



Prospects for Farmers' Support:
Advisory Services in European AKIS

**Agricultural Knowledge and Information Systems in Sweden
Report for the AKIS inventory (WP3) of the PRO AKIS project**

Borgeby, April 2014

Authors:

Kristina Yngwe

HIR Malmöhus, Hushållningssällskapet



This project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement no 311994

Please reference this report as follows:

Yngwe K. (2014): Agricultural Knowledge and Information Systems in Sweden. Report for the AKIS inventory (WP3) of the PRO AKIS project. Online resource: www.proakis.eu/publicationsandevents/pubs

Executive Summary

The main aim of the report is to provide a comprehensive description of the Agricultural Knowledge and Information System (AKIS) in Sweden, 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.

Only 5.8% of the total area is covered by agricultural land and agricultural contribution to GDP in 2010 was 1.83%. Swedish agriculture employs 56,900 full time workers, of which 68% is family labour. Swedish agriculture is focused on milk production, pig production, wheat and barley. Organic farming is well established involving 5.61% of holdings.

The main actors on transmitting knowledge to farmers are LRF-consult, the Rural Economy and Agricultural Societies and Växa. The farmer owned cooperative Lantmännen offers free advice along with selling their products. When it comes to full time farmers, crop production and economy, and to some extent the environment and renewable energy, are the most common topics of advisory service. For the part-time farmers, primarily crop production and economic advice are most often delivered. For young farmers the focus is on the economy, environment, renewable energy and how to develop their enterprise.

In Sweden 85,625 holdings received direct payments in 2009 and these holdings have to follow the cross-compliances. The Swedish farmer pay 30% of the cost of the advisory visit and the other 70% is paid by the Rural Development Programme. The advisers that work with cross-compliance advice are certified by the Swedish Board of Agriculture, and needs training in order to be certified. There are approximately 150 certified advisers, but there is no information on how many of them are active. The Swedish Board of Agriculture offers training for new advisers as well as in-service training. The Swedish Board of Agriculture does not have any advisers within the FAS since they are the ones who control if the rules are followed, so the advisers are all from external advisory organisations such as the Rural, Växa and LRF Konsult.

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List of Acronyms

Acronym	Explanation
AKIS	Agricultural Knowledge and Information/ Innovation Systems
FADN	The Farm Accountancy Data Network
FAS	Farm Advisory System
GAEC	The good agricultural and environmental conditions
GDP	Gross Domestic Product
JTI	Swedish institute of Agricultural and Environmental Engineering
LRF	The Federation of Swedish Farmers
NJF	Nordic Agricultural Research
RDP	Rural development programme
SLF	The Swedish Farmers Foundation for Agricultural Research
SLU	Swedish University of Agricultural Sciences
SMR	Statutory management requirements
SVA	The National Veterinary Institute

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1. Main structural characteristics of agricultural sector in Sweden

Sweden is a very long country that measures 1,572 km from the northernmost to the southernmost point. Due to its length, there are quite large differences between the prerequisites for agriculture in different parts of Sweden. The surface area of Sweden is 450,300 m², and only 5.8% of the total land area is covered by agricultural land.

Sweden had a population of 9,449,213 in 2011, and is one of the most urbanised EU-countries with more than 85% of inhabitants living in cities and urban areas. In 2010 agriculture's contribution to employment was 2.1%, which was 0.1% less than 2009. GDP per capita in Sweden in 2010 was 37,300 euros and agricultural contribution to GDP in the same year was 1.83%.

The number of agricultural holdings in Sweden has decreased rapidly, and in 2010 there were 71,090 agricultural holdings in Sweden compared to 75,810 in 2005, and the average size of an agricultural holding in 2010 was 43.13 ha. About 55% of the holdings have less than 20 ha of land and 11% manage 100 ha or more. Agriculture in Sweden is thus very diverse, but many holdings are still quite small scale.

The age structure in Swedish agriculture is quite alarming, as only 4.8% of the agricultural farm holders were less than 35 years in 2010. In 2007 the number was 6%. One quarter of the managers in 2010 were 65 or older, which is 5% more than in 2007. Another 28% of Swedish farmers will reach retirement age within 10 years, according to numbers of 2010.

Swedish agriculture employs 56,900 full time workers, of which 68% is family labour. There was a decline in the number of employed persons in agriculture with 29% between 2000 and 2010, which is related to the decline in number of agricultural holders as well as rationalisation and increase of productivity. The number of FADN holdings in Sweden in 2009 was 1,038.

Milk production is an important sector in Sweden, and Sweden produced 2,850,000 tonnes of milk in 2011, which was an increase from 2010 with 22%. Cream and drinking milk are big products in Sweden, and one third of the milk produced in 2010 was sold as drinking milk. In 2010 there were 1.75 million livestock units, 61% were cattle, 3% were sheep, 21% were pigs and 9% were poultry. When it comes to meat production, pigs are dominating. Of the amount of animals slaughtered in 2011 2.56 million tonnes were pig meat, 1.47 million tonnes were cattle meat and 1.19 million tonnes were poultry meat.

The total harvest of cereals in 2011 was 4.65 million tons, with an average yield of 5.1 tons per ha in 2009 and 4.5 tons per ha in 2010. The main cereals are wheat and barley, and the most common other crops are sugar beet and rape. Tomatoes are the main vegetable cultivated in Sweden, with 99,000 tons in 2011.

Organic farming is quite well established in Sweden, with 5.61% of holdings doing organic farming and 14.3% of arable land growing organic in 2010. Sweden has a very low consumption of fertilisers and pesticides, 69.4 kg respectively 0.6 kg per hectare of arable land. The ammonia emission (NH₃) from the Swedish agriculture was 44,000 tons in 2010, which was a decrease of

10.6% from 1990. The Gross Nitrogen Balance in 2008 was 126 kg N per hectare agricultural land.

2. Characteristics of AKIS

2.1 AKIS description

To make the Swedish AKIS system easier to overview, it can be divided into three actors in the knowledge process: producers of knowledge, transmitters of knowledge and users of knowledge. Between these three levels there are facilitators that bind the different actors together, in order to facilitate the transmission of knowledge between the actors.

The main producer of knowledge is the Swedish University of Agricultural Sciences (SLU) that comes under the Ministry of Rural Affairs. Due to changes in the government directive to SLU, the main focus of the research has changed from applied research to ground research since the 90s. There are only two institutes that work within the area of agriculture, JTI – Swedish Institute of Agricultural and Environmental Engineering and SVA – the National Veterinary Institute. The Swedish Board of Agriculture is also conducting field trials and monitoring in regional offices, mainly concerning pest management, but they also finance research projects in other organisations. The public financing of Swedish agricultural research amounted to 127 million Euros in 2008, and there are several different sources of financing where the Swedish Research Council Formas that sorts under the Ministry of Environment is one of the primary sources. Applied research is also carried out by the research and development divisions of selling companies like Lantmännen. Applied research is often also carried out in the research divisions of the advisory organisation the Rural Economy and Agricultural Societies. The financing of the research in advisory services often comes from SLF – The Swedish Farmers' Foundation for Agricultural Research whereas the financing comes from the farmers themselves.

The transmitters of knowledge in Sweden are the actors within the Swedish advisory system. The Swedish advisory system can be divided in three groups; selling advisory services, commercial advisory services and free advisory services. Within commercial advisory services, which mean that they sell advisory services as a product, there are three national main actors, LRF Konsult, the Rural Economy and Agricultural Societies and Växa. They employ between 700-1,500 employees, and reach a lot of Swedish farmers. Besides these, there are 60-70 minor, local advisory organisations. As to selling advisory services - organisations that sell products and give advice as a part of selling the product - the largest actor is the farmer owned cooperative Lantmännen with a market share of approximately two thirds. Free advisory services are conducted as a part of the commercial advisory services, but in some regions the County Administrative Boards also conduct advisory services that are publicly financed. Historically the producer organisations and cooperatives have offered free advisory services, but this is not very common today as the profitability of the cooperatives has gone down. The Federation of Swedish Farmers, LRF, sometimes offers free advisory service to their members, and for a few years they have offered a regional coach whose visits support the farmer as an entrepreneur in questions about development or change, to help the farmer see and choose goals and strategies as an entrepreneur. The coaching is financed by money from LRF.

The farmer is labelled as the user of knowledge, which means that he or she is both the receiver and the requester of knowledge.

As facilitators between the producers of knowledge and the transmitter of knowledge, there are two actors that arrange a lot of meetings and seminars which are platforms for researchers and advisers to meet: Partnership Alnarp and The Royal Swedish Academy of Agriculture and Forestry. The partnership Alnarp is a partnership between SLU, the business and the society with a focus on agriculture and the green sector. It is financed by membership fees for participating firms and organisations and by SLU. The Royal Swedish Academy of Agriculture and Forestry is a network organisation or a think tank working with issues relating to the green sector, and is economically independent of the authorities, business and interest groups.

The facilitators between the transmitters of knowledge and the farmer as users are usually producer organisations and the farmers' organisation LRF – the Federation of Swedish Farmers. They often arrange meetings and training for farmers, with advisors and experts attending. They are also often the link between the farmer and the producer of knowledge, as elected representatives and officials are often included in boards or steering groups of e.g. research institutions and SLU.

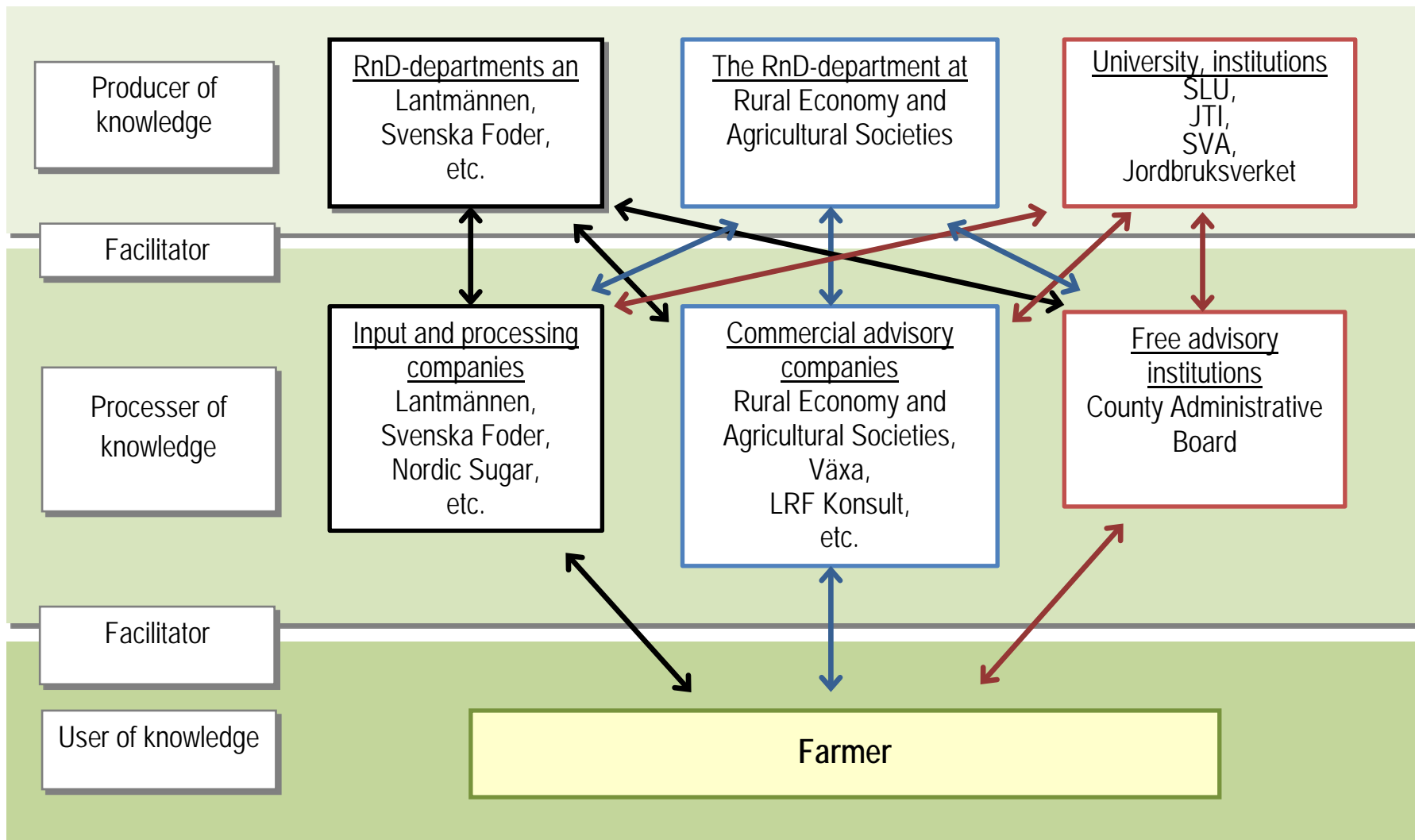
The policy framework is more closely described in chapter 4.2, but in short the only policy framework concerning improving farmers' knowledge is within the Rural Development Programme. The free advisory services are financed by the Rural Development Programme, and there are two programmes that cover knowledge transfer to farmers, and two national projects where knowledge transfer is conducted. The main focus of publicly financed knowledge activities during the last programme period is the reduction of the impact of agriculture on the environment and climate. The policy framework identifies the commercial advisory services as their prime provider of knowledge transition to farmers.

Table 1. Overview of organisations creating the AKIS

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	
Public sector	Advisory department of the Ministry of agriculture	1	5-15	X	X							
	Local/regional agencies	1	20-40	X	X							
	Other (specify)	None	-									
Research and Education	University	1	None									
	Research Institute	3	None									
	Other education bodies (specify)	None	-									
Private sector	Upstream industries	10	30-50							X		
	Downstream industries	5	5-10							X		
	Independent consultant	35	40-80	X	X				X			
	Private agricultural advice company	-	-									
	Farmers' owned advice company	3	800-1300	X	X				X			
	Other (specify)	None	-									
Farmer based organisations	Farmers' cooperative	4	200-400						X	X		
	Chambers of agriculture	None	-									
	Farmers' circles/groups	None	-									
	Farmers' organisation	1	20-30	X	X		X					
NGO		None										

2.2 AKIS diagram

Figure 1. The AKIS Diagram of the Swedish AKIS



3. History of the advisory service

Advisory services and training to farmers have a long history in Sweden. The Swedish Rural Economy and Agricultural Societies (in Swedish: Husshållningssällskapet) is the oldest advisory organisation; the first regional society was formed in 1791 and during the first half of the 19th century more regions started their own Rural Economy and Agricultural Society. Today there are 18 societies all over Sweden.

In the beginning the societies were mainly financed by membership fees from the farmers, but in 1855 the parliament introduced a tax on alcohol production, and one fifth of this tax was given to the societies. In the beginning of the 20th century the advisory service in the societies became more specialised, and they hired advisers on e.g. animal husbandry, dairy and buildings. During this time the societies also evolved field trials, which also today add a value to the advisory services of the Rural Economy and Agricultural Societies. The field trials were financed by their own assets, funds and donations and did not depend on public financing.

It was not until the 1940s that production organisations, the farmers' organisation and cooperatives started to evolve their own advisory service within their specific area.

In 1967 the Swedish Parliament decided that the publicly financed advisory services should be taken over by the Country Administrative Boards, and the objective of the advisory work was to make Swedish agriculture more efficient and rational. Before 1967, about 65% of the advisory services of the Rural Economy and Agricultural Societies were financed by the state, and with the withdrawal of public support the Rural Economy and Agricultural Societies struggled to survive and to find out how to relate to the publicly financed advisory service. This led to a reorganisation of the advisory services of the Rural Economy and Agricultural Societies. With the weakening of the Rural Economy and Agricultural Societies' advisory services in the beginning of the 1970s this opened up the system for other actors such as cooperatives, producers' organisations and farmers' organisations to strengthen their advisory services.

For a long time, the advisory service was very much focused on intense production, with higher yields, higher level of fat in the milk, etc. During the 1970s one can see the beginning of a change of focus towards the economy. The farms grew bigger and more complex and the costs of input goods increased with higher speed than the price of produced goods which led to a demand of better connection between production and business. This was the start of the intense advisory service that is now common in many advisory organisations. Intense advisory does not mean that the advisory service was focused on an intense production, but means that the adviser had close contact with the farmer in order to do the measures needed at the right time instead of doing them according to a set plan, which had been a common method of producing before the 1970/1980s.

During the 1990s the focus of the Swedish government started to shift from wanting to promote rationalisation and change of structure in agriculture to promoting a more environmentally friendly production. Therefore the public financing has been very much focused on agriculture and environment during the recent decades. Especially since entering the European Union in

1995, the publicly financed production advisory services have ended and the County Administrative Boards are no longer great actors in advisory services.

When the public production advisory service ended in the 1990s, it allowed for more commercial advisory organisations to enter the market of production advisory work, and today there are 60-70 actors on the market. Today one can see yet another shift in focus on advisory services, and more and more actors within the Swedish AKIS talk about management, leadership, LEAN and other areas of corporate government, and to evolve the farmers from being producers to becoming entrepreneurs.

4. An outline of the agricultural advisory services

4.1 An overview of all service suppliers

The actors of the Swedish agricultural advisory services have become quite diverse since the establishment of the first private advisory service in the 1980s. In general one can divide the Swedish advisory services into three groups; *the commercial advisory services* that have agricultural advisory service as their main occupation, *the selling advisory services* where advisory service is not a product on its own, but part of the sales strategy when selling input goods, and *the free advisory services* where all of the advisory service is paid by the public. For a long time, The Rural Economy and Agricultural Societies was the only agricultural service supplier, but with the establishment of the first private agricultural service in the 80s, the suppliers of advisory services have become quite diverse with public, private and farmers' owned organisations.

There are some leading national suppliers of commercial agricultural advisory service – The Rural Economy and Agricultural Societies, which is a farmer-based member organisation for farmers and it has a diverse service supply of e.g. advisory service, field trials, education, - Växa, which is farmers' owned and stems from the animal husbandry and breed organisations and focuses on animal production, and finally LRF Konsult, which is an affiliate to the Swedish Federation of Farmers and mainly focuses on economy and bookkeeping for both agricultural and non-agricultural businesses. These three organisations can be found in local and/or regional offices all over Sweden, and have a total of 700, 500 and 1,500 employees. In total there are about 60-70 private/farmer owned suppliers of agricultural advice, many of these are local actors with less than 10 employees.

There are quite a few actors that could be defined as “selling” advisory services, as they sell input goods to the farmers and acts as advisers in these discussions but do not sell advisory services on their own. The market leader is Lantmännen with approximately 13,000 employees all over the world, but Svenska Foder and Gullviks are other large national players. There are some smaller, local retailers of input goods, many of which are members of the Danish DLA-group, and there are also food companies like Nordic Sugar and Findus that have advisers for their contractors, in order for the contracted farmer to produce as high quality products as possible.

In some regions the County Administrative Board offers free advisory services. The producer organisations used to give free advisory services to their members in the past, but as profitability has gone down, the structures of Swedish cooperatives have changed, as some have been sold and others have emerged, it has become very rare for these producer organisations to offer free advisory services, unless it is part of a specific project.

4.2 The main public policies, funding schemes and financing mechanisms

The only public policy that covers the agricultural advisory service is the Rural Development Programme, funded by EU and Sweden. A large part of the public financing of knowledge transfer lies within the programme “Skills acquisition support” that has ten focal areas for the

programme of 2007-2013. Many of these ten areas are closely related to the 16 environmental goals of Sweden, and public financing of advisory service is therefore mainly focused on environmental issues. The ten areas are:

1) **Development of Enterprise**

The objective is to make it possible for the enterprise to increase the quality of production of goods and services and boost business development and competitiveness. The target area is divided into companies in the green industry and companies outside the green industry.

2) **Rural development**

The goal is to contribute to a better quality of life in rural areas by enhancing skills in the areas of service, rural development and the development and conservation of natural and cultural heritage.

3) **A varied agricultural landscape**

The objective is to help strengthen farmers' knowledge of the natural and cultural values in the agricultural landscape.

4) **Zero eutrophication**

The goal is to increase knowledge and give the farmer tools to reduce nitrogen and phosphorus losses in a cost effective manner.

5) **Non-toxic environment**

The goal is to raise awareness about the risks of using pesticides and how the use and management of these can be done so that the health and environmental risks are avoided. Also handles adjustment of chemical control of weeds and pests, biological control methods and other alternatives to chemical control.

6) **Reduced climate impact**

The objective is to stabilise greenhouse gas concentrations in the atmosphere at a level that ensures that human impact on the climate system is not dangerous.

7) **Organic production**

The purpose is to facilitate the transition process and develop organic production.

8) **Increased animal welfare**

Aims to raise the awareness of the animals' different needs and gain knowledge of how these needs can be met.

9) **Cross compliance**

The goal is to provide farmers with knowledge of cross compliance.

10) **A magnificent mountain landscape**

Aims to raise knowledge on how activities in the mountains can be operated to promote a sustainable development in the mountains.

The County Administrative Boards decide how to spend the money from the Rural Development Programme in their specific regions, and decide which of the ten goals are more or less prioritised. This is usually done in discussion with regional farmers' organisations and other actors that are affected by the priorities. Both individual and group advising can be carried out within these ten goals. Every year, the County Administrative Board gives the regional advisory organisations a possibility to send in their ideas for activities within the ten goals that they plan

to do during the following year. The County Administrative Board then decides which activities and organisations should have public financing, according to the regional priorities.

There is one large national project concerning advisory service, called “Focus on Nutrients”, where the goal is to reduce the leaching of nutrients. In the beginning it was financed with money from the RDP and from environmental taxes, but due to changes in national environmental taxes, the RDP is now fully financing the project. The regional advisory services submit a tender on conducting free advice within the project “Focus on Nutrients”, and then the County Administrative Board chooses which regional advisory services will do the advisory work, and the budget frame for the advisory work.

The farmers can also apply for support within the programme “Support for skills development in rural businesses”. The support aims to develop the farmer’s business, increase the production quality, strengthen competitiveness and enhance the environment and animal welfare. The farmer seeks the support from the County Administrative Board or the Sami Parliament. The support is given for various activities. It may include courses, corporate training, study tours and professional development in the form of advice.

The national project “Sweden – the national culinary nation” aims to increase production and profitability in the Swedish food chain, and sometimes there is project money to seek from the Swedish Board of Agriculture in order to arrange courses etc.

The FAS, of course, also make up the advisory services, but the FAS are described more closely in chapter 5.

According to the survey, a rough estimation would be that approximately 50% of the financing of the agricultural advisory organisations come from farmers that pay for advisory services. About one third comes from public financing at national or regional level, e.g. by working with projects such as “Focus on Nutrients”. Some advisory organisations sell input goods such as e.g. software programmes, and some organisations are financed partially by trusts and foundations. Public advisory services are usually fully funded by public money, whereas selling advisory organisations have a higher share of private financing, from selling products and services to farmers.

The advisory service is usually paid per hour, but advisory packages are also quite common. Some of the advisory work is paid according to specific advice, but this is not as common as payment per hour or packages.

4.3 Methods and Human resources

The advisers in Sweden are in general experienced and have worked as advisers for several years. According to the enquiry the majority of the employees have worked more than 12 years at the organisation, and many organisations state that the mean work experience of their advisers is 10-20 years. Many respondents also state that there is a general problem with finding and keeping young advisory professionals and to make advisory services attractive jobs.

There are many female advisers as well as many female staff, and gender issue is not considered to be a concern among the advisory organisations. The percentage of the respondents female

staff and advisers is 50% which is a higher number than the share of female farmers in Sweden (20% in 2010).

The advisory organisations consider education and in-service training to be important, and in the survey almost all the respondents answered that all of their advisers had taken part in some kind of training in 2012. It has often been public institutions, university or the advisory organisation itself that has provided the training. In many cases the training has been in-service, for deeper knowledge in the advisers' area of expertise, but the training has also been about leadership, pedagogics, sales management and training to become a better adviser in general.

For the advisory organisations a large share of the time is spent on advisory work - about 60% according to the respondents of the survey, 20% is spent on administrative work and management, and about 10% of time is spent on research and development.

When it comes to the advisers the picture does not differ very much. Most of the time is spent on advisory work. The average is 60%, but this differs a lot between the organisations. The share of work time spent on administrative work and management is 20%, where advisers in smaller organisations seem to spend more time on administration than in larger. About 10% of the advisers' time is spent on in-service training, and this is quite the same for both larger and smaller organisations.

4.4 Clients and content

Individual extension is the most common method of advisory work, often on-farm, but also off farm and by telephone. Group advice is arranged in some organisations, more often off the farm than on the farm. Social media and new technology are still not very well used tools for Swedish advisers, but traditional media like journals is still quite a common way of spreading knowledge to farmers. The Rural Economy and Agricultural Societies and Växa have magazines for their members, as well as Lantmännen and Svenska Foder. There are also some specialised agricultural magazines where advisers write in order to spread information and knowledge, e.g. the journal *Arvensis* that is owned by The Rural Economy and Agricultural Societies, produced by advisers and which entirely focus on the latest knowledge within crop production.

According to the survey, the average number of farmers per adviser is 40-50, and the average farmer owns 100-200 ha. The full time farmer is the major target group in the Swedish advisory service, whereas part-time farmers are the target group of some organisations, but is generally considered a minor target group. Employees are quite rarely considered to be a target group, although some consider them to be the major target group. Female and young farmers are not considered to be specific target groups in Sweden, as they are integrated into the other target groups.

When it comes to full time farmers, crop production and the economy, and to some extent the environment and renewable energy, are the most common topics of advice. When it comes to part-time farmers, primarily crop production and economic advice are most often delivered. It is less common to deliver specific advisory topics like stable design, machinery and environment to part-time farmers. For young farmers the focus is not so much on the knowledge of production, but the advisory topic is often focused on the economy, environment, renewable energy and how to develop their enterprise.

Universities, public research institutes and public authorities are considered to be the most valuable sources of knowledge. Some of the respondents of the survey say that foreign research and knowledge are getting more important, as the applied research is decreasing in Sweden.

4.5 Linkages with other AKIS actors and knowledge flows

For a long time there was little cooperation between the advisory organisations, except for some local linkages, but in 2013 the Swedish agricultural advisory organisations formed a group to improve the cooperation. About 30 companies are members today, but the potential is 60-70 organisations. This confederation of Swedish agricultural advisory organisations is led by a board, and a managing director. The confederation will work for a secured access to advisers with the right skills, and increased status and attractiveness of advisers in the industry. In addition, the Council shall represent member companies in dialogue with governments, universities and others to promote the business of advising companies and working to develop advice to the farming business.

According to the survey the organisations consider each other as partners for cooperation and not primarily as competitors. Most common and important was cooperation with public authorities.

There are some networks and organisations where research and advisers meet, e.g. Partnership Alnarp and The Royal Swedish Academy of Agriculture and Forestry. These are considered good platforms to exchange knowledge, but farmers are maybe not as involved in these networks and activities as they could be.

4.6 Programming and planning of advisory work

The timesheet is a very common tool for keeping records of advisers' work, but also financial indicators for advisers are used tools. Quite a few have a specific incentive programme for rewarding the performance of advisers, and the ones that have use the financial indicators together with other factors such as personal development and other achievements when discussing the salary. Only one of the respondents has a bonus system connected to results that are higher than the planned budget.

Almost all of the respondents make a strategic plan for the advisory work, usually together with the advisers, but sometimes farmers, shareholders and public authorities are also involved. If it is a board or a council that is involved in the strategic plan, farmers and clients are often members.

5. Farm Advisory System

5.1 Advisors forming FAS

Farmers that receive direct payments are offered advisory help regarding Statutory and Management Requirements (SMR) and the Good Agricultural and Environmental Conditions (GAEC), in accordance with the Farm Advisory Systems (FAS) which EU member states are bound to implement since decisions taken in 2007. In Sweden 85,625 holdings received direct payments in 2009 and these holdings have to follow the cross-compliances. The Swedish farmer pay 30% of the advisory visit and the other 70% is paid by the Rural Development Programme.

The advisers that work with cross-compliance advice are certified by the Swedish Board of Agriculture, and need training in order to be certified. There are approximately 150 certified advisers, but there is no information on how many of them are active. The Swedish Board of Agriculture offers training for new advisers as well as in-service training. The Swedish Board of Agriculture does not have any advisers within the FAS since they are the ones who control if the rules are followed, so the advisers are all from external advisory organisations such as the Rural, Växa and LRF Konsult.

The advisory service is individual and consists of a visit to the farm where the adviser informs the farmer about the rules that must be followed regarding SMR and GAEC. The advisory system is divided in two modules, one module that applies to all farms and one module that only applies to animal producers. After the visit, the farmer receives a letter with a summary of the visit and hands-on advice on what needs to be changed on the farm. The letter is also supplemented by contact over telephone.

5.2 Evaluation of the implementation of FAS

In 2010 an evaluation was made by the Swedish Board of Agriculture to evaluate the effects of the FAS and how the farmers had experienced the advisory visit. The persons that had advisory visits within the FAS were all active farmers, and 85% of them were men. When it came to the advisers' knowledge, 90% of the farmers answered that the adviser had high or very high knowledge. Two thirds replied that they had help or much help from the follow-up letter, and the farmers experienced that getting knowledge on how to manage the land was the most rewarding. Two thirds said that they had taken action and made changes on the farm after the visit. Land management was perceived as the area where the majority of farmers had taken actions after a FAS advisory visit. Furthermore half of the respondents in the survey also mentioned that they had began to think more about how to work environmentally friendly and on the basis hereof had changed their daily work routines.

The evaluation concludes that the FAS have been an important complement to the EU rules, and that it has the potential to decrease the violation of the rules. The advisory services also make the farmers feel more secure and safe when it comes to following the rules, and since one third of the farmers has answered that the cross-compliance system makes their work as a farmer more difficult, it is important to help the farmer feel safe when the inspectors come. The FAS have also been appreciated for being a form of support that is given directly to the active farmer.

6. Summary and Conclusions

Swedish agriculture has some challenges ahead which will have a great impact on the advisory organisations, and this section gives a summary of what challenges agricultural services are facing and what needs to be done.

6.1 A brief summary and conclusions on the section 1-3 (an overview of suppliers, public policy, funding, methods, human resources)

Build a more independent advisory service

Today agricultural advisory services rely on public financing to a quite high extent. To rely on politics is always a risk, as there is no long term security when the political goals can change from year to year. The political goals steer what kind of competence the advisory organisations are hiring and what kind of advisory services they provide, but if the political goals are changing, it could be a problem that the advisory services and the adviser staff are no longer wanted by the farmers. Therefore it is important that advisory organisations have knowledge of their vulnerability to political changes, and calculate the risks associated with changes in public financing.

But at the same time public support is important to agricultural advisory services. Today the public authorities are an important player as they are often providing e.g. in-service training; this is valuable for smaller advisory organisations as they can be updated on the latest knowledge. Public financing also plays an important role when it comes to advisory services which the farmer do not want to pay for, but which is important for Swedish agriculture and the society as a whole, e.g. advisory service on environment. One problem when it comes to public financing of advisory services is that the County Administrative Board acts as both the provider and the procurer of advisory services, which sometimes can make it difficult for other regional advisory services to compete.

Handle renewal of generations within the advisory staff

Finding new advisory staff and keeping them is a concern for many advisory organisations. With fewer agricultural students, it is getting harder for advisory organisations to compete with other organisations. Connecting with young professionals during their studies to attract them at an early stage, a clear career path and an incentive programme that makes it interesting to stay and grow in the organisation could be some solutions.

Relevant advisory service in a time of change

Times are changing fast. Today farmers have access to new technology and new possibilities that we never could have dreamt of 10-20 years ago. This makes it important for the farmers and the advisory organisations to stay up to date and keep up with the fast changes. Advisory services have still not adapted well to new technology, as the “old” technology is still dominating when communicating with farmers. This is of course partially because not many of the farmers are using new technology, but then the advisory services need to take the lead and show the farmers how technology can be used.

The needs of the farmers are also changing – in the past the farmer has settled for advice on his or her specific production, but as the role as a farmer is getting more and more complex there is a need for a more comprehensive view of advisory services. Therefore the advisory services need to be organised to meet these demands. The farmer does not only want the expertise of his or her adviser, but wants the entire network that the adviser can offer. There is an on-going organisational change, but this has to happen faster in order for the advisory organisation to be relevant in the future.

Changing role of the advisor

Long term rules and regulations are important for the stability in the agricultural firms, but today farmers feel more insecure about politics than they do about the weather. The increasing demands from the society on farmers makes the role of the adviser more about providing safety and security when it comes to handling and adapting to changes in politics. The role of the adviser is also changing from an adviser that tells the farmer what to do, to be more of a discussion partner and a coach that supports the farmer when making decisions.

There is also a demand from farmers to meet, discuss and share their experiences in order to gain more knowledge. In this work, the advisers could be the catalysts that take care of the practicality, drive the process forward, but are not involved primarily as experts or providers of knowledge.

In the future bio based economy where the industry of the green sector is growing there will be new buyers of agricultural products and new business opportunities. The industry needs to find partners that can guarantee them a continuous deliverance of products, and the farmer wants to find partners that are willing to make long term commitments which the farmer needs in order to make investments. A new role of the adviser in the future could therefore be a catalyst that matches the connection between farmers and industry in order to create business.

6.2 A brief summary and conclusions on the section 4-5 (Clients and topics, linkages with other actors/knowledge flows)

Meet a declining number of farmers and profitability

The ageing and declining number of farmers together with a low profitability will be a challenge for the Swedish advisory organisations.

When Swedish agriculture becomes more market oriented, there is a need for Swedish farmers to undergo a shift from producer to entrepreneur. For this to happen, the agricultural advisory organisations also need a mental shift, from a focus on production to a focus on the entire business. Advisory services need to stand on three legs: production – market – management, which is not the case today. There are shortcomings regarding the service provided by the advisory organisations when it comes to management and leadership. These shortcomings need to be remedied. Today there are a lot of platforms and networks where advisers on production can meet and discuss, but these do not exist to the same extent when it comes to management and leadership.

Larger farms and more complex business puts pressure on the farmer, which also increases the expectations on the expertise of the adviser. Even though there is a need for a more holistic advisory approach, the farmer will also request more specialist knowledge as the younger farmers are very often well educated. This means that the farmers need to be closer to the research and knowledge. The farmer and the advisory services need a close partnership in order for the advisory services to know what kind of knowledge the farmers want and need.

One potential problem for the advisory organisations in the future is that with a declining number of farmers and a declining profit, there will be less time and money for in-training and education in order for the advisers to be real experts in their area of knowledge.

More applied research

There is a need for more applied research, the ground research is important for the applied research to build on, but today the general opinion is that there is lack of applied research which makes the farmers and advisers look east and south to Denmark, England and Germany. Some suggestions to this problem have been to have higher demands on the ground research e.g. by setting aside parts of the research funding to think about communications of the results, and how this new knowledge could be used. There have also been requests for more cooperation between the Nordic countries, to share the results from the applied research that is carried out there. In the past there has been an organisation called the Nordic Agricultural Research (NJF) which coordinated and communicated the applied research, but it is no longer very active, but maybe it would be good to improve Nordic cooperation.

There is also a critique that the research is communicated in too much of an academic language, which makes it difficult for farmers and advisers to use the new knowledge. It is therefore important to find new channels and new ways to communicate research. Another critique has also been that the university is too much focused on analysing problems, and not finding solutions – but solutions and innovations are what Swedish agriculture needs!

Better knowledge flow between farmers and research

Farmers have sometimes criticised agricultural advisory services for not being relevant and based on demand, and that they want to see more demand-driven advisory services and not to see their money thrown down the drain. This is especially the case when it comes to the free advisory service like “Focus on Nutrients”. It is a challenge to find a good balance between push and pull in the knowledge flow – sometimes the farmers need to push for new knowledge and sometimes the research need to pull.

This balance would be easier with a strong chain between researcher-adviser-farmer, which is unfortunately not very strong currently. There is a need for more networks and platforms where researchers, advisers and farmer can meet, rather than the situation of today, where they are mainly just platforms for researchers and advisers or advisers and farmers. One interesting way to work is farmer-driven research, where farmers and researchers work closely together. Maybe crowd-funded research could be interesting, where farmers cooperate and pay for a specific research project that they are interested in.

Swedish advisory services also need to be better at inviting researchers to events and meetings. One problem is that there are not so many possibilities for researchers to attend meetings or networks with farmers in order to communicate their research and to get an idea of what kind of research the farmers are interested in. The budget for a researcher is tight and therefore they could need some kind of financial support in order for them to be able to participate in farmers' events.

One possibility for better research flow between university and advisory organisations would be to share employees, for example that an adviser conducts part-time research, or that a researcher is hired part-time at an advisory company to work with research and development. Having an adviser with a PhD is also a good way to move advisory services and research closer together, as it is then easier for the adviser to understand the academic language.

Improve innovation in agriculture

The Swedish agricultural sector is currently very bad at innovation. There are a lot of ideas among farmers, but they very seldom get commercialised. Therefore the advisory services needs to be better on picking up innovative ideas, support them in the innovation process, and a supporting system is also needed that helps the farmer to commercialise the idea. Today there is little knowledge on innovation and commercialisation among farmers and advisers, which means that a lot of ideas stay on the farm. Maybe there needs to be certain incubation centres for the green sector, as there are in many other sectors. Maybe the university could be a partner, together with advisory services, in order to help the farmer in the innovation process.

Increased international network

Learning from other advisory organisations is important, and as the prerequisites and the challenges for European agriculture and European agricultural services are quite similar, it could be good to have European cooperation between European agricultural advisory organisations.

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

This report has been written based on national websites, reports, an online survey and semi-structured interviews. Since there are a lot of different actors within the Swedish AKIS, e.g. many local advisory organisations, it is difficult to get a complete overview of the actors. The list in the appendix is therefore most certainly not complete, and the enquiry has not been sent to all actors in the Swedish agricultural advisory system. The survey was sent to 80 representatives from 32 different organisations. In five national organisations, the survey was sent to regional managers. In total 32 persons responded, and 15 of these completed the survey. The respondents were a mixture of small and large, local, regional and national advisory organisations, and from selling, free and commercial advisory organisations. This means that the base of the responses have been quite good.

The semi-structured interviews were carried out over telephone, with five experts from advisory organisations, university, and others. The questions were a base for the interview, but the experts could speak quite freely on the topics that were covered. The interviews took 30-60 minutes.

The experts interviewed were:

- Erik Stjerndahl, CEO of the advisory organisation HIR Malmöhus AB
- Lars-Göran Pettersson, senior advisor at the advisory organisation LRF Konsult and managing director of the confederation of Swedish agricultural advisory organisations
- Lisa Germundsson, managing director of Partnership Alnarp
- Björn Sundell, senior advisor in research and advisory service
- Magnus Ljung, researcher on environmental communication at SLU

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www.jordbruksverket.se

Jordbruksverket, *Mål för kompetensutveckling inom landet lär*. Available via www.jordbruksverket.se

Jordbruksverket, *Projektstöd för rådgivning om tvärvillkor*. Available via www.jordbruksverket.se

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9. Appendices

APPENDIX 1. A list of some organisations providing advisory service

Name	Website	Address
Governmental and coordination actors		
The Ministry for Rural Affairs	www.regeringen.se	registrator@regeringskansliet.se
The Swedish Board of Agriculture	www.jordbruksverket.se	kundtjanst@jordbruksverket.se
The County Administrative Board	www.lansstyrelsen.se	infomaster@lansstyrelsen.se
Advisory and extension actors		
AgriFocus	www.agrifocus.se	frida@malarago.se
AgroRåd	www.agrorad.se	per-anders@agrorad.se
Agrotektbyrån	www.agrotektbyran.se	helena@agrotektbyran.se
Agrowis		denniswistrom@yahoo.se
Areal	www.areal.se	info@areal.se
Argum AB	www.argum.se	info@argum.se
Assarssons ekonomitjänst		assarsson.ek@telia.com
Associera Lantbruksrådgivning	www.lantbruksradgivning.se	info@lantbruksradgivning.se
Axet	www.axet.se	webbred@lrf.se
Ekoll AB	www.ekoll.com	ekoll@ekoll.net
Ekologgruppen i Landskrona AB	www.ekologgruppen.com	mailbox@ekologgruppen.com
Erika Västgöte Dreber	www.osterby.se	info@osterby.se
FVB		karl-mikael.steen@fvb.se
Fyrklövern	www.4klovern.se	info@4klovern.se
Findus	www.findus.se	Info@findus.se
Griskonsult	www.griskonsult.se	jessica.sandberg@griskonsult.se
Grön Kompetens AB	www.gronkompetens.se	inger.christensen@gronkompetens.se
Gullviks	www.gullviks.se	info@bernercompany.se
Hushållningssällskapets förbund	www.hushallningssallskapet.se	info@hushallningssallskapet.se
LantByggByrån i mellansverige AB	www.lantbyggbyran.se	info@lantbyggbyran.se
LG Husdjurstjänst AB	www.lghusdjurstjanst.se	info@lg-husdjur.com
Lovang Lantbrukskonsult AB	www.lovanggruppen.se	konsult@lovang.se
LRF Konsult	www.lrfkonsult.se	info@lrfkonsult.se
LRF	www.lrf.se	info@lrf.se
Lundens Djurhälsa	www.lunden.com	info@lunden.com
Lönsamt Lantbruk	www.lonsamtlantbruk.se	info@lonsamtlantbruk.se
Lönsamt Lantbruk	www.lonsamtlantbruk.se	johan.sjoblom@lonsamtlantbruk.se
Margareta Dahlbergs Lantbruksråd	www.lantbruksrad.se	margareta@lantbruksrad.se
Maria Kihlstedt	www.kihlstedt.com	maria@kihlstedt.com

GrisKonsult	www.griskonsult.se	maria.malmstrom@griskonsult.se
MarkVäxt05 AB	www.markvaxt.se	nils@markvaxt.se
MULE Konsult	www.mulekonsult.se	bjorn.nylander@mulekonsult.se
Naturcentrum AB	www.naturcentrum.se	ncab@naturcentrum.se
Naturvårdsgruppen AB	www.naturvardsgruppen.se	anders@naturvardsgruppen.se
Naturvårdsingenjörerna AB	www.naturvard.nu	info@naturvard.nu
Nordic Sugar	www.nordicsugar.se	info@nordicsugar.se
Råby Konsult	www.rabykonsult.se	charlotte@rabykonsult.se
Rådgivarna i Sjuhärad	www.radgivarna.se	info@radgivarna.se
Rådhuset Nordfalan	www.nordfalan.se	lisa@nordfalan.se
Silvbergs Miljöteknik AB	www.silvberg.se	Kersti.linderholm@silvberg.se
Skånesemin	www.skanesemin.se	mia.davidsson@skanesemin.se
Slit AB	www.slitab.se	info@slitab.se
Sorpet	www.sorpet	soren.petersson@sorpet.se
Sundh Miljö	www.sundhmiljo.se	sundh.miljo@telia.com
Svenska Djurhälsovården AB	www.svdhv.org	lotta.petersson@svdhv.org
Svenska Pig AB	www.svenskapig.se	info@svenskapig.se
Taurus Köträdgivning AB	www.taurus.nu	info@taurus.se
Visavi	www.visavi.se	ingrid.tornqvist@visavi.se
Växa Sverige	www.vxa.se	info@vxa.se
Växträd	www.vaxtrad.se	info@vaxtrad.se
Åsa Odelros	www.gronkompetens.se	asa@odelros.se
Research and Education actors		
Swedish Institute of Agricultural and Environmental Engineering (JTI)	www.jti.se	info@jti.se
National Veterinary Institute	www.sva.se	sva@sva.se
Swedish University of Agricultural Sciences	www.slu.se	registrator@slu.se
Associations, unions and some other AKIS actors		
The Federation of Swedish Farmers (LRF)	www.lrf.se	info@lrf.se
The Royal Swedish Academy of Agriculture and Forestry (KSLA)	www.ksla.se	akademien@ksla.se
Partnership Alnarp	www.partnerskapalnarp.slu.se	lisa.germundsson@slu.se