

# ***Advisory services in the United Kingdom: exploring ‘fit for purpose’ criteria***

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**Abstract:** The concept of Agricultural Knowledge and Information System (AKIS) offers a multi-actor perspective designed to deal with the complexity and the diversity of information sources and channels in rural areas. Advisory services are a subsystem of AKIS that are meant to provide farmers with relevant knowledge and networks around innovation, as well as adjustments to policy and markets in agriculture. It is contested whether a fragmented AKIS and associated advisory services is problematic and policies should strive to enhance its integration and coherence, not least because the multiplicity of service providers is confusing to farmers and land managers. Other authors argue that with the diversity of farmers’ practices and information needs, an array of providers that operate simultaneously is needed to address these needs while a uniform national approach is neither useful nor necessary. The current UK AKIS and the advisory sub-system are characterised by a diverse advisory community and fragmentation. This paper takes the discussion beyond fragmentation to investigate whether the UK advisory system are ‘fit for purpose’. We explore the characteristics of advisory services by means of identifying criteria for well-functioning services and investigating to what extent they are currently met. Data were collected in an online survey of 80 agricultural advisory organisations across the UK. Findings show that most criteria are met but a number of client groups are not targeted by advisory services and some organisations use only a narrow range of advisory methods.

**Keywords:** advisory services, extension, agriculture, AKIS

## **Introduction**

There is controversy in the literature regarding the optimal structure of an Agricultural Knowledge and Information System (AKIS). The AKIS concept describes the exchange of knowledge and supporting services between diverse actors from the first, second or third sector in rural areas, providing farmers with relevant knowledge and networks around innovations in agriculture.

Some consider a fragmented AKIS and associated advisory services as problematic and promote the value of employing an integrated approach (DEFRA 2013) not least because fragmentation “may lead to confusion among farmers about where to go for information, duplication and wasteful competition among providers” (Garforth et al., 2003: 300). For England, Curry et al. (2012) find that the disjuncture and unregulated nature of the AKIS have been frustrating for farmers and land managers. Roles in a mixed public-private advisory system are divided between different actors, with private advice provision on sustainable farm management being viewed as ‘suboptimal’ (Klerkx & Jansen 2010). Kidd et al. (2000) add the criticism that resource-poor farmers may get overlooked.

Others argue that (pure) public sector extension has come to be viewed as problematic (Benson & Jafry 2013) and a uniform national approach is seen as neither useful nor necessary. Instead, a mix of public and private extension can address both government and land managers’ needs (Garforth et al. 2003). These authors caution that any attempt at integration should not be at ex-

pense of diversity (ibid.). Acknowledging the diversity of farmers' practices and information needs, an array of providers, that operate simultaneously, is needed to address these needs. According to Klerkx & Proctor (2013), a benefit of greater advisor diversity is increased client orientation.

The state advisory service in the UK has been commercialised in the 1980s and privatised in 1997 which brought about a diverse advisory community. Fragmentation appears to come about as a side-effect of the privatisation of extension services (Kidd et al., 2000). Sutherland et al. (2013: 91) add that "the transition to a pluralistic advisory system and commoditisation of knowledge has been blamed for the fragmentation of the system in which actors are not well-connected and there is information asymmetry". The current AKIS and the advisory sub-system are characterised by a multiplicity of actors in four UK-countries connected by both weak and strong links. Therefore, it is not appropriate to speak of an 'UK AKIS'. In practice, there are four quite separate knowledge systems, governed by discrete sets of policy, government departments and agencies, and to a large degree also a discrete set of NGOs, farmer organisations and private commercial actors (Prager & Thomson 2013).

Instead of dwelling on the benefits and shortcomings of fragmentation versus integration of AKIS, we follow calls from Birner et al. (2009) for a 'best fit' approach and focus our attention on what kind of AKIS is best able to address current and emerging knowledge needs of agricultural actors. The conception of an AKIS includes research and education, training, and advisory service (World Bank 2012)<sup>9</sup>. We will focus on agricultural advisory services as a subsystem of AKIS. These services have a central role as a pillar of the infrastructure of the broader AKIS both in its dimensions of actors and networks, as well as of the dynamics of knowledge flows involved in it.

The key question we want to answer in this paper is: Is the agricultural knowledge system – and in particular the advisory subsystem – in the UK 'fit for purpose'? We will explore the characteristics of advisory services by means of identifying criteria for well-functioning services and investigating to what extent they are currently met. This should allow us to reflect on whether the current fragmented system is associated with any gaps in the provision of advice or flow of information and whether any further criteria need to be taken into account.

### **Criteria for well-functioning advisory services**

The primary roles of advisory services are to provide farmers with relevant knowledge and networks around innovations, adjustments to policies and agricultural markets. We conceptualise a well-functioning, 'fit for purpose' advisory service as one that meets the following eight criteria. These criteria have been identified on a plausibility basis from the literature because studies are lacking that test the effect of individual factors on enhancing the 'fit for purpose' nature of the service overall. In this regard, we assess how the current advisory system performs against our selected criteria. We see this list as a starting point and acknowledge that the list may not be exhaustive or other criteria may be more appropriate.

Criterion 1: all relevant advisory **topics**, such as crop production, livestock production, and rural development should be covered. The topics in the survey were chosen in accordance with typical farming activities in Europe. We acknowledge that there are always niche topics and emerging

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<sup>9</sup> An agricultural knowledge and innovation system (AKIS) "indicates a system that links people and institutions to promote mutual learning and generate, share, and utilize agriculture related technology, knowledge, and information. The system integrates farmers, agricultural educators, researchers, and extensionists to harness knowledge and information from various sources for improved livelihoods. Farmers are at the heart of this knowledge triangle" (World Bank, 2012).

topics that farmers will require advice on but this dynamic cannot be captured in a study that looks at a particular point of time.

Criterion 2: All **client groups**, in other words those that seek out advice, such as owners of commercial and subsistence farms, young farmers and female farmers should be covered if the advisory system is to have no gaps.

Criterion 3: There should be a stable or growing **workforce of advisors** as “a greater number and diversity of actors mean that an AKIS becomes more information-rich” (Sutherland et al, 2013: 97) which is of benefit to the clients as more advisors should result in advisory organisations with higher capacity to deliver advice.

Criterion 4: a well-functioning advisory system should involve a range of **different types of organisations** (with services that complement one another). Some recommend a mix of public and private organisations because it can address government and land managers’ needs, and demand that an integration should not be at expense of diversity (Garforth et al., 2003). Another argument for a mixed set up is that it can help reduce costs of advisory services (assuming that public organisations have a higher overhead, Garforth et al., 2003)<sup>10</sup>. If the overall goal was to reduce costs, full privatisation would be the appropriate choice, as according to Leeuwis (2004: 348), “there is little doubt that a government can reduce costs by privatising extension”. We derive that it is important to maintain a mixture of both public and private advisory organisations as it is easier for public organisations to aid with collective change. Complimentarily, private organisations tend to be cheaper to maintain and are often good at opening up AKIS “for new non-traditional and relatively well-resourced clients” (Leeuwis, 2004: 348).

This diversity of organisations should be coupled with tapping into **diverse knowledge sources** (Benson and Jafry, 2013). This will allow for “a flexible multi-agency approach which both promotes a client-driven agenda and better addresses both diversity and location-specific issues” (Benson and Jafry, 2013: 390), which is of particular importance in the UK as its four countries have different political structures and agricultural policies and therefore a single static UK advisory system would be very difficult, if not impossible, to execute successfully.

Criterion 5: Various advisory **organisations should cooperate** with one another to bridge any potential gaps in knowledge and information provision which may exist from a single source. This type of cooperation will “achieve convergence and prevents duplication of efforts by individual organisations” (Benson and Jafry, 2013: 390), it should also ensure that if a particular advisory organisation cannot provide appropriate advice for a client they should at least be able to point them in the right direction in terms of where best to obtain this advice from (Garforth et al, 2003). This relates to the fact that in an increasingly privatised and specialised advisory system, advisors are more reliant on each other for specific knowledge (Klerkx and Proctor, 2013: 22).

A closely linked consideration is that a well-functioning advisory system should be free from ‘breaks’ or ‘disconnects’ in the system, i.e. an obvious lack of interaction between organisations offering advisory services. Leeuwis (2004: 36) emphasises that, “when talking about agricultural knowledge systems, one is immediately confronted with issues of interinstitutional co-operation and associated problems”, so these cannot be ignored when assessing the ‘fit for purpose’.

Criterion 6: Advisory organisations need to be **flexible** and adjust, or broaden, their remit to maintain their relevance, because the needs of the farming communities are constantly changing and evolving, due to changes in land-use policies and environmental factors such as climate change and the growth in popularity of renewable energies. As Leeuwis (2004: 8) argues “in or-

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<sup>10</sup> Garforth et al. (2003) argue that growing a public sector capability for delivering advice is less likely to achieve cost-effectiveness and flexibility compared to contracting private sector organisations to deliver services with well-defined goals and appropriate delivery methods within agreed timeframes.

der to make agriculture survive, government bodies and farmers are looking for new value-added products, including non-agricultural ones such as recreational services, nature conservation and even agro-health care services”, for which the advisory services need to accommodate.

Criterion 7: Advisors need to receive **regular training** as this “improves the performance and the overall effectiveness and efficiency of advisory schemes” (Garforth et al., 2003: 331). There is evidence that without regular training, “schemes have been constrained at least in the short-term by a shortage of appropriately qualified personnel” (ibid.: 329). Given that the roles of advisors and their organisations are constantly evolving, regular training is a necessity to maintain their relevance.

Criterion 8: A diverse **range of advisory methods** should be employed across a ‘fit for purpose’ advisory system in order to meet different clients’ needs and preferences, from individual one-on-one advice, to group extension, and right through to the use of mass media (Leeuwis 2004). Different advisory methods will be utilised by different groups, for instance small-scale farmers would be more likely to use individual extension than a large commercial farm (Leeuwis 2004: 29).

## Methods

The empirical research focussed on a subsystem of the overall UK AKIS, the agricultural advisory services. According to Birner et al. (2009: 342), such advisory services comprise “the entire set of organisations that support and facilitate people engaged in agricultural production to solve problems and to obtain information, skills, and technologies to improve their livelihoods and well-being”.

The data collection methods were semi-structured interviews and an online survey. The interviews took place in August 2013 with 7 key informants from agricultural and conservation organisations throughout the four UK countries. An online questionnaire was developed based on the Worldwide Extension Study by Swanson & Rajalahti (2010), which was shortened and adapted to the European context through various discussions among PROAKIS project partners ([www.proakis.eu/Partners](http://www.proakis.eu/Partners)).

The online questionnaire was distributed (in June 2013) through a broad range of channels to capture a broad range of advisors, such as advisors within NGOs, advisors within government bodies and advisors for private companies. Professional organisations and associations such as the Farm Business Advisor Accreditation Scheme for Scotland (FBAASS), Farming Connect (Wales) and Scottish Land and Estates were also contacted to distribute the survey to their members and consultants on our behalf. Roughly 175 out of a total of 230 consultants from BIAC (British Institute of Agricultural Consultants) were contacted, along with a few additional consultants identified from online Google and yellow pages searches. Unfortunately, the response rate cannot be identified due to secondary organisations circulating the questionnaire on our behalf. The majority of the 80 responses obtained from across the UK came from Private Organisations, followed by Public Organisations (Table 1). The majority of the organisations were based in, or mainly offered advisory services in England; least responses were received from Northern Ireland.

Table 1: Survey respondents by type of organisation and UK-country

Type of organisation	England	Scotland	Wales	N. Ireland	Several UK-countries	Total
Private	34	14	3	-	3	<b>54</b>
Public	4	5	2	1	2	<b>14</b>
Farmer-based	1	2	1	-	2	<b>6</b>
NGO	2	3	-	-	1	<b>6</b>
Total	41	24	6	1	8	<b>80</b>

Representativeness of the sample and response rate could not be determined due to the fact that there are no standardised registers of advisory services across the four UK countries.

The online questionnaire included general questions on the characteristics of the organisation, the frequency at which different advice is delivered, distribution of staff activities and staff numbers, the client groups targeted by the various organisations, relevance of different knowledge sources and the levels of cooperation or competition with other organisations, as well as knowledge sources. The online survey included multiple-choice, constant-sum and open-ended questions.

Contingency tables were calculated to show the frequency distribution of pairs of categorical variables corresponding to multiple-choice questions. The associations between those pairs of variables were further analysed using Chi-square tests (Fisher's exact tests were applied in those cases where expected frequencies below 5 were found). Graphical representations were also used to visually show the differences in responses between groups. Both the descriptive statistical analysis of the data and the statistical tests were implemented using Microsoft Excel 2011 and R software (R Core Team, 2013).

Information from the interviews helped to give context to the questionnaire responses. For example, there had been three responses from different participants from Scottish Agricultural College (SAC)/ Scottish Rural College (SRUC) (renamed in 2012 following a merger of several organisations) and follow-up telephone calls clarified the diverging responses.

## Results

The results are discussed according to the criteria that we suggest constitute a well-functioning and 'fit for purpose' advisory service. Organisations that only partially filled in the survey have been included in the data analysis, which leads to different numbers of responses for individual questions.

### Criterion 1: All relevant advisory topics are covered

Participants were asked how frequently advice was delivered by their organisation on a variety of agricultural advisory topics. These advisory topics are listed in Table 2. We believe that a well-functioning advisory service should offer advice on all of these topics across the organisations involved (but not necessarily by each individual organisation). The respondents had to choose one of five options which they believed represented their frequency of delivery of the aforementioned topics (very frequently delivered; routinely delivered; seldom delivered; never delivered; not offered). To make the data more accessible the five categories were collapsed and presented as a heat map (Wilkinson and Friendly, 2009) in Table 2. The percentages are based on the respective number of responses in each type of advisory organisation provided in the header.

Results show that all of the advisory topics are covered by all four types of advisory organisations; however, the extent of this coverage is variable. Table 2 shows that the farmer-based organisations (FBOs), frequently or routinely offer advice on all topics apart from building design.

The NGOs mostly offer advice on the environment and agri-environment. The private organisations, in contrast, focus on rural development and agri-environment. It is surprising that only a small proportion of them frequently or routinely offer advice on crop production, agricultural building design and machinery. The public organisations frequently deliver advice on the environment, agri-environment and renewables, and some frequently advise on livestock production and rural development.

In terms of the topics that are well covered, the results from the survey highlight that rural development, agri-environment, environment, cross-compliance are very frequently or routinely delivered by four types of advisory organisations (except cross-compliance is not offered by 57% of public organisations).

Gaps would occur only if one type of advisory organisation is taken out of the picture. For example, only 39% of all the organisations in the sample provide advice on crop production and it is mainly delivered by farmer-based organisations. If those were to cease providing this advice, public organisations are unlikely to fill the gap. There are also few organisations that regularly provide advice on agricultural building design, bookkeeping & taxes and machinery. However, advice on these topics may also be provided by other organisations not targeted in the survey, such as agronomists employed by farmers (Ingram 2008), or perhaps advice comes in the form of instruction manuals and specialist courses.

We were interested to test whether there are advisory topics that tend to be covered by mainly one type of organisation. We found statistically significant differences at a 5% significant level between the responses in different types of organisations for Bookkeeping/ taxes (p-value=0.007), Business diversification (p-value=0.012), and Cross-compliance (p-value=0.013).





1) *Bookkeeping and taxes*: 83,3% of the respondents from NGOs and 85,7% of the respondents from Public Organisations reported they never deliver/don't offer advice on this topic, whereas the percentages within Private and Farmer-based organisations were considerably lower (35,2% and 33,3% respectively).

2) *Business diversification*: 72,2% of Private organisations and 66,7% of Farmer-based organisations frequently deliver Business diversification advice, whereas lower values are found for Public organisations (42,9%) and Non-governmental organisations (33,3%).

3) *Cross-compliance*: 74,1% of private organisations and 83,3% of farmer-based organisations consider that *Cross-compliance* is a frequently or routinely delivered advisory topic, whereas lower values are found for Non-governmental organisations (66,7%) and Public organisations (21,4%).

Table 2: Advisory topics and their frequency of delivery (percentage) by type of organisations.

	Farmer-based organisations (6)			NGOs (6)			Private organisations (54)			Public organisations(14)		
	VF/RD	SD	ND/NO	VF/RD	SD	ND/NO	VF/RD	SD	ND/NO	VF/RD	SD	ND/NO
Crop production	83,3	16,7	0,0	33,3	33,3	33,3	40,7	14,8	44,4	0,0	21,4	78,6
Livestock production	100,0	0,0	0,0	50,0	33,3	16,7	48,1	16,7	35,2	50,0	21,4	28,6
Agr. building design	16,7	50,0	33,3	33,3	16,7	50,0	38,9	24,1	37,0	42,9	28,6	28,6
Bookkeeping & taxes	50,0	16,7	33,3	0,0	16,7	83,3	48,1	16,7	35,2	14,3	0,0	85,7
Machinery	50,0	0,0	50,0	16,7	33,3	50,0	25,9	27,8	46,3	14,3	35,7	50,0
Rural development	100,0	0,0	0,0	50,0	33,3	16,7	77,8	11,1	11,1	50,0	21,4	28,6
Cross compliance	83,3	0,0	16,7	66,7	33,3	0,0	74,1	13,0	13,0	21,4	21,4	57,1
Business diversification	66,7	0,0	33,3	33,3	33,3	33,3	72,2	18,5	9,3	42,9	14,3	42,9
Environment	83,3	0,0	16,7	83,3	0,0	16,7	68,5	16,7	14,8	92,9	0,0	7,1
Agri-environment	100,0	0,0	0,0	100,0	0,0	0,0	77,8	7,4	14,8	71,4	7,1	21,4
Renewables	50,0	0,0	50,0	66,7	16,7	16,7	55,6	27,8	16,7	64,3	14,3	21,4
Other	83,3	0,0	16,7	50,0	0,0	50,0	50,0	1,9	48,1	50,0	0,0	50,0

	0,0-24,9 %	VF/ RD = very frequently / routinely delivered
	25,0-49,9 %	SD = seldom delivered
	50,0-74,9 %	ND/ NO = not delivered/ not offered
	75,0-100,0 %	

These figures illustrate that those public organisations and NGOs in the sample are not often involved in bookkeeping, business diversification and cross-compliance advice, but these areas are covered by most private organisations and farmer-based organisations.

Respondents were also asked to highlight if they offer any ‘other’ advisory topics. Farmer-based organisations reported they offer topics such as animal health and welfare, and agricultural property valuation. Private organisations deliver advice on topics such as woodland management and single farm payment scheme advice. Some of the public organisations also reported offering advice on Controlled Activities Regulations (CAR) and designated sites.

Looking specifically at the Private organisations (category with the highest number of respondents), advice is very frequently or routinely delivered by at least half of the private organisations on all topics apart from agricultural building design, crop production and machinery. However, as Table 2 highlights, this issue is apparent for these three topics across the FBOs, NGOs and public organisations as well. The topics that are well covered by private organisations include agri-environmental programmes and rural development, which may be as a result of perhaps these topics being the most profitable (due to funding programmes that support farmers to cover costs investments and for help with application forms).

## Criterion 2: All client groups are covered

As a second criterion we propose that a well-functioning advisory service should cover all relevant client groups. Farmers and other land managers were grouped according to the following categories: commercial farms (small, medium and large), subsistence farms (both semi and fully), agricultural producer groups, young farmers, female farmers, part-time farmers, farm employees. The respondents were asked to indicate whether each of these client groups was a major target, a minor target or not a target for their advisory organisation. All client groups were targeted by at least one type of advisory organisation. The heat map in Table 3 shows the degree to which the different client groups are a target for advisory services by the responding organisations. The categories of small, medium and large scale commercial farms were collapsed into *commercial farms* and semi- and fully-subsistence farms were collapsed into *subsistence farms* to simplify the table as we wanted to see what overall trends are emerging in terms of what types of client groups are targeted and by whom.

Table 3: Extent to which client groups are targeted by the four types of advisory organisations

	FBO (4)			NGOs (6)			Private (46)			Public (12)		
	M	m	NT	M	m	NT	M	m	NT	M	m	NT
Commercial farms (small/med/large)	75,0	25,0	0,0	44,4	16,7	38,9	70,3	21,0	8,7	66,7	11,1	22,2
Subsistence farms (semi and fully)	25,0	25,0	50,0	8,3	8,3	83,3	45,7	15,2	39,1	16,7	12,5	70,8
Agricultural producer groups	25,0	25,0	50,0	50,0	16,7	33,3	17,4	28,3	54,3	50,0	25,0	25,0
Young farmers	25,0	50,0	25,0	16,7	33,3	50,0	19,6	47,8	32,6	33,3	33,3	33,3
Female farmers	25,0	50,0	25,0	16,7	16,7	66,7	15,2	34,8	50,0	25,0	25,0	50,0
Part-time farmers	50,0	25,0	25,0	16,7	0,0	83,3	17,4	41,3	41,3	16,7	25,0	58,3
Farm employees	0,0	50,0	50,0	16,7	16,7	66,7	4,3	19,6	76,1	8,3	50,0	41,7
Other groups	25,0	25,0	50,0	50,0	16,7	33,3	15,2	2,2	82,6	16,7	16,7	66,7

	0,0-24,9 %	
	25,0-49,9 %	M = Major target
	50,0-74,9 %	m= minor target
	75,0-100,0 %	NT = not targeted

Table 3 shows that *commercial farms* are a major target for the majority of farmer-based, private and public organisations. Part-time farmers are a major target only for farmer-based organisations (but note here the small sample size). Agricultural producer groups are a major target for about half of the public organisations and NGOs that responded.

In terms of potential gaps, it is striking that all client groups apart from commercial farms and agricultural producer groups appear as mostly a minor target or a non-targeted client group (in other words, 50% or less of the respondents say these are a major target). Farmer-based organisations do not get involved much with subsistence farms (amalgamated group), agricultural producer groups or farm employees. Half of the NGOs will mainly target agricultural producer groups but few of the other groups. Private organisations tend to not focus much on female farmers or farm employees, and public organisations have little targeting towards subsistence farmers, female or part time farmers.



With literature and media attention on the lack of active young and/ or female farmers (BBC News 2012; 2013) these figures confirm that this client group is not targeted in advisory activities of existing organisations. Subsistence farming may be less of a target because there are fewer subsistence farmers in the UK nowadays (apart from of course the crofting small-holds in the Scottish Highlands). Alternatively, it may not be a profitable area for the advisory organisations. This consideration may be particularly relevant for the large number of private organisations which are concerned with making a profit. Overall, the survey results support the perception that there is a lack of advice for young farmers, female farmers, subsistence farmers and part-time farmers.

### **Criterion 3: There is a stable or growing workforce of advisors**

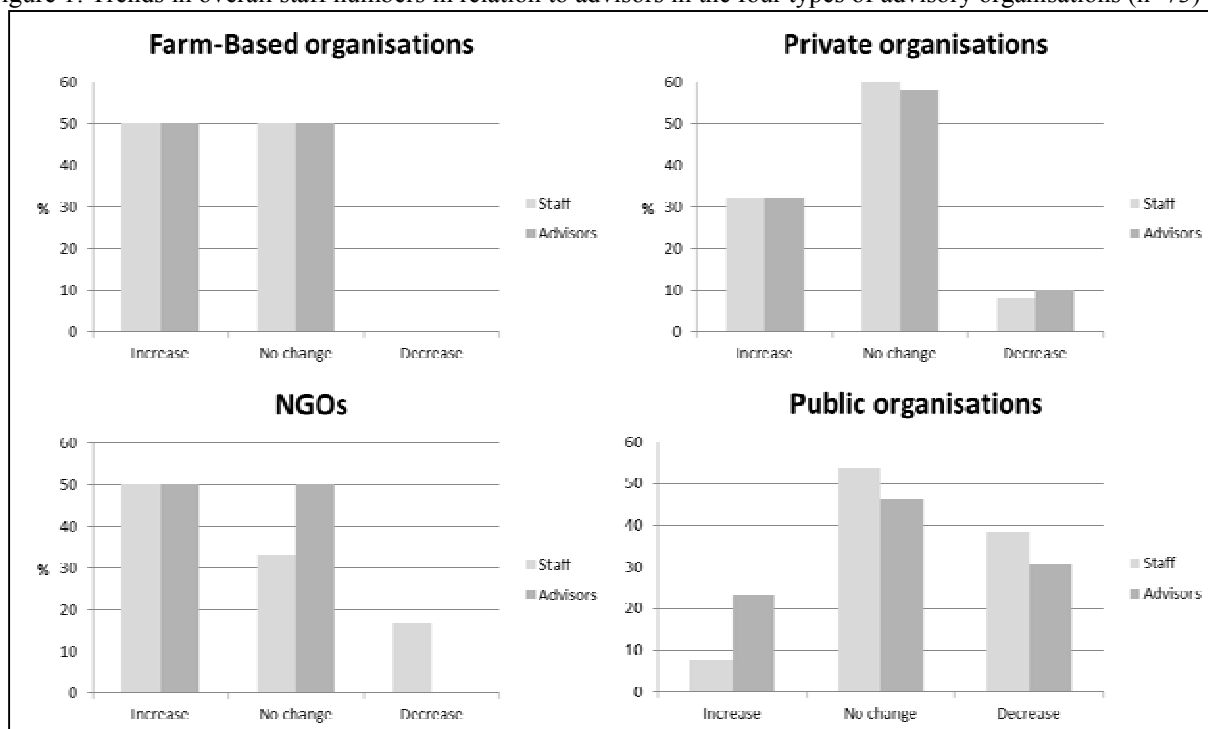
In particular in larger public organisations, respondents found it difficult to provide the exact number of advisors as most of their staff are not exclusively providing advice to farmers but have also have other roles and duties. In addition, the total number of private consultants and agricultural consultancies is unknown. Therefore, we asked for trends (increasing, decreasing or stable) in the workforce of advisors. A stable or – if deficits have previously been identified – growing workforce of advisors is taken to contribute to a well-functioning AKIS.

The data presented in Figure 1 highlights that on the whole there is a stable, or in some cases, a growing workforce of advisors. These increasing and stable advisor numbers have generally occurred in organisations where their overall staff numbers are also increasing or remaining the same. In other words, the percentage of advisors within the larger organisations has remained the same on the whole. In particular, farmer based organisations report no decline in staff or advisor numbers. NGOs, although with reduction in overall staff numbers, show no reduction in advisor numbers.

Looking at the overall picture respondents, from the total 73 organisations that responded to this question, nearly 30% of organisations stated their number of staff had increased in recent years, 56% believed that numbers had remained the same, and 14% believed that their advisor numbers have decreased.

In public organisations, the decrease in staff and advisor numbers was most pronounced. It appears that reductions in advisor numbers did not correspond with reductions in staff numbers. This may be interpreted as a certain protection of staff with advisory functions. In contrast, private organisations appear to be doing well with increasing staff and/or advisor numbers (for 26% overall staff and advisor numbers have increased). There is the possibility that public advisory service employees set up their own consultancy or are moving to private organisations which often have better wages, but this cannot be substantiated from our data.

Figure 1: Trends in overall staff numbers in relation to advisors in the four types of advisory organisations (n=73)



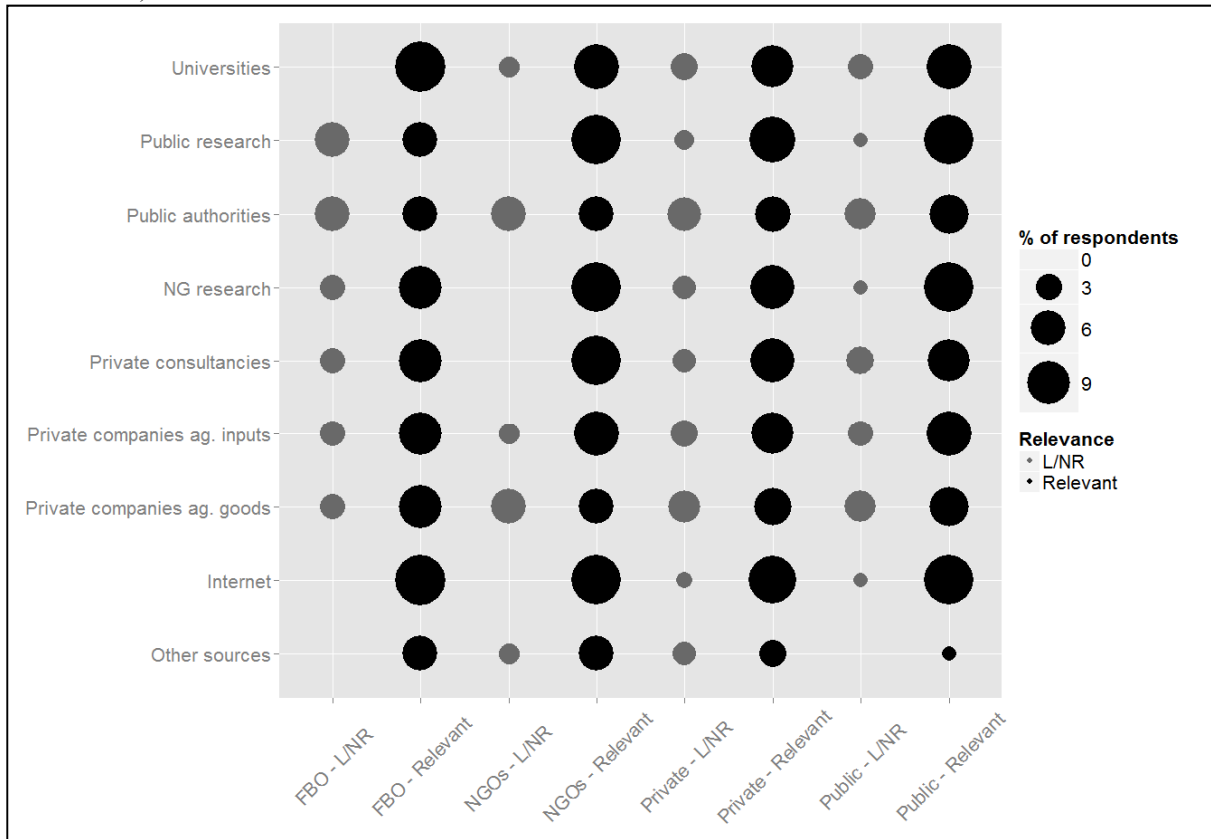
**Criterion 4: A range of different types of organisations are involved that draw on diverse knowledge sources**

Findings from the survey and a review of the literature showed that there are different types of organisations that provide agricultural advice, either via advisors or by other means (e.g. information pamphlets, the web, or training courses). Private consultants and public organisations are the main types of organisations providing advisory services. NGOs and farmer based organisations play an important niche role in providing advice on specific topics.

The survey captured responses from different types of advisory organisations in the UK (Table1), which indicates that the landscape of advisory services includes a range of organisations. In some cases, respondents felt they did not fit exclusively into one category. This list is not exhaustive as there are organisations and companies who either we did not contact or did not fill out the survey such as independent agronomists (also called crop consultants) or commercial agronomists (work for agrochemical companies and provide advice as part of a package of agrochemical sales) who have an important role in on-farm advice (Ingram 2008).

Respondents were asked how relevant different sources of knowledge were for their organisation. Figure 2 shows a bubble plot highlighting the various knowledge sources used. The response categories were collapsed from four to two (relevant and very relevant to the category of ‘relevant’ versus ‘little/ no relevance’). Overall, the *internet* and *public research centres* are the most relevant sources of knowledge. More than 90% of all respondents considered the internet to be a relevant source. The least relevant sources are *Public authorities* and *Private companies processing agricultural goods* (such as dairies).

Figure 2: Relevance of different knowledge sources (left axis) to four types of advisory organisations (L/NR = little/no relevance)



Looking at the most relevant knowledge sources for different types of organisations, farmer-based organisations draw knowledge from all sources albeit to a lesser extent from public authorities and public research centres. NGOs seem to frequently use all of the knowledge sources, with public authorities and processing companies being used to a lesser extent. The same pattern applies to private organisations. About 25% of private organisations reported farming and agricultural bodies (e.g. National Farmers Union, Central Association of Agricultural Valuers) as other knowledge sources. Public organisations also source knowledge from a variety of organisations, but seem to draw less on other public authorities. About half the FBOs and NGOs reported they use other sources of knowledge such as farmers themselves, farming publications and social media.

**Criterion 5: There is cooperation to help bridge knowledge gaps**

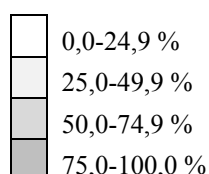
Respondents were asked to indicate whether they cooperated, competed, or had no interaction with other actors in the agricultural advisory system. These knowledge sources included Universities, Public research centres, Public authorities, Non-governmental research centres, Private consultancies, Private companies (who provide agricultural inputs such as seeds and fertiliser), and Private companies (who process agricultural goods such as dairies). We wanted to observe patterns of cooperation between advisory organisations which would indicate that an exchange of knowledge takes place which could potentially bridge any knowledge gaps.

Table 4 shows that the majority of Farmer-based organisations and NGOs cooperate with a range of different types of actors from both the private and public spheres. A quarter of FBO respondents also acknowledge competition with private organisations.

Table 4: Cooperation links of the four types of advisory organisations

	Universities			Public research centres			Public authorities			Non-government re- search centres		
	Coop	Comp	NI	Coop	Comp	NI	Coop	Comp	NI	Coop	Comp	NI
FBOs (4)	100,0	25,0	0,0	100,0	25,0	0,0	100,0	0,0	0,0	100,0	25,0	0,0
NGOs (6)	100,0	0,0	0,0	100,0	0,0	0,0	83,3	16,7	0,0	100,0	33,3	0,0
Private org. (48)	56,3	14,6	37,5	58,3	12,5	35,4	60,4	8,3	37,5	68,8	16,7	27,1
Public org. (13)	92,3	0,0	7,7	92,3	7,7	7,7	100,0	7,7	0,0	84,6	15,4	7,7

	Private consultancies/ enterprises			Private companies providing agr. inputs			Private companies proc- essing agr. goods			Other sources		
	Coop	Comp	NI	Coop	Comp	NI	Coop	Comp	NI	Coop	Comp	NI
FBOs (4)	100,0	25,0	0,0	100,0	25,0	0,0	100,0	25,0	0,0	50,0	0,0	0,0
NGOs (6)	66,7	50,0	0,0	83,3	16,7	0,0	50,0	0,0	16,7	16,7	0,0	16,7
Private org. (48)	83,3	64,6	4,2	75,0	18,8	18,8	62,5	8,3	31,3	16,7	2,1	18,8
Public org. (13)	92,3	38,5	0,0	76,9	30,8	15,4	76,9	30,8	15,4	23,1	7,7	0,0



Coop = cooperation; Comp = competition; NI = no interaction

*Note: Percentages do not add up to 100% due to the fact that those cases where respondents stated that there is overlap of cooperation and competition have been counted twice.*

Private organisations have a strong focus on cooperating with other private consultancies and companies. There is a notable lack of interaction with any kind of public organisation such as public research centres, authorities and universities. Competition is most pronounced between private consultancies (around 65% report competition; some of them a combination of cooperation and competition).

The majority of Public organisations cooperate with all other types of organisations. Competition is acknowledged more prominently with private consultancies as well as input and processing companies.

Overall, there is least interaction with private companies processing agricultural goods (33% of responding organisations do not interact with this type of organisation). The results also show little interaction or even competition between private organisations and farmer based organisation with both universities and public research centres, indicating scope for improvement.

The extent of cooperation as stated by the respondents leads us to assume that potential gaps in knowledge can be filled through cooperation with a wide range of actors. Overall, the data highlight that the majority of organisations do cooperate with other organisations offering advice. In

some cases, organisations both cooperate and compete at the same time. Although the data only represents a limited sample of advisory organisations, we did not detect breaks or disconnects in its system (understood as a lack of cooperation).

**Criterion 6: Advisory organisations are flexible and able to adjust their remit**

We believe that ‘fit for purpose’ advisory organisations should be flexible so they can potentially respond to new and ceasing demands. For instance, with the surge in popularity of social media sites advisory organisations need to be flexible enough to engage with these new communication channels, as “mobile phone and social media applications are gaining popularity by sharing information among large number of farmers and other stakeholders in agriculture”(GFRAS conference, November 2013). While we could not measure the ‘flexibility’ of organisations per se, we use the time spent for research and development as a proxy indicator for the interest and capacity of an organisation for continuous learning, development and adjustment.

Figure 3: Time spent on advisory work, research & development, and administration & management by different types of advisory organisations (n=73).

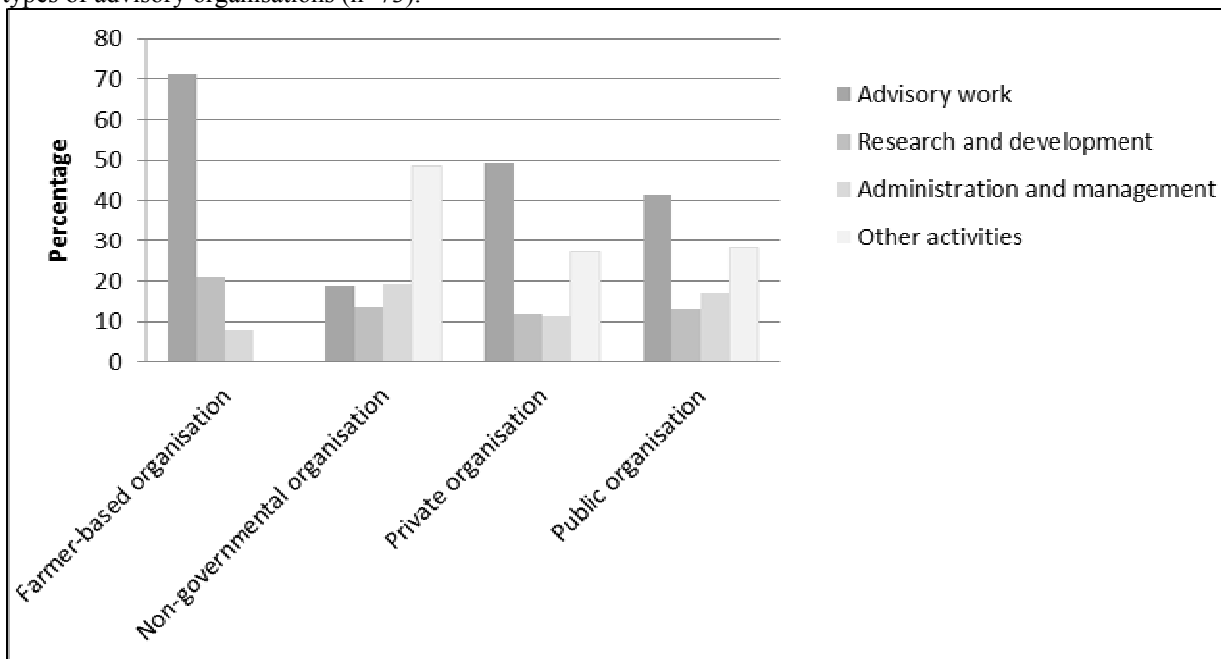


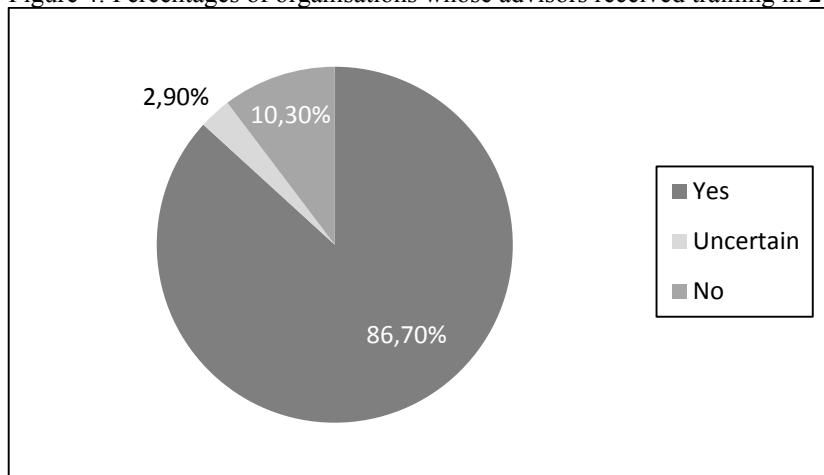
Figure 3 shows that farmer based organisations spend almost all of their staff time (more than 70%) on advisory work, and very little on administrative tasks. It is surprising that the average NGO spends more time on administration and management than public organisations. This may be due to the specific sample of organisations in the survey. NGOs spend only a fraction of their time on advisory work (less than 20%) whilst spending almost 50% of their time on other activities such as government and policy recommendation work, reflecting that their remit is not solely advice. Private and public organisations have a more even spread of time. On average, public organisations spend more of their staff time (17%) on administrative tasks than private organisations (11%).

All types of organisations spend between 10 and 20% or their time on research & development. We assume that this amount was sufficient in the past to adjust to changing demands – as evidenced by the fact that more than half of the organisations in the sample date have existed for many years (56% were established before the year 2000; n=74).

### Criterion 7: Advisors receive regular training

According to Garforth et al. (2003: 329), “staff who deliver a service need to have appropriate expertise, knowledge and skills if they are to be effective and remain credible in the eyes of clients”. Against this background, regular training is an important component of a successful advisory service. More than 86% of organisations stated that their advisors received training in 2012 and only 10% reported that they did not (Figure 4).

Figure 4: Percentages of organisations whose advisors received training in 2012.



The data also show a connection between maintaining or increasing advisor numbers and the completion of training. The link between advisors receiving training is much more pronounced in organisations that increased their advisor numbers (35%) or maintained their advisor numbers (50%). In contrast, 85% of organisations whose advisors did not receive training had maintained (not increased) their advisor numbers.

### Criterion 8: Range of advisory methods

As the agricultural industry encompasses a wide range of people from different backgrounds and different generations, with varying sizes of organisational forms and farm types, it is important that a diverse range of advisory methods are used to deliver advice to ensure that the differing needs and preferences of clients are met. Respondents were asked to give a percentage estimate of the dominant advisory methods used by their advisory staff. The options included extension (e.g. one to one advice on the farm or over the telephone), group extension (e.g. small group advice on or off the farm) and mass media extension (e.g. the use of the internet, radio, TV, publications).

The findings indicate that overall individual extension was the most popular working method (Figure 5). The proportions of methods show a high level of variability (as indicated by the scatter of points in Figure 5) with the proportion of *Individual* and *Mass-media* extension varying from around 0% to 100% between different advisory organisations, and the proportion of *Group extension* presenting less variation (from 0% to 80%). On average, it can be said that *Individual extension* is the favoured method (mean=69.65% versus 16.97% and 11.99% for the other two categories).

Figure 5: Ternary plot<sup>11</sup> highlighting the proportion of the three advisory methods used by advisory organisations in the survey (aggregated for all organisations)

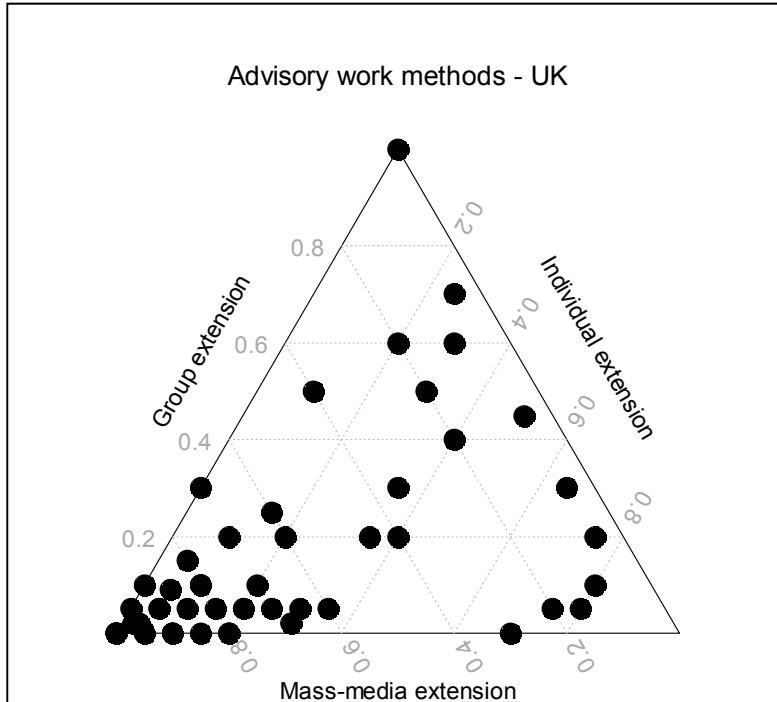
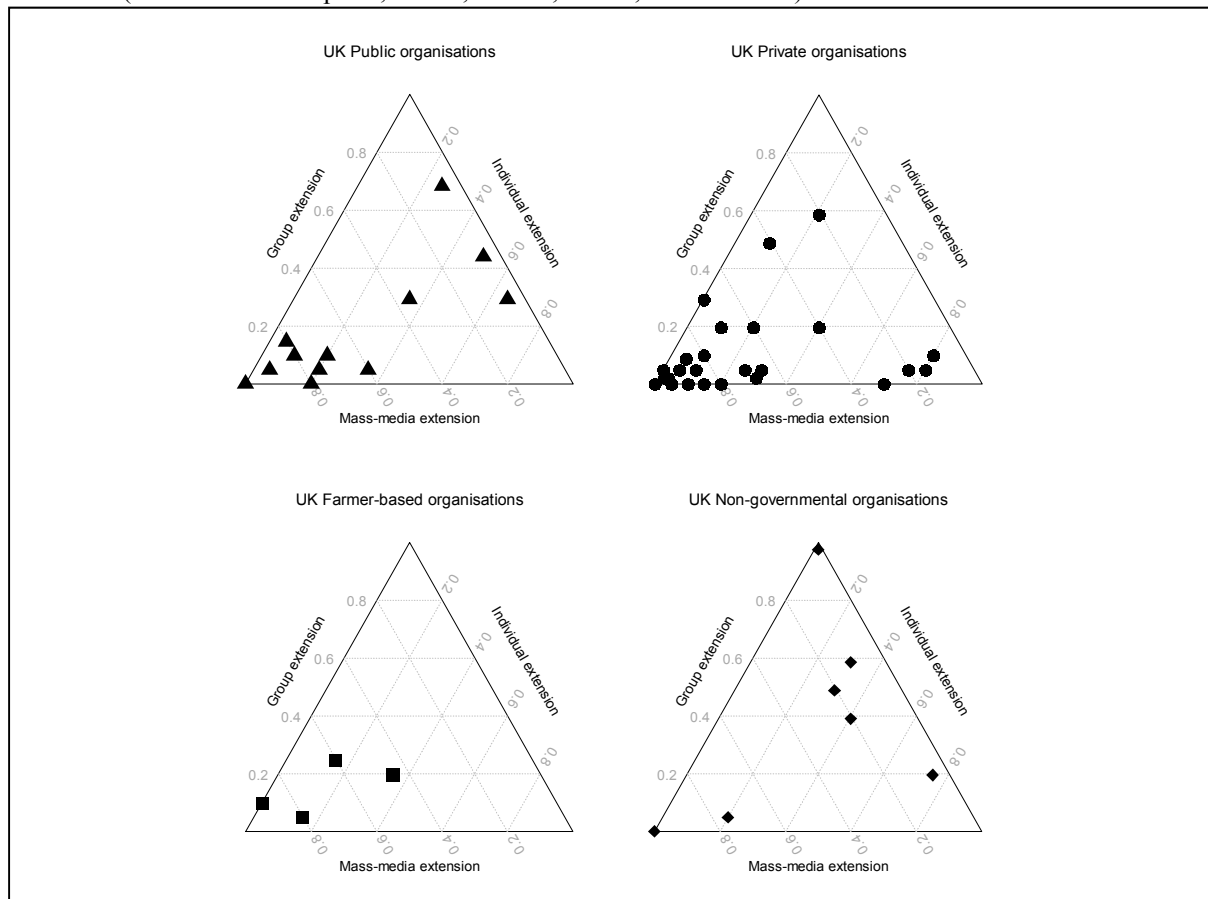


Figure 6 shows the proportion of the three advisory methods used by type of advisory organisation. Respondents from Public, Private and Farmer-based organisation showed, on average, the highest mean for Individual extension (57%; 80%; 69%), followed distantly by Group extension (24%; 14%; 16%), and finally by Mass-media extension (19%; 6%; 15%). It appears that all three types of organisations respond to a farmer’s demand for this type of advice despite it being the most time and resource-consuming method. It may also reflect the recognition that this method is deemed the most effective for knowledge transfer. NGOs have more even proportions in their use of approaches. They have the highest mean for Mass-media extension (39%), followed by Individual extension (33%) and Group extension (28%). Note that the results for public, farmer-based and NGOs should not be generalised due to the small sample size.

<sup>11</sup> A ternary plot (Aitchison, 1982) is an equilateral triangle, with each of the three vertices representing a percentage, and with the three percentages summing up to 100%. The closer a point appears to one of the vertices, the higher the percentage corresponding to the advisory method whose name appears on the side of the triangle opposite to that particular vertex. A point near the centroid of the triangle indicates an even allocation of the three methods.

Figure 6: Ternary graphs highlighting the frequency of the three advisory methods for each of the advisory organisations in turn (clockwise from top left; Public; Private; NGOs; Farmer-based)



## Discussion and Conclusions

The underlying assumption of our study is that agricultural advisory services' primary role is to provide farmers with relevant knowledge and networks around innovations, adjustments to policies and agricultural markets. Based on this assumption, we selected eight criteria which would indicate that the advisory service functions well and is 'fit for purpose'. However, there are also other possible conceptualisations, e.g. the services could be assessed based on whether they help to meet national strategies, or address needs for knowledge and/or support innovation identified by experts or the government.

Table 5 provides an overview of criteria and our assessment whether they are being met by the UK advisory system. We postulated that a well-functioning advisory system should involve a range of organisations whose services are complimentary. There is evidence that a diverse set of organisations are part of the UK AKIS and its advisory services. This set up should successfully cater for the needs of different farmers, addressing Kidd et al.'s (2000: 101) argument that "there are extension functions and topics which, though important, will not be absorbed by the private sector and many farmers will not be served effectively by commercial extension they cannot afford."

Whether the advisory services of existing organisations complement one another depends on the complementarity of the topics and clients they cover (criteria 1 and 2), and that a range of advisory methods is employed to serve differing user needs and preferences (criterion 8). Complementarity is given with regard to topics and advisory methods (although methods are somewhat skewed to individual extension). However, there are gaps regarding a number of client groups such as young farmers, female farmers, subsistence and part-time farmers, with the majority of organisations either not covering these client groups at all or as just a minor target.



Table 5: Overview of criteria for assessing advisory services within AKIS

Criteria	Assessment (+ is being met, - is not being met)
1. All relevant advisory <b>topics</b> are covered.	+
2. All <b>client groups</b> are covered.	-
3. There is a stable or growing <b>workforce of advisors</b> .	+
4. <b>Different types of organisations</b> are involved that draw on <b>diverse knowledge sources</b> .	+
5. The advisory <b>organisations cooperate</b> to bridge potential knowledge gaps.	+
6. Advisory organisations are <b>flexible</b> to adjust their remit.	+
7. Advisors receive <b>regular training</b> .	+
8. A <b>range of advisory methods</b> are used.	+/-

All other criteria appear to be met in the UK advisory system:

- A variety of knowledge sources is used; and organisations cooperate with a range of other actors. According to Benson and Jafry (2013: 385), “public sector extension organisations need to work in partnership with the public, private and NGO sectors to achieve convergence and respond to the needs of farming communities”. The findings indicate this is happening in the UK, which can be interpreted to mean that the UK advisory services are ‘fit for purpose’ in this regard. Since “the solution to address fragmentation is not necessarily to bring all advice under one roof” (Garforth et al., 2003: 330), but more for the different advisory organisations to be aware of the advice that other organisations provide and point people in their direction if they themselves cannot help we believe that the current level of cooperation and interaction is sufficient to provide this. However, we cannot derive conclusions about the levels or the quality of cooperation, or whether the ‘right’ knowledge is being exchanged.
- The overall workforce of advisors appears to be stable and receiving regular training.
- Advisory organisations spend time not only on advice but a range of other tasks and activities which should allow them to be flexible in adjusting to new demands.

The study also helps to see what sort of results particular survey questions will yield. For example, the question on relevance of different knowledge sources did not provide conclusive evidence which might be due to the high aggregation level. An organisation might have used all these sources at one point or another, but not in great depth. To explore knowledge and information flows in more detail would require in-depth studies of relationships between selected organisations and potentially a focus on what kind of knowledge and information is being shared. There is a trade-off between appropriate answer options (and even survey questions) for e.g. large public organisations vs. consultancies with one or two employees.

In interpreting the results it is important to keep in mind the limitations of the study. The sample depth and breadth cannot be considered as representative. The survey was completed by a considerably higher proportion of private organisations than other types of organisations, making the results unbalanced. On the other hand, public organisations have many more advisory staff than the average private organisation. There is also a bias towards England. With only one response from Northern Ireland and six responses from Wales, statements about the function of advisory services in these UK countries are difficult. In addition, the accuracy of the survey results is diffi-

cult to judge in those cases in which respondents were completing the questionnaire for their larger-scale organisation where staff may only have an overview of their own department. A further limitation is related to the fact that not all sources of information and advice were captured (e.g. in-house in larger companies, agronomists employed on-farm, garage for machinery advice), which may have distorted the results to a degree.

To conclude, we agree that the UK AKIS is fragmented, and its advisory subsystem is composed of a diverse advisory community. With sufficient cooperation and coordination, the negative effects of fragmentation can be addressed. We recommend that future studies employing the notion of 'fit for purpose' or 'best fit' need to explicitly define what the demands of the current context in a country are, and what the 'fit' actually expresses (a 'best fit' advisory system does not necessarily imply it is also a 'best fit' with the overall AKIS). There is currently also a lack of clarity in the literature discussing AKIS and advisory services regarding how they relate. We caution that inferences regarding 'fit for purpose' from the advisory subsystem cannot be made to the overall AKIS because it neither considers the education and research subsystems nor knowledge flows between the subsystems.

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