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## AKIS and advisory services in Belgium

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Prospects for Farmers' Support:  
Advisory Services in European AKIS

**AKIS and advisory services in Belgium**  
**Report for the AKIS inventory (WP3) of the PRO AKIS project**

May 2014

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## Executive summary

The main aim of the report is to provide a comprehensive description of the Agricultural Knowledge and Information System (AKIS) in Belgium, with a particular focus on agricultural advisory services. The description includes history, policy, funding, advisory methods and a section on how the Farm Advisory System (FAS) was implemented.

This report represents an output of the PRO AKIS project (Prospects for Farmers' Support: Advisory Services in the European Agricultural Knowledge and Information Systems'). It is one of 27 country reports that were produced in 2013 by project partners and subcontractors for compiling an inventory of Agricultural Knowledge and Information Systems. AKIS describe the exchange of knowledge and supporting services between many diverse actors from the first, second or third sector in rural areas. AKIS provide farmers with relevant knowledge and networks around innovations in agriculture. Findings from the 27 country reports were presented at three regional workshops across Europe in February and March 2014, discussed with stakeholders and experts, and feedback integrated in the reports.

Belgium is a rather small country at the European scale, and contains fewer than 45 000 farms, mainly in arable farming, animal production and horticulture. But the agricultural sector is highly productive, and is an important contributor to the Belgian trade surplus together with the agri-food industry. Thus, AKIS investments and activities aim at supporting the performance of the sector but also at tackling the challenges associated to the reduction of its environmental impact.

An important characteristic of the Belgian AKIS is that it is completely under regional responsibility. As a result, there are two AKIS in Belgium: one in Flanders and one in Wallonia. They share the same history and are characterized by very strong formal and informal interactions between the different actors of AKIS. These actors include agricultural universities, applied research institutes, and a series of third sector organisations that fulfil different functions within the system (experimental stations, advice, training...). An important dimension of the system stems from the fact that many of these actors are associations which their boards contain representatives of research, public administration and farmers' organisations. Advisory services are provided to farmers by a diversity of organisations: farmers' unions and associations, farmers' cooperatives, private consulting companies, provincial and regional administrations, but also upstream and downstream industries.

Public support for the AKIS is still important in both regions. This support consists of both institutional mid-term funding to key actors of the system (applied research institutes, experimental stations), and competitive calls. Overall, the funding of AKIS and agricultural advisory services combines different sources (regional and provincial funds, farmers' contributions) and forms. It includes calls that aim more and more at supporting innovations and at enhancing the connections between AKIS organisations, so they can be of benefit to the users. If the positive effects of these interactions are highlighted in many sectors (like the horticultural sector in Flanders or arable farming in Wallonia), there are some discussions about the lock-in effects that such public-private partnerships could induce.

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## List of Acronyms

ADLO	Sustainable Agricultural Development Division
AKIS	Agricultural Knowledge and Information System
AWE	Associations Wallone de l'Elevage
CADCO	Centre Agricole pour le Développement des Cultures Céréalières et Oleo-Protéagineuses
CAP	Common Agricultural Policy
COSTAGRI	Comité Stratégique de l'Agriculture
CRA-W	Centre de Recherche Agronomique de Wallonie
CRE	Centre de Référence et d'Expérimentation
DG06	Direction générale opérationnelle de l'Économie, de l'Emploi et de la Recherche
DG03	General and Operational Direction of Agriculture, Natural Resources and Environment
DGARNE	Direction Générale Opérationnelle Agriculture, Ressources naturelles et Environnement
EU	European Union
FAS	Farm Advisory System
FHW	Fédération Horticole Wallone
FJA	Fédération des Jeunes Agriculteurs
FUGEA	Fédération Unie de Groupements d'Eleveurs et d'Agriculteurs
FWA	Fédération Wallone d'Agriculture
GAEC	Good Agricultural and Environmental Conditions
ILVO	Institute for Agricultural and Fisheries Research
IPM	Integrated Pest Management
IWT	Innovation by Science and Technology
LED	Light-Emitting Diode
LLN	Louvain-la-Neuve
PCS	Research Centre for Ornamental Plants
PRO AKIS	Prospects for Farmers' Support: Advisory Services in European AKIS
R&D	Research and Development
SME	Small and Medium Entreprises
SPW	Service Public de Wallonie
UAW	Union des Agricultrices Wallones
UNAB	Union Nationale des Agrobiologistes Belges

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## 1. Main structural characteristics of agricultural sector

In 2010 the Belgian agricultural sector consisted of 42 900 farms. There is an ongoing trend of a reduction in the total number of farms. This reduction concerns mostly small farms, both in terms of economic outputs and the cultivated area (figures 3 and 4 in appendices). In 2010 agriculture represented 1.4% of the active population and 0.7% of the gross domestic capital. Even though the sector is not a major sector for the national economy, it is still an important one, particularly in relation to landscape and environmental impacts. Due to the decentralisation of agricultural and rural policies, we propose to highlight the diversity of farms in both regions: Wallonia and Flanders.

In Wallonia, farming occupies 720 000 ha, or 43% of the total area of the region. The distribution of agricultural land use is as follows: about 58% of fodder crops, 25% of cereals, 9% of industrial crops, 4% of potatoes and 1.7% of vegetables and others. In terms of employment and farm structure, there were 13 500 farms in Wallonia in 2011. The number of farms has decreased sharply in recent years: there were about 30 000 farms in 1990. In terms of employment, there are 22 500 people working in agriculture. More than 25% of Walloon farmers are part-time farmers. 30% of farmers are over 60, and 60% are over 50. The farmers that are younger than 40 represent only 10% of the farming population. The average farm acreage has doubled since 1990, with more than 50 hectares today. In terms of farm specialisation, the distribution is as follows: 28 % of beef production, 11% mixed milk-beef production, 12% mixed arable-beef production, 15% milk, 25% of arable crops and 10% of other systems. In terms of performance, Walloon farms present high level of yields with, for instance, an average of 8.9 tonnes per hectare of wheat. The value of the economic production is €1.73 million, and agriculture and the agri-food sector accounts for 2.8% of the gross added value of Wallonia. There are also concerns about the environmental impact of agriculture in Wallonia, with an effort to develop organic agriculture (which is more important for animal production). For instance, more than 25% of poultry is bred organically and more than 15% of the agricultural area is farmed organically in South East whereas this proportion is much lower in the North-Western area where arable farming is more prominent (DG03 2013, Government Walloon 2012).

There were less than 26 000 farms in Flanders in 2010. As in Wallonia, the reduction in farms number is very important as there were still 41 000 farms in the area in 2000. The farms occupy 620 000 ha (46% of Flanders area). The use of agricultural land is spread as follows: 55% for fodder crops, 20% for cereals, 10% for potatoes, 7% for sugar beet and 0.1% for greenhouses. In term of social data, Flemish agriculture employed 51 000 people in 2011 (72 000 in 2001), amongst which 22% came from outside of farmers' families. There are about 35% of women employed in the sector. The horticultural sector is important, representing about one third of the total employment. 53% of farmers are over 50 and less than 10% have a designated follower (Platteau et al. 2010). As in Wallonia, there have been efforts to reduce the impact of agriculture on the environment and to increase the area that is farmed organically.

Aside the differences in the agriculture of the two regions, some common points should be emphasised. First, even though there are fewer and fewer people employed in Belgian



agriculture, the sector remains important for the country's economy: the total Belgian trade in agricultural products has a clear positive balance, and represented in 2009 about one quarter of Belgium's trade surplus (Platteau et al. 2010). A second common point is the evolution of the farming population with fewer and fewer farms being managed by an ageing population. The third common point stems from the necessity to reduce the environmental impacts of agriculture in the two regions. Many regulations aim at reducing the contamination of soil and water by nitrates and other pollutants, but also at monitoring the input use efficiency in the sector (Platteau et al. 2010).

Thus, it seems that the main objective of the AKIS in both regions is to support farmers in combining productive and environmental objectives, along with the guarantee of food safety (figure 5 in appendices). A good illustration of this priority of Belgium agricultural policy can be found in the modalities of application of the Common Agricultural Policy (CAP) (European Commission 2013). Rural development (2nd) pillar stands for only 8% of total expenditure in Belgium (23% in average for EU-27) whereas market measures represent 25% (9% in average for EU-27) (figure 6 in appendices).

## 2. Characteristic of AKIS in Belgium

The main characteristic of the Belgian AKIS is its decentralisation. Therefore, we chose to separately present the two regional systems (Flanders and Wallonia).

### 2.1 AKIS in Flanders

#### 2.1.1 Key actors of AKIS in Flanders

According to Vuylsteke and De Schepper (2011) and the interviews with experts (table 1 in section 7), the key actors of the AKIS in Flanders are the following:

- **Universities:** there are two public universities directly involved in agricultural research (*Ghent University*<sup>1</sup> and the *Katholieke Universiteit Leuven*<sup>2</sup>) that have faculties dealing with agriculture. To our knowledge, there is no department that specialises in training advisors and analysing advisory services.

- **Research Institute:** there is one major applied research institute for agriculture in Flanders: the *Institute for Agricultural and Fisheries Research (ILVO)*<sup>3</sup>. This institute implements research for all the sub-sectors of agriculture. ILVO employs 600 people among which 250 are researchers and more than 50 are PhD students. 70% of its funding (total budget of about €25 millions) comes from the regional Ministry of Agriculture (40% through a subsidy based on a three year scientific program with a maximum of 25% dedicated to basic research); 30% through scientific contracts related to specific tasks (such as official trials for crop varieties certifications), and 30% from various competitive calls (Flemish ministry of research, Federal Government, European Union, Private Industry...). The institute is organised into 4 research departments: animal sciences, plant sciences, technology & food sciences, and social sciences (ILVO 2012).

- **Experimental stations:** the 14 experimental stations are a central element of the Flemish AKIS as well as of the relations between applied research and advice for farmers. They are co-funded by the regional government, provinces and farmers. Farmers are present in the boards that decide which experiments will be carried out each year. Experimental stations also provide direct advice to farmers. More details about their advisory functions are given in section 4. These experimental stations play a much stronger role in horticulture and arable farming than in the animal production.

- the **Agency for Innovation by Science and Technology (IWT)**<sup>4</sup> helps Flemish companies and research centres in realizing their research and development projects, through financial funding, advice and support to networks of potential partners in Flanders. The agency also supports the Flemish Government in its innovation policy, including agriculture.

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<sup>1</sup> <http://www.ugent.be/en>

<sup>2</sup> <http://www.kuleuven.be/kuleuven/>

<sup>3</sup> <http://www.ilvo.vlaanderen.be/>

<sup>4</sup> <http://www.iwt.be/english/welcome>

- **(Professional) Advisory services:** there are a range of organisations specialising in the delivery of advisory services. These organisations are mostly private companies or farmers' associations (Bergen and Van Gijsegheem 2010), which are presented in section 4. There are also formal or informal networks, farmers' group and study clubs, but a review of such activities does not exist. Beyond these specific organisations, many of the other actors of AKIS provide advisory services to farmers (section 4).

- **Farmers' associations:** there are three main farmers' associations: *Boerebond* (about 7000 members), *Bioforum* (organic farming) and *Algemeen Boerensyndicaat*. All of these organisations provide services to farmers which are discussed further in section 4.

- **Support System:** Information and knowledge also come to farmers through diverse organisations (mostly private) supplying farmers with inputs, or collecting their production. Farmers' associations and cooperatives provide information to farmers, for instance *AVEVE*, a cooperative historically connected to the farmers' union *Boerenbond*. Not a lot of centralised data about these organisations exists but according to the various interviewees the private companies that supply farmers with seeds, chemical and fertilizers are major partners of farmers for the diffusion of information related to technical and economic issues.

- **Education:** Education falls under the responsibility of the Flemish Ministry for Education. There are agricultural-related schools at two levels in Flanders: i) secondary education (from 12 years old), for which about 20 schools offer education related to agriculture; and ii) higher education, with university colleges offering various degrees in bio-sciences (professional bachelors and masters).

### **2.1.2 Policy framework, governance and coordination structures in Flanders**

The Flemish AKIS benefits from important support from the regional government. This support can be differentiated in two instruments: basic funding (so-called "institutional funding": 67% of total) and, competitive calls (so-called "funding schemes": 33% of total) (table 2 in appendices). The region also supports knowledge platforms aiming at connecting the different actors of AKIS, for instance for foresight exercises. These investments represent about 35 million Euros per year (that is about €300 per farmer in 2010), and institutionalize strong interactions between AKIS actors (figure 1).

ILVO, the applied research institute, is a main beneficiary of the institutional funding (it receives about €10 million per year). Its objectives are set out in a three year contract with the Minister. The contract stipulates that at least 57% of research should be of interest to the Ministry. The contract also sets an evaluation procedure and critical performance indicators for the activity of the institute, accounting for different criteria (networking, publications...). ILVO also benefits from a tax refunding system that has enabled the institute to hire more than 50 PhD students. Experimental stations also benefit from regular subsidies from both the regional government and from the provinces.

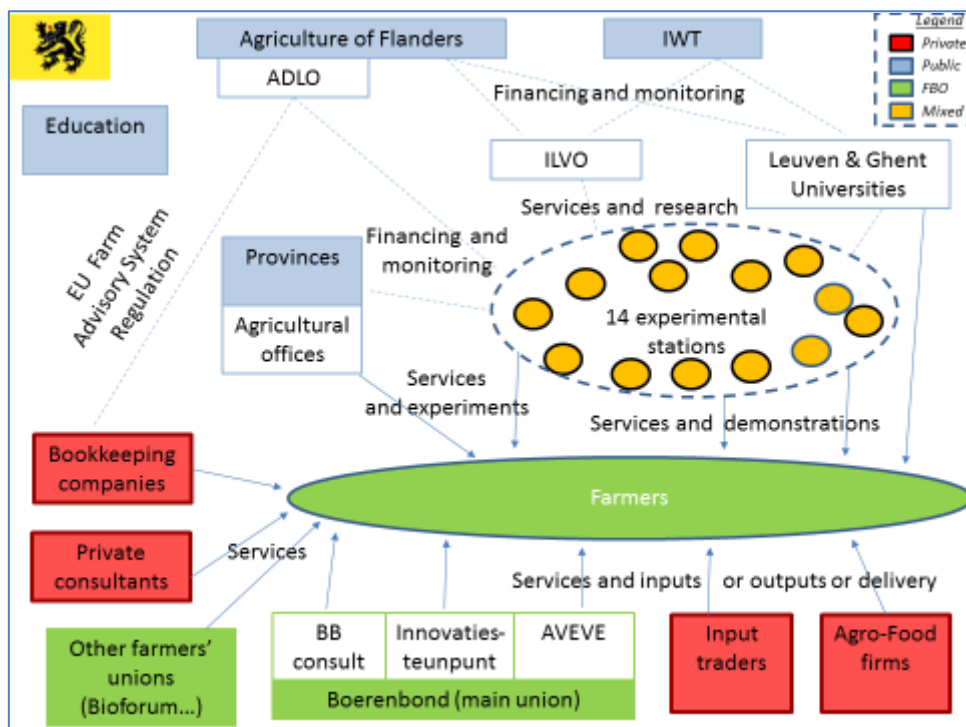
The second public funding is related to competitive calls. Beyond integrated research programming, there are three research programmes specific to agriculture (Vuylsteke and De Schepper 2011):

- i) the agricultural research grant program from the Agency for Innovation by Science and Technology (IWT) that aims at producing knowledge with the economic actors' participation;
- ii) demonstration projects targeted at a fast transmission of innovation practices ready for implementation at the farm level;
- iii) the strategic plan on organic agriculture.

It should be noted that co-funding is compulsory within the first of these funding schemes. IWT thus obliges a contribution of private actors (farmers, farmers' associations, private consultants...) within each project. Such rules are the expression of broader transformations of the conception of innovation policy in Flanders (Goorden 2004, Soete 2007), embodied in the creation of IWT.

IWT aims at helping Flemish companies and research centres to realise their research and development projects through financial funding (about 10% of ILVO and experimental stations budget). The Ministry of Agriculture and Fisheries and the Flemish Land Agency are also active in the establishment of different knowledge platforms, such as the platforms for agricultural research, for aquaculture or for rural research. These platforms are active in the planning of future agricultural research policy and coordination activities (Vuylsteke and De Schepper 2011). It should be noted that there are differences across sectors regarding the dynamics of agricultural research and networking. For instance there seem to be more initiatives in the horticultural sector (Vuylsteke and Van Gijsegem 20012) than in other plant production sectors and moreover vis-à-vis animal production sectors.

**Figure 1. AKIS Diagram in Flanders (source: the authors)**



## 2.2 AKIS in Wallonia

### 2.2.1 Key actors of AKIS in Wallonia

The AKIS in Wallonia (figure 2) contains some features in common with Flanders, as some of the organisations and institutions within these systems (such as the applied research institute) shared the same history before decentralisation. Nevertheless, some important differences should also be noted. The key actors of AKIS in Wallonia are:

- **Universities**<sup>5</sup>: there are three universities that propose curricula related to agriculture: the *Université de Liège*, *Gembloux Agro-Bio Tech*<sup>6</sup> and the *Université Catholique de Louvain* (LLN)<sup>7</sup>. To our knowledge, there is no specific course on training farm advisors within these universities.

- **Research institute**: as in Flanders, there is one major applied research institute in Wallonia: the *Centre de Recherches Agronomiques de Wallonie* (CRA-W<sup>8</sup>). This institute is financed by the Walloon government, with about €20 million per year (total budget: €34 million). It employs about 450 persons, among which 150 are scientific staff. There are four different research departments in CRA-W: life sciences, production and sectors, agriculture and natural environment, and valorisation of natural products. CRA-W benefits from an experimental domain of about 300 ha (experimental fields, orchards, greenhouses, laboratories) in three locations, including Gembloux (together with Libramont and Mussy La Ville).

- **Knowledge brokers and advisory associations**: since the federal state, and then the region, had gradually withdrawn from the direct implementation of services, some associations were created to stimulate interactions between actors of the Walloon agricultural R&D, and to provide services to farmers. Such knowledge brokers have different objectives.

11 of them are "*Centres Pilotes*"<sup>9</sup>: they regroup all the R&D actors related to a certain crop (fodder crop, corn, fruits, cereals...), or technique (organic farming...).

Others are called "*Filières*" and their role is to coordinate the different actors within different supply chains (potato, beef, pork, rabbit, milk). "*Filières*" are more or less the equivalent (for animal production) of "*Centres Pilotes*" for plant production. "*Filières*" may be more oriented towards market issues and consumers' needs and they are connected to the regional agency for the promotion of agricultural products. *Filières* and *Centres Pilotes* share a history with the Flemish experimental stations. The main difference being that they may act more as a broker and network organisation, with less direct investments in experimentations.

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<sup>5</sup> There are also three « Hautes Ecoles » related to agriculture: the *Institut Supérieur Industriel Agronomique* ([www.isia.be](http://www.isia.be)), the *Haute Ecole de la Province de Liège* ([www.hepl.be](http://www.hepl.be)), and the *Haute Ecole Provinciale de Hainaut-Condorcet* ([www.condorcet.be](http://www.condorcet.be)).

<sup>6</sup> <http://www.gembloux.ulg.ac.be/>

<sup>7</sup> <http://www.uclouvain.be/index.html>

<sup>8</sup> <http://www.cra.wallonie.be/>

<sup>9</sup> Here are the links to the websites of the eleven « centres pilotes » : [www.irbab-kbivb.be](http://www.irbab-kbivb.be) (for sugar beet) [www.fourragesmieux.be](http://www.fourragesmieux.be) (for fodder crops and grasslands), [www.fiwap.be](http://www.fiwap.be) (for potato), [www.centre-pilote-mais.be](http://www.centre-pilote-mais.be) (for corn), [www.gembloux.ulg.ac.be/pt/cepiscop](http://www.gembloux.ulg.ac.be/pt/cepiscop) (for cereals and oilseeds), [www.walhorti.com](http://www.walhorti.com) and [www.uap.be](http://www.uap.be) (for ornamentals), [www.legumeswallons.be](http://www.legumeswallons.be) and CPL –Vegemar (for vegetables), and Cepifruit asbl and Groupement desfraisiéristes wallons asbl (for fruits).

- **Farmers' unions:** there is one major farmer's unions in Wallonia: the *Fédération Wallonne d'Agriculture* (FWA<sup>10</sup>), which diffuses information through its study department. Other unions include the FUGEA (*Fédération Unie de Groupements d'Eleveurs et d'Agriculteurs*), UNAB (*Union Nationale des Agrobiologistes Belges*), FJA (*Fédération des Jeunes Agriculteurs*), the UAW (*Union des Agricultrices Wallonnes*) or the FHW (*Fédération Horticole Wallonne*).

- **(Professional) Advisory services:** as in Flanders, there are a range of organisations that specialise in the delivery of advisory services. These organisations could be either private companies or (and mostly) farmers' associations. They are described further in section 4. It should be noted here that the public sector plays a limited role in the direct supply of services. The employees of the public Service of Wallonia nevertheless still organise some activities with farmers (training sessions, conferences, open days and demonstrations in a network of farms acknowledged as centres for references and experimentations - *Centre de Référence et d'Expérimentation* [CRE]). The provinces employ a few advisors but have limited resources in that respect.

- **Support system:** upstream and downstream organisations within supply chains are an important part of R&D and advisory services in Wallonia. Part of this support is provided by farmers' associations (with or without the support of the regional government). In animal production for instance, there is an important federation, *l'Association Wallonne d'Élevage* (AWE<sup>11</sup>) that receives 2.8 million Euros per year from the region to implement R&D activities (section 4). In addition, AWE has created a firm for the purchase of inputs and the collection of outputs for farmers. *Bioforum* is another example, in the sector of organic farming. There are less farmers' organisations involved in the support systems of plant production.

- **Education:** It should be noted that education is not under the responsibility of the Ministry of agriculture but of the regional Ministry of education ("*Technical Education Department of Bruxelles-Wallonia Federation*"). Technical education exists in different curriculum: secondary education in ten technical and professional agricultural schools (6 years training from 12 years old), bachelor degrees in the three *Hautes Écoles Supérieures d'Agronomie*, and bachelor, master and PhD degrees in the three universities. There are also some possibilities to enter university through a "transition" programme or through training sessions accredited by the government. A three month internship is also necessary for farmers to benefit from subsidies when starting their businesses. Some evening classes are organised by the federation of young farmers (about legislation, farm techniques or more practical coaching) for this purpose.

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<sup>10</sup> <http://www.fwa.be/>

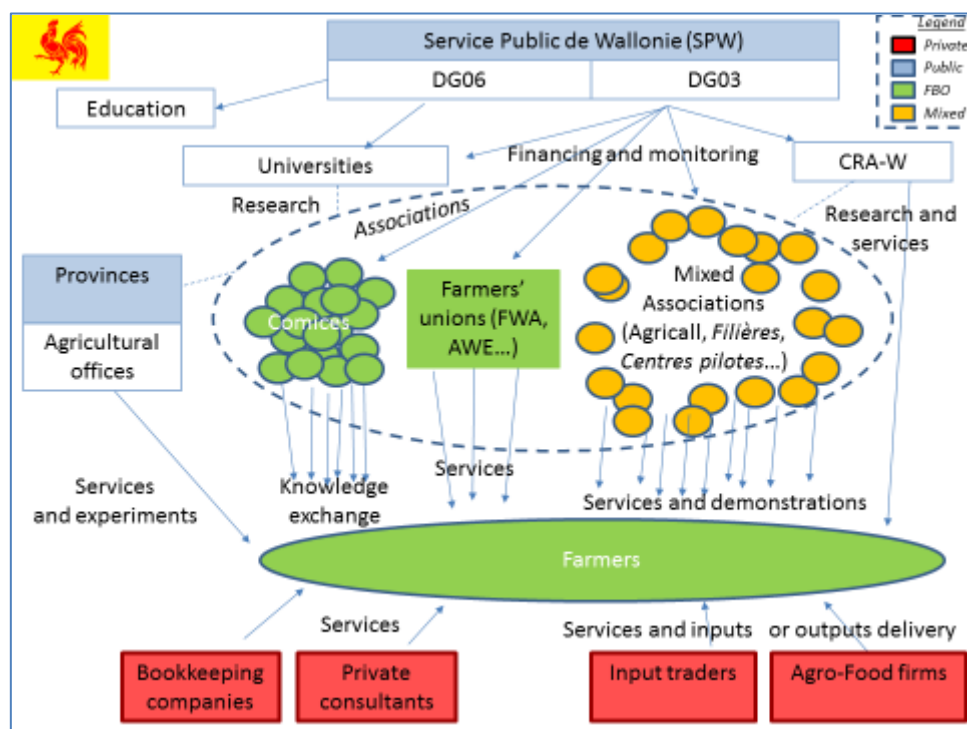
<sup>11</sup> <http://www.awenet.be/awe/>

## 2.2.2 Policy framework, governance and coordination structures in Wallonia

An important dimension of the intervention of the region is the financial support to a diversity of actors of the AKIS in Wallonia. As in Flanders, this support combines “institutional support” and “funding schemes” (competitive calls). The strategy of the region is thus to delegate various services to different actors of AKIS, including applied research, advisory services, and brokering. The main beneficiary of the services is the applied research institute CRA-W, as already mentioned. The activity of CRA-W is evaluated by the Committee of consultation and monitoring of agronomic research (*Comité de Concertation et de Suivi de la Recherche Agronomique*), with representatives from the University of Gembloux, Louvain, Bruxelles and Liège, the director of CRA-W, four representatives from public administrations, two from farmers' associations, one from a consumers' associations and two from the upstream industries.

But the delegation of services is complex: the public administration of Wallonia has individual contracts and conventions with more than 70 organisations besides CRA-W, including “Centres Pilotes” and “Filières”, but also with a variety of farmers’ or local associations. This system of delegation of services generate high cost of management and administration for small amounts of support to many associations (sometimes less than 10 000€). Currently there are debates within the Ministry about the rationalisation of this system of delegation of services, especially for the support of advisory organisations (see section 4 for a presentation of this project of reform).

Figure 2. AKIS diagram in Wallonia (source : the authors)



### 3. History of advisory system

There is a very long history of advisory services in Belgium, along with a long history of collective organisations of farmers. The most recent period of this history is characterized by the regionalisation of services. This decentralisation is not specific to agricultural advisory services, nor to agricultural policies: it is embedded in the complex history of federalism in Belgium (Deschouwer and Reuchamps 2013).

A key date in the history of farm advisory services is 2003. Before 2003, advisory services were essentially under federal responsibility. There used to be some state agronomists and specialist extension staff within the Ministry of agriculture who were in charge of both economic and technical advisory services. The state engineers were working with farmers setting-up and investments plans whereas specialists were working with farmers on more technical issues such as horticultural production techniques, crop protection, animal sciences...

Until 1995, this public extension system was mostly comprised of individual services for farmers. Advisers were civil servants covering all sub-sectors of agriculture. This system was criticized at a time with debates over the commercialization of services, and about the distortion of competition that public extension could induce on an emerging knowledge market.

Between 1995 and 2003, there was a radical shift, and the focus was put on group advice: civil servants were supposed to concentrate on collective operation, whereas individual advice was meant to be taken over by private and third-sector organisations. This was partly embodied in the creation of the “Centres pilotes” specialized according to sub-sectors: cereals, sugar-beet, potatoes, horticulture (vegetables and ornamentals). Public extension was thus not individual anymore, and there was a drastic reduction of staff involved in advisory activities, especially in Flanders. Some advisors left and others were redirected towards new activities such as the organisation of lectures and seminars for farmers, or expertise for the regional administration. They remained key actors for interlinking the different components of AKIS, and especially for connecting research and extension. Another trend was the development of experimental stations. These stations are organized at a level lower than the regional level: namely provinces. In both Flanders and Wallonia, the pilot centres and experimental stations have been given the status of associations.

In 2002, the fifth state reform (Lambermont Accord of 2011) was an important step in the transfer of competences to the regions, including agricultural and rural policies, public services, and the management of scientific institutions. The advisory systems have then evolved differently in the two regions, even though the experimental stations or Centres Pilotes still play a key role in the two regional AKIS.

In Flanders, as part of a global strategy of reduction of public expenditure (“Better Administrative Policy”), there has been a major reorganisation of the applied research institute and of experimental stations. Provinces were also involved so as to share investments with the regions and to cover R&D for every agricultural commodity. There is, for instance, a distribution of the topics of advice and R&D between provinces according to what the area



mainly produces. This is embodied by the experimental stations. These experimental stations are co-funded by the region, by the provinces and by farmers.

In Wallonia, the situation is more complex, with a bigger number and diversity of associations subsidized by the Wallonia region, reflecting the history and the diversity of farming structures and rural territories in the region. These associations are mostly funded by the region and by farmers' contributions. Besides the central role of the experimental centres and associations in the direct provisions of services within the two regions, there is thus an increasing pluralism and fragmentation of the advisory systems. The description of these systems, as well as the current funding mechanisms and regional policies, are presented in the next section.

## 4. The agricultural advisory service(s)

This section was rather complex to implement, given the high degree of diversity and plurality of advisory services suppliers. The methodology (see section 7 for further details) combined different sources of information, including a bibliography (written documents and websites), interviews with experts and an online survey. Unfortunately, it was not possible to collect figures for all types of suppliers, but we tried to sketch the advisory environment of farmers and also to create an overview of the respective resources of different types of advisers. A first non-comprehensive attempt of such an overview is presented in table 3 (appendices). It shows that, in both regions, the farmers are currently in contact with a wide range of actors providing complementary but competing services, in a rather fragmented system (figure 7 in appendices).

### 4.1 Overview of all service suppliers

In both regions, a major supplier of services for farmers are **upstream and downstream stakeholders** of the supply chains. It is not possible to highlight all of these organisations here, nor is it possible to precisely state their number of advisers, which may differ sharply from one sub-sector to another, and which are often disconnected from the public funding schemes. However we can highlight the importance of certain organisations, especially those connected to farmers' unions, such as *AVEVE* in Flanders<sup>12</sup>, of *AWE* in Wallonia.

*AVEVE* is a company linked to the most important farmers' union in Flanders: the *Boerenbond*, even though the two organisations are now clearly separated in legal terms. This company, established in the late XIX<sup>th</sup> century, was the first collective organisation of farmers which aimed at purchasing inputs, and later on at selling their products. The governance of this firm is still based on local circles of farmers and provincial boards of representatives. The group grew sharply in the 1980s when they bought over many firms (upstream and downstream) to become a holding. Today, *AVEVE* is the market leader in agricultural and horticultural supplies in Belgium and has more than 40 companies, it employs 1600 people (including the country's largest chain of garden centres), and it has a turnover of €1 billion (among the TOP 100 companies in Belgium)<sup>12</sup>. It is hard to evaluate the number of employees actually involved in advisory activities, but *AVEVE* is certainly a major actor of agricultural R&D in Belgium.

In the animal production sector the *Association Wallonne de l'Élevage* (*AWE*, the Walloon association of breeders) has a similar profile, even though it is much smaller. It has two components: the association that implements R&D activities and provides services to farmers (with about 70 advisers in the field), and a company that is active in selling farmers' products, managing genetic resources markets and providing inputs to farmers. The association receives a subvention of 2.8 million Euros from the Wallonia region, which covers 50% of the association's expenditure on advice and applied research.

Aside these key actors; there are also many private suppliers of inputs that provide information to farmers. An example given was the technical services of the Tirlémontoise

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<sup>12</sup> <http://www.aveve.be/Engels/Home/tabid/4243/language/en-US/Default.aspx>

refinery in Wallonia, which sells weeds to farmers and proposes some agronomic services to farmers' fields with their own agronomists. But we were not able to gather comprehensive data about the development of the farm advisory activities proposed by such organisations.

Another common point in the two regions is the role played by **applied research institutes** in the delivery of services to farmers. *ILVO* and *CRA-W* share more than a common history. Even though giving advice to farmers is not their core activity, they are both in direct contact with farmers for some of their activities. For instance, *CRA-W* reaches farmers through different means: e.g. publications (such as the White Book that provides results of experiments about arable crops, see section 4.5), online tools that are freely accessible (but that are more targeted to advisers than to farmers), information bulletins about crop contamination by diseases and pests, and formal or informal meetings with farmers (through demonstration fields, open days, evening lectures...)...

A third actor is a collection of **non-profit organisations that provide advisory services to farmers**. These associations share some common features across the two regions: they are non-profit, and their members and board are often composed of a range of actors, including farmers and researchers. Nevertheless, the situation is different in the two regions.

In Flanders, these associations are mostly the 14 experimental stations. These stations, co-financed by the region, the provinces, and some farmers' contributions, provide a range of service to farmers. In total, they employ a few hundred researchers who work part or full-time as advisers. We interviewed the director of one of these experimental stations, which specialised in horticulture (*Research Centre for Ornamental Plants - PCS*<sup>13</sup>). It employs 40 people of which 50% are also involved in advisory activities through demonstrations and open days, a warning system (about pest dissemination), field courses, but also through individual services to farmers. Even though the experimental stations are autonomous and supported by the different provinces, they do not compete with each other. There is an institutional arrangement which recognises that they specialise in different production sectors, reflecting the commodity specialisation of the different provinces.

In Wallonia, the situation is a bit more complex, as the regional ministry has contracts with a broader range of associations, reflecting the history of collaboration between research and farmers in the region. These associations have a different status and are often much smaller than the experimental stations in Flanders. They can be classified in different types: *Centres Pilotes*, focused on technical issues and only for plant productions, *Filières*<sup>14</sup> with a broader perspective on the whole value chain (animal production), provincial associations for the promotion of rural development, NGOs, and a wide scope of other associations. Some of

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<sup>13</sup> <http://www.pcsierteelt.be>

<sup>14</sup> The list of « Filières » includes the Filière avicole et cunicole, the Filière horticulture produits comestibles the Filière horticulture ornementale, the Filière grandes cultures, the Filière lait et produits laitiers wallons, the Filière ovine et caprine, the Filière pommes de terre, the Filière porcine, the Filière viande bovine, the Filière Pisciculture. Some of them, dealing with animal production, have been integrated in AWE as far as their advisory activity is concerned.

these associations, which play a role of research, brokering, networking and advice, are managed by researchers from Université de Liège-Gembloux Agro Bio-Tech or Université catholique de Louvain (LLN). Others are facilitated by farmers.

**Farmers' unions** are also active in providing services. In Wallonia, the main farmers' organisation is the *Fédération Wallone de l'Agriculture* (FWA)<sup>15</sup>, with about 7000 members. Beyond its function of farmers' political representation and lobbying, it proposes services for farmers thanks to the 15 advisers of its "*département études*" (studies department), mainly on how to apply or comply with various European, national or regional regulations and standards (about rural development, water management, environmental standards...). There are other farmers' unions such as the *FUGEA* that also propose a support to farmers.

In Flanders, the most important farmers' union is the *Boerenbond* (about 7000 members). Besides its historical role in the settlement of AVEVE, the *Boerenbond* also provides various services to farmers: social services (replacement, support to farmers facing crisis...), but also coaching and support for innovation projects. Thus, 15 to 20 advisers work for the *Innovatiesteunpunt voor land- and tuinbouw*<sup>16</sup>. It aims to incubate and deliver experimental development projects that foster innovation and also play the role of innovation brokers covering any aspect of the innovation process. The advisers are called "innovation consultants" and give advice to individual agricultural entrepreneurs, as well as to different types of partnerships. In addition, various training sessions are given to entrepreneurs on social, strategic and technical innovation. Most of the activities are project based (EU or nationally funded innovation projects).

Among the other farmers' unions, some are active in the promotion of organic farming, in both regions, such as UNAB in Wallonia. They have contributed to the emergence of Bioforum<sup>17</sup>, which is active in both regions, and provides diverse training and information regarding organic farming, from technical to marketing issues. The scope of this association goes beyond farmers and includes other key actors of the promotion and development of organic farming.

There are also some services provided by an organisation dedicated to farmers facing difficulties in both regions<sup>18</sup>, with the status of a public-private partnership in Flanders<sup>19</sup>.

**Private advisory services companies** compose another category, which is more complicated to describe, as the companies are often less connected to public administration or to any other form of monitoring publicly available. Thus, we cannot claim to be exhaustive in our description, nor even representative of the diversity of these firms.

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<sup>15</sup> <http://www.fwa.be/wordpressfwa/>.

<sup>16</sup> <http://www.innovatiesteunpunt.be/EN/Home>

<sup>17</sup> <http://www.bioforum.be/>

<sup>18</sup> Agricall ASBL in Wallonia ([www.agricall.be](http://www.agricall.be)).

<sup>19</sup> <http://www.boerenopeenkruispunt.be/>

In both regions, there seems to be a difference between two kinds of firms: bookkeeping companies and technical consultants. Bookkeeping companies are important suppliers of advisory services, and they are involved in the implementation of the Farm Advisory System Regulation (FAS) in Flanders. In Flanders, we could identify 8 of these companies that are SMEs (employing often less than 15 advisers). One of these companies was created by the farmers' union *Boerenbond*, even though it is now an independent company from a legal point of view. It should be noted that, maybe due to the reduction of the numbers of traditional clientele (farmers requesting bookkeeping services), these companies have tended to diversify their activity towards more technical and agronomic content (manure management, renewable energy...), but also outside of agriculture (craft industry...). In both regions, there are also many other individual bookkeepers which we could not identify in this inventory.

Companies providing technical advice are also difficult to identify, as often they do not belong to any frame of public policy. However the interviews with experts enabled us to identify some of these firms. Often they are very small enterprises, with less than five advisers, sometime highly specialised in very small sectors of production (such as azalea production for instance). It should be noted that one Dutch private advisory company is active in Belgium (both Flanders and Wallonia): *DLVadvies*<sup>20</sup>, which it's few dozen advisers provides, besides management and bookkeeping services, advice on soil, environment, energy, quality and building.

Other examples of private advisory companies include consultancy organisations developed by Universities initiatives, such as the *Service Pédologique de Belgique*<sup>21</sup> (soil-science service), initiated by the *University of Leuven*, which provides advice based on the analysis of soil sample, or more globally the *REQUASUD* networks of private laboratories that work closely with universities. Some associations mentioned above also commercialize part of their services, such as *Diversiferm*<sup>22</sup>, an association that provides and charges coaching and feasibility studies for farmers willing to diversify their activities in Wallonia.

Compared to 15 years ago, when advice was provided by agronomists from the Ministry of Agriculture, nowadays **the public sector** plays a limited role in the direct provision of services in both regions, even though it is still involved in the financial support of these activities. In both regions, there are two administrative levels involved in the support to advisory activities: the central regional administration, and the provincial level.

In Wallonia, there are about 10 people working on development issues within the central regional administration in the *General and Operational Direction of Agriculture, Natural Resources and Environment* (DG03) of the *Public Service of Wallonia* (SPW). This central administration (based in Namur) is not involved in the direct supply of services, but rather in the monitoring of associations financed by DG03, and in the elaboration of public policies regarding research, knowledge transfer, innovation, with also a focus on food quality. DG03 also have some offices at the provincial level (*'Services Extérieurs'*) which are more active in

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<sup>20</sup> <http://www.dlv.be/>

<sup>21</sup> <http://www.bdb.be/Productendiensten/Weerbericht/Onlineweerbericht/tabid/157/language/fr-BE/Default.aspx>

<sup>22</sup> <http://www.diversiferm.be/>

the direct supply of collective activities for farmers (training, open days, demonstrations...) and the follow-up of reference farms, including the network of *Comices Agricoles*.

The provincial administrations are also active in the extension activities through the “*Offices Provinciaux Agricoles*”. For instance, the office of the Namur’s province<sup>23</sup> offers services to farmers: management (*one* engineer and two assistants), agronomic advice (two engineers) and a laboratory providing trials for farmers and other actors of the supply chain (soil and plant analysis). These services exist in each province, with roughly the same numbers of advisers (5), providing services based on laboratory activities. It should nevertheless be noted that human resources are quite volatile and are thus hard to evaluate.

In Flanders, the Department of Agriculture and Fisheries (the regional Ministry in charge of agriculture) is still involved in agricultural extension within through a specific department: the *Sustainable Agricultural Development Division (ADLO)*, which employs people in charge of connecting research and practice through collective information activities (but they don't provide individual services to farmers). One of their main tasks is to support, together with the dedicated staff of the five provinces, the activities of the experimental stations. As in Wallonia, Flemish provinces also have departments for advisory services, mainly focused on the follow-up of the provincial experimental stations, on collective operations (demonstration, training, open days...) and on networking, and generally, as the region, not on the provision of individual advice.

## **4.2 Public policy, funding schemes, financing mechanisms, programming and planning of advisory work**

As mentioned in the history of advisory services, the major recent characteristics of the Belgian AKIS is its **decentralisation**. Each region has its own policy, even though there are some common inherited structures. The decentralisation of services even goes one step further in Flanders with the growing role of provinces within the system. In both regions, the principle of public intervention regarding advisory services could be described as a **delegation of services** (Rivera 2000, Labarthe et al. 2013, PROAKIS deliverable 2.1).

### **4.2.1 Advisory public policy in Wallonia**

In Wallonia, besides the financial support of CRA-W described in the section 2., the Government has organised its support within its public administration (DG03 of SPW) by creating a “Development” department in charge of following the diverse contracts between the DG03 and associations providing R&D services to farmers. This could be annual contracts or framed pluri-annual conventions. At the moment, there are such contracts with over 70 different associations. There is a ministerial decree (with precise mission to fulfil) for each association, and a steering committee that provides a follow-up of the project. The DG03 contributes to a maximum 80% of the budget of *Centres Pilotes* and up to 100% of the budget of other associations. As described earlier, the associations supported by the State are numerous and have diverse statuses (DG03 2011), reflecting the history and the diversity of Walloon agriculture and rural areas, and the aim of public administration to provide knowledge for farmers throughout the whole territory and for every type of production in the region.

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<sup>23</sup> <http://www.opaciney.be/>.

Nevertheless, the interviews with the different stakeholders reveal that there are some debates about the costs and effectiveness of this system. Firstly, due to the system redundancy and fragmentation, the transaction costs for its monitoring are often considered to be too high for the region. Secondly, there are considered to be maybe too many associations, with some overlapping, and a lack of coordination and visibility of who does what for the farmers. There is a willingness to reshape the landscape of AKIS actors in Wallonia, so as to give more voice to the farmers in the system and to enhance the coordination with agricultural and rural policies.

This view is shared by the Minister of agriculture who has planned an important reform of the Walloon development policy<sup>24</sup> from 2013 onwards. If the present system allows for many interactions between advisers and researchers, the Minister wants to simplify it and give a bigger role to farmers' representatives in the system. Thus the planned reform does not include a withdrawal of the State. It is a new conception of the modalities of the service delegation with more farmers' participation, more regional centralization in the funding, and a longer term perspective in the contracts with AKIS actors. Two main changes will be implemented:

- First, some new institutions are set up to enhance the coordination of actors involved in the Walloon AKIS, and to better integrate farmers' needs in the planning of research and in the monitoring of advisory and demonstration services. Some of these institutions are not specific to the planning of the R&D, but contribute directly to it.
  - o The *Comité stratégique de l'Agriculture* (COSTRAGRI) is involved in elaborating public policies. Its members are the Minister, members of the administration, but also CRA-W.
  - o The *Conseil supérieur wallon de l'agriculture, de l'agro-alimentaire et de l'alimentation* give some statements or feedbacks to the proposal written by the COSTAGRI or by the administration.
  - o The *Collège des producteurs* (farmers committees) is made of assemblies of farmers (organized by commodities or by themes). It ensures a political representation of farmers. It can formulate demands to the COSTAGRI that will integrate this feedbacks in a pluri-annual development plan for the financial support to R&D teams.
  - o The *Comité de Concertation et de Suivi de la Recherche Agronomique* is a network of information and knowledge exchange in the Wallon region. It is active in the definition of knowledge gaps in the planning of agricultural research. It includes agricultural universities and colleges, CRA-W, and some farmers' associations involved in R&D activities (AWE...).
- Second, there will be some efforts to reorganise and refocus the R&D activity. Some organisations will be merged within thematic R&D units (where CRA-W, pilot centres, and associations will be regrouped); and the public support will be focused on some of the key actors of the AKIS such as:
  - o The CRA-W that implements R&D activities,
  - o The 11 *Centres Pilotes*, which will be in charge of coordinating R&D for specific commodities or themes (on the basis of an annual action plans validated by the COSTAGRI after a consultation of the Producers' committee);

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<sup>24</sup> <http://diantonio.wallonie.be/la-wallonie-se-dote-d-un-code-de-l-agriculture>

- The *Comice agricole* (there are 38 « comices » in Wallonia), which are farmers' association promoting information and knowledge exchange between farmers;
- The public administration is also reformed: the *Services extérieurs de l'Administration* (DG03) will evolve into some « *Espaces Wallons de l'agriculture* », which will consist in knowledge platforms or portals where farmers could get any form of advice or information about who owns the competence to provide services on the issue raised by the farmer.

In total, the plan thus consists in setting up new institutions and formalizing a feedback loop with farmers, thanks to producers' committees. Thus, this reform would be an institutional transformation of the modalities of the advisory services delegation and of the contractualisation between the regional administration, R&D organisations and farmers' associations. More details about the reform are given in figures 8 and 9 of the appendices.

#### 4.2.2 Advisory public policy in Flanders

In Flanders, the situation seems to be more stable after the intensive reorganisation that followed the regionalisation in 2003. Nowadays the reform of public intervention regarding agricultural advisory is the expression of the broader transformations of regional innovation policies, targeted towards more integration of science policy, innovation policy and economic policy in a context of further decentralisation and growing role of provinces. As mentioned in section 2, an initial involvement of the State is through the presence of employees for the follow-up and implementation of funding schemes and institutional funding both at the regional and provincial levels (mainly for ILVO and the experimental stations). Another domain of the regional public investments consists in integrating diverse actors in project dynamics, and in various platforms of exchanges to foresee upcoming areas for further R&D. Some examples of this R&D policy planning and networking are given in section 4.5. FAS is also an important policy instrument of the region (see section 5).

In conclusion of this section, it can be stated that important reforms have been (or are) implemented in the two regions, where the state may be less active in supplying directly services to farmers. Nevertheless, **the administration of both regions still play a very important role in the financial support and coordination of the different actors of AKIS and advisory services, thanks to various funding schemes and coordination bodies.**

#### 4.3 Methods and Human resources

It is very hard to produce a systemic appraisal of the methods of advisory services due to the wide range of actors in both regions. Nevertheless, there are some general features that emerged from the interviews with experts. It seems that associations (*Centres Pilotes, Filières* in Wallonia, *Experimental Stations* in Flanders) and provincial public services implement more collective methods of advice (group or mass-media), whereas independent consultants and bookkeeping companies are based more on individual advice. If such a view is consistent with the literature on private advisory services (Labarthe et al. 2013), it is not really validated by our 25 online survey responses which show no clear pattern of a connection between the types of suppliers and the types of advisory methods and of the activities implemented



(distribution between front- and back-office activities<sup>25</sup>) (tables 4 and 5 of appendices), apart from confirming the fact that consultancy cabinets (such as bookkeeping) often dedicate almost of their activities to the front-office.

The picture is fuzzier for associations. For instance, some associations are clearly focused on back-office activities (they play a central role in laboratory sample measurement and field experiments) and disseminate, through mass media and meetings, the results of these activities, while other associations dedicate much more of their human resources to front-office activities. Again, beyond the limitations of our survey and the multiple selection bias that is possibly associated with it, this statement might be the expression of the diversity of aims, histories, and functions of the advisory associations in Wallonia and Flanders.

#### **4.4 Clients and topics / contents**

There is hardly any monitoring of the beneficiaries of the services in the two regions, apart from data available about FAS (see section 5.2). Thus there is a clear lack of information about which farms benefit (or not) from which service. Moreover, there seem to be very few political discussions about the targeted public of advisory services, neither in terms of farm structure (small farms...) or social characteristics (genders, employees...), beyond a few specific operations for young farmers (when starting new business), or for farmers facing difficulties. This situation is of course far from being an exception in Europe, as data about farmers' access to services is lacking in most countries (Labarthe and Laurent 2013). This is especially true in contexts where the supply of advice has been transferred to private actors or associations which may be reluctant to divulge data about their clientele.

But this lack of data nevertheless raises issues associated with the evaluation of the impacts (both positive and negative) of advisory services (that still benefit from public support) on farmers' populations. When we look (cautiously, given the lack of robustness in the evaluation of the representativeness of the sample) at the results of the survey, it is striking to observe that specific social groups, who are the subject of discussion within EU rural development and cohesion policies, such as small farms, part-time farms, women or farm employees, are almost not targeted by any advisory organisations, should they be public, private or third-sector organisations (see table 6 of appendices).

#### **4.5 Linkages with other AKIS actors / knowledge flows**

The AKIS of Flanders and Wallonia are characterized by strong formal and informal interactions between advisory and applied research organizations. These interactions are partly due to the social and geographical proximity among actors, which were often trained in the same universities in each region. It is not possible here to describe all the interactions within the system, and, as for other dimensions of the questionnaire, the online survey did not indicate clear patterns of interactions (beyond the fact that it highlights the existence of some competition between associations, private advisory services and upstream and downstream

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<sup>25</sup> The front-office of the advisory services stands for the direct interactions between the advisors and the beneficiaries of the advice. The back-office corresponds to R&D, scientific monitoring and all the activities guaranteeing that farm advice will be based on the best possible evidence in each particular situation (Labarthe et al. 2013).

industries, see tables 7 and 8 of appendices). But we can present here some examples of these interactions in specific sub sectors of Belgian agriculture which were emphasized during the qualitative interviews with various AKIS and advisory services experts.

In Wallonia, we chose to highlight the interactions in the sector of arable crops. In this sector, there are some strong, old and formalized interactions between the *University of Liège-Gembloux Agro-Bio Tech*, the applied research institute *CRA-W* and different associations and farmers' unions. Different illustrations of these partnerships between public, private and farmers' based organisations can be given. An initial concrete operation is the yearly edition of the White Book of cereals. The *University of Liège-Gembloux Agro-Bio Tech*, *CRA-W*, the *Plant Clinic (CORDER Asbl)* of the *University of catholique de Louvain (LLN)*, the provincial public advisory services, and the *REQUASUD* network of private laboratories implement together many trials and experiments about the effectiveness of seeds, fertilizers, pesticides in different soil and climatic conditions of Wallonia. The results of these trials (more than 8000 experimental plots) are published in the White Book, and presented during an open day with more than a thousand participants.

Another operation is a warning information system aimed at facilitating the implementation of Integrated Pest Management (IPM) practices by farmers. This information system is managed by the *Centre Agricole pour le Développement des Cultures Céréalières et Oleo-Protéagineuses (CADCO<sup>26</sup>)*, a *Centre Pilote* (association) that gathers participants from the *University of Liège-Gembloux Agro-Bio Tech*, the *Plant Clinic (CORDER Asbl)* in Louvain-la-Neuve, *CRA-W*, and the provincial agronomic centres of Namur, Brabant, Hainaut, Liège (the advisory service of four provinces), and the farmers' association *FWA*. This association is financed by the DG03 and implements many activities for farmers (including demonstrations, open days, experiments, reviews...). More globally, many associations funded by DG03 (*Centres Pilotes...*) play a key role in the collaboration between advisers and researchers in sectors other than arable crops that we cannot describe exhaustively in this report. Some of them are managed by researchers from universities, others by engineers from *CRA-W* or by advisers or even by farmers.

In Flanders, we focused our analysis on the horticultural sector, which has been extensively described in the literature (Vuylsteke and Van Gijsegem 2012). There are many connections between farmers, experimental stations, applied research institutes, and universities in this sector. The geographical clustering of most of the actors in the surroundings of Ghent is an important factor in the history of these relations. Some of these interactions are institutionalised in the funding schemes and in the steering committees of the experimental stations, the cornerstone of this sub-sectoral AKIS. These stations, such as the *PCS*, are co-financed by the region (75%), the province of East Flanders and farmers. This steering committee is composed of mainly farmers (including farmers elected in farmers' unions) and the different founders. *PCS* (the experimental station on ornamental plants) collaborates in projects both with universities and *ILVO*. There are for instance PhD students of the university who implement experiments at *PCS*. But the experimental stations also collaborate with private actors (farmers and/or private advisors) through *IWT* projects. This collaboration

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<sup>26</sup> <http://cadcoasbl.be/>

is strongly supported by the fact the *IWT* makes it compulsory to integrate a share of private investment in every project that it finances. Such investments may come from private advisory companies, such as a small independent advisory company (with 3 consultants, providing services about azalea production) that we interviewed.

In the Flemish horticultural sector, the fact that about 40% of public support comes from competitive calls did not result in more competition between AKIS actors, and collaborative projects have emerged within the AKIS. A first example is the project of *Technopool* shared by four of the main actors of AKIS for ornamental plants: the *University of Ghent*, the agricultural college of Ghent, *ILVO* and the experimental station *PCS*. Beyond communication (such as a unique logo on leaflets), the final project aim is to emphasize the complementarities between competences of the organisations, and to propose a unique portal where stakeholders can identify which organisation owns which competence. This has, for instance, enabled the creation of the *Sietinet*<sup>27</sup> project. The project aimed at mitigating a problem faced by ornamental plant producers: accessing, assessing and reviewing the academic literature on ornamental production. This is a task too complicated and costly for SMEs such as farms and firms involved in the production and commercialisation of ornamental plants. *Sietinet*, co-funded by private companies and the region, offered firms the possibility of formulating demands for reviews of the academic literature on specific technological issues. It should nevertheless be noted that most of these activities stopped with the end of the project funding, even though some of them were taken over in the *Technopool* project mentioned above and funded through the agricultural grant scheme of *IWT*. But this case illustrates the sustainability issue associated with the support of AKIS when implemented through project dynamics and funding schemes.

The examples above are only illustrations of the functioning of AKIS in the two regions, and we do not claim to be representative or exhaustive of the features of the functioning of AKIS. There are, for instance, some strong differences between plant and animal production sectors that we could not integrate into our study and subsequently call for further research.

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<sup>27</sup> <http://www.sietinet.be/>

## 5. Characteristic of Farm Advisory System (EC reg)

The FAS is under the responsibility of each region.

### 5.1 Organisations forming FAS

A first step in the implementation of FAS consists of the accreditation of a list of organisations that will provide the FAS services to farmers. The organisations accredited for the FAS system are very different in the two regions. The two lists can be found in the table 9 and 10 of the appendices.

In Flanders, the FAS are concentrated within a very small number of advisory organizations that are very homogeneous: there are only 10 organisations accredited. For nine of them<sup>28</sup>, the main areas of competence are bookkeeping and advice on economic and environmental performance. These nine organisations are private companies (SMEs) that share some of the same features: their first area of competence is economic, accountancy and performance advice, with a diversification towards environmental and administrative advice. They are all SMEs, with less than 15 advisers. Two have particular features: one is a company of the main farmers' union in Flanders (*Boerenbond*) and one is the daughter company of a Dutch company (*DLV Belgium*). The only member with a different profile is an experimental station: *Proefcentrum Hoogstraten* vzw. This concentration is even greater in the actual implementation of the services: three organisations - private firms (*DLV*, *SBB*, *BB*)- account for more than 75% of the FAS activity in Flanders (29% for *SBB*, 27% for *DLV*, 20 % for *BB*).

In Wallonia, there is a bigger diversity of actors involved. Over 50 organizations were identified in a census before the launch of FAS, but only 9 were accredited in the FAS. All of these organisations are non-profit associations supported by the public service of the region through the various contracts and conventions described in the section 4. This diversity is also the expression of the fragmentation of the advisory services in the region in terms of competences and/or regional distribution. The DG03 provided a matrix of the distribution of competences related to FAS to help to identify which organisation can provide what kind of knowledge. The matrix lists the area of competence according to the content of cross-compliance: Good Agricultural and Environmental Conditions (GAEC) and management regulatory requirements (about environment, animal identification and registration, public health, animal health, animal welfare, plant health). But it does not include the dimension of Farm Management, namely for decisions of productions and investments, which were selected in Flanders and might explain why bookkeeping companies are the key actors of FAS in Flanders.

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<sup>28</sup> Vlaams Agrarisch Centrum (with about 10 advisers), lanbouw ingenieurs Bureau Achten (with about 10 advisers), specialised in dairy production, also active in the Netherlands, SBB Bedrijfsdiensten cvba (an accountability proposing services to farmers but also to other SMEs), BB consult vzw (the advisory company of the farmers' union Boerenbond), Limburgs Adviesbureau voor land- en tuinbouw vzw, a private company with 12 advisors specialised in economic and performance advice), the centrum voor agrarische boekhouding en bedrijfsleiding CCAB, BE-Consult and Kathleen Creëlle, an independant consultant, and DLV Belgium (about 10 advisers), the belgian sister company of the Dutch consulting company DLV advies.

## 5.2 Evaluation of implementation of FAS

A first point that should be noted is that both public administrations operate precise monitoring of the implementation of the FAS in the two regions. In Flanders, there is a report of 110 pages about the evaluation of FAS implementation (Bergen et al. 2012). This report also proposes a reflection on European innovation policy instruments, along with others documents (Bas and Van Gijsegem 2005, Bas et al., 2009). In Wallonia, we rely on the concept note that set the rationale of the implementation of FAS in the region (Opdecamp 2007), but also on different papers that proposed reflections on the evaluation of FAS (Lelong 2013) and on the modalities of its further application.

In Flanders, it was decided by the region to use some European money to fund the FAS, so subsidies for helping farmers to pay for services could be provided. Farmer can be reimbursed 80% of the cost (with a maximum of €1500) for the first request of services related to FAS, and 40% (with a maximum of €750) for a follow-up visit. In total, about 19 million Euros were spent between 2007 and 2012. Thirty percent of this cost was covered by EU funds and 70% by the region. The region decided to propose five modules in the FAS services: i) good agricultural and environmental conditions (GAEC-module 1), ii) plant health and human health (module 2), iii) animal health and welfare and human health; iv) work safety; v) farm management optimisation (economical, environmental, marketing).

In terms of implementation, 3400 farmers benefited from FAS services, and 10% asked for a follow-up. The 3400 farmers represent more than 10% of the total number of farmers in Flanders.

Bergen et al. (2012) compared the population that received FAS service with the total population of farmers. This comparison does not show big differences when it deals with the age or education level of the farmers or the technical-economic specialization of farms. On the other hand, some differences can be found when comparing the distribution of the number of farms according to the amount of subsidies that they receive from the first pillar of the CAP and the distribution of farms benefiting from FAS services. The proportion of farms requesting FAS services is lowest for the farms receiving the least subsidies (figure 10 of appendices). This last feature tends to confirm the difficulties to reach small farmers through instruments based only on the support of demand (Labarthe and Laurent 2013). The evaluation of Bas et al. (2012) also points out some recommendations for increasing the effectiveness of FAS. One of them is a better integration of FAS related advice with economic advice.

In Wallonia, a major difference with Flanders is that the region decided not to use money from the second pillar of the CAP to fund the FAS, due to the constraints set by the EU regulation in terms of co-funding, to the risk of double funding (some of the FAS organisations are already subsidised by the region that use CAP 2<sup>nd</sup> pillar funds in that respect), and to limitation of the resource within the Rural Development Regulation (2<sup>nd</sup> pillar). The implementation of FAS was conceived and formalized as a centralized partnership between the public administration and the private or third sector organisations providing services to farmers. A formal procedure was set up with three steps:

- the reception of demand: a coordination cell (within public administration) receives a demand from a farmer who also provides information and documentation about the conformity of his/her farm vis-à-vis cross-compliance. This demand is then forwarded to a relevant advisory organisation (among the 9 accredited) that can fulfil the demand;
- the expertise: based on a farm visit the adviser establishes a diagnostic (non-conformity regarding GAEC and standards...) and then formulates some recommendations;
- the evaluation and monitoring.

Concretely, the expertise may take three different forms: a phone helpdesk, individual advice, or the support of forums.

But these procedures remained partly theoretical and the FAS regulation had little and a diminishing impact. If there were some visits in the first year, there were only 12 of them in 2011. There were more collective activities: about 450 meetings took place in 2011, with thousands of participants. The low level of impact was followed by many debates about how to enhance the effectiveness of FAS. Lelong (2013) proposes a synthesis of the problems identified after a consultation of both the administration and the advisory organisations that implement the regulation. A first important issue is related to the connections between control and advice. Even though SPW guarantees the strictly confidentiality nature of advice given by the “services extérieurs” of DG03, farmers might be reluctant to ask the administration for services (related to non-conformity vis-à-vis cross-compliance) which other departments are in charge of controlling conformity. This has led SPW to go even further in the separation between control and advice. It abandoned the idea of the coordination cell in 2010 (that was de facto bypassed by farmers) and farmers can now ask for FAS advice directly to the advisory associations accredited by the administration. A second issue is related to the visibility of the FAS and to a lack of demand of farmers regarding this issue. A third issue is related to evaluation and monitoring: many advisory organisations acknowledge the fact that the registration of all the operations implemented for FAS are too costly, especially in a situation when there is no EU money specifically allocated to advisory organisations for the FAS implementation.

## 6. Summary and Conclusions

Belgian agriculture has undergone important transformations that have raised challenges for rural and advisory services. In both Belgian regions, the numbers of farms continues to decrease sharply, as well as the contribution of the sector to the total employment of the country. Nevertheless, the sector remains important from an economic point of view: agricultural and food industries are very important for the commercial balance of the country. At the same time, Belgian agriculture has to confront many challenges to reduce its environmental impact, such as nitrogen or pesticides loss in ground water, and to guarantee that it delivers safe food for domestic consumption and exports. Thus, if we use the frame of the PRO AKIS project to represent the multifunctionality of Belgian agriculture, it appears clearly that combining Productivity, Environment, and Food Safety is the priority of Walloon and Flemish agricultural policies. Thus, the aims of the regional policies concerning agricultural R&D and AKIS are also primarily targeted towards these functions.

Belgium is characterized by a long tradition and history of public investments in (and debates on) farm advisory services. In that respect, it should be noted that there are specific departments for monitoring and planning applied research and advisory services within the regional administrations in charge of agriculture in both Wallonia and Flanders. Nevertheless there have been some very important changes in the conception and implementation of the role that these administrations should play. If we adopt the typology of Rivera adapted in the concept note of the PRO AKIS project (Labarthe et al. 2013), it can be suggested that the trajectory of public policy regarding advisory services combines a decentralisation and a delegation of services. The decentralisation is not specific to advisory services or even agricultural and rural policies. It has been a broader reform in Belgium, especially since 2002. But it can be noted that the decentralisation is almost total in that case: the federal government does not play any role in the support of AKIS apart from the minor funding of research activities in relation to sustainable development. At the regional level, advisory services and AKIS are still very important dimensions of the political agenda and missions of public administrations. But there is a clear change in the form of this regional investment, with a tendency towards the delegation of service. There are still some employees of regional administrations working in advisory activities (a few dozen in total). But their activities have greatly changed. They do not provide individual advice anymore, but instead focus on collective activities (demonstrations, open days, networking, and training). The main task of administrations is to fund various actors of AKIS, to ensure the monitoring and follow-up of the contracts established with these actors (private firms and/or non-profit organisations), and to support networking and training activities for their staff.

Both dimensions of decentralisation and delegation of services are discussed in the Belgian context. Some authors argue that such decentralisation is very effective to acknowledge within rural development policies the diversity of farms and of their contexts of production (Vandermeulen and Van Huylenbroeck 2006). In the case of advisory services, the decentralisation has enabled some local administrations to contract with advisory organisations and associations grounded in local contexts. But on the other hand, this form of decentralisation could lead to higher management and transaction costs in the relations

between public administrations and associations. This is for instance the case of Wallonia, where the decentralisation resulted in a plurality of contracts and conventions with dozens of organisations, with the ambitious aim to cover exhaustively the territories and production sectors of the regional agriculture. There are debates at the moment about problems of redundancy and overlapping between organisations. The multiplication of organisations also makes it difficult for the administration to gather the data on the implementation of the services that would allow a global evaluation of the impact of the public support to AKIS. But it should be noted that such problems are a matter of debates within public administrations. This is, for instance, the case of the implementation of the FAS regulation in Wallonia (Lelong 2013), where the plurality of actors and associations involved in advisory services, FAS and AKIS, are regarded both as the expression of the diversity of territories and environmental issues associated to Walloon agriculture, but also as a fragmentation that reduces the impacts of public policies based on the delegation of services.

A second dimension of the discussion about the effectiveness of AKIS and advisory services in Belgium deals with the effects of the relations and knowledge flows between the actors of AKIS on the transitions of farmers' practices. Both Flemish and Walloon systems are characterized by very strong relations between the actors of AKIS, including relations between applied research, advisory services, and private companies. These relations are supported by formal institutional arrangements, such as the IWT call for tenders in Flanders that makes the co-funding of certain projects by private actors compulsory. These exchanges of knowledge are also supported by the informal interactions of agents who often share a similar background and education in the faculties of agriculture, and a close geographical proximity (around Ghent in Flanders and Gembloux in Wallonia for instance).

These collaborations have ended in concrete realizations. There are many examples of joint implementation of experiments and R&D, but also of the dissemination of the results of these R&D projects. Some of these examples are embedded in long traditions, like the "cereal white book" published for the last 30 years in Wallonia. Some are more recent, such as the Sietinet project in the sector of Flemish ornamental plants, where private firms could formulate requests to a consortium of R&D actors (universities, applied research institute, experimental stations). The consortium would make it possible to identify who owns the relevant knowledge and competences regarding the request and to propose a review of literature useful for practice and for the company. As suggested by Vuylsteke and Van Gijsegem (2012), these relations are not just ones between the actors of AKIS, but also between AKIS actors and other stakeholders of the innovation systems.

The effects of such a high level of interactions are discussed in academic literature. An interesting discussion is whether such interactions reduce or increase the risks of technological lock-in (Labarthe 2010). In the interviews that we carried out, some examples were given about how the interactions between innovation actors and AKIS have enabled a prevention of a technological lock-in. For instance, producers of ornamental plants in Flanders were interested in switching the lighting systems of their greenhouses to LED technology, as some of their Dutch colleagues did. The relations between producers, advisory services and the experimental stations has allowed for pilot experiment to be carried out at very short notice. The trials showed that any potential that LED technology has for increasing



ornamental plants growing (that led to new R&D projects), comes with an increase of the costs of the heating of the greenhouse atmosphere and appears to be non-profitable.

Nevertheless, some case studies tend to show, on the contrary, that the relations between public R&D and some firms of the private sector may lead to a lock-in. Different Belgian scholars contribute to the academic debates on the transition towards agro-ecology (Stassart et al. 2012). They base their research on case studies in animal production (the case of the blanc-beu cows, Stassart and Jamar 2012) or in plant production (R&D on genetics and variety selection for crop production: Vanloqueren 2007, Vanloqueren and Baret 2008, 2009). Some of these researches show, especially in the case of genetics R&D, that public investments in advice and R&D are taken into a long history of relations with private firms that orientate the experiments towards specific technologies (based on input use, seeds and chemicals), and may prevent from the production of evidence and knowledge about the development of alternative technologies such as organic farming or Integrated Pest Management (IPM) technologies.

This question is also related to the connections between advisory services and collective organizations of farmers. Collective actions of farmers are embedded in a long history in both regions of Belgium. In Flanders and Wallonia, the main farmers' unions (Boedenbond in Flanders and FWA in Wallonia) play a key role in the provision of services and information to farmers. In Flanders for instance, the Boerenbond has created a bookkeeping company (which implemented about 30% of FAS activity), an innovation centre with about 20 advisers, and a company, AVEVE, involved in upstream and downstream industries, which was based on the consultation of farmers' circles. In this context, a challenge is to give a voice to the plurality of interests and conceptions of farming. This issue is all the more problematic in a context of a decreasing number of farms that could make it difficult to raise enough human resources to support a diversity of collective actions in the country.

These different questions are challenges for public policies based on a delegation of services. As experienced in Wallonia, even though there are some concerns about the access of certain populations of farmers to information and knowledge (such as small farms), it is not easy to collect information about the clients and beneficiaries of advice delivered by associations subsidized by the public administration, which moreover cover only a part of the total supply of services in the region. It should be noted that this question concerning the beneficiaries of services is barely debated in the two regions. For instance, there were no priorities set on which kind of farms should benefit from FAS services in the two regions. More globally, the FAS regulation highlighted the difficulties that surrounded integrating different objectives in advisory services in a context of delegation of services. For instance, in Flanders, the FAS was implemented by a very specific dimension of the supply of services: bookkeeping companies. If such consultancy firms have competencies in helping farmers controlling the conformity of their practices vis-à-vis cross-compliance and push for a better connection between FAS and advice related to farm economic management, they are on the other hand poorly connected to applied research institutes, universities, and experimental stations that implement R&D about environment and agriculture. This is one of the reasons why the modalities of application of FAS are likely to change greatly in the next Rural Development

Plan. This would also be the case in Wallonia, where the question of integration of FAS advice with economic advice appears to be a major challenge (Lelong 2013).

In total, it appears that the advisory services of Wallonia and Flanders are embedded in a long tradition of public investments and of integration of these services in broader AKIS and innovation systems, where collective organizations of farmers play a very important role. Advisory services are still considered to be an important instrument of public policies and both regional administrations are very active in coordinating AKIS. They still have specific departments for advisory services that produce reflection papers on the evaluation and foresight of such services, including related to the ability of the delegation of services to accommodate different agricultural populations and functions.

## 7. Acknowledgement of partners, information sources, gaps etc, reflection on methodology

Before we start to describe the methodology of our work **we would like to thank Anne Vuylsteke, Jean Marot and Stéphanie Lelong for the time they kindly spent answering our questions, for the numerous documents that they provided, and for their very careful and constructive reading, comments and corrections of preliminary versions of the report.**

The methodology of this work combined three sources of data: i) open interviews with nine experts of the Belgium AKIS and advisory services organisations; ii) bibliographic search; iii) an online survey with advisory organisations.

i) The interviews with stakeholders were carried out through the use of a very open questionnaire. Our aim was to gather information and knowledge with stakeholders from different standpoints: public administrations, research institutes and universities, advisory organisations and associations. The list can be found in the table below.

**Table 1. List of experts interviewed**

Organisation	Person contacted	date
Service Public de Wallonie, DG03	Jean Marot	June 2013
Service Public de Wallonie, DG03	Stéphanie Lelong	June 2013
Flemish Ministry of Agriculture	Anne Vuylsteke	June 2013
Centre d'Economie Rurale		June 2013
University de Liège-Gembloux Agro-Bio Tech	M. Bodson	June 2013
Centre de Recherche Agronomique de Wallonie	Director + board	September 2013
Station expérimentale - PCS	Bruno Gobin	September 2013
Johan Van den Hagen	Johan van den Hagen	September 2013
Johan von Huylenbroeck	ILVO	September 2013

ii) The bibliographic survey combines three sources of information: the documents and reports provided by the interviewees, the websites of the different AKIS organisations in Flanders and Wallonia (including their annual reports) and a systematic survey on Web of Knowledge, using the following algorithm: (advi\* OR consul\* OR extension) AND (Belgi\* OR Flande\* OR Wallo\*) AND (agri\* OR farm\*). This systematic survey provided very few documents.

iii) An online survey with the organisations supplying services to farmers. **We want to thank our colleague Katrin Prager from the James Hutton institute who provided the technical support for this online survey.** The questionnaire was sent to more than 100 organisations providing services to farmers, approximately 70 in Wallonia and 30 in Flanders. These lists of

organisations were built by combining the following: the list of the organisations accredited in FAS regulation in the two regions, the list the organisations funded by the DG03 in Wallonia, the 14 experimental stations in Flanders and a series of actors that were identified by the 9 interviewees. This last series of actors include farmers' cooperatives, private advisory companies, etc. In total, we received 26 responses.

Our study benefited from the important work of planning and monitoring of the AKIS and the advisory organisations implemented by the administrations of the two regions. This work of public administration provided many inputs for our report. Nevertheless, we faced some difficulties in gathering information. An initial difficulty surrounded reaching the organisations that do not receive subsidies from public administrations. Thus, a major limit of our work is that we could not assess the importance of the services provided by private organisations such as independent consultants, or services from cooperatives and input suppliers. Another limit is that we found very few resources in academic publications dealing with advisory services.

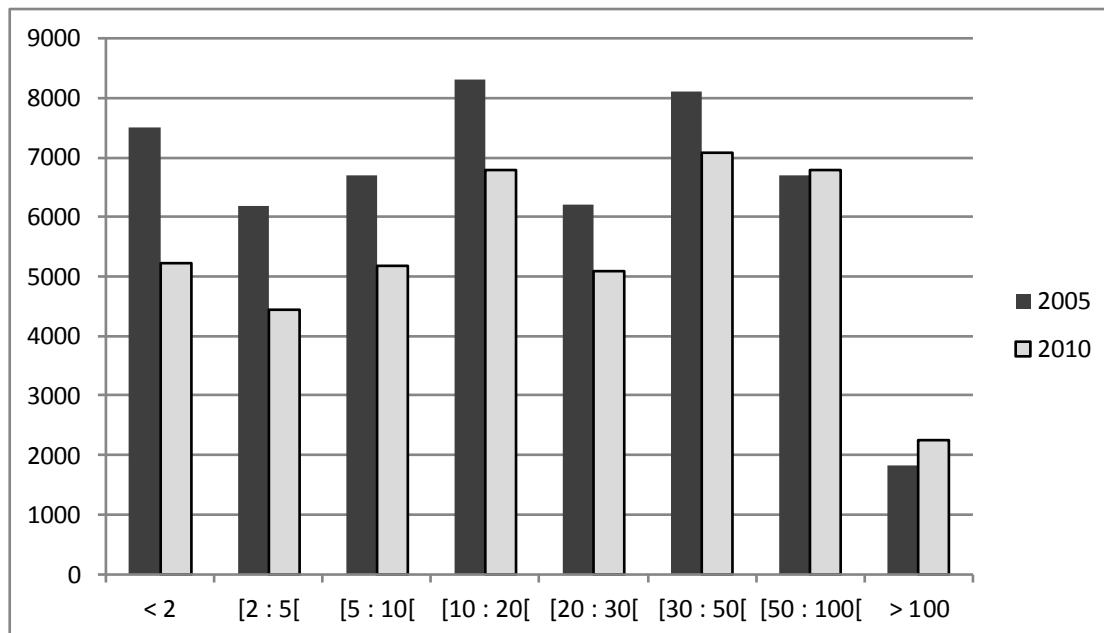
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## 9. Appendices

**Figure 3. Evolution of the distribution of Belgian farms according to the area cultivated (ha) (source: Eurostat)**

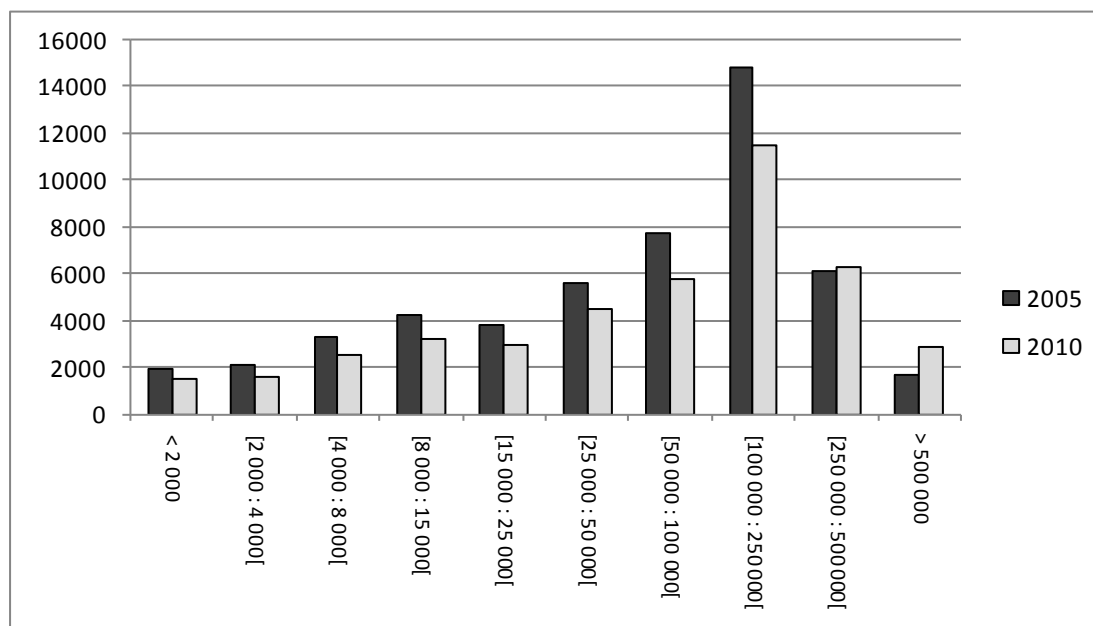


*Legend:*

*Y-axis: number of farms*

*X-axis: classes of utilized agricultural area (UAA) (ha)*

**Figure 4. Evolution of the distribution of Belgian farms according to the economic dimension (standard gross production) (source: Eurostat)**

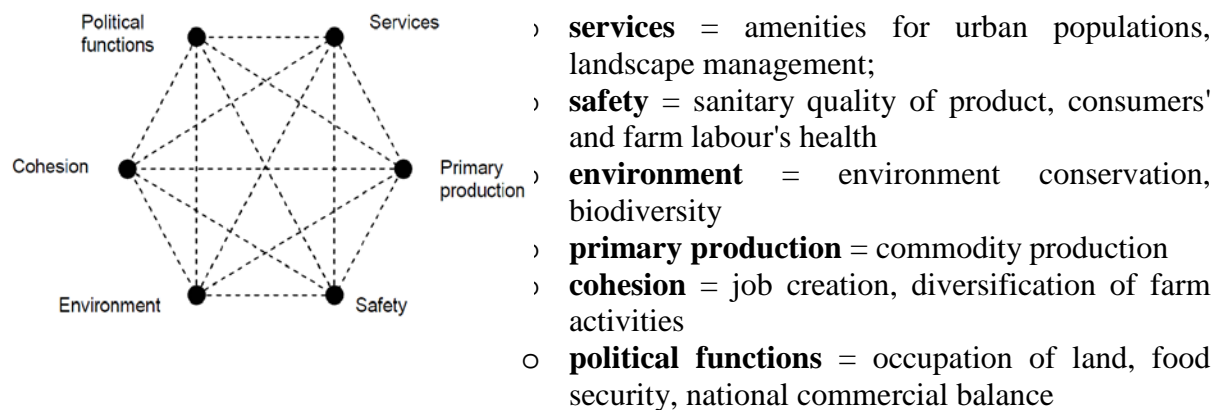


*Legend:*

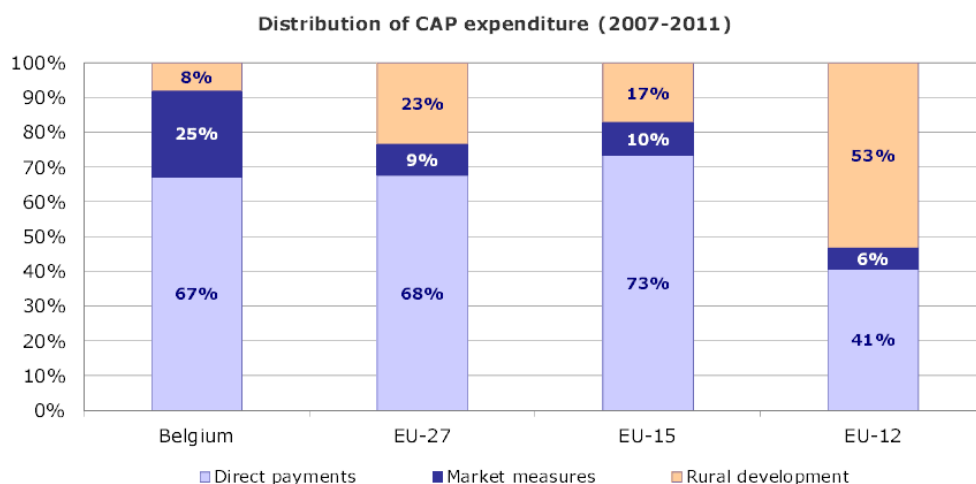
*Y-axis: number of farms*

*X-axis: classes of standard gross production (€)*

**Figure 5. The main objectives of the support of the Multifunctionality of Agriculture in Belgium (source: the authors, adapted from Renting et al. 2005)**



**Figure 6. Distribution of CAP expenses in Belgium (source: EC 2013)**



**Table 2. Expenditure of the region Flanders in the AKIS (€) (source: Vuylsteke and van Gijsegem 2012)**

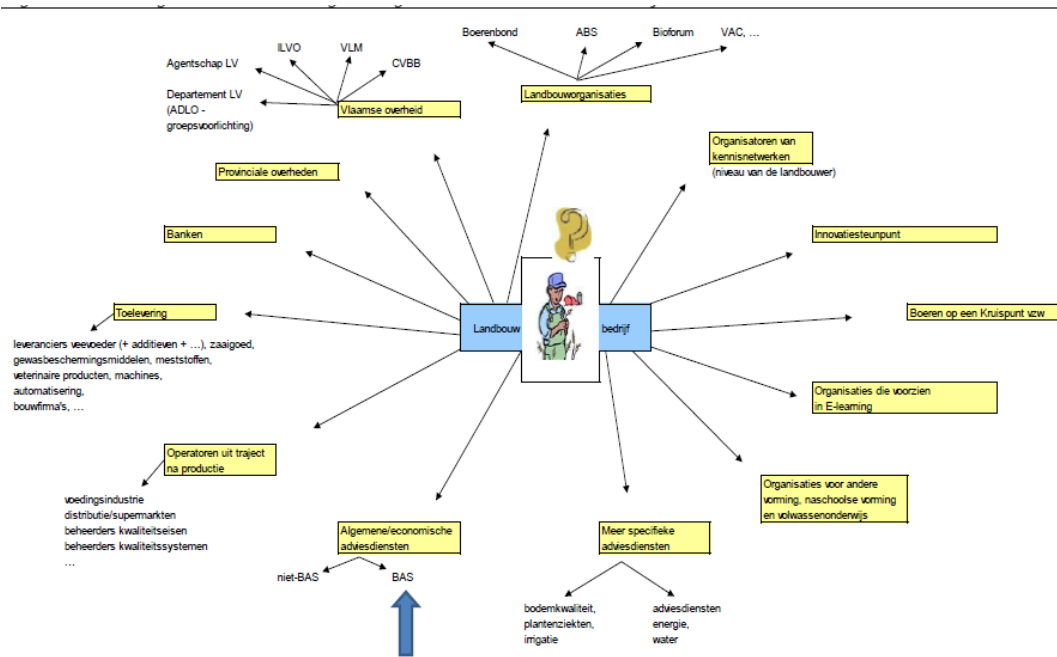
	2007	2008	2009	2010	2011
<b>Institutional funding</b>	<b>19820000</b>	<b>22219000</b>	<b>21843000</b>	<b>23935000</b>	<b>22890000</b>
of which ILVO	16030000	18039000	17889000	18632000	18753000
of which Experimental stations	3790000	4180000	3954000	5303000	4137000
<b>Funding schemes</b>	<b>10782000</b>	<b>10905000</b>	<b>10686000</b>	<b>10142000</b>	<b>11557000</b>
of which agricultural research grant programme	9602000	9602000	9602000	9122000	10122000
of which demonstration projects on sustainable agriculture	1180000	1303000	982000	922000	1000000
of which stimulation of organic agriculture			102000	98000	435000
<b>TOTAL</b>	<b>30602000</b>	<b>33124000</b>	<b>32529000</b>	<b>34077000</b>	<b>34447000</b>
<b>share of competitive calls</b>	35,2%	32,9%	32,9%	29,8%	33,6%



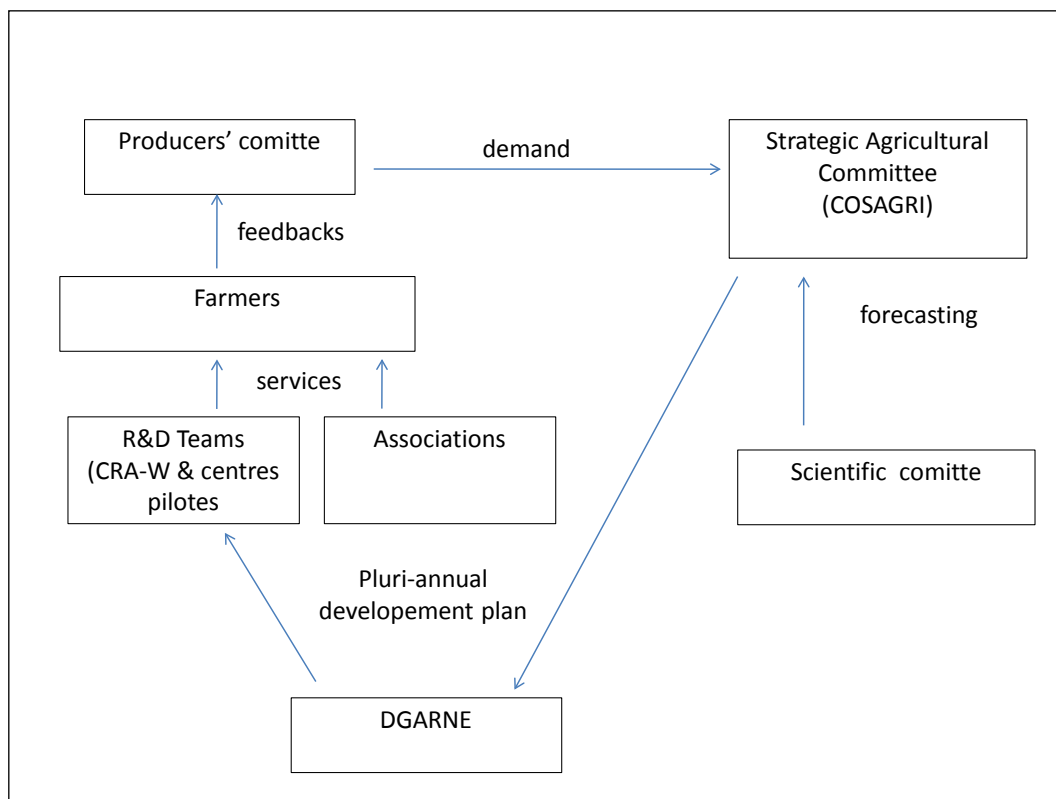
Provision of service				Source of financing								
Status of the organisation	Type of organisation	Number of organisations	Number of advisors	Public funds			Farmers			Private	NGO	Other (specify)
				EU funds	National funds	Regional funds	Farmers' levies	Farmers' contribution	Billing services	Other products (inputs, outputs)	foundation	
<b>Public sector</b>	National Ministry											
	Local/regional agencies	10	>50	2		1						
	Other (specify)											
<b>Research &amp; Education</b>	University	5	?									
	Research Institute	2		2		1			4	3		
	Other education bodies											
<b>Private sector</b>	Upstream industries	?	?									
	Downstream industries	?	?									
	Independent consultant	?	?									
	Private agricultural advice company	>20	>100			2			1			
	Farmers' owned advice company	> 3	> 40			2			1			
	Other (specify)											
<b>Farmer based organisation</b>	Farmers' cooperative	> 2	> 100			2				1		
	Chambers of agriculture	0										
	Farmers' circles/groups											
	Other											
<b>Brokers</b>	Experimental stations and associations	>60	> 200			1	2					

**Table 3. Tentative overview of the farm advisory service suppliers in Belgium (source: the authors).**

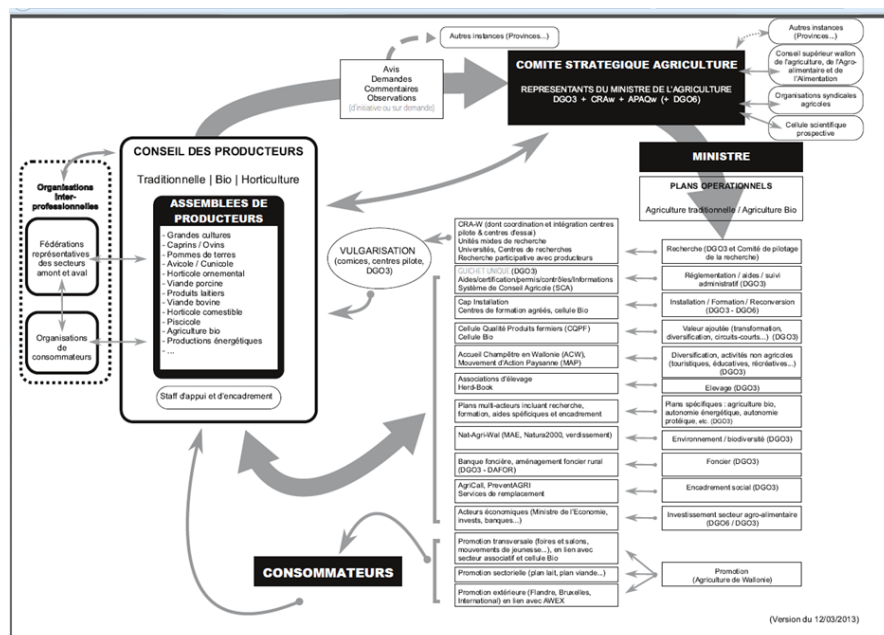
**Figure 7. The supply of advisory services for Flemish farmers (source: Bergen and Van Gijsegem 2010)**



**Figure 8. Simplified diagram of the project of AKIS reform in Wallonia (source: the authors)**



**Figure 9. Comprehensive diagram of the project of reform of the AKIS in Wallonia (source DG03).**



**Table 4. Methods implemented by the 25 advisory organisations that answered the online survey (source: the authors)**

Type of advisory organisation?	Individual	Group	Mass media
Association	33	33	33
Association	40	40	20
Association			
Association	90	5	5
Association	65	35	0
Association	25	25	50
Association	40	10	50
Association	25	25	50
Farmer-based organisation			
Farmer-based organisation	5		95
Farmer-based organisation			
Non-governmental organisation	60	15	25
Private organisation	1	4	95
Private organisation	40	20	40
Private organisation	40	40	20
Private organisation	25	50	25
Private organisation	100		
Private organisation	95	4	1
Private organisation	97	3	
Private organisation	95	5	
Public organisation	50	0	50
Public organisation	5	25	70
Public organisation			
Public organisation	20	20	60
Public organisation	30	60	10

**Table 5. Activities realised by the staff of the 25 organisations that answered the online survey (% of total labour) (source: the authors)**

<b>Type of advisory organisation?</b>	<b>front-office</b>	<b>back-office (R&amp;D)</b>	<b>back-office (administration)</b>
Association	15	75	10
Association	45	25	30
Association			
Association	80	10	10
Association	25	50	25
Association	25	50	25
Association	20	40	40
Association	65	10	25
Farmer-based organisation			
Farmer-based organisation	10	85	5
Farmer-based organisation			
Non-governmental organisation	70	10	30
Private organisation	5	65	30
Private organisation	37	13	50
Private organisation	50	30	20
Private organisation	10	70	20
Private organisation	20		80
Private organisation	60	38	2
Private organisation	75	10	15
Private organisation	25		75
Public organisation	5	55	40
Public organisation	15	45	40
Public organisation			
Public organisation	10	20	70
Public organisation	35	65	

**Table 6. Clientele targeted by the 25 advisory organisations that answered the online survey (source: the authors)**

Type of advisory organisation?	Large commercial	medium commercial	small commercial	semi-subsistence	subsistence	groups	young farmer	women	part-time	employees
Association		major	small commercial farms							
Association	major	major	major	minor	not targeted	not targeted	not targeted	not targeted	not targeted	not targeted
Association										
Association						major	major	major	major	major
Association	major	major	minor	minor	minor	major	minor	minor	minor	minor
Association	minor	minor	major	not targeted	not targeted	not targeted	minor	minor	major	not targeted
Association	major	major	major	minor	minor	major	major	major	major	major
Association										
Farmer-based organisation										
Farmer-based organisation										
Farmer-based organisation										
Non-governmental organisation	major	major	major	not targeted	not targeted	minor	minor	minor	minor	not targeted
Private organisation	not targeted	not targeted	not targeted	not targeted	not targeted	not targeted	not targeted	not targeted	not targeted	not targeted
Private organisation	major	major	minor	not targeted	not targeted	minor	not targeted	not targeted	not targeted	not targeted
Private organisation	minor	minor	minor	minor	minor	minor	minor	minor	minor	major
Private organisation	minor	major	minor	not targeted	not targeted	minor	major	minor	minor	minor
Private organisation	major	major	minor	not targeted	not targeted	major	major	major	minor	not targeted
Private organisation	major	major	minor	minor	not targeted	major	major	major	major	major
Private organisation	major	major	major	minor	minor	not targeted	major	major	minor	minor
Public organisation										
Public organisation	minor	major	minor		not targeted	major	minor	minor	minor	minor
Public organisation										
Public organisation										
Public organisation	minor	major	major	minor	not targeted	major	major	minor	minor	minor

**Table 7. Interactions between the 25 organisations that answered the online survey and the other actors of the Belgian AKIS (source: the authors)**

Type of advisory organisation?	University	Public research	Adminsitration	NGO research	Private consultancy	Upstream insutries	Downstream industries
Association	Intensive cooperation	Intensive	Cooperation	Cooperation	No interaction	Cooperation	Cooperation
Association	Intensive cooperation	Intensive cooperation	Intensive cooperation	No interaction	Cooperation and competition	Cooperation and competition	Cooperation and competition
Association	Cooperation	Intensive cooperation	Cooperation	Cooperation	Cooperation and competition	Cooperation	Cooperation
Association	Intensive cooperation	Intensive	Intensive	Cooperation	Cooperation	No interaction	Cooperation
Association	Cooperation	Cooperation	Cooperation	No interaction	Cooperation and competition	Cooperation	Cooperation
Association	Cooperation	Intensive	Intensive	Cooperation	No interaction	No interaction	Cooperation
Association	Cooperation	Cooperation	Intensive	No interaction	No interaction	Cooperation	Cooperation
Non-governmental organisation	Cooperation and competition	Intensive cooperation	Cooperation	No interaction	Intensive cooperation	No interaction	No interaction
Private organisation	No interaction	No interaction	Intensive	No interaction	Cooperation	No interaction	No interaction
Private organisation	Cooperation	Intensive	Cooperation	Cooperation	No interaction	Cooperation	Cooperation
Private organisation	No interaction	No interaction	Intensive	No interaction	Cooperation and	No interaction	No interaction
Private organisation	Cooperation	Intensive	Cooperation	Intensive cooperation	Intensive cooperation	Intensive cooperation	Cooperation
Private organisation	Cooperation	No interaction	Intensive	No interaction	Cooperation	No interaction	No interaction
Private organisation	No interaction	Cooperation	Cooperation	Cooperation	Cooperation and competition	No interaction	No interaction
Private organisation	Cooperation	Cooperation and competition	Intensive cooperation	Cooperation	Cooperation and competition	Cooperation and competition	Cooperation and competition
Private organisation	Cooperation	Cooperation	Cooperation	Cooperation	Competition	No interaction	No interaction
Public organisation	Intensive cooperation	Intensive cooperation	Intensive cooperation	Cooperation and competition	Cooperation and competition	Cooperation and competition	No interaction
Public organisation	Intensive cooperation	Intensive	Cooperation	Cooperation	Cooperation	Cooperation	Cooperation
Public organisation	Cooperation	Cooperation	Cooperation	Cooperation	No interaction	Cooperation	Cooperation
Public organisation	Intensive cooperation	Intensive cooperation	Cooperation	Cooperation	Cooperation and competition	No interaction	Cooperation

**Table 8. Relevant sources of knowledge for the 25 organisations that answered the online survey (source: the authors)**

Type of advisory organisation?	Universities	Public research	Administration	NGO research	Private consultant	Upstream	Downstream
Association	Relevant	Relevant	No source of knowledge	No source of knowledge	No source of knowledge	No source of knowledge	No source of knowledge
Association	Very relevant	Very relevant	Little relevance	No source of knowledge	Relevant	Relevant	Relevant
Association	Very relevant	Very relevant	Relevant	Very relevant	Very relevant	Relevant	Relevant
Association	Very relevant	Relevant	Very relevant	Relevant	Very relevant	Relevant	Relevant
Association	Relevant	Little relevance	Relevant	No source of knowledge	Relevant	Little relevance	Little relevance
Association	Very relevant	Very relevant	Very relevant	Very relevant	No source of knowledge	No source of knowledge	Very relevant
Association	Relevant	Very relevant	Relevant	Relevant	Relevant	Little relevance	Little relevance
Non-governmental organisation	Relevant	Very relevant	No source of knowledge	No source of knowledge	Very relevant	Little relevance	Little relevance
Private organisation	Relevant	Relevant	Very relevant	No source of knowledge	No source of knowledge	Little relevance	Little relevance
Private organisation	Very relevant	Very relevant	Little relevance	Relevant	Little relevance	Relevant	Relevant
Private organisation	Very relevant	No source of knowledge	No source of knowledge	No source of knowledge	Very relevant	No source of knowledge	No source of knowledge
Private organisation	Little relevance	Relevant	Little relevance	Very relevant	Very relevant	Relevant	Relevant
Private organisation	Relevant	Relevant	Little relevance	Relevant	Relevant	Relevant	No source of knowledge
Private organisation	Relevant	Relevant	Little relevance	Relevant	Relevant	Little relevance	Little relevance
Private organisation	Relevant	Little relevance	Very relevant	Little relevance	Relevant	Little relevance	Little relevance
Private organisation	Relevant	Relevant	Relevant	Relevant	Relevant	Little relevance	Little relevance
Public organisation	Very relevant	Very relevant	Very relevant	No source of knowledge	No source of knowledge	No source of knowledge	No source of knowledge
Public organisation	Very relevant	Very relevant	Very relevant	Little relevance	Little relevance	Relevant	Relevant
Public organisation	Very relevant	Very relevant	Very relevant	Relevant	Little relevance	Relevant	Little relevance

**Table 9. List of FAS organisations in Flanders (source: Bas et al. 2009)**

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**Vlaams Agrarisch Centrum cvba**  
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Tel. 09 252 59 19  
Mieke Van de Walle: Tel. 09 272 77 55  
✉ e-mail: [vac@vacvzw.be](mailto:vac@vacvzw.be)  
🌐 website (nieuw venster): <http://www.vacvzw.be>

**LIBA bvba (Landbouw Ingenieurs Bureau Achten)**  
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Johan Achten: 089-46 46 06  
✉ e-mail: [Liba@liba.be](mailto:Liba@liba.be)  
🌐 website (nieuw venster): <http://www.liba.be/>

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**Table 10. List of FAS organisations in Wallonia (source: DG03)**

Name	Area of expertise
Agra-Ost (germanophones)	Toutes
Arsia	IdA, SaN & SecAl
CER	BAn (veaux et bovins)
Comité régional PHYTO	PP
Faune & biotopes*	BCAE, PN
FACW	BAn (volaille, oiseaux, lapins)
FPW	Ban (porcs)
Girea*	PN
Natagora*	PN
Nitrawal: Nord (Gembloux) Est (Huy) Sud (Philippeville) Ouest(Froyennes)	BCAE, Azote, Boues, ESO
Mission wallonne des Secteurs Verts:	PP

**Legend:**

Matières	Libellés des thématiques	Abrégés
Environnementale	Bonnes conditions agricoles et environnementales	BCAE
	Protection de la Nature	PN
	Protection des eaux contre les nitrates de source agricole	Azote
	Valorisation agricole des boues de stations d'épuration d'eaux usées	Boues
	Protection des eaux souterraines contre certaines substances dangereuses	ESO
Sanitaire	Identification animale	IdA
	Santé animale	SaN
	Sécurité alimentaire	SecAl
	Produits phytopharmaceutiques	PP
	Bien-être animal	BAn

**Figure 10. Percentage of farmers using FAS services in Flanders according to the amount of direct payments received from the CAP first pillar (source: Bas et al. 2009)**

