In the first section, we describe AgriLink's dynamic model of farmers' decision-making. It builds on the 'Triggering Change model' (Sutherland et al. 2012.). This allows us to propose a stylised representation of decision-making that could be used for different innovation areas and across regional contexts. This representation highlights key steps of farmers' decision-making. In the second section, we present our concept of microAKIS, which encompasses the different sources of information, knowledge and services that farmers combine to become aware of an innovation, to assess its potential positive (and negative) effects, and to implement or decide not to implement it in practice.

1. AgriLink's conceptualisation of farmers' decision-making: the "Triggering Change model"

Figure 1 demonstrates the interplay of AgriLink's key concepts to better understand the role of farm advice in farmers' decision-making regarding different innovation areas. At the centre are farmers (and farm households), making decisions about how to manage their businesses. Major decisions are conceptualised as occurring cyclically, in stages, largely in response to 'trigger' events. During these change processes, farmers are influenced by

advisory services, researchers, peers and other sources of knowledge (inside and outside of the agricultural sector), and also make their own contribution to the latter. A key feature of AgriLink’s model is its dynamic dimension that enables to capture both path-dependency and transition mechanisms.

Figure 1 – Representation of AgriLink’s key concepts



Source: AgriLink Initial Conceptual Framework (Sutherland et al. 2017)

Note:

EU-FAS stands for European Farm Advisory System (EU regulation)

R-FAS stand for Regional Farm Advisory System (AgriLink’s conceptualisation of advisory systems at regional level)

In our model, the sources of farmers’ knowledge are conceptualised as farmers’ ‘microAKIS’, developed within the existing innovation environment. In our conception, these microAKISs are dependent on a given innovation appropriation process, but they are also partly determined by structural characteristics of the farms. A key feature of the project is that decision-making will be described both from the perspective of farmers who have adopted innovations and farmers who have not (either because they could not or have deliberately chosen not to adopt).

Central to AgriLink is then to understand the role of farm advisory organisations in this dynamic model of decision-making. We define “advisory organisations” as the set of organisations that provide agricultural knowledge services to enable farmers to develop farm-level solutions, enhance skills and coproduce knowledge with advisors (Labarthe et al. 2013). Advisory organisations are included in the enabling environment. Farm advisory services include traditional advice providers (chambers of agriculture, public bodies, etc.), farmer-based organisations (unions, associations, cooperatives, etc.), independent consultants, NGOs, upstream or downstream industries, and high-tech sectors. They can

provide a range of services, including research, advice, facilitation, and brokering. In other words, they can be active at different steps of the decision-making and use different methods at these different steps.

The actors in the innovation environment are influenced (also by the provision of funding) through the broader policy and institutional environment, which includes regional, national as well as EU legislation and agricultural European Innovation Partnership (EIP-Agri) activities to enable innovation in the agriculture and forestry sectors.

In the following sections, we will describe more in-depth the different layers of this conceptual framework.

1.1 A multidisciplinary and evolutionary perspective on farmers' decisions

Numerous studies in recent decades have analysed farmers' decision-making, but primarily in relation to outcomes. Actual processes of decision-making are difficult to quantify, as these are typically iterative, informal, and farmers themselves may not be conscious of the processes involved. Several theories of the human behaviour coexist in social sciences. Some economic approaches rely on methodological individualism, assuming that decisions are made through an internalised process of cost-benefit analysis. Policies to encourage farmers to make particular decisions (e.g. to engage in agri-environmental schemes) tend to be based on this approach. However, this approach of the economic behaviour does not reflect the complexity of the drivers of decision-making (Sneddon et al. 2011). Other economic approaches (e.g. evolutionary economics, institutional economics) analyse how economic decisions are embedded in specific technological paths, institutional frameworks or socio-cognitive norms. They have built tight collaborations with other disciplines to make the most of the recent advances in the studies on behaviour. AgriLink is an illustration of such a pluri-disciplinary perspective.

In recent decades, social psychology theories have increasingly been applied to the analysis of farmers' decision-making. Ajzen's (2005, 2011) Theory of Planned Behaviour, for example, draws attention to social norms and practical limitations, in addition to the attitudes or values associated with the objective of the decision itself (see Sutherland 2010, 2011 for applied examples). In the Theory of Planned Behaviour, the decision to make a change is actively planned – the decision-maker has clear motives for considering an action, and actively considers the practical limitations (e.g. planning restrictions, financial barriers) as well as social considerations (what the neighbours or other people of importance to the decision-maker would think of the action). For example, work on the social construction of the 'good farmer' has focused directly on the role of social norms and identity in influencing farmer behaviour (e.g. utilising Bourdieu to conceptualise normative identities as 'good farmers', Burton 2004, Sutherland 2013). In van der Ploeg's (1994) work on farming styles, he argues that farms are limited in their 'room for manoeuvre' by their degree of technology and market integration. Markets, technology and social norms do not determine what type of farming will be carried out, but they provide the context in which different trajectories are possible.

1.2 The Triggering Change model

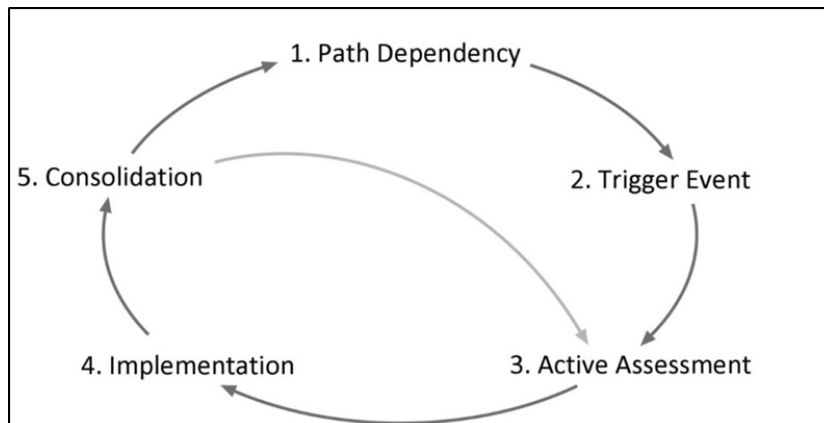
In developing the Triggering Change model, Sutherland et al. (2012) argue that owing to the path-dependency of farms, major changes in farming trajectory occur largely in response to trigger event(s) (e.g. crop failures, low commodity prices, succession, retirement). In response to these trigger events, farmers become more active knowledge seekers, choosing and implementing a new course of action. If successful, these new actions become part of a new path-dependency (see Figure 2).

The model draws on social psychology theory (the 'elaboration likelihood model' – Petty and Carpaccio 1986) to demonstrate that while farmers are locked in path-dependency, they engage largely in 'peripheral route processing' of new information – giving it superficial attention but storing it for potential later use. Changes are incremental. Following a 'trigger

event' (which can range from the gradual integration of a successor or recognition of long-term financial losses to more sudden shifts such as loss of staff or the emergence of new market opportunities), farmers more actively seek and assess information using 'central route processing', which leads to more durable change. New changes are implemented but take time to develop and consolidate. If unsuccessful, the period of active assessment continues; if successful, the changes become the new norm and farmers become path-dependent on using the new innovation.

It is important to note that the triggering change conceptualisation represents an idealised process. Triggers are often unpredictable, and thus may occur at any stage in the change process, or may indeed be removed, leading to an early return to path-dependency or active assessment. This can result in deviations from the process as outlined above.

Figure 2 – The Triggering Change model



Source: Sutherland et al. 2012: 144.

1.3 Where do advisory services fit on the Triggering Change Model?

There are several entry points for developing the model in AgriLink: formation of the microAKIS, the role of advisors, and the role of non-knowledge related factors in decision-making. There is also a potential to utilise the Triggering Change Model to understand transitions in advisory service provision.

A micro-level agricultural knowledge and innovation system (microAKIS) is the knowledge-system that farmers personally assemble, including the range of individuals and organisations from whom they seek services and exchange knowledge, the processes involved in the formation and working of the system, including the way farmers translate these resources into innovative activities (or not). The 'Active Assessment' process identified in the model is where the farmer(s) actively form the microAKIS associated with the innovation they are considering adopting. The microAKIS is further revised through the implementation and consolidation phases, forming part of the path-dependency in terms of information access for future innovation processes.

Advisors can play a role at any stage – general awareness-raising during the path-dependency stage, active advice provision during 'active assessment' and 'implementation'. Advisors may also be part of a trigger event, making farmers aware of particular activities or performance issues (e.g. accountants reporting poor financial returns may actively encourage farmers to consider different courses of action). Advisors can also strategically target farmers who are likely to be undergoing a transition process (e.g. farmers who are approaching retirement, have recently identified a successor, or who are in an industry which has been experiencing a financial downturn).

There are three main implications of the conceptual model for the empirical approach that we will develop in AgriLink:

- i) The field work will be based on farmers' interviews that integrate the different steps of the triggering change model. Our aim is to understand which sources of information and services enable farmers to go from one step to another in the Triggering Change model.
- ii) The sampling strategy is designed to cover a wide diversity of farmers' contexts, not only in terms of innovation areas, but also in terms of farming contexts. In that respect, we have decided to implement data collection in 26 focus regions that represent the diversity of rural and agricultural contexts.
- iii) The methodology combines a quantitative and a qualitative perspective. The quantitative analysis (with close to 1000 farmers in our sample) will enable to propose a typology of microAKIS across innovation areas and focus regions. The qualitative dimension will make it possible to highlight narratives about farmers' decision-making process regarding different innovation areas.

2. AgriLink's conceptualisation of farmers' sources of knowledge: farmers' microAKIS

Although the Triggering Change model identifies different types of information seeking and processing which occur at different points in farming trajectories, it does not address the specific processes farmers undertake to acquire and adapt new knowledge, or the role of intermediaries (human and technological) in those processes, for farmers adopting innovation as well as for those who do not. These are areas in which AgriLink will apply and develop further the Triggering Change model.

2.1 What are the contexts and determinants of farmers' access to and use of knowledge?

Considerable research in recent years has addressed the way that knowledge (amongst other resources) flows and is altered through networks. Conceptualisations of the structure and influence of these networks often draw on the concept of 'social capital', which can be defined as "the features of social organisation [...] that can improve the efficiency of society by facilitating coordinated actions" (Putnam 1993: 167). Social scientists have long since rejected the notion that linear knowledge flows from scientists to extension agents to farmers are the best way to ensure innovation in the sector (van Crowder and Andersen 1997, Chambers et al. 1989, Dockés et al. 2011, Röling and Wagemakers 1998). The AKIS Strategic Working Group of the Standing Committee on Agricultural Research (SCAR AKIS SWG) and EIP-Agri similarly emphasise the importance of 'interactive innovation', whereby innovation is conceptualised as a social process involving a range of actors (EU SCAR 2015).

Garforth et al. (2003: 324) argue that "an almost universal finding from studies of farmers' sources of information and influence is that 'other farmers' are their most frequently reported source". Recent research has emphasised that both knowledge gained through experience and exchange with peers and scientific knowledge are important for achieving sustainability in agricultural systems (Curry and Kirwan 2014, Labarthe and Laurent 2013, Tovey 2008). Innovation and up-take of new farming technologies or practices are widely accepted as resulting from iterative engagement in non-linear **knowledge networks** or systems². In line

² The concept of 'LINSAs' (Learning and Innovation Networks for Sustainable Agriculture) is a typical example. It was developed in the FP7 SOLINSA project as an alternative to traditional understandings of AKIS, specifically as a means to understand transition pathways towards 'alternative' agricultural approaches, likely to be more sustainable (such as organic farming). In SOLINSA, LINSAs were defined as "networks of farmers, food producers, consumers, NGOs, experts and local administrations, looking for alternative ways to produce food and contribute to rural sustainable development" (Ingram et al. 2013). LINSAs primarily develop outside of the traditional AKIS, and develop organically on the basis of perceived need, typically starting with informal collaboration between individuals, and becoming more formalised through time. The identified networks are explicitly goal-oriented in terms of increasing the sustainability of agriculture. Processes of social learning (learning in specific contexts, including tacit knowledge) and innovation are key. Within the LINSAs conceptualisation, knowledge exchange and co-production are understood as leading to innovation up-take and development.

with this, recent literature emphasises the importance of advisors as facilitators of knowledge exchange within these systems (Österle et al. 2016, Cristavao et al. 2012).

Numerous studies have also shown the role of geographical proximity and the importance of **spatial relations** in the process of information and knowledge transfer, and in the diffusion of innovations (e.g. Audretsch and Feldman 2004, Boshma and Frenken 2011, Capello 2014). DiMaggio and Powell (1983) point to a phenomenon of "institutional isomorphism" which refers to a convergence and homogenisation of actors' behaviours in the same sector or territory. This reflects **localised rules and norms** and the spatial characteristics of the region. Geographical proximity effects are thus particularly strong within sectors. Social networks may also be lodged in particular spaces.

2.2 Combining infrastructural and process perspective on farmers' microAKIS

AgriLink will focus on decisions made by farmers in relation to adoption or non-adoption of specific innovations (technologies or methods) in selected innovation areas. We will focus particularly on the assembly of information from a range of sources (the 'microAKIS' each farmer/decision-maker assembles in the process of adoption or non-adoption). AgriLink will integrate the spatial dimension by grounding the empirical analysis of microAKIS in 26 focus regions. Klerkx et al. (2012) differentiate between two types of AKIS assessment: process and infrastructure. The infrastructural approach focuses on the innovation support infrastructure, essentially a static image of the actors (e.g. advisory services, research institutions) and infrastructure (rules, regulations and physical infrastructure) which directly influence innovation outcomes. This approach was evident in the FP7 PRO AKIS project, which conducted an inventory of advisory service providers across Europe. Process approaches, in turn, emphasise the interactive development of technology, practices, markets and institutions. AKIS is seen as largely self-organising and focused around achieving a particular end (Klerkx et al. 2012). The FP7 SOLINSA project utilised this approach, focusing on the processes involved in LINSA activities.

Therefore, the **infrastructures of microAKIS** encompass the sources of knowledge on which farmers draw to make decisions on the adoption, implementation or non-adoption of a particular innovation. These sources are thus specific to social groups of farmers (or farm decision-making bodies) and to their contexts. The infrastructural dimension of microAKIS thus also includes the characteristics of the farm, farmer and Regional Farm Advisory Systems (R-FAS). These include development goals of the farmers, available labour, farming technologies, skills, communication technologies, land capability and available advisory services of various forms (e.g. fee for service, public/private). As such, the infrastructures of microAKIS details the capability of the farm and farmer, and the available resources, particularly as they relate to information access and knowledge exchange.

The **process within microAKIS** addresses the interactions that occur over a period of time in which the farmer considers developing, taking up or rejecting an innovation. These processes include the active consideration of options, consultations with household members, business partners and/or staff, interactions with peers and advisors, and the facilitative role played by technologies (e.g. mobile phones, internet access) in mediating these relationships.

Our concept of microAKIS aims at bridging the process and infrastructural view in farmers' decision-making regarding innovation appropriation. It enables to better understand the role of farm advice in both the process within microAKIS and in the infrastructures of microAKIS.

2.3 Where do advisory services fit in the microAKIS concept?

Agricultural innovations, particularly those innovations leading towards more sustainable agriculture, are increasingly seen as emerging in and best advanced by multi-actor learning networks where different stakeholders with their various kinds of knowledge meet and negotiate and institutionalise new meanings and new farming practices (Šūmane et al. 2017, Moschitz et al. 2015, Wood et al. 2014, Oreszczyn et al. 2010, Knickel et al. 2009).

Knowledge or learning networks make explicit the interactive and participatory character of knowledge generation and innovation, with all the stakeholders, including the farmers, being active partners and knowledge co-producers. In order to reach different stakeholders' mutual understanding and learning, and enhance the generation of innovation, the interactions between and within these groups of actors need to be facilitated. Knowledge brokerage or intermediary activities to reduce the knowledge gap is key in enabling multi-actor learning networks and in integrating various knowledge cultures (Tisenkopfs et al. 2015). While all actors potentially can become knowledge brokers, it is expected that agricultural advisors take a central mediator role and facilitate connections and knowledge exchange among various stakeholders for joint learning.

Even though the debate about the new functions (brokering, facilitating) expected from advisory services to support open innovation is a key debate, one may argue that other functions of farm advice are still needed when one does not focus on pioneers only. More traditional face-to-face advice or animation of farmers' ring might be very useful for late adopters, or for farmers whose farms do not fit the conventional model and who may need direct support for the appropriation of innovation. Extension and access to scientific evidence might also be very relevant for farmers who want to weight the potential positive and adverse effects of an innovation before adopting it.

In more general terms, AgriLink will enable to produce new empirically grounded knowledge about the methods used by advisory organisations at different stages of assisting farmers' decision-making, including the development of a typology of these activities. The seminal work of Leeuwis and van den Ban (2004) is a valuable starting point in that respect.

Another key question is then about who can play these different advisory roles for different groups of farmers. This question is all the more important in a context where the supply of services is becoming complex, with a diversification of suppliers, a multiplication of information channels, and some new forms of competition, partnerships or even hybridisation between actors. In other words, a challenge for AgriLink is to improve understanding of advisory systems at a time when the supply of services tends to be more and more pluralist and when AKIS is becoming decentralised or even fragmented (Knierim et al. 2015, 2017).

Within AgriLink, we will try to apprehend this complex landscape of advisory services with the concept of Regional Farm Advisory Services (R-FAS). R-FAS are part of the broader AKIS. We will identify the membership of the R-FAS in part by integrating the microAKIS identified by farmers, but also by interviewing established AKIS members. These actors do not necessarily need to be located in the region; through internet and other sources, farmers can readily access information from outside their regions. AgriLink will embrace a holistic approach as described above by proposing i) typologies³ of key actors involved in advisory systems (and their relative strength in the system); ii) soft description of the evolution of the boundaries of the advisory systems.

The R-FAS can thus largely be considered as an infrastructural view on regional AKIS – they are the sum of the different sources of advice available to farmers in a specific region, but also the linkages between these actors. The systems approach, as well as institutional analysis, are useful for understanding how the different advisory services within the broader AKIS interact. They allow for the systematic identification of different actors and how they

³ AgriLink's typology of advisory organisations will be based on the concept of Knowledge Intensive and Business Services (KIBS). KIBS are organisations (Gallouj 2010, Miles et al.1995) "whose primary value-added activities consist of the accumulation, creation, or dissemination of knowledge for the purpose of developing a customised service or product solution to satisfy the client's needs" (Bettencourt et al. 2002: 100). Different authors have developed, based on empirical studies, some original typologies of organisation and innovation in services, including KIBS (Gallouj and Savona 2009, Hipp and Grupp 2005). A key dimension in these typologies relies in providers' conceptions of where the customer fits in the service delivery, both in the relational dimension of the activity (front-office) and in the investments for knowledge updating (back-office). It often leads to typologies differentiating technological KIBS organisations (based on industrial models of diffusion of services based on ICTs) from professional ones (based on relational models supported by the specific competences of advisors). Members of AgriLink's consortium have started to adapt such frameworks to the agricultural sector (Labarthe et al. 2013, Prager et al. 2016).

contribute to linking farmers with their innovation environment. AgriLink will build on the literature about knowledge brokering and knowledge intensive and business services (KIBS) to identify the range of approaches that are currently being undertaken by R-FAS, particularly in relation to microAKIS formation, and how these can be understood in practical and conceptual terms.

AgriLink will seek to better understand how some characteristics of the R-FAS system (types of advisory organisations within these systems, linkages between them, brokering methods, etc.) play in farmers' decision-making processes. This will enable to understand what the reciprocal effects are between farmers' microAKIS and R-FAS. Are there some discrepancies (e.g. service gaps for certain groups of farmers)? Can we observe some lock out effects (e.g. farmers' microAKIS or advisors who contribute to unlock farmers' sources of knowledge regarding a given innovation area?). In summary, AgriLink will contribute to provide insights on the relations between demand and supply for advisory services in diverse innovation areas (from technological to organisational innovation areas), and in diverse regional contexts. The multi-level perspective of the project will allow to better understanding what drive the best-fit (or discrepancies) of R-FAS with regards to farmers' needs for services. We foresee three types of results emerging from the comparison of cases across regions or innovation areas:

- i) Highlighting "good stories": AgriLink will enable to describe cases and contexts where advice was successful. This would feed the debate about the best-fit of advisory services (Birner et al. 2009);
- ii) Identifying "Gaps": AgriLink will enable to identify some missing elements within R-FAS, for instance the fact that farmers may lack support at certain stages of the decision process (e.g. such as assessing the positive and negative effects of an innovation?), or the fact that this lack of services specifically affect certain categories of farmers. This will feed the debate about the effects of the transformation of farm advice on farmers' access to services (Labarthe and Laurent 2013) and on the quality of services (Prager et al. 2006);
- iii) Revealing "Surprise": The diversity of cases explored in AgriLink may produce some unexpected results, revealing the role that new actors (start-ups? NGOs? independent consultants? Etc.) may play or not at different stages of the decision process. This will feed the debate about the consequences of the increasing pluralism of advisory services (Garforth et al. 2003, Knierim et al. 2017).

Conclusion

AgriLink will advance knowledge of AKIS in the following ways:

- Assessing the role of advisors at different points in the triggering change process (e.g. acting and responding to triggers, enabling active information seeking, providing support during implementation of new innovations)
- Empirically testing the concept of 'microAKIS'
- describe the new forms of organisations and business models of advisory services (drawing on literature on Knowledge Intensive Business services) – the infrastructural approach
- assess the new models of advisory service provision (e.g. brokering and boundary work)
- developing the multi-level perspective for identifying linkages between these levels

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