Situating demonstrations within contemporary agricultural advisory contexts: analysis of demonstration programmes in Europe

Purpose

The paper aims to examine interactions between demonstrations at programme level and Agricultural Advisory Services (AAS). It situates analysis of the demonstration programme activities within contemporary advisory contexts, asking: how do demonstration programmes interact with the AAS in which they are situated; and what role do demonstration programmes play in enhancing and contributing to the AAS?

Methodological approach

Data pertaining to organisational arrangements was collected using interviews and workshops representing 35 demonstration programmes across Europe. Themes from the literature together with emergent themes were used to progressively unpack and understand the interaction between the programmes and the AAS.

Findings

Demonstration organisational arrangements show different degrees of embedding in, and adapting to, the AAS. Embedding is being incorporated into existing formalised structures and is more likely in the AAS with a low level of pluralism. Adaptation occurs through collaboration, partnership and networking and is more likely in more pluralistic AAS.

Practical Implications

The need to support demonstration programmes to create more stable networks, to strengthen their linking role in the AAS, and to foster strategies for the progression of farmers' learning was identified.

Theoretical implications

The paper contributes to the literature by providing insights at the demonstration programme level (as opposed to farm or event level) and revealing embedded and adaptive processes with many interdependencies between the programmes and AAS components.

Originality

This paper opens up new perspectives on understanding how demonstrations are positioned in contemporary AAS contexts, looking at AAS influences on delivering demonstrations beyond farm and event level methods.

Keywords: demonstration, Agricultural Advisory Services, Agricultural Knowledge and Innovation System

Paper Type: research

Situating demonstrations within contemporary agricultural advisory system contexts: analysis of demonstration programmes across Europe

1.Introduction

Changing societal and policy demands, increasingly globalised and integrated food systems, volatile costs and markets, changing farm structure and farm demographics and technological innovations and ICT advancements have brought a shift in Agricultural Knowledge and Innovation Systems (AKIS)[1]. Commensurate with this, agricultural advisory services (AAS)[2], a core component of the AKIS, have evolved through different stages in their focus, approach, and channels of delivery (Rivera and Sulaiman 2009; Faure, Desjeux, and Gasselin 2012). In Europe increasing decentralisation and privatisation in AAS has resulted in considerable diversity between, and pluralism within, countries (Knierim et al. 2015). In line with this our understanding and agricultural innovation context has shifted from a strongly hierarchical pattern premised on adoption as a top-down linear process to a more network-like structure (Klerkx, Aarts, and Leeuwis 2010). Throughout these changes farm demonstrations have proved to be one of more enduring mechanisms for advice and facilitating innovation. Demonstration farms have a long tradition in Europe and, although subject to limitations (Šťastná et al. 2019; Burton 2019), have evolved into a useful means for communication,

[1] AKIS is a system that links people and organisations to promote mutual learning, to generate, share, and utilize agriculture-related technology, knowledge, and information. The system may include actors such as farmers, farm workers, agricultural educators, researchers, non-academic experts, public and independent private advisors, supply chain actors, and other actors in the agricultural sector.

[2] The term Agricultural Advisory Services encompasses the entire set of institutions and the actors involved in the advisory activity institutions that support and facilitate people engaged in agricultural production to solve problems and obtain information, skills, and technologies to improve their livelihoods and well-being (adapted from Birner et al, 2009).

delivering messages, discussing problems and testing solutions with local farmers on working farms (Bailey et al. 2006; Angell 2004; Crawford et al. 2007).

Given the transformations, it is timely to reappraise the role of demonstrations in the complex advisory landscape in which they are situated. Firstly, new actors, structures, networks, demands and contexts call for a renewed understanding of how demonstrations are organised, coordinated and delivered in the context of the AAS. The impacts of privatisation and fragmentation of AAS on the effectiveness of different advisory methods has been widely studied (Feder, Birner, and Anderson 2011), but with a tendency to focus on the farm level and not so much on the institutional and organisational characteristics (governance or back office) (Labarthe and Laurent 2013a; Nettle et al. 2017; OECD 2015). Secondly, it is also important to consider what role demonstrations play in terms of supporting and consolidating learning in this dynamic and increasingly demand-led AAS context. This is important given that privatisation can potentially result in barriers to farmer to farmer networking (Rivera 2008), and narrow down farmers' choices (Birner et al. 2009).

Previous research has evaluated the effectiveness and efficiency of demonstration delivery models according to: the benefits they bring to farmers (Bailey et al. 2006; Kania and Kielbasa 2015); the nature and extent of participation, facilitation and learning (ADAS 2008; Kiptot et al. 2016); participant motivation and recruitment; the mechanisms and tools that are being used in demonstration activities (La Grange et al. 2010); access, power relationships and parity between hosts and participants (Taylor and Bhasme; 2018), social and cultural interactions at play (Taylor and Bhasme; 2018), and peer to peer learning (Kania and Kielbasa 2015). These have improved our understanding of how to deliver effective demonstration activities at farm

and event level, however the organisational environment that enables such activities has been neglected.

This paper situates analysis of the organisation of demonstration activities within contemporary advisory contexts by examining demonstration programme relations with the AAS. Specifically it asks: how do demonstration programmes interact with the AAS in which they are situated; and what role do demonstration programmes play in enhancing and contributing to the AAS?

The paper addresses these questions drawing on analysis of data collected from respondents in 35 case studies of demonstration programmes studied within the Agridemo Farmer to Farmer (F2F) project[3]. This project, funded from the European Union's Horizon 2020, aimed to enhance peer-to-peer learning within the farming community across Europe. Case studies were selected for wide-spread geo-graphical coverage, representative for EU-agricultural sectors, systems and territories and low-tech versus high-tech in mediation techniques to perform an in-depth comparative analysis (see also Marchand et al. 2021) (Table 1).

2. Concepts

2.1 Demonstration programmes

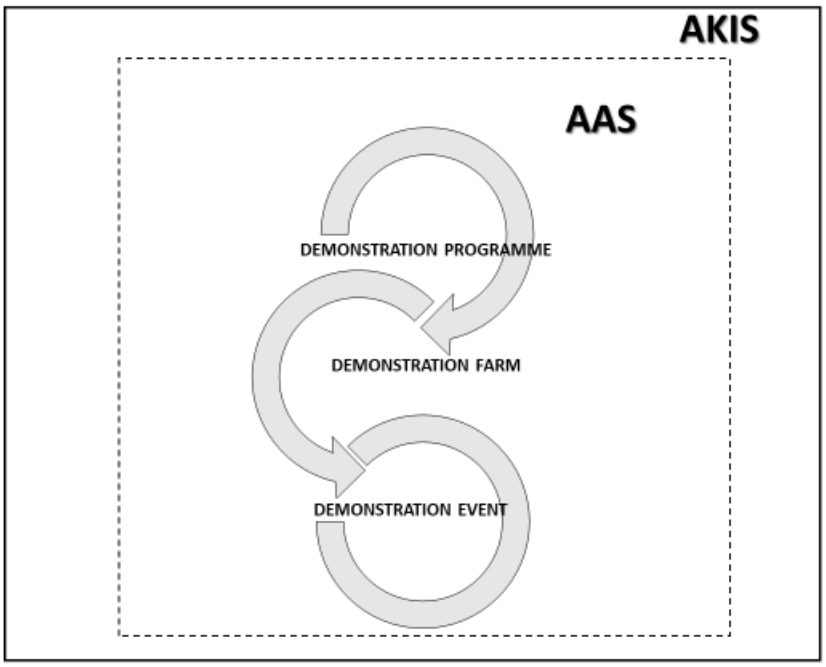
Demonstrations are an advisory method that lies at the heart of agricultural advisory services and AKIS. They comprise many different activities including: scientific application or trials run by research institutes (and commercial companies); teaching farmers and students agricultural methods; monitor farms where farmers meet regularly to follow a technological or business idea; and facilitated farmer-led groups who experiment in more informal ways (Creaney, McKee, and Prager 2015). As such they can lend themselves to all three main

[3] https://agridemo-h2020.eu/the-project/

advisory approaches: technology transfer, advice and learning facilitation (Faure et al. 2012), although over the years, increasing emphasis has been placed on providing insights into on-farm risk management and adaptations (Crawford et al. 2007), and on experience-based learning as a means of promoting innovation uptake at demonstrations (Bailey et al. 2006).

The Agridemo project distinguished three levels of activities (programme, farm, event)[4] (Ingram et al. 2018; Koutsouris et al. 2017) for analysis. Figure 1 shows abstractly how these are positioned within the AAS, and wider AKIS. Viewing demonstration programmes as part of multi-faceted AAS and AKIS opens up new perspectives for analysis.

Fig 1 Demonstration event, farm and programme level activities in the AAS and AKIS context



[4] Demonstration activities provide knowledge with the objective of improving their production, income and (by implication) quality of life. Demonstration farms are defined as meeting places where dissemination of knowledge and information is taking place, advice is provided, solutions and tools are designed and implemented as well as controlled, and on-the-farm research is conducted (Kiełbasa and Kania, 2015). Demonstration events operationalise these activities in group settings.

This paper focuses on the programme level activities. As with other delivery mechanisms in the AAS, there is no uniform demonstration programme. They equate to initiatives that address different objectives and are funded, initiated and delivered by multiple actors using different arrangements. This reflects, not only the extent of diversity and pluralism in AAS, but also the processes of networking and interactive learning among the heterogeneous set of actors involved who contribute to innovation and learning in the AAS and wider AKIS (Hall, Mytelka, and Oyelaran-Oyeyinka 2006).

Here we use the term programme loosely to describe a form of organisation of demonstration activities. Programmes can range from more established ongoing series of coordinated activities to loose networks of actors delivering one-off events. Formal programme types have been described (monitor farms, model farms, demonstration farm networks), although there is blurring in the conceptual distinction between them, according to ADAS (2008), whilst others regard demonstrations as open structures accommodating many different sorts of actors and networks (Bailey et al., 2006). Furthermore, the range of participatory approaches now operating in Europe that involve some group demonstration activity means we cannot be too prescriptive in terms of defining the demonstration programme concept.

2.2 Demonstrations interacting with Agricultural Advisory Services

European AAS are characterised by a diversity of individual and collective actors, organisational forms, methods and institutional structures (OECD 2015; Knierim et al. 2015). These comprise a mix of ‘public’, ‘private’ and ‘semi-public or civil-society’ spheres, which utilise different funding sources, are based in various societal sectors, and operate at distinct governance levels (Feder, Birner, and Anderson 2011). The term “pluralistic” is used to capture the emerging diversity of institutional options in providing and financing agricultural advisory

services (Birner et al 2009). It is important to understand how the case study demonstration programmes are situated within this context.

Firstly, the question of how demonstration programmes are positioned within different AAS and how this affects the nature of demonstration delivery is of interest. Demonstrations, in Europe and internationally, have traditionally been associated with more centralised and publicly supported AAS (Strasna et al., 2019). However, transformation in the AAS has brought organisational heterogeneity resulting in a diminishing importance of classical, well-established interactions and ways of communication. The central organisational role of government agencies in AAS have become much reduced and coordinating authorities dismantled (Labarthe and Laurent 2013b), while the coordination and governance of AAS particularly in the context of pluralistic advisory systems[5] is considered to be weakened (Nettle et al. 2017; Knierim et al. 2015). Increased client orientation associated with market-led and demand-driven perspectives, fragmentation and greater adviser diversity in pluralistic systems is also known to create barriers for some farmers in accessing advice (Klerkx and Proctor 2013). Little is known about the implications of these changes for demonstration organisations and programmes.

There is some suggestion that more a fragmented AAS is less likely to support coordinated demonstration programmes thereby contributing to weaknesses in knowledge transfer and market failure (ADAS, 2008). However, there is also evidence that demonstration programmes can adapt and thrive in such contexts by exploiting informal social networks and utilising local

[5] Pluralistic advisory services refer to the variety of service providers that have emerged in recent years, including public–private partnerships and outsourcing to the private sector and nongovernmental organisations (NGOs)

contacts which do not rely on formal linkages (Franzel et al. 2015; Creaney, McKee, and Prager 2015). This is in line with the perceived ability of pluralistic advisory services to overcome constraints (shortages in funding, staffing etc), through flexibility, tailoring, greater stakeholder involvement and the use of partnerships and other types of collaboration between players (Birner et al 2009; Knierim et al., 2015).

Secondly regarding the question of how demonstration programmes can contribute to the national AAS and what role they play. Demonstration activities are seen to play a supporting role in the wider advice landscape and not an activity for their own sake. Research has revealed links between programmes and existing knowledge and advisory services (Prager, Creaney, and Lorenzo-Arribas 2017). These links can be mediated through programme organisers, host farmers and activity level facilitators, many of whom are agricultural advisers. Demonstrations play multiple roles, they can act as nexus points in the flow of information and practices, and can help to engage, inform and inspire land managers. Demonstration activities may also contribute to network building in agriculture communities, leading to longer term sustainability and economic development in rural areas (Taylor and Bhasme 2018). Furthermore, the effectiveness of demonstration activities can be enhanced if participants themselves are part of a larger network. Coordination of demonstration programmes with respect to other advisory approaches is therefore important.

Given these different interactions, disentangling the role that organisational arrangements are playing in the relationship between AAS and demonstrations can provide insights for the delivery of demonstration programmes as well as the wider AAS. Put simply we can ask: how are demonstration organisations shaped by the AAS, and in turn, how do demonstration organisations shape the AAS?

In positioning an analysis of demonstration programmes in the AAS, it is important to consider AAS services as part of the wider systems in which knowledge and innovations are generated, disseminated, and utilized in the agricultural sector, specifically the AKIS (Birner et al., 2009). AAS as key components of the AKIS represent important mediating structures, and are positioned in debates about the problems or benefits associated with the fragmentation of the system.

3. Methodological approach

Previous research has focused on evaluation of AAS effectiveness assessing key components and indicators which interact and explain performance: such as the governance structure, capacities of advisory service providers, and methods by which advice is provided (Prager, Creaney, and Lorenzo-Arribas 2017; Birner et al. 2009; Faure, Desjeux, and Gasselin 2012). Others have applied methodologies for analysing AIS with respect to innovation capacity, (Schut et al. 2015), impact (Hall et al. 2003), and structure and function (Lamprinopoulou et al., 2014). This resarch does not aim to conduct an evalution of the AAS but to explore the proceses of interaction between the demonstration programmes and the AAS. As such, rather than applying a prescriptive framework with pre-determined indicators, an analytical guide for data collection was developed, directed by themes identified in the literature as important with respect to the two research questions (Table 2). These themes are indicative and were refined as the analysis progressed

For the first research question, three main themes were identified as relevant and were used to shape the interview questions. These were, firstly: the programme characteristics and organisational arrangements (actors, networks and structures) and types (public, private, farmer-organisation, NGO) for delivering the programme (Prager, Creaney, and Lorenzo-

Arribas 2017), as well as the dominant national AAS orientation (extent of pluralism). Secondly, the nature of the interaction between programmes, their organisations and existing knowledge and advisory services, the extent of incorporation of programmes into existing structures, and the extent of collaboration, partnerships and networking[6] with AAS were identified as important (Rivera 2008; ADAS 2008). Thirdly, governance characteristics, which refer to the institutional options available for financing, relationships between partners and decision making processes, and the level of coordination were identified (Birner et al. 2009; Schultz et al. 2015). Farmer representation and internal coherence and governance of demonstration programmes which aim to empower farmers' engagement and influence interaction have been noted as important (Breetz et al. 2005). Whilst the first theme describes organisations, the latter two aim to capture the institutional context which governs the relationship between the different actors and the factors that affect their relationships (Hall et al. 2003) (Table 2).

Table 2 Key themes framing data collection

How do demonstration programmes interact with the AAS in which they are situated? How does the AAS shape demonstration progarmmes? Relevant themes	
Literature	**Themes explored in interviews and workshops**
Creaney et al. (2015); Knierim et al. (2015); Prager et al. (2017)	Organisational arrangements for coordinating, managing, delivering demonstration programmes • Programme description and objectives (focus, topic, target audience); sector; scale (geographic/temporal) • Organisation delivering the progarmme (public, private, farmer-organisation, NGO), actors (and their roles), networks and structures • Dominant AAS in the country- extent of pluralism
Rivera (2008); ADAS (2008); Strasna et al. (2019); Bailey et al. (2006)	Nature of interaction with existing AAS actors, networks and structures • Extent of incorporation of demonstration programmes into existing AAS structures. • Extent of collaboration, partnership and networking with AAS
Birner et al (2009); Schultz et al. (2015); Breetz et al (2005)	Governance characteristics • Funding arrangements • Farmer representation in programme • Accountbaility, lifespan monitoring and feedback processes

[6] Collaboration is the process of collectively creating something new that could not have been created by the individual users; and networking describes the multi-layered interactions between actors, groups and institutions.

What role do demonstration programmes play in enhancing and contributing to the AAS? How do demonstration programmes shape the AAS? Relevant themes	
ADAS (2008)	Demonstrations contributing to linkage in the AAS • Programme goals • Programme organisers and host farmers can be mediators/anexus
Prager et al. (2017)	Demonstrations contributing to a strategy of learning • Continue to engage participants after the demonstrations • Degree of penetration, extent of influence (diffusion) from demonstration programme

For the second research question, two interlinked themes were explored. First, the role demonstrations can play in linking the AAS and addressing fragmentation as research has shown that links can be mediated through programme organisers and host farmers (ADAS 2008). The second theme explores how demonstrations contribute to a wider strategy of learning in the AAS, since, for example, the degree of penetration of the programme, is known to be important and higher in more established programmes (Prager, Creaney, and Lorenzo-Arribas 2017).

These themes guided the data collection in interviews and workshops, specifically they were used to design open interview questions, supplemented with closed questions to assess engagement and degree of penetration, and workshop questions (Table 3).

Table 3 Example interview and workshop questions

Example Interview questions
What are the programme's objectives?
What are organisational arrangements and governance structures? How is the programme managed? How is it coordinated?
Who are the actors involved and what are their roles?
What are the funding arrangements for your programme? In particular, how do these impact on the lifespan of the programme?
To what extent is the programme connected to other programmes or networks in your country or even internationally?
What is the connection between the programme and other knowledge exchange organisations (e.g. NGOs, agronomists, commercial organisations) and networks? How is this fostered/managed?
Do you try to assess the extent of influence (diffusion) from your demonstration programme(s) to non-participants (those who have not attended demonstration events)? Closed: Y/N
Do you – at the programme level – continue to engage participants after the demonstrations? Closed Y/N
Are farmers involved in decision making? What continuous structures are in place for this? How do you identify/select relevant topics that will interest farmers?

Example Workshop questions
How does the demonstration arrangement fit into the AAS/AKIS? What are the main linkages and influences?
How important are demonstrations compared to other advisory services? Who are the key players?

This analysis draws on interview and workshop data from 35 case studies (CS) (programmes) across 12 European countries. The process of CS selection primarily aimed to achieve a range of demonstration activity types (programme, farm and event) commensurate with the methodology criteria of the Agridemo project . The CS represent different organisational arrangements (actors, structures) and production and public-good oriented objectives. The lead organisations of CS demonstration programmes were categorised as follows: farmer organisations (8), private/public extension or advisory service (11), NGOs (6), research institutes and projects (8), and individual farmers (2). The CS programmes run demonstrations as the means of: consolidating an advisory programme; experimenting, sharing and monitoring progress in a network or group (e.g Monitor farm); disseminating research trials or project outputs; or reaching a wide range of farmers and customers. Thus, they interact with and contribute to, all elements of the AAS. Most (24) of the CS programmes run demonstrations in a series or yearly while the rest (11) organise one-off activities. The countries represented by the CS also cover the range of AAS orientations, from those dominated by public or farmer organisations to more pluralistic AAS with multiple, diverse providers. Due to the specifications of the project, commercial organisation demonstration programmes (machinery firms, seed companies) were not included as CS. Table 1 lists selected example CS referred to in this analysis.

Semi-structured interviews were undertaken with 37 programme level interviewees (PLI) (and 27 farm level interviewees). CS partners in each country identified the key programme (organisation) actors for interviews. These included demonstration programme managers, deliverers and facilitators who were mainly advisers of different status. Interviews were

recorded and fully transcribed and analysis of all interview transcripts was conducted with NVIVO which confirmed and identified a number of additional themes in relation to the research questions.

Following the interview analysis, participatory workshops (10) were held in selected countries or groups of countries with a range of CS programme (demonstration organisers, facilitators, deliverers) and farmer host participants (10-20) invited by the project partners. These aimed to validate interview findings and explore further the demonstration programmes interaction with the AAS, specifically the demonstration's position and relationships in the AAS, and wider AKIS (Table 2), using small group and plenary discussion applying Actor Linkage Matrix (ALM) and AKIS mapping exercises Workshop discussions were recorded and summarised in reports prepared for each country. These were manually coded and analysis looked for further emerging themes and patterns regarding the two key questions this paper is addressing.
All methods and data are reported in the country case study reports[7].

The approach combined deductive and inductive analysis. Interview questions were guided by the themes identified in the literature (Table 2). Through interview analysis, new themes were revealed inductively. All themes were validated and extended in workshop settings and workshop reports were presented to programme organisers for feedback. In this way research guided by the themes identified from AAS thinking (Table 2) was iteratively woven together with new evidence. As the data continued to feed the initial lines of inquiry, the nature of the interaction between the CS and the ASS was progressively unpacked and the significance of

[7] https://agridemo-h2020.eu/case-study-reports-structural-characteristics-functional-characteristics-and-effectiveness/

the AAS orientation (extent of pluralism) became apparent, and this provides the overarching framework for the results.

4. Results

The CS analysis reveals a multiplicity of demonstration organisational arrangements and their interactions with AAS. These are discussed in the next two sections.

4.1 Interactions between demonstration programmes and the AAS

The nature of interaction between the demonstration programmes and the AAS is largely determined by orientation **(**extent of ASS pluralism)[8] of the national AAS and this frames the presentation of the results in the following sub-sections.

4.1.1 Demonstration programmes integrated into AAS with low pluralism

In countries which retain a strong public presence in the AAS (Ireland, Wales, Poland) or where an established Farmer Organisation dominates like the Chambers of Agriculture (CoA) in France and Austria, CS demonstration programmes are more likely to be integrated into existing formalised structures and networks at many spatial levels.

Programme characteristics and organisational arrangements

Formal, established demonstration programmes with some level of coordination are a characteristic of CS in these AAS. These are typically delivered by the dominant AAS actors such as public advisory services and CoA, in line with their wider objectives. For example, in Ireland (Teagasc) and Poland, the countrywide public agricultural advisory services are the main delivery organisations for the three CS examined, operating through 16 regional

[8] This is envisaged as a spectrum rather than a typology. It is recognised that this is simplistic and cannot capture the full complexity of arrangements, also that there other criteria that could be use (e.g Knierim et al's (2015) weak and strong, and fragmented and integrated axes), however it is useful for structuring the results and analysis.

agricultural advisory centres in the case of Poland. These CS demonstration programmes tend to be well established and often long-term, for example, in Wales the CS is a seven year programme, and Ireland the farm walk programme (IR1) organised each year in 12 farms is part of the Teagasc's organic programme and has been running for 14 years.

Nature of interaction with agricultural advisory services

Interaction is characterised by programme integration into highly coordinated and hierarchical systems. In Ireland, Teagasc was described by workshop participants as "centrally located in the AAS". The CS demonstration programmes it delivers, all benefit from the organisation's integrated (research, advice and farming) structure. In the Austrian CS the interview respondents highlighted the importance of incorporating demonstration programmes into existing networks of the CoA which integrates advisory services with public administrative, educational and training functions at both national and federal state levels together with Austria's advisory board for agricultural engineering, the research institutes and the nine institutes for rural training. In Poland a system of demonstration activities is coordinated at regional, local and event levels, with a multiannual plan of cooperation of national institutes, farmers' organisations and the public AAS. The local agricultural advisors play a crucial role in facilitating development of demonstration farms in Poland. The CS programmes sit within hierarchical structures linked to research institutes, pilot and experimental farms, as well as training centres for farmers. Respondents here emphasised the close working relationship between farmers, research institutes and public advisory services and the value of long-term personal relationships in running the CS programmes. However respondents noted the lack of national coordinating instruments in Poland (i.e. no existing data base on planned schedule of event in demonstration farms) which were felt to heavily limit the full potential of the demonstration farm system as part of the national AKIS policy.

Demonstration programmes delivered by CoA in France also benefit from being integrated into the multi-level hierarchical national and regional structures, with associated departments and actors; and good connections to research institutes and commercial actors. CoA's long experience and good networks with, and accountability to, the farming industry, allows the CS demonstration programmes to make vertical and horizontal connections with multiple national and local networks for both promoting the demonstration and disseminating demonstration trial results more widely. Referring to CS Innov'Action (FR1) where there are regional and local advisers coordinating demonstration programmes, one respondent highlighted the value of continuity in the organisation, saying "the chambers rely a lot on their own accumulated work and knowledge from the field" (PLI2). Demonstration programmes that are centrally located in the AAS like this can leverage other AAS actors and mechanisms to extend their reach and impact.

Governance

The institutional arrangements for funding are more established for CS demonstration programmes in countries with AAS with strong public and CoA presence, enabling access to public regional, national or EU funds. For example, the Welsh government uses EU RDP funds to support the national Farming Connect programme which delivers its demonstration network. However, funding strategies can be complex, in France, although supported by the CoA, both Innov'Action (FR1) and the Experimental Vegetable Farm (FR2) need to use multiple public funding envelopes (taxes, research program communication and local authority funding), as well as submit research proposals to other funders to secure funds for some activities. In Poland, although, demonstration farms are one of the key instruments for informing farmers on new solutions and practices from research, respondents at the workshop reported that there are limited funds for research institutes to carry out demonstration activities. They agreed that funding as "an absolutely fundamental precondition" of any effective and systematic inclusion

of demonstration farms in a national AKIS plan. They also observed that the absence of such funding leads to a situation where the whole system relies, to a large extent, on an individual farmer's involvement in carrying out demonstration activities.

There are a number of different governance mechanisms (advisory boards, concept plans, action plans, steering committees, grower panels etc) used in bringing together and consulting actors involved in the demonstration programmes (farmer representatives, facilitators, hosts) about objectives, strategy and future plans. These tend to change with the level or scale of activity, to ensure that the programmes consider different territorial contexts.

In AAS systems with more public/farmer organisation support, the capacity to build and sustain mechanisms for engaging farmers in decision making processes is greater. In France, for example, typically the CS programme level governance arrangements deal with identifying priorities and potential projects with elected members of the CoA, while those of the farm level activities are the responsibility of the host farm manager and CoA advisers. For Poland CS the National Centre for Practical Training (PL1) demonstration programme is managed through an advisory branch including a social council consisting of representatives of farmers, scientists, advisers. This enables the programme to be connected to other programmes, through the participation of advisers and farmers from different regions and farming sectors.

In Teagasc's farm walk programme (IR1) local advisers are involved in planning the walks and there are well established links to farmers, which allows mechanisms for farmer representation in the programme's governance. Furthermore, Teagasc's programmes need to be accountable to public funders so have monitoring and feedback processes in place which can bring about

improvements. These programmes show coherence of objectives with those of AAS, planning, and longevity of delivery is relatively strong.

Despite the advantages of demonstration programmes being incorporated into established institutional arrangements where funding is more likely to be secured and the programme long term, there were some drawbacks identified. An indirect consequence of continuity is that programmes and events become 'too familiar' to farmers and they did not value or engage with them, as reported for CS in Ireland and Wales. Topic selection can become strongly steered by policy makers, and in one case host farmer selection was subject to a number of top-down selection rules which prevented the more innovative farmers from being selected.

4.1.2 Demonstration programmes adapting to pluralistic AAS

For CS in countries where the level of public investment in AAS is low, there are no CoA, and services are characterised by privatisation and multiple, diverse providers (Netherlands, Denmark, Sweden, England)[9], demonstration organisations utilise varying collaborative and networking arrangements to deliver programmes.

Programme characteristics and organisational arrangements

There are few formal actors and structures involved in delivering demonstration programmes in any coordinated way associated with these AAS. For example, for the Danish CS, respondents said there is no specific programme for the overall coordination and organisation of demonstration events managed by ØRD (DK1) and LMO (DK2). They are run respectively by private advisory services for organic farmers and as a service for existing, or to new,

[9] It is recognised that plural AAS are not uniform, for example while Denmark is strong and integrated with a predominant farmer levy organisation (Seges), Netherlands is fragmented but strong.

customers. Overall commercial companies take a particularly active role and there is little evidence of permanent arrangements or longer term programmes, with CS events in these AAS more likely to be one-off. In the highly fragmented and uncoordinated AAS of Greece, there is little public support for, or coordination of, demonstrations and there is neither a national policy framework nor coordination mechanisms between existing AAS and AKIS actors. Commercial supply chain companies are very active in using demonstrations to promote their services and products.

Nature of interaction with agricultural advisory services

In the absence of formalised AAS structures, those running demonstration programmes turn to collaborative and partnering arrangements. For the CS in Greece, these arrangements not only seek to overcome the fragmented context but also the lack of relevant experience and culture within farming communities of attending demonstrations. The CS led by Hellenic Crop Protection Association (GR1) uses strategic partnering in its demonstration programme to overcome this, looking for local cooperation and co-organiser partners with a strong record of offering services to farmers and coordinating agri and rural development measures and programmes. Through levering this reputation and these long-standing relationships through partnering they "make use of their [the partners] deep knowledge and experience on the problems, constraints, needs and interests of local people" according to the CS programme leader (PLI2). Such collaboration builds on different strengths and relationships of the partners using their extensive and trusted networking in the farming community (farmers, corporations, local agronomists, agricultural services).

Other CS utilise informal networks to develop a programme. Organisers join and exploit arrangements to different extents to: optimise both the impact and reach of the demonstrations; ensure efficient use of resources and secure funding; and build on synergies in delivery and

access. Typically, when questioned about networks, CS respondents listed a large number of organisations they were linked to, for example, in Denmark the respondent for the private advisory organisations LMO (DK1) remarked "we join in the many industry networks…LMO keeps strong contacts and partnerships with supply chain companies, organic businesses, scientific programs, and other related organisations" (PLI1). The networks tend to be oriented towards similar or complementary organisations that can support them in achieving programme objectives, more often with one-off events. For example, the respondent (PL1) for the Odling In Balance (SW3) farm network in Sweden explained that they team up with other farmer organisations, the authorities, advisers and researchers, to allow them to meet their objectives. In another example the programme level respondent (PLI1) in the Belgian and Dutch programme that aims to accelerate the transition to agroforestry (BE1) remarked "as long as it fits in our own aim of accelerating the transition, we are open for everything". This is reflected in the ØRD CS (DK1) where a respondent (PLI2) remarked that they cooperate with any organisation that can "fit in its demonstrations", saying "when we make bigger events, we cooperate with whomever it makes sense to cooperate with".

Governance

Regarding access to funds and resources, this collaboration, partnering and networking is used to access funding. Mixed strategies are pursued with multiple funders, including public and private sector partnering and co-financing events supplemented by project funding, farmer self-funding and participant fees. A number of demonstration programmes rely on commercial sponsorship for running events. The Odling In Balance (SW3) CS in Sweden is funded by research and development projects and by the stakeholders linked to the network, but also applies for money from a financing institution or from organisations in the agronomic business that they collaborate with.

In these situations the CS are more reliant on commercial partners' sponsorship, short-term projects funding or farmers themselves to cover costs. According to respondents, this has implications: incurring transactions costs when seeking funds; introducing potential bias from involving commercial sponsors; being constrained by having to respond to pre-defined project topics; and relying on the commitment of individual farmers.

CS respondents in pluralistic AAS describe mechanisms for representing farmers' views and needs. The annual Strawberry demonstration day CS (NL3) in the Netherlands which is organised by the board of strawberry growers, supported by and linked to the privatised advisory organisation ZLTO, has a hierarchical governance structure which connects national, regional commissions and working groups. This structure allows them to be connected with each other; according to a ZLTO employee (PLI3) "there is a continuous connection with the growers in the local and national working groups" which allows them to engage participants after the demonstrations. Similarly, in Denmark the ØRD CS (DK1), a private organic advisory service, makes an action plan based on a demonstration idea or goal and involves farmers in the development of the overall programme through a professional group and multiple actors on the demonstration topic selection "in order to meet its audience interests" (PLI2).

In the Netherlands for the NL1 CS, the topic precision techniques in practice was "decided after long cooperation period between farmer and union" according to the interviewee (PLI2) who explained that they continue to engage with participants "from project to project and stay involved with the core people". Thus mechanisms for continued farmer involvement are not the sole territory of CS in more formalised advisory services, and are often oriented to target audience demands.

4.2 Demonstration programme contribution to agricultural advisory services

Respondents and workshop participants were asked about the role demonstrations can play in contributing to AAS, in two interconnected ways, firstly by linking actors in the AAS, and secondly by being part of a wider learning strategy.

Demonstrations contributing to linkage in the AAS

In relation to the demonstration programme goals, although the primary goals might be dissemination of trial results or uptake of a single technology, secondary goals were articulated which can be more far reaching. For example, for the National Centre for Practical Training in Poland (PL1) the main goal of the demonstration programme's activities is the presentation of technology developments, however the intention is also to improve the collaboration with research institutes and the advisory system as well as to improve transfer of knowledge and training advisers and farmers. For the CS Experimental Vegetable Farm in France (FR2), the first aim is to deliver to the producers the results of trials implemented but the second is to federate independent producers in Brittany who are isolated. Furthermore, respondents also talked about how soft objectives and goals need to be considered - such as empowering farmers by building social capital and networks, and building good links and personal relationships between farmers and advisory and research communities.

Part of a wider strategy for learning

Workshop participants emphasised the importance of demonstration programmes being part of a wider strategy for enhancing farmer learning. Those representing CS stakeholders from Denmark, Sweden and the UK (England and Wales) argued that it is important to follow-up with participants after demonstration events, either with more demonstrations or other

channels to consolidate messages. The UK workshop participants identified the important role of mentoring, coaching and peer support associated with demonstrations and recognised the value of a programme of progression as implemented by the Farming Connect CS in Wales, where farmers attend an open demonstration meeting, then if interested can progress on to a more focused closed demonstration meeting, and then a two-day master class at an innovation centre. This is in line with the suggestion at the workshops that one event is not enough, a series of events complemented with other channels are needed to build learning and ultimately bring about change, as well as to link to other AAS supporting actors.

Analysis of responses to the interview question "Do you, at the programme level, continue to engage participants after the demonstrations?" showed an average response level (42%) for all organisation categories, with farmer organisations (58%) and public/private advisory services (53%) more likely to engage afterwards compared to NGOs and research institutes. However, when questioned about follow up activities, these often involved a leaflet, direction to a website or occasionally a phone call, rather than any strategic post-event plan to build on demonstration learning. Furthermore with 11 of the 35 CS described as one-off events, and not part of a series or annual programme, this suggests limited opportunities for reinforcing learning. As the respondent for the CS annual growers' day organised by the Swedish cereal producers and seed and oil seed producers (SW1) said "events may be organised annually but there are no follow-up activities to reach out to participants after each event" (PLI2). Moreover, there do not seem to be many examples of formal evaluation processes installed, nor dissemination materials shared with participants, during or after these one-off events.

There was also minimal evaluation of the wider impacts of demonstration programmes. The percentage of interview respondents who answered yes to the question "Do you try to assess

the extent of influence (diffusion) from your demonstration programme(s) to non-participants (those who have not attended demonstration events)?" were Farmer Organisation (42%), public/private advisory services (18%), research organisation (17%) and NGOs (66%), suggesting that surprisingly advisory organisations have little consideration of the demonstration programme influencing a wider audience.

5. Discussion

5.1 Demonstration programmes interacting with AAS

Analysis of the CS demonstration programmes revealed diverse and complex organisational arrangements for coordinating, managing, delivering and funding demonstration programmes. These interact with the AAS in a number of ways and we can identify different degrees of embedding in, and adapting to, the AAS. Embedding is understood as being, or becoming, incorporated into existing formalised structures and working with related actors, and is more likely for CS in the AAS with a low level of pluralism. Adaptation occurs through collaboration, partnership and networking and is more likely in CS demonstration programmes in more pluralistic AAS. We acknowledge that, whilst this distinction between low and high pluralism provides a useful heuristic to frame the analysis, the AAS arrangements are often hybrid and that, even for publicly supported AAS, advisory activities are played out in the context of powerful commercial drivers (Lapierre, Sauquet, and Julie 2019).

CS demonstration programmes in AAS dominated by public agencies or farmer organisations are more likely to be embedded in formalised structures with integration into highly coordinated and hierarchical systems. Whilst this has the clear benefits of enabling access to resources and continuity of funding allowing longer term programmes, and tapping into

national, regional and local structures and institutions including research and adviser support, the less obvious benefits were revealed in the analysis as equally important. These include: building on accumulated knowledge; close working relationship between farmers, research institutes and public advisory services; ability to leverage other AAS and AKIS actors and mechanisms to extend reach and impact; the trust and recognition of farmers, and established governance mechanisms for farmer representation. However, some negative aspects also emerged, including more restrictive rules regarding topic and host selection which might constrain innovation and farmers' choice, something others have identified where public sector has a strongly hierarchical culture (Hall et al. 2003). Furthermore, there are examples of well supported and funded demonstration programmes being successful but having limited influence. This is illustrated in France where the publicly (government and CoA) supported réseau Dephy demonstration campaign failed to extend its reach to the farmers outside of the network, as these looked to powerful private upstream and downstream actors for services and demonstration (Lapierre, Sauquet, and Julie 2019; Guichard et al. 2017). These findings add depth to the guiding themes (Table 2).

In the context of more pluralistic AAS, CS demonstration programmes adapt by interactively utilising collaboration, partnerships and networks with private sector actors and NGOs. Through this, they become effective at working synergistically with other partners to create new programmes and achieve common goals, secure funds and economies of scale, tapping into different resources, and utilising local organisations' trusted relationships. A collaborative culture appears to have emerged which was not described for CS in more publicly supported AAS. Examples of strategic and repeated partnering are evident, as well as more informal networking which is opportunistic and multi-layered. The value of working with pre-existing

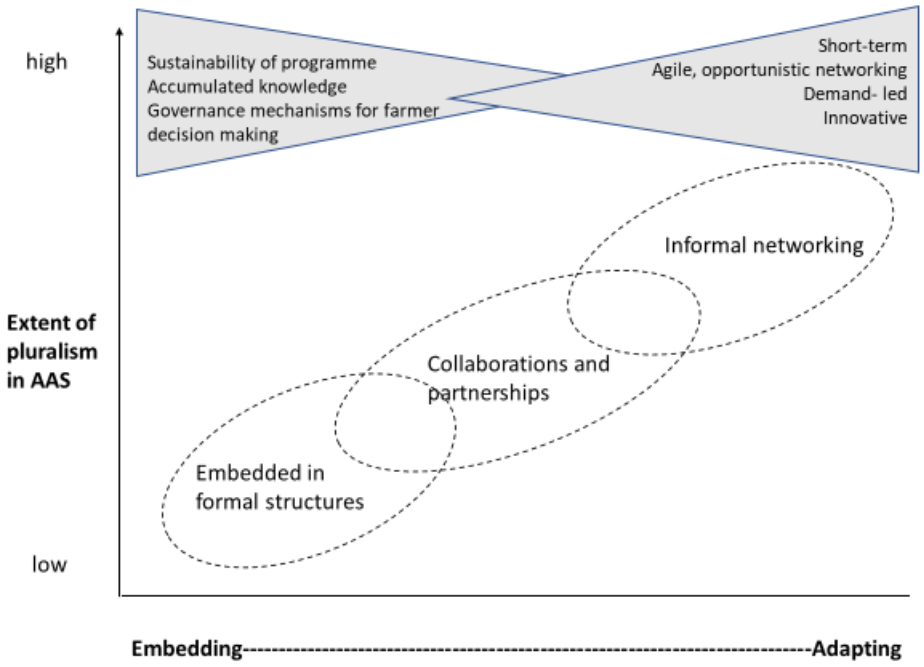
locally based groups and networks in adding to the effectiveness of demonstration activities has been noted elsewhere (Franzel et al. 2015; Kiptot et al. 2016; Bailey et al. 2006).

This picture of self-organising networks and adaptive demonstration programmes aligns with descriptions of privatised pluralistic AAS being creative with flexible spaces (Garforth et al. 2003). The multi-actor coalition building and dynamic iterations described here also resonate with conceptualisation of AKIS as Complex Adaptive Systems, formed by many agents of different types, which react to the actions of other agents and to changes in the environment (Spielman, Ekboir, and Davis 2009). Taking this systems view, suggests that demonstration programme arrangements, emerge as a result of the interplay of various component organisations (Faure et al., 2012), and adapt to the more loosely structured environments (Coudel, Tonneau, and Rey-Valette 2011). However, although these adaptive processes might achieve immediate goals, the ability to develop long- term relationships and accumulate knowledge as described for embedded programmes, is limited. The mechanisms in place for engaging farmers in decision making processes, are oriented to the target audience's demands, and tend to reflect private sector interests. This risks narrowing options as farmers are not always aware of new technologies that they could demand, a concern voiced about demand-driven advisory services (Birner et al 2009). Overall, the ability to build up any stable networks and achieve sustainability of programmes, and thus contribution to wider advisory objectives, can be uncertain.

The different arrangements are mapped on Figure 2, where the y axis denotes the extent of pluralism, and the x axis, a spectrum from embedding to adapting. The figure provides a representation of how demonstration programmes interact with and respond to the AAS with CS embedded in formal structures in the bottom left merging into collaborations and

partnerships and then informal networking towards the top right. The attributes and relative advantages of each interaction type are shown to be diminishing as the grey triangles narrow. Although both axes are a simplified proxy and cannot fully capture the multiple drivers and organisational forms of AAS, nor the complex interactions with CS demonstration programmes, the figure visualises the demonstration/AAS interaction landscape.

FIG 2 Demonstration programmes embedding and adapting arrangements in AAS



5.2 How do demonstration programmes contribute to AAS?

The role of demonstration programmes in contributing to AAS is less clear. Researchers suggest that demonstrations act as mediating structures, or nexus, in the advisory landscape and have the potential to address failures of AKIS (Rivera and Sulaiman 2009; Garforth et al. 2003). The advantages of regional structures enabling programme to be connected to other programmes, through the participation of advisers and farmers from different regions and farming sectors was noted in the findings. However only two CS, notably in AAS with

public/farmer organisation support, explicitly described themselves as having such a secondary bridging role.

Planning demonstrations as part of a wider package of advice and continued engagement with participants, although recognised as important, was not common practice in the CS assessed. Researchers have acknowledged the importance of this, pointing out that group extension approaches like demonstrations are not a substitute for individual advice and may even create more demand for follow on one-to-one advice. Indeed where this is not readily available, it is argued it will limit the effectiveness of a group extension programme (Garforth et al. 2003). Although embedded demonstration programmes should have an advantage in this respect by being integrated into stable, well-resourced structures, and being able to develop wider and longer term campaigns of learning and innovation support for building up knowledge and capacities, there is limited evidence of this in the CS.

Researchers analysing the change processes in advisory systems have argued that governments should continue to play a key role in funding, governing and coordinating integrated advisory services (including demonstrations) in pluralistic AAS because of market failure. However, there are different views on how to achieve this. For demonstrations, ADAS (2008) proposed a flexible approach, they conceptualised demonstration provision as a supply and demand issue arguing that a fixed network of demonstration farms is not the most efficient way of meeting farmers' needs. The analysis reported here confirms that many demonstration programmes are delivered regularly as demand-led collaborations and opportunistic networking, outside of any fixed or coordinated arrangements. However, these do not build more stable arrangements to allow accumulated knowledge and relationships with farmers to develop. It is evident from the analysis that across the CS studied there was little articulation of a shared expectation of demonstration programmes contributing to the wider goals of the AAS. Overall interventions

that can, firstly, provide some support for stable and sustainable interactions between demonstrations and ASS but not at the expense of being responsive and innovative, and secondly, allow the 'rethinking' of demonstrations as integral to a wider learning strategy, could strengthen demonstration programmes interaction with and contribution to the AAS.

Figure 3 sets out a conceptual framework refined from the themes used to guide the data collection (Table 2) and those that subsequently emerged in the analysis. Putting the two interconnected research questions at the centre, the figure captures the key interactions, outcomes and interdependencies. It shows (left hand side) how the AAS steers and determines the organisational arrangements of demonstration programmes resulting in a spectrum of embedding and adapting, each having relative benefits for, and constraints to, demonstration delivery. It also shows (right hand side) the attributes needed for demonstration programmes to contribute to the AAS through developing demonstration's role in linking and progressing learning.

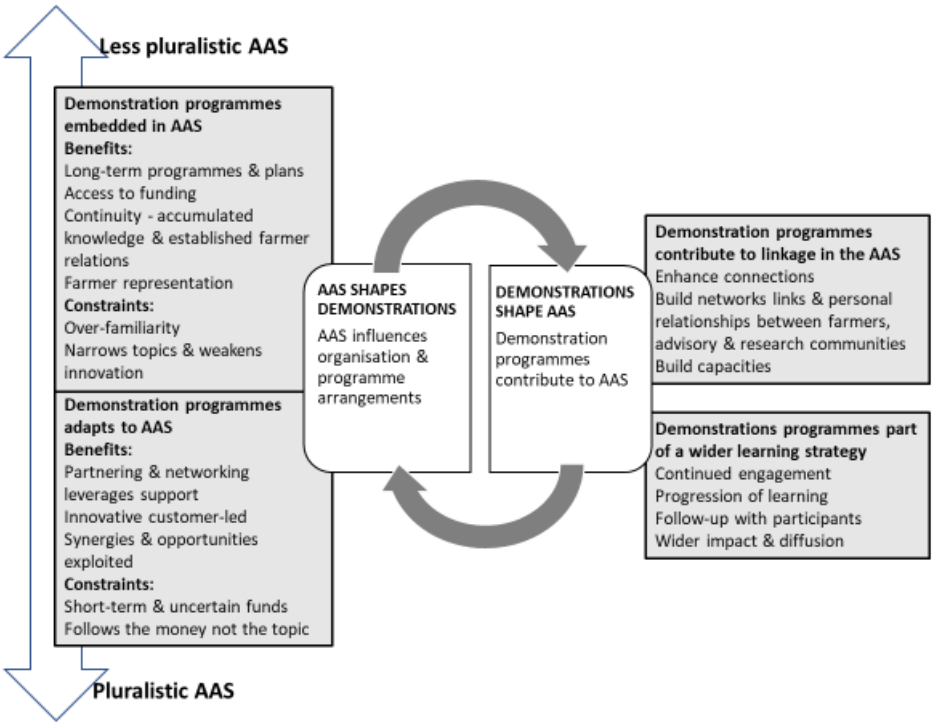


Figure 3 sets out a conceptual framework refined from the themes

With this analysis and conceptualisation, this paper contributes to and extends the 'demonstration' literature. To date only a few studies have noted the significance of institutional support for planning of demonstrations, programme management (access to resources and linkages to extension services) and administrative systems (World-Vision 2017); and the importance of institutional coordination in the back-office for advisory services more generally (Labarthe and Laurent 2013a).

6. Conclusion

This paper situates an understanding of the organisation of demonstration activities within contemporary advisory contexts. The analysis has shown that demonstration programmes and activities do not operate in isolation, they are part of a wider advisory landscape. Specifically it shows that the orientation of the AAS steers and determines the organisational arrangements of demonstration programmes, with embedded and adaptive processes apparent. In turn, analysis shows that demonstration programmes are not meeting their potential to contribute in any coordinated or coherent way to the wider AAS.

Future research should be directed towards identifying how demonstration programmes can be supported to strengthen the AAS, in particular the consideration of their role in linking and as being integral to strategies for farmers' learning. It should also incorporate an understanding of the role of private companies which, as shown by other researchers, and confirmed here, can be significant.

.

References

ADAS. 2008. "An Investigation into the Role and Effectiveness of Scottish Monitor Farms in Improving the Sustainability and Profitability of Participating Farm Business and Disseminating the Results to Influence the Wider Farming Community." Report produced for the Scottish Government Rural Directorate.

Angell, B. 2004. "Evaluation of the Forward Farming Pilot Demonstration Farm Project." Report to the Department of Environment, Food and Rural Affairs (Defra).

Bailey, AP, CJ Garforth, B Angell, T Scott, J Beedell, S Beechener, and RB Rana. 2006. "Helping farmers adjust to policy reforms through demonstration farms: lessons from a project in England." *Journal of farm management* 12 (10):613-25.

Birner, Regina, Kristin Davis, John Pender, Ephraim Nkonya, Ponniah Anandajayasekeram, Javier Ekboir, Adiel Mbabu, David J Spielman, Daniela Horna, and Samuel Benin. 2009. "From best practice to best fit: a framework for designing and analyzing pluralistic agricultural advisory services worldwide." *Journal of Agricultural Education and Extension* 15 (4):341-55.

Breetz, Hanna L, Karen Fisher-Vanden, Hannah Jacobs, and Claire Schary. 2005. "Trust and communication: mechanisms for increasing farmers' participation in water quality trading." *Land Economics* 81 (2):170-90.

Burton, Rob JF. 2019. "The failure of early demonstration agriculture on 19th Century model/pattern farms: lessons for contemporary demonstration."

Coudel, Emilie, Jean-Philippe Tonneau, and Hélène Rey-Valette. 2011. "Diverse approaches to learning in rural and development studies: review of the literature from the perspective of action learning." *Knowledge Management Research & Practice* 9 (2):120-35.

Crawford, Anne, Ruth Nettle, Mark Paine, and Carolyn Kabore. 2007. "Farms and learning partnerships in farming systems projects: a response to the challenges of complexity in agricultural innovation." *Journal of Agricultural Education and Extension* 13 (3):191-207.

Creaney, P., A McKee, and K. Prager. 2015. "Designing, implementing and maintaining (rural) innovation networks to enhance farmers' ability to innovate in cooperation with other rural actors -Monitor Farms in Scotland, UK." Report for AKIS on the ground: focusing knowledge flow systems (WP4) of the PRO AKIS project. February 2015.

Faure, Guy, Yann Desjeux, and Pierre Gasselin. 2012. "New challenges in agricultural advisory services from a research perspective: a literature review, synthesis and research agenda." *The Journal of Agricultural Education and Extension* 18 (5):461-92.

Feder, Gershon, Regina Birner, and Jock R Anderson. 2011. "The private sector's role in agricultural extension systems: potential and limitations." *Journal of Agribusiness in Developing and Emerging Economies* 1 (1):31-54.

Franzel, Steven, Ann Degrande, Evelyne Kiptot, Josephine Kirui, Jane Kugonza, John Preissing, and Brent Simpson. 2015. "Farmer-to-farmer extension." *What Works in Rural Advisory Services? Global Good practice Notes.* Global Forum for Rural Advisory Services Note 53. http://www.betterextension.org

Garforth, Chris, Brian Angell, John Archer, and Kate Green. 2003. "Fragmentation or creative diversity? Options in the provision of land management advisory services." *Land Use Policy* 20 (4):323-33.

Guichard, Laurence, François Dedieu, Marie-Hélène Jeuffroy, Jean-Marc Meynard, Raymond Reau, and Isabelle Savini. 2017. "Ecophyto, the French action plan to reduce pesticide use: a failure analyses and reasons for hoping." *Cahiers Agricultures* 26 (1).

Hall, Andrew, V Rasheed Sulaiman, Norman Clark, and B Yoganand. 2003. "From measuring impact to learning institutional lessons: an innovation systems perspective on improving the management of international agricultural research." *Agricultural systems* 78 (2):213-41.

Hall, Andy, Lynn K Mytelka, and Banji Oyelaran-Oyeyinka. 2006. "Concepts and guidelines for diagnostic assessments of agricultural innovation capacity." UNU-MERIT Working Paper.

Hall, A., Sulaiman, V.R., Clark, N. and Yoganand, B., 2003. From measuring impact to learning institutional lessons: an innovation systems perspective on improving the management of international agricultural research. *Agricultural Systems*, 78(2), pp.213-241.

Ingram, Julie, Hannah Marie Chiswell, Jane Mills, Lies Debruyne, Hanne Cooreman, Alexandros Koutsouris, Eleni Pappa, and Fleur Marchand. 2018. "Enabling learning in demonstration farms: a literature review." *International Journal of Agricultural Extension*.

Kania, Józef, and Barbara Kielbasa. 2015. "Demonstration farms for transfer of knowledge-case study from Poland." *Roczniki Naukowe Stowarzyszenia Ekonomistów Rolnictwa i Agrobiznesu* 17 (5).

Kiptot, Evelyne, Monica Karuhanga, Steven Franzel, and Paul Benjamin Nzigamasabo. 2016. "Volunteer farmer-trainer motivations in East Africa: practical implications for enhancing farmer-to-farmer extension." *International Journal of Agricultural Sustainability* 14 (3):339-56.

Klerkx, Laurens, Noelle Aarts, and Cees Leeuwis. 2010. "Adaptive management in agricultural innovation systems: the interactions between innovation networks and their environment." *Agricultural systems* 103 (6):390-400.

Klerkx, Laurens, and Amy Proctor. 2013. "Beyond fragmentation and disconnect: Networks for knowledge exchange in the English land management advisory system." *Land Use Policy* 30 (1):13-24.

Knierim, A, K Boenning, Monica Caggiano, A Cristóvão, V Dirimanova, T Koehnen, Pierre Labarthe, and K Prager. 2015. "The AKIS concept and its relevance in selected EU member states." *Outlook on Agriculture* 44 (1):29-36.

Koutsouris, A, E Pappa, H Chiswell, L Cooreman, L. Debruyne, J. Ingram, and F Marchand. 2017. "Agridemo: the analytical framework: demonstration farms as multipurpose structures, providing multi-functional processes to enhance peer-to-peer learning in the context of innovation for sustainable agriculture." Agridemo project deliverable, https://agridemo-h2020.eu/publications-deliverables/

La Grange, RF, M Titterton, EM Mann, and CM Haynes. 2010. Agricultural extension: a review and case study in the Tasmanian dairy farming sector. Paper presented at the Australasian Dairy Science Symposium: Meeting the Challenges for Pasture-Based Dairying.

Labarthe, Pierre, and Catherine Laurent. 2013a. "The Importance of the Back-office for Farm Advisory Services." *Eurochoices* 12 (1):21-6.

———. 2013b. "Privatization of agricultural extension services in the EU: Towards a lack of adequate knowledge for small-scale farms?" *Food Policy* 38:240-52.

Lamprinopoulou, C., Renwick, A., Klerkx, L., Hermans, F. and Roep, D., 2014. Application of an integrated systemic framework for analysing agricultural innovation systems and informing innovation policies: Comparing the Dutch and Scottish agrifood sectors. *Agricultural Systems,* 129, pp.40-54.

Lapierre, Margaux, Alexandre Sauquet, and Subervie Julie. 2019. "Providing technical assistance to peer networks to reduce pesticide use in Europe: Evidence from the French Ecophyto plan." https://hal.archives-ouvertes.fr/hal-02190979/

Marchand, F, H Cooremana, E Pappa, I Perifanosc, Alexopoulosb, Y, L Debruyne, H Chiswelld, J Ingram, and A. Koutsouris. 2021. "Effectiveness of on-farm demonstration events in the EU: role of structural characteristics." *Journal of Agricultural Extension and Education* (this issue).

Nettle, Ruth, Laurens Klerkx, Guy Faure, and Alex Koutsouris. 2017. "Governance dynamics and the quest for coordination in pluralistic agricultural advisory systems." *Journal of Agricultural Extension and Education 23 (:3):* 189-195

OECD. 2015. "Fostering green growth in agriculture: the role of training, advisoryservices and extension initiatives. In: OECD Green Growth Studies.".

Prager, Katrin, Rachel Creaney, and Altea Lorenzo-Arribas. 2017. "Criteria for a system level evaluation of farm advisory services." *Land Use Policy* 61:86-98.

Rivera, William M. 2008. "The'business' of the public sector: Extension in Transition and the balance of powers." *Journal of International Agricultural and Extension Education* 15 (2):19-31.

Rivera, William M, and V Rasheed Sulaiman. 2009. "Extension: object of reform, engine for innovation." *Outlook on Agriculture* 38 (3):267-73.

Schultz, Lisen, Carl Folke, Henrik Österblom, and Per Olsson. 2015. "Adaptive governance, ecosystem management, and natural capital." *Proceedings of the National Academy of Sciences* 112 (24):7369-74.

Schut, M., Klerkx, L., Rodenburg, J., Kayeke, J., Hinnou, L.C., Raboanarielina, C.M., Adegbola, P.Y., van Ast, A. and Bastiaans, L., 2015. RAAIS: Rapid Appraisal of Agricultural Innovation Systems (Part I). A diagnostic tool for integrated analysis of complex problems and innovation capacity. *Agricultural Systems*, *132*, pp.1-11

Spielman, David J., Javier Ekboir, and Kristin Davis. 2009. "The art and science of innovation systems inquiry: Applications to Sub-Saharan African agriculture." *Technology in Society* 31 (4):399-405. doi: http://dx.doi.org/10.1016/j.techsoc.2009.10.004.

Šťastná, Milada, Veronika Peřinková, Pavla Pokorná, and Antonín Vaishar. 2019. "New approach to sustainability in rural areas comprising agriculture practices–analysis of demonstration farms in the Czech Republic." *Sustainability* 11 (10):2906.

Taylor, Marcus, and Suhas Bhasme. 2018. "Model farmers, extension networks and the politics of agricultural knowledge transfer." *Journal of Rural Studies* 64:1-10.

World-Vision. 2017. "Improving the Management of Agriculture Demonstration Sites in Food Security Programs. A Practitioner's Guide." *Washington, DC: World Vision*

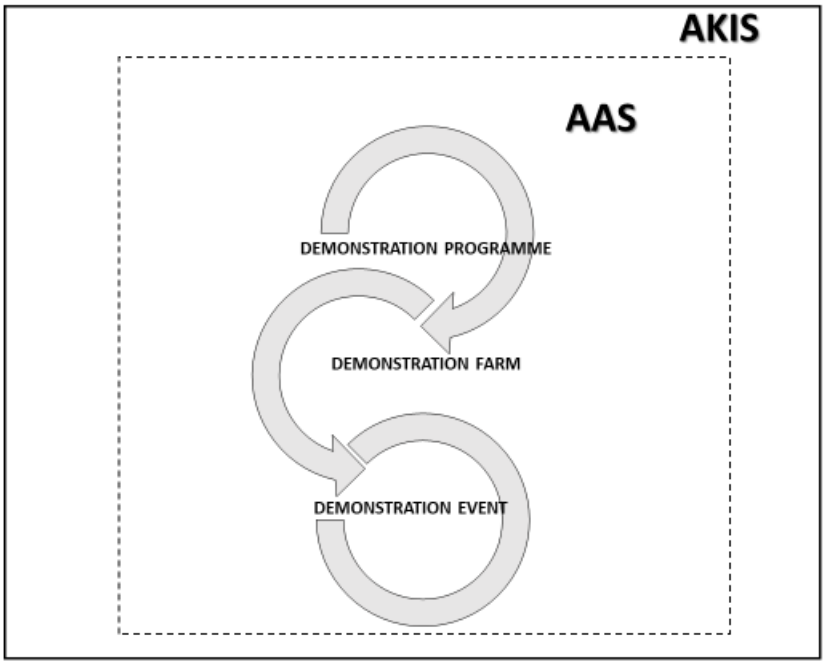
Table 1 Case study demonstration programmes (referred to in this paper)

Cases	**Country & Organisers/programme** AD= private/public advisory service; FO= farmer organisations, R= institutes	**Topic (porogramme and event)**	**Type of demo**	**Lead Organiser**
AT1	Austria: Cooperation between: AGES; The Agricultural Chamber of Upper Austria; working group with advisers & farmers	10 agronomic trials on fertilisation;. fungicides; varieties;. under sowing; sowing density etc	series	AD
AT2	Austria: Cooperation between: FIBL, BOKU, Bio Austria & the host farmer	No-tillage & roller-crimper; vermicomposting; agroforestry & flower strips	one-off	R
DK1	Denmark: ØRD, a private advisory service to organic farmers with goal to create added value for the farmers	Roughage for organic milk cows	one-off	AD
DK2	Denmark: LMO, a private advisory service that consists of different divisions. Organise event jontly with Seges (main DK advisory service)	The demonstrations vary in size & theme. The last two years they have held a big "Økotræf" event	series	AD
FR1	France: Inno'Action. COA supported national programme aims to identify relevant innovations with farmers. Steering group of host farmers & COA	Inlcudes: New barns, farmer co-working, robot & grazing	series	FO
FR2	France: Steering group with farm manager & Chamber of Agriculture advisers (FR)	Experimental vegetable farm tour presening results of projects	yearly	FO/ R
GR1	Greece: The Hellenic Crop Protection Association (HCPA)	Safe pestivcide usage, farmers' health protection; environmental protection	one-off	FO
IR1	Ireland: A series of 12 annual organic farm Workman walks throughout Ireland. A joint venture between Teagasc	The project aims to focus attention on the organic sector in Ireland and to promote interest amongst potential	series	AD

	(coorindators) and the Department of Agriculture, Food and Marine DAFM (funders)	stakeholders. Agroforestry-establishment options & management		
IR2	Ireland: The Agroforestry: LB (ALB) DAFM and Teagasc. One of the objectives of this programme is to	promotes the afforestation of Irish farmland	series	AD
IR3	Ireland: partnership between Dawn Meats, Teagasc, McDonald's & the Irish Farmers Journal	Beef production & cross breeding	yearly	AD
NL1	The Netherlands: ZLTO (private advisory) leads the consortium with farming associations, advisory entities, universities etc. The demonstration farm is part of four programmes & wider networks	Practice centre for precision farming	one-off	AD
NL2	The Netherlands: Cooperation between ZLTO, five host farmers & the Open Greenhouse day's foundation	Open Greenhouse Days - Red Pepper .	yearly	FO
NL3	The Netherlands: Aardbeiendemodag is organised by a foundation, the national strawberry commission, a board of strawberry growers, linked to ZLTO/Delphy	Strawberry demonstration day – Vertical ventilation strawberry	yearly	FO
PL1	Poland: The National Centre for Practical Training – a cooperation between Agricultural Advisory Centre, the Institute for Soil Science & Plant Cultivation	Aims to present technology developments in a productive system. Conventional & organic farming, experimental & demonstration farm.	series	AD/ R
PL2	Poland: Polish Union of Cereal Grain Producers	Maize production, Decision Support System in plant protection, computer + GPS control of tractor	yearly	AD/ R

PL3	Poland: Polish Society of Organic Farmers	Specialised organic vegetable production	yearly	AD/R
SW1	Sweden: cooperation between the Swedish cereal producers association & a local organisation for seed & oil seed producers	Growers day; plots at biogas facility, winterwheat, ley & canola fields	yearly	FO
SW2/SW3	Sweden: The OiB (Odling In Balance) farm network. Farmer-led who wanted to work for a more sustainable farm production, based on 17 Swedish pilot farms	Productivity & environment	series	NGO
UK1[10]	United Kingdom: Innovative Farmers, England, a partnership of NGOs, levy board (AHDB)	Alternative methods for terminating cover crops	series	NGO
UK2	United Kingdom: AHDB Monitor Farms, England (levy board network)	Benchmarking in arable framing	series	AD
UK3	United Kingdom: Farming Connect Demonstration Network, Wales	12 demonstration farms which hold regular events & host projects	series	AD

[10]UK have a strong regional structure with diverse arrangements in each administrative unit of the country.


AKIS
AAS
DEMONSTRATION PROGRAMME
DEMONSTRATION FARM
DEMONSTRATION EVENT