

AKIS and advisory services in *Slovenia*

Report for the AKIS inventory (Task 1.2) of the i2connect project

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Author

Igor Hrovatič

Contact: igor.hrovatic@kgzs.si

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Executive summary

Agricultural production in Slovenia is predominantly taking place on small-scale farms. This is also reflected in terms of standard output distribution: almost 70% of farms fit into the class of 2.000 - 5.000 € of standard output. The demographical and educational structure of farm managers present a challenge: 30% of them are older than 65 years and only 1.3% of farm managers have completed their studies on agronomy on university level. And additional important issue is small family farms low market orientation.

The basic characteristic of Slovenia's agriculture is that for a long time it developed in exactly the opposite direction than taken by agriculture in the majority of other European countries. This applies especially for the agrarian structure and its development. While in developed western European countries, together with the improvement of agricultural technology, the process of enlargement of farms and concentration and specialization of production were going on relatively fast, in Slovenia the exact opposite process occurred right up to the beginning of the 1990's, largely in the private sector of Slovene agriculture. This process is characterized by permanent decrease and fragmentation of the land property, by low working intensity of production and, in some areas, by gradual abandoning of production and the consequent overgrowing of farm land. Although Slovene agriculture is forced to manage in more difficult production circumstances due to the natural conditions, it is primarily socio-economic factors such as poor size and property structures of farms, the low level of professionalization, and the still relatively low work intensity, that decisively obstruct more rapid technological progress and modernization.

We can recognise a lack of a permanent monitoring system on the AKIS in Slovenia. There are no special analyses done yet of the national AKIS in Slovenia. We estimate that knowledge, creativity and innovation are deficient factors of Slovenian sustainable development, and in particular the following shortcomings are evident: duplication of tasks between various knowledge-creating institutions, sporadic, random forms of cooperation, which are predominantly the result of informal ties between individual experts from different institutions, a relatively slow transfer of knowledge to end-users, and thus the transfer of knowledge into practice, and in particular the practically weak return flow of information on the needs from practice to the research sphere.

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Abbreviations

AKIS	Agricultural Knowledge and Information Systems
CAFS	Chamber of Agriculture and Forestry of Slovenia
FADN	Farm Accountancy Data Network
FAS	Farm Advisory System
FAService	Farm Advisory Service
NGO	Non-governmental Organisation
RDP	Rural Development Programme

1. Main structural characteristics of the agricultural and forestry sector

Due to the distinctive dissection of the relief, Slovenia most certainly does not rank among the countries with natural assets favorable to agricultural production. On the contrary, in the European space Slovenia belongs to the circle of countries with the most unfavorable production conditions because of its diverse and mountainous relief and large proportion of karst areas. While poorer production conditions do not necessarily make agricultural production impossible, they result in the lower production capability of farms and a smaller choice of cultures and production orientations, and in general, they weaken the adaptability and competitiveness of Slovene agriculture.

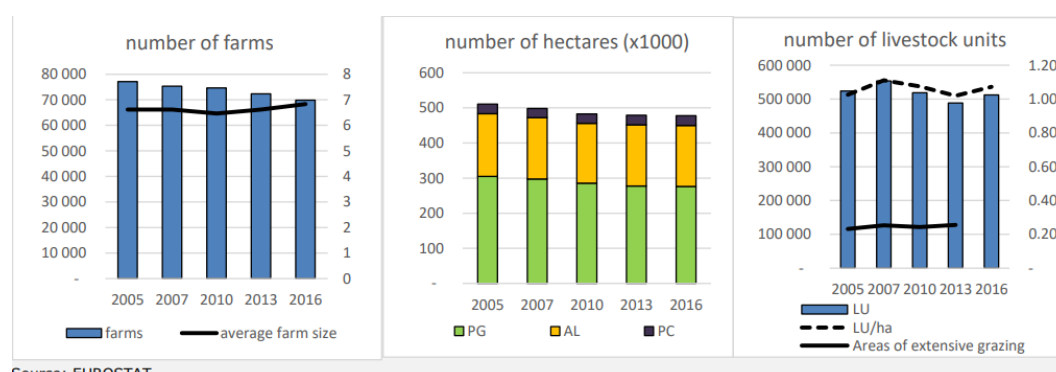
The quite specific and variegated structure of the use of farmland also influences the low level of adaptability of agriculture. With the exception of the flatlands of the sub-Pannonian region in the north-east and smaller consolidated areas in the bottoms of valleys and plains, Slovenia has no significant areas suitable for crop production. In spite of an advantageous geographical position that allows extensive and mostly qualitative production in fruit growing and winegrowing, the proportion of land under permanent orchards and vineyards is much lower than in countries with similar production conditions. Some two thirds of all farm land is grassland that is poorly exploited on the average relative to the frequency and the manner of use, which is dominated by two- and three-harvest meadows, extensive pastures, and hayfields.

Farm Structure in Slovenia, there were 70,063 agricultural holdings in Slovenia in 2016. Although the **number of agricultural holdings decreased**, the utilised agricultural area was stable and was in 2016 476,682 hectares, but the number of livestock units (LSU) has increased (to 418,512 LSU in 2016).

An average agricultural holding in Slovenia in 2016 used 3,91 hectares of permanent grassland, 2,51 hectare of arable land and 0.38 ha. Agricultural holdings in Slovenia use 898,365 hectares of land, approximately 53% of land is utilised agricultural area, about 44% is forest, 2% is unutilised agricultural area and 2% is barren land.

Among 476,682 hectares of utilised agricultural area the largest share is permanent grassland (57.5% or 274,251 hectares), followed by arable land (36.8% or 175,519 hectares) and permanent crops (5.6% or 26,913 hectares). While the area of permanent crops remained almost the same in 2016 as in 2013 (1.3% less than in 2013), the areas of individual permanent crops changed quite a bit. The area of olive groves increased by 14.7% (to 1,038 ha), the area of orchards by 4.6% (to 10,245 ha), while the area of vineyards decreased by 5.6% (to 15,331 ha).

80% of agricultural holdings breeds animals. 55,814 agricultural holdings in Slovenia are breeding animals in 2016 (7,5 LSU). The most common type of livestock on agricultural holdings is still poultry, since it is bred on more than half (54%) of all agricultural holdings. The second most common type of livestock is cattle; it is also bred on almost half of all agricultural holdings (47%). Pigs are bred on 32%, sheep on 9%, horses on 8% and goats on 7% of all agricultural holdings.



Source: EUROSTAT

Figure 1 Number of farms, number of hectares and number of livestock units

In Slovenia, the agricultural income per worker is on average about 22% of the average wage in the whole economy between 2005 and 2018. This share ranges from 25% in 2015 and 2018 to 19% in 2009 and is below the EU-average. At EU level, the gap between the agricultural income per worker and the average wage in the economy seems to be closing over time. The average agricultural factor income per worker fluctuates around EUR 5 200 between 2005 and 2018. Agricultural income per worker is rather stable with small peaks in 2011, 2015 and 2018 above EUR 5 500. Direct payments form about 31% of the agricultural factor income in Slovenia in 2017. Total CAP payments form about 60% of the agricultural

income in Slovenia. ANC payments are important for livestock farming sectors. The income per worker is above average for (COP) field crops, granivores, and wine and milk farms. Income per worker is on average lower in the livestock sector (sheep and goat, cattle and mixed livestock). The average income for mixed livestock farms is negative in 2012 and 2015. Currently, Slovenia uses 15% of their direct payments to provide coupled support to small grain cereals, beef fattening, milk production in mountain areas, vegetables and protein crops. The income per worker is lower for smaller farms. Income per worker increases with farm size. The share of direct payments in the income per worker decreases with farm size.

The average economic farm size in Slovenia is the highest in the age class of 25 to 34 years old. The economic farm size increases in all age cohorts, but it grows faster in the lower age cohorts.

Agricultural output per sector

The circle diagram gives an overview of the importance of different sectors based on the output at production value. Milk (16.2%), forage plants (13.7%) and cattle (13.4%) are the most important sectors in terms of production value in Slovenia in 2017.

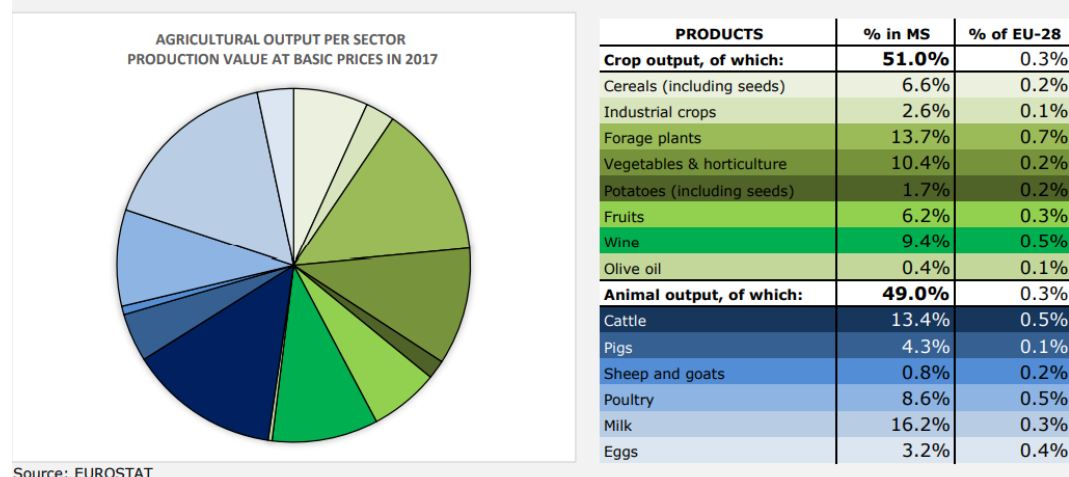


Figure 2 Agricultural output per sector

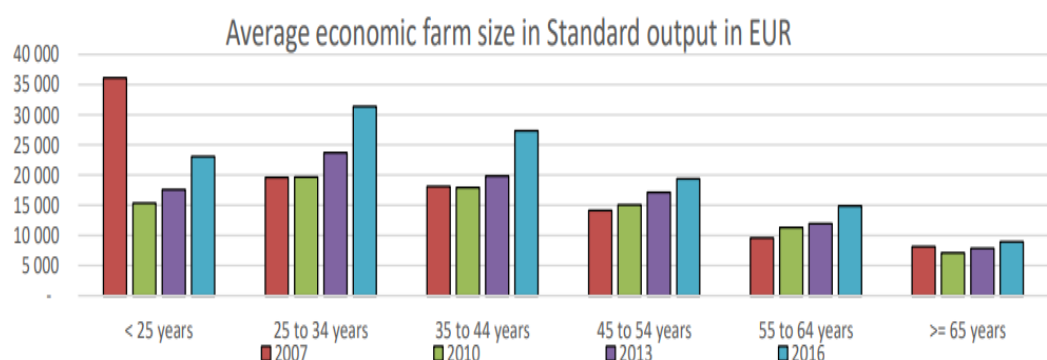


Figure 3 Economic farm size per age class

Source: DG AGRI - EUROSTAT

Agricultural training of farm managers 59% of farm managers below 35 years of age had at least a basic level of agricultural training in Slovenia in 2016. This is higher than the share of total farm managers in Slovenia (50%) in 2016. The share of 'young' farm managers with at least a basic agricultural training in Slovenia is higher compared to the EU average.

In Slovenia, 50% of the total farm managers attained basic or full agricultural training in 2016. This share increased over time. Compared to the EU, the share of farmers that attained full agricultural training (meaning any training course continuing for the equivalent of at least two years full time training after the end of compulsory education and completed at an agricultural college, university or other institute of higher education in agriculture) is higher in Slovenia.

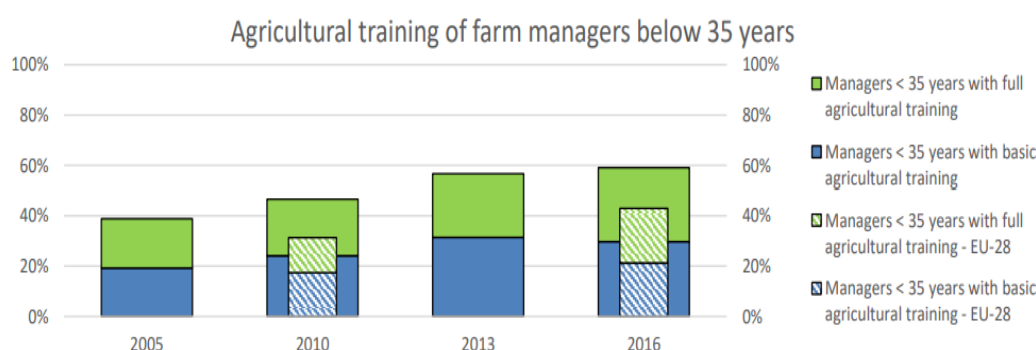


Figure 4 Agricultural training of farm managers

Source: DG AGRI - EUROSTAT

The rural employment rate in Slovenia steadily increased from 67% to 74% in 2008. However, after the crisis in 2008 the (rural) employment rate decreased to 68% by 2012, and after 2012 climbed again back to 2008-level in 2017. The employment rate in predominantly rural areas is a little higher than the average employment rate in Slovenia. The employment rate in rural areas in Slovenia is above the EU-average rural employment rate in 2017 (74% vs. 72.6%).

Biodiversity in Slovenian agriculture: In Slovenia, only 28% of agricultural habitats were in a favorable status in 2012. 50 % of grassland had an unfavorable-bad conservation status. The more favorable areas are located in the northwest of Slovenia. To improve biodiversity, 55.6% of land is under contracts to improve biodiversity and/or landscapes in Slovenia in 2017. In Slovenia increase the number of organic farming from year 2015 to year 2020. Around 10% of agricultural land is covering by organic farming.

Agricultural holdings and area with organic farming					
	Ø 2005-09	Ø 2010-14	2015	2016	2017
Number of agricultural holdings	1,951	2,722	3,417	3,518	3,635
• with organic farming	1,573	2,154	2,699	2,933	3,190
• in conversion to organic farming	378	568	718	585	445
Utilised agricultural area (ha)	27,709	35,568	42,188	43,579	46,222
• with organic farming	22,329	28,978	32,488	36,353	40,349
• in conversion to organic farming	5,381	6,590	9,700	7,226	5,874
Area with organic farming by land use (ha)					
Arable land	2,186	3,923	5,359	5,700	5,942
of which: vegetables and strawberries	114	181	281	267	227
Orchards	611	1,008	1,466	1,608	1,870
Vineyards	154	346	495	536	561
Olive groves	24	157	214	240	243
Nurseries	-	0	-	0	0
Permanent grassland	24,733	30,132	34,653	35,494	37,607

Source: SORS (Organic Farming), calculated by AIS

Figure 5 Agriculture and environment

Forestry

Slovenia is characterized by a very high degree of natural diversity. In addition to its varied topography and geology, the continental, Alpine and Mediterranean

climates converge in Slovenia. The forest has always been present and important in this environment. Today, we are aware not only of its economic significance but also of its role in conserving the biological diversity of the landscape and alleviating the impact of natural disasters and human pollution; equally it is important in the balanced development of the countryside and as a natural environment for human recreation.

Slovenia is one of the most densely afforested countries in Europe. Forests cover 58,1 percent of the surface area, or 1 100 000 ha, and dominates as much as three-quarters of the landscape. Much of the present forests originate from overgrown farmland, since in 1875 only 36 percent, and in 1947 44 percent of the surface area of Slovenia was covered by forest. According to the objectives of rural development, no substantial increase in forest coverage is expected in the coming decade. Most of Slovenia's forests are in the region of beech (44 %), beech-fir (15 %) and beech-oak (11 %) sites, all of which have a relatively strong productive capacity (Table 1). Thermophile deciduous and pine sites, which account for only about 12 percent of the total surface area of the Slovenian forest land, are poorer or arid.

In 2018, the removal in Slovenian forests was about 22% larger than in 2017. 6,060,959 m³ of timber was felled, of which 4,367,576 m³ of coniferous trees and 1,693,383 m³ of non-coniferous trees. There was still a lot of wood that had been felled due to damage from the 2014 ice storm and bark beetles, and the wind damage in 2017. Thus, sanitary felling amounted to approximately 67% of the total timber removals. The total removals represented 89% of the allowable removals under forest management plans.

Common agricultural policy and budgetary support

In 2017, in the framework of direct payments the implementation of schemes continued: the basic payment, green payment, additional payment for the new entrants to Young Farmers scheme, and optional payment in the framework of Small Farmers scheme. Additionally, the agricultural holdings could apply for production coupled payments for small grain cereals, vegetables, cattle and milk production in mountain areas, whereas the coupled payment for protein crops was abolished. In 2017 subsidies for protein, crops were abolished and a new payment for the areas with natural constraints based on the slope steepness (eligible agricultural area in mountainous areas with slope steepness of 35 %-50

%, or above 50 %) was introduced. Due to the external convergence, the national envelope for direct payments decreased to 136 mill. EUR (137 mill. EUR in 2016). The implementation of the measures defined in the RDP for the period 2014–2020 also continued. By the end of 2017 approximately 460 mill. EUR had been granted for twelve measures and technical assistance (42 % of the program's available resources; 1,107 mill. EUR) of which 291 million (26 %) had been paid out. Most of the payments (81 %) were paid for the measures implemented under the subsidy campaign and were related to the annual payments for agrienvironment-climate measures, animal welfare and payments to farmers with areas with natural and other constraints, while for some measures (basic services and village renewal in rural areas, setting up of producer groups and organizations, co-operation) public tenders had not been published till the end of 2017.

Total budgetary support to agriculture (322.8 mill. EUR) increased by 3 % in 2017 compared to 2016, whereas the share of co-financing from the EU budget declined to 71 % (from 73 %). The biggest share of budgetary support was directed to market and direct support measures (52 %) and to structural and rural development measures (36 %). The executed payments for the CAP first pillar measures increased by 2 % compared to 2016. Significantly more funds were earmarked for disaster and other extra compensations to producers (frost damage 2016), as well as for variable input subsidies that lower the costs of farming (co-financing of insurance premiums). There were one percent less payments executed for direct payments. Executed payments for structural and rural development measures increased by 3 %, which is mainly due to the execution of several bigger payments in the framework of the measures for improving the competitiveness of agriculture and supporting rural economy and population.

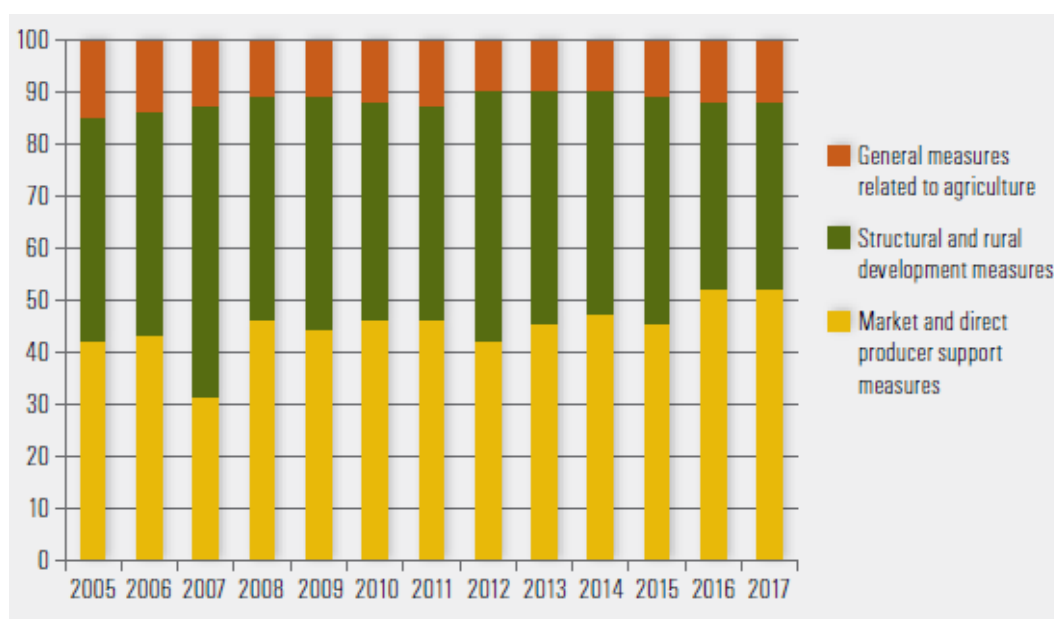


Figure 6 Budgetary support in agriculture

The general measures include also support for advisory service and other public services in agriculture and forestry, also support for education, research and development in agriculture and forestry.

Under the programming period 2014-2020, Slovenia programmed 4% of their total rural development envelope (EAFRD + national contribution) under M01: knowledge transfer and information actions, M02: advisory services, farm management and farm relief services and M16: Co-operation-EIP. This is above the EU-28 average of 3.6%.

Share of co-financing of budgetary support to agriculture from the EU budget (%; calendar year)					
	Ø 2005-09	Ø 2010-14	2015	2016	2017
Market and direct producer support measures	41	70	86	86	83
Structural and rural developments measures	72	77	76	75	75
General measures related to agriculture	6	7	11	11	12
TOTAL BUDGETARY SUPPORT TO AGRICULTURE	51	66	73	73	71

Source: MAFF, AKTRP, calculated by AIS

Figure 7 Share of co-financing of budgetary support to agriculture from the EU

2. Characteristics of AKIS

2.1. AKIS description¹

The structure of institutions that forms advisory service within agricultural knowledge and information system (AKIS) in Slovenia is diverse. In general, they can be classified into six groups according to their purpose and contribution to agriculture. The first three groups are comprised of a) the public sector with the Ministry for Agriculture and affiliated bodies, b) 18 research and education institutions and c) a group of public institutions that provide public services. Next, three groups are private interest-driven institutions that consists of a) farmer-based organisations, b) private advisory organisations, and companies and c) NGOs. As presented further on in detail, the organisations of all six groups operate on national level, some of them also on regional or territorial and local levels. Regarding the geographic point of actors division, it is important to stress that regions in Slovenia still do not perform their political and economic functions in terms, common to EU regions. Consequently, institutions territorial units operate on territories that diverge from the official regional division of the country. For this reason the term “regional or territorial level” is used.

2.2. AKIS actors and knowledge flows

Public institutions

The Ministry of Agriculture and Environment is a governmental institution that performs tasks on the field of agriculture. Its affiliated bodies on the field of agriculture are Agency of the Republic of Slovenia for Agricultural Markets and Rural Development, Slovenian Environmental Agency, Inspectorate of the RS for Agriculture, Forestry, Food and Environment, and The Administration of the RS for Food Safety, Veterinary and Plant Protection. Given the small size of the Republic of Slovenia, its ministries operate just on national level, though some affiliated bodies have territorial units. Public services in agriculture are implemented by different public and private organisations, such as Chamber of Agriculture and Forestry of Slovenia (CAFS), and Slovene Forest Service.

¹ This chapter largely relies on Erhart, Verena (2014): *AKIS and advisory services in the Republic of Slovenia: Report for the AKIS inventory (WP3) of the PRO AKIS project*, p. 8 – 10.

Research and education institutions; there are 15 educational institutions on the field of agriculture in Slovenia; three faculties operate within two universities (Biotechnical Faculty and Veterinarian Faculty within the University of Ljubljana, Faculty of Agriculture and Life Sciences, University of Maribor), other 12 institutions are secondary schools and/or colleges. Faculties operate on national level and later on regional or territorial level. Key national research institutes are Agricultural Institute of Slovenia with two experimental centres, Slovenian Forestry Institute and Slovenian Institute of Hop Research and Brewing.

Slovene Forest Service was established by the state in order to perform public service for forest owners, irrespective of ownership. Its main tasks and activities are forest management planning, silviculture, forest protection, forestry technique, forest wildlife and hunting, hunting reserves with a special purpose and also public relations, and education of forest owners. The organisation's headquarters are situated in Ljubljana, while its numerous units are spread all over the country (regional and local units and forests districts).

There are also some **other public institutions** that contribute to agriculture knowledge and information exchange such as: public institutions officially responsible for public service on rural development, forestry, nature preservation (e.g. national parks) and regional and regional/local institutions involved in rural development, and other issues important for the development of their territory (e.g. local development agencies). The situation differs from region to region.

Private Organisations

Farmer based organisations: there are two agriculture chambers - CAFS and Chamber of Agricultural and Food Enterprises. The first one represents farmers and forest owners and the second one represents companies and entrepreneurs in the business of production and processing of agricultural and food products. The latter has already transformed into a voluntary association though membership for farmers and forest owners in CAFS is still obligatory. In addition to representation of members' interests, CAFS co-established 8 Agricultural and Forestry Institutes. Through those institutes and local units, CAFS performs public farm advisory service (FAS) as well as other activities, such as research, implementation of services of national interests, trainings, seminars and promotion activities.

The second group of farmer-based organisations, based on voluntary membership, consists of: Cooperative Association of Slovenia, territorial or local

cooperatives, and Farmers' union. Cooperative Association of Slovenia is a voluntary umbrella organisation of cooperatives with

73 members and works just on national level, the same as Farmers' union. Agriculture cooperative is the most common and traditional form of business cooperation in the agriculture sector. Its primary focus is on purchase and sale of agricultural products, and operates on national, territorial or local levels. As an intermediate link between producers and retail chain and consumers they also play a role in AKIS in terms of farmers' adaptation to market conditions and demands.

Beside those there are also some organisations/associations of farmers within the agriculture and food processing sector (e.g. producers of food products protected within EU or national food quality schemes, eco products, small cheese producers, goats and sheep breeders, etc.). Most of them are non-commercial organisations/associations and their scope of activities for members differs, though all of them provide some technical support, organise promotion activities and events etc. Quite often FAS advisors and persons employed at regional and local development institutions provide support in their annual program implementation.

Private professional advisors: The small market for private advisory service in Slovenia is due to centralization of advisory service within two organisations mentioned above, but the situation started to change a few years ago. Today, there are private consultants that provide help to different producers' groups with the main focus on marketing and organisation; additionally some veterinarians give support to farmers on basic agriculture issues.

An important channel of support to farmers are also upstream and downstream industries - advisors employed by commercial producers of seeds, farm machinery etc. and advisors that help farmers to meet technical standards i.e. quality standard, labelling requirements etc. set by purchasers.

Non-governmental sector: This is a diverse group of entities with different interests and political power that in some cases also facilitates development. There are two traditional groups: Slovenian Rural Youth Association with local associations and Association of Country Women with local associations. In addition to above mentioned, there are also professional associations, NGOs that focus on environmental issues, etc. NGOs organise different seminars, excursions, events, and round tables, but in general they are non-commercial organisations.

Quite often FAS advisors and persons employed at regional and local development institutions provide support in their annual program implementation.

It is a fact that knowledge and innovation transfer from research institutions through FAS and interest organisations to the end user, farmer, is low and insufficient. All public institutions also agree that they do not have sufficient information on farmers and forest owners' actual needs – reverse information flow is also not operational. There are several reasons for the lack of cooperation between institutions. One of key issues is the research system which promotes basic research. Researchers are not stimulated to do applied researches as they do not contribute to indicators that they have to reach to preserve their status. Another obstacle is a system that doesn't allow persons without researcher status (as most of FAS advisors) to be involved in research projects financed by EU or national funds.

We can recognise lack of permanent monitoring system on AKIS in Slovenia. There are no special analyses done yet of the national AKIS in Slovenia, anyway we estimate that knowledge, creativity and innovation are deficient factors of Slovenian sustainable development, similar as perceived in other European countries, and in particular the following shortcomings are evident: duplication of tasks between various knowledge-creating institutions, sporadic, random forms of cooperation, which are predominantly the result of informal ties between individual experts from different institutions, a relatively slow transfer of knowledge to end-users, and thus the transfer of knowledge into practice, and in particular the practically weak return flow of information on the needs from practice to the research sphere.

2.3 AKIS diagram

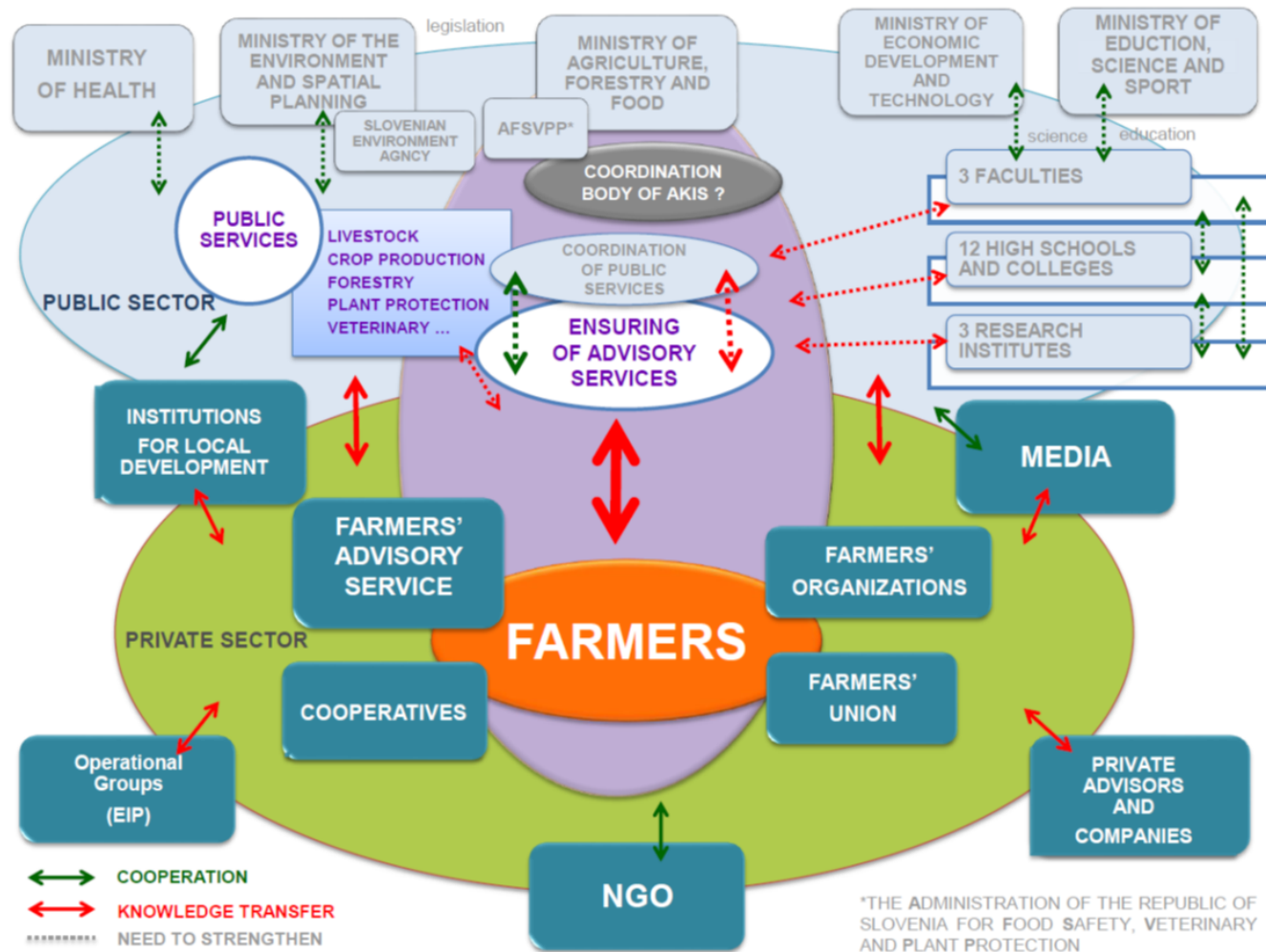


Figure 8 Slovenian AKIS

The Slovenian AKIS scheme covers all stakeholders and defines the processes of their cooperation and knowledge exchange. The upper part of the scheme defines the public sector, which is the holder of research in agriculture, forestry and food, formal education and public services, including the Public Agricultural Advisory Service, which in Slovenia mainly provides agricultural advisory services. Consulting in the field of forestry is provided by the Slovenian Forest Service.

The center of the system of innovation and knowledge transfer is the farmer, as the carrier of agricultural production and a key user of knowledge to ensure their own survival and food security of all residents. It is linked to professional organizations whose goal is to connect growers and jointly enter the market and represent the interests of farmers (Chamber of Agriculture and Forestry of Slovenia, Chamber of Commerce and Industry of Slovenia, chambers, cooperatives, farmers' organizations and trade unions). Within the public sector, in agriculture, the transfer of formal knowledge from science and education systems to the end user, ie the farmer, is organized mainly through activities of public advisory service. In connection with other public services that perform professional tasks in the field of crop production, animal husbandry, forestry and fisheries, and plant and veterinary protection.

In Slovenia, cooperation and coordination of AKIS stakeholders takes place at various levels, but there is no established coordination body that would coordinate tasks, exchange knowledge and information in one place and connect AKIS stakeholders and encourage cooperation between them. There is also no single AKIS platform as a hub for knowledge, innovation and digitalisation.

2.3.1 KEY FINDINGS of AKIS in Slovenia

The problem of Slovenian agriculture is not only the sporadic cooperation between actors and the weak transfer of knowledge, but the inadequacy of the AKIS system, which connects science / research, consulting, education and support systems. Among the key causes are the lack of systemic integration and cooperation between institutions, the fragmentation of higher education and counseling, competition between relevant institutions, the lack of development and innovation role of the public system, the unclear role of the state and consequently suboptimal AKIS system. It is essential to establish links between these areas, which cannot operate on their own, and to strengthen cooperation with the private sector (data for 2014, but the findings, according to the evaluator, remain current). (Deloitte d.o.o., 2019)

All public services are mostly financed from the budget and are organized throughout the country, but the problem is that knowledge does not reach the end user, farmer or forest owner to a sufficient extent or in an appropriate way, which will need to be strengthened through better cooperation and exchange of information. among all AKIS stakeholders, and in particular between the listed public services and public advisory service.

Basic consulting services for various areas of agricultural production are provided by public advisory service field agricultural consultants, who cover the entire territory of Slovenia. Specialist consultants for the predominant agricultural industries work at all JSKS branches, some specialists work only in certain areas or in the entire territory of the Republic of Slovenia.

Public advisory service provides specialist consulting in the entire territory of Slovenia and also cooperates with other providers in the field of agriculture.

There is a lack of specialist consulting services in the field of newer technologies in connection with the economics of production, protection of natural resources and climate change. Advisers are relatively little educated abroad, where they could gain knowledge in the field of newer technologies of production and processing in agriculture, as well as guidelines on how the agricultural economy can introduce innovations and digitalisation into its practice.

Agricultural advisers usually provide mainly advice on an individual intervention / measure, rarely addressing the farm as a whole.

Cooperation of public advisory service with other public services in the field of crop production and animal husbandry has been established, but is not yet sufficiently implemented.

Public advisory service carries out the transfer of knowledge to farmers in various forms, but to a lesser extent interferes with more modern methods of knowledge transfer.

Private agricultural consultants advise in the areas of submitting collective applications, preparing business plans, obtaining external financial resources, agricultural machinery and plant protection products, and these consultants are often also representatives of providers of agricultural machinery, fertilizers, etc. Private consultants are not included in AKIS.

Research institutions in the field of agriculture in Slovenia cooperate with each other occasionally, through projects, but their cooperation is not systematically

determined. The results of scientific and research findings are not publicly available in one place, which would allow for greater transparency, reduce the risk of duplication and speed up the transfer of solutions into practice.

There are no competence centers for the development of human resources among Slovenian research institutions in the field of agriculture, which would significantly contribute to the transfer and exchange of knowledge between them and other users of knowledge.

The key reasons for joining the EIP Task Force are for farmers to get acquainted with new technologies, practices, farming processes, followed by the acquisition of new expertise and solutions to a specific problem, which indicates a lack of such ways of transferring knowledge and information at the system level. This is also confirmed by the high percentage of farmers (95%), who cited access to experts as one of the most important reasons for participating in the project.

The initiators of EIP projects are mostly research institutions (52%), only 21% are farmers, which may indicate a lower visibility of EIP projects among farmers. Within the Network, there is an EIP VEM point, under which farmers are encouraged to highlight the problems they face in practice.

2.3.2. NEEDS for improving knowledge transfer

Raising the skills of farm holders.

Improving the age structure of agricultural holders - increase the number of younger agricultural holders, as they can absorb innovations faster and adapt to market conditions and are usually more motivated to acquire additional knowledge, introduce improvements and innovations in technology, environment and in the field of climate change adaptation and mitigation.

Transforming, strengthening and increasing the attractiveness of educational programs at all levels in the fields of agriculture, food and forestry, especially those that co-create professions and are important in rural areas, including the inclusion of new approaches to knowledge delivery (new technologies, digitization, etc.) and so increase interest in them.

University-level education, which ultimately shapes career profiles, requires a major change in terms of strengthening engineering logic, environmental responsibility, building social competences and strategic planning and management skills, and understanding the broad entrepreneurial, environmental and social dimensions of rural areas. These contents are insufficiently present in

the school curriculum, and the ways of presenting them lag behind the needs and characteristics of the current generations of young people.

2.4 Policy framework at national level

In all production orientations within Slovenian agriculture (the same applies to the food processing industry and forestry), there is a need to improve transfer technologies and technological know-how into practice, applied research, development and upgrading of research infrastructure, stronger links between professional services, researchers and the academic sphere and the increase in the specialization and competence of consultants and primary producers

2.5 Coordination structures

Slovenia established a core working group working in the field of AKIS, also preparing data and organizing a workshop with relevant actors. Within the Target Research Project V4-1608: Effects and Perspectives of the CAP on Slovene agriculture and rural areas, a study “Evaluation of Slovenian Agricultural policies in the period 2015-2020, Research support for strategic Planning after 2020 was created (<https://www.program-podezelja.si/sl/knjiznica/287-vrednotenje-slovenske-kmetijske-politike-v-obdobju-2015-2020/file>). This study includes some chapters connected to AKIS issues. The CAP strategic planning is not in the stage that actors of AKIS are involved. Now Slovenia is the middle of discussion on resolution regarding development of agricultural sector in future. Managing Authorities are supported by outside methodological support from Agricultural Institute of Slovenia, University of Ljubljana, University of Maribor.

3. History of the advisory system²

In the seventies, extension service in Slovenia was organised on three levels: 1) field advisors within agricultural cooperatives on municipality level, 2) advisors - specialists on regional level within seven regional agriculture institutes (today in the structure of CAFS) and, 3) on the level of Republic of Slovenia (at that time part of former Yugoslavia) – by the Republic Centre for Farm Advisory Service operated under Agricultural Institute of Slovenia. There were approximately 100 experts from the institute, faculties and cooperatives working together as expert groups. At that time (data reference to year 1972), advisory service within agricultural cooperatives was co-financed by the municipality (in average 20 %), and other two segments of FAS were co-financed by funds from the Republic of Slovenia.

In 1972, the Cooperative Union of Slovenia (for agriculture) was established and three years later the services of Republic Centre for Farm Advisory Service came under its authority. In the following year the first Regional Agriculture and Animal Breeding Centre (i.e. an institute with specialized advisory service) was established.

In 1992, after the adoption of the new legislation on cooperatives, FAS was organised as a public administration within ministry for the field of agriculture, though the slow process of transition of the advisors (official employment status) from the cooperatives to regional agriculture institutes began a few years earlier. The key issue was that advisory service should be available to all farmers, not just to members of cooperatives. This point was probably also the beginning of the slow separation process of the advisory service and research and education institutions.

At the turn of the century, CAFS was established to represent and protect the interests of agriculture, forestry and fishery. It was constituted in May 2000 after the adaptation of The Chamber of Agriculture and Forestry Act in June 1999. Regional institutes, formally independent legal entities, became part of its organisation's structure and so all different types of advisors were united in one institution and this lead to the acquisition of a legal status.

² This chapter is a literal quotation from Erhart, Verena (2014): *AKIS and advisory services in the Republic of Slovenia: Report for the AKIS inventory (WP3) of the PRO AKIS project*, p.11.

Today CAFS is the umbrella interest organisation of natural and legal persons in the Republic of Slovenia engaged in agriculture, forestry and fishery. Its central task is to protect and represent their interests, to consult them and accelerate economical and environment friendly activities. Its preferential tasks are the acceleration of the development and the improvement of economic conditions, the assurance of specialist services operation, the co-formation of legislation, the improvement of social conditions of life, keeping settlement of Slovenian rural areas and the promotion of the Slovenian agriculture at home and abroad. Its specialist services are agricultural advisory service, selection and monitoring production in stockbreeding, forestry advisory service, and centres for fruit-growing and nursery.

4 The agricultural and forestry advisory service(s)

4.1 Overview of all service suppliers

FAS in Slovenia is centralised and is organised within national chamber of agriculture and Forestry (CAFS).

CAFS operates on three levels. The first level is the Chamber's Headquarters in Ljubljana, the second level consists of 13 district subsidiaries established throughout Slovenia, and 59 local units operating on a local (third) level. Such divided organisation structure provides accessible service in every part of the country.

Organisational structure of CAFS is divided into general sectors (coordination of elected bodies, PR & international cooperation and general affairs), and the Sector for Agriculture and Forestry. The latter consists of four sectors (livestock production, plant production, rural development, forestry and renewable sources) and provides three public services: FAS, selection and monitoring production in stockbreeding, and public forestry service.

FAS operates within the Departments for Agricultural advisory at 8 Agricultural and Forestry Institutes, though farmers can also get support in 53 local units throughout Slovenia.

Table 1 Structure of FAS within Agricultural and Forestry Institutes

Institute	Description
Agricultural and Forestry Institutes Celje	11 branches, 53 advisors
Agricultural and Forestry Institutes Kranj	3 branches, 20 advisors
Agricultural and Forestry Institutes Ljubljana	13 branches, 45 advisors
Agricultural and Forestry Institutes Maribor	2 branches, 18 advisors
Agricultural and Forestry Institutes Murska Sobota	4 branches, 35 advisors
Agricultural and Forestry Institutes Nova Gorica	9 branches, 41 advisors

Agricultural and Forestry Institutes Novo Mesto	6 branches, 39 advisors
Agricultural and Forestry Institutes Ptuj	5 branches, 40 advisors

Source: Work report for public advisory service in CAFS for year 2019

In 2019, 81 consultants were employed at 8 KGZ, of which 175 field consultants, 82 specialist consultants and 34 consultants for the farming family and the development of complementary activities. The basic consulting service for various areas of agricultural production is provided by field agricultural consultants. Specialist consultants for the predominant agricultural industries work at all branches of JSKS, while specialists in the fields of rural development, complementary activities on the farm and protection of nature and the environment work in certain areas. In particular, specialists in hop growing, meat processing and on-farm tourism, aquaculture, agricultural machinery, fruit processing into fruit trees, processing and production of herbs and milk processing generally operate in the entire territory of the Republic of Slovenia. Advisors for the farm family and supplementary activities on farms work at the branches for agricultural counseling, as a rule in the area of the administrative unit.

Core tasks of FAS are defined in Agriculture Act and Chamber of Agriculture and Forestry Act (OJ RS No. 41/99 and 25/04), Regulation on the manner and obligations of performing the public agricultural advisory service (OJ RS 60/2017), Rules on the conditions regarding the premises, equipment and staff to be met by the public agricultural advisory service provider (OJ RS 63/2017), Rules determining the prices of the services of the agricultural public advisory service that are payable by users (OJ RS 11/18, 10/19) and are further defined in detail in the annual Programme of Activities and in the financial plan. The programme is confirmed by the government.

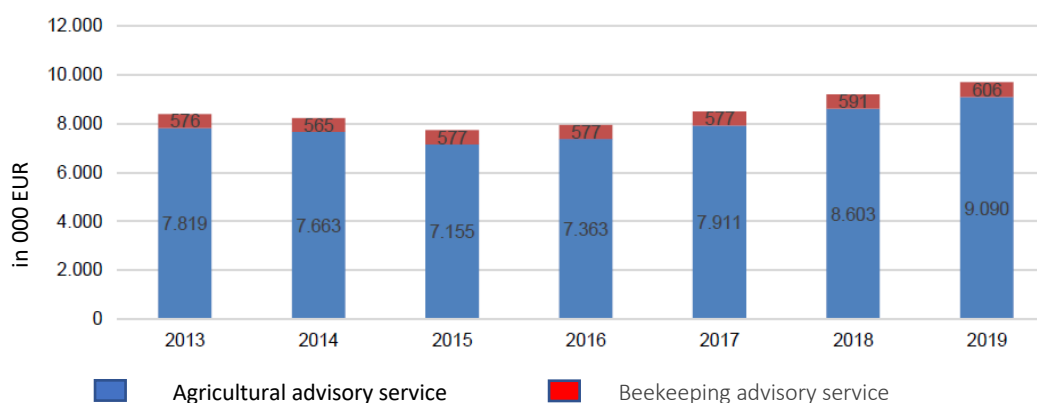
4.2 Public policy, funding schemes, financing mechanisms, advisory service providers

Advisory service for agriculture has a public service role. It got concession from year 2018 to year 2025. Ministry ensure funds and also with yearly program, define the activities of service. FAS is funded from different sources according to

annual plan of service agreed by the ministry. Nevertheless, the majority of funds are provided from national funds, though its share and the total amount for public service is gradually lowering down.

The volume of public funds allocated by the MAFF for the operation of FAS (including beekeeping) decreased from EUR 8.4 million in 2013 to EUR 7.73 million in 2015, and since then it has been slowly increasing and in 2019 it was 9, EUR 69 million almost reached the value of 2012 (EUR 9.71 million).

Figure: MAFF funds for the operation of the public advisory service, 2013–2019, in thousands of EUR



Source: MAFF

Funds that were available for FAS in 2020 was 9.252.417,00 € financed from national budget. FAS is also financed by end users for services defined by ministry of agriculture and services provided as public tender for M01, M02 and M 11. Private advisors are financed by end uses.

In Slovenia exist as public advisory service the advisory service for bee keeping which is organized inside the National association of Slovenia for bee keeping.

4.3 Clients and topics and methods

“FAS is provided to all types of farmers and forest owners. The methods used by FAS are all concerned typical/classic, thus they use: one-to-one advice on the farm, one-to-one advice outside the farm, small group advice on the farm (study tours for a specific group of intersects), and small group advice outside the farms, printed handbooks and brochures (Manual for meeting cross-compliance requirements, Catalogue of calculations for management planning on farms in Slovenia, Organic farming, technological lists, etc.). Farmers can also contact the advisor or the specialist via telephone or e-mail. As for the use of internet options, they are set simply. On their webpage one can find their contact information and information on seminars and events, though just some basic expert guidance, recommendations and brochures are available there.

FAS in Slovenia provides wide scope of service to farmers and forest owners. The end users are mostly farmers from small and medium farms, and part-time farmers.” (Erhart 2014:13)

Table 2 Number of participants in consultations within the framework of paid public contracts of sub-measure M0.2 “Advisory services, farm management assistance services and farm replacement services” (until 31.12. 2019)

Topic of advising	No. of participants
Preparing programs for animal welfare	1.123
Elaboration of a plan for the reorientation of the agricultural holding in the practice and methods of organic farming	672
Preparing program of activities for farmers	7.843
Implementation of individual consultations for agricultural holdings that have joined the organic farming measure	3.402
Implementation of individual consultations for agricultural holdings that have joined the environmental measures	6.734
Total	19.774

Source: MAFF

In year 2018 the CAFS, advisory service got the accreditation as a regional office for CECRA certificate. Training for mostly new advisors to use different methods, is organized with CECRA standards.

“One of special tasks of FAS is Project “Traditional Slovene breakfast”; the key goal of this free breakfast for childrens in kindergartens, primary schools and some secondary schools. The project became national project, supported by different ministries. It is the promotion of quality local food and the increase of consumption of local products in public institutions; all employees of CAFS are involved in the organisation and delivery of free apples and milk to children in the kindergartens and primary schools.

FAS is also involved in the preparation of national strategies and supporting documents to its implementation. One of them is the Catalogue of Calculations for Management Planning on Farms in Slovenia, a key document for farm business plan. FAS has also very important role in participation in CAP, in field of implementation of measures and suggestion for improving them.” (Erhart 2014:14)

FAS is also involved in different projects with topic for advisory service and digitalization HORIZON 2020, Fairshare and i2Connect) and it is an active partner with major role in EIP projects. IT is involved in more than 60 EIP projects till now.

The field of agricultural consulting, which is freely available on the market, is not regulated either in terms of legal organizational form or in terms of the necessary knowledge or. reference. As a rule, private consultants in the market operate on the basis of the Companies Act. At the level of Slovenia, there are no records of private consultants in the field of agricultural production and other areas related to farm management (such as obtaining financial resources, assistance in applying for public tenders, tourism on the farm, safety at work on the farm, marketing). Private consultants are not included in AKIS. No study has been carried out from the point of view of the functioning of the private agricultural advisory market.

4.4 Programming and planning of advisory work

In 2017 FAS got the legal base for its working. The Annual Programme of Activities and the Financial Plan of CAFS is the main document of this institution and is approved by the council of CAFS. It contains all Chamber activities, including the operation of public services within the organisation.

Annual Programme of Activities and the Financial Plan of FAS is also confirmed by Ministry of Agriculture, Forestry and Food. In the programme for 2020, seven

priority tasks are defined:

- advice on the technological, economic and environmental field of agricultural activity,
- advice on the technological, economic and environmental field of agricultural activity
- advising and assisting in the implementation of agricultural policy measures. Consulting and support for implementation of agriculture measures
- advice and assistance in the organization and operation of breeding organizations, producer organizations and other forms of production associations of agricultural producers
- advice in the field of agricultural and agricultural-related regulations,
- work management and coordination,
- cooperation with other ministries and providers of other public services, development and professional tasks or research work, and with organizations whose work relates to the operation of JSKS in the Republic of Slovenia and abroad.

Advisors work plan bases on the annual programme and is coordinated by the central office in Ljubljana. Procedures for reporting are uniform and set in the protocol. Advisors submit report on special forms in e-version that is archived for their own statistics and are inaccessible to the control system.

Public advisory service is implemented in the form of personal or group counseling, in circles and other forms, including counseling by telephone or through the use of electronic media, which help to transfer knowledge to users. Public advisory service includes trainings, lectures, presentations, demonstrations, organization and implementation of professional events, exhibitions and demonstrations of technologies, skills, sample facilities, field and other experiments, as well as seminars and workshops. It is also carried out with professional materials, articles in the media, on the World Wide Web, with technological instructions, brochures and other materials that are available in printed or electronic form to users. The public service is carried out in such a way that field units cover the entire territory of the Republic of Slovenia and ensure the regional accessibility of specialist services by individual agricultural branches. Consulting within FAS is mostly free for the user.

4.5 Linkages with other AKIS actors/knowledge flows

“As clearly stated by all parties involved - FAS, ministries, and research and education institutions linkages between different AKIS actors on knowledge flow and also on joint research are very low. All system players also agree that their awareness of farmers’ and forest owners’ needs is getting weaker. Cooperation between institutions basically relies on good relations between the individuals¹. However, the information technology allows farmers to find information on the Internet and they often prefer direct contact with producers or organise visits to farms with advance technology by themselves. One of the reasons for the situation could also be the absence of demonstration centres and technology innovation centres at advisory and research institutions in Slovenia.

There are several reasons for the lack of cooperation between institutions. One key issue is the research system that promotes basic research. Researchers are not stimulated to do applied research as they do not contribute to indicators that they have to reach to preserve their status. Another obstacle is the fact that the system does not predict greater involvement of people without researcher status (as most of FAS advisors are) in research projects financed by EU or national funds.

Apart from this, it is necessary to point out that institutes and faculties provide support if asked for, organise seminars for FAS employees each year and that there are several other joint activities such as publishing handbooks, brochures, etc. “ (Erhart 2014:15)

4.6 Advisory organizations forming the FAS and evaluation of their FAS implementation

MAFF finances 16 public services operating in the field of agriculture, forestry and food, thus systematically ensuring the development of new production and production technologies and the transfer of (new) knowledge to agricultural advisors. Procedures for financing and coordination of public services (preparation of starting points, approval of annual work programs and preparation of contracts) take place within the directorates for agriculture, forestry and food at the MAFF and the Food Safety, Veterinary and Plant Protection Administration.

“The Farm Advisory System (FASystem) in Slovenia is organised within CAFS and FAS operates in eight regional agricultural forestry institutions and 53 local units are very accessible to all farmers, especially to small farmers. Advisors are employed in 8 Agricultural and Forestry Institutes (independent legal entities co-established by CAFS), though FAS is coordinated by central office in Chamber’s Headquarters. FAS control is organised as a separate service within CAFS.” (Erhart 2014:18)

In Slovenia exist also public advisory service for beekeeping organized in Beekeeping Association of Slovenia (NGO). 10 of them working in central unit and 11 of them on regional level. This public advisory service covers all Slovenia.

“In addition to official national FAS there are several institutions and organisations that provide different support to farmers. They can be divided into four groups: institutions officially responsible for public service on rural development, forestry, nature preservation (publicly financed), regional and local institutions involved in rural development and other issues important for the development of their territory (financed by municipalities or funds from different projects/funds), and private companies providing support to farmers (commercial activities).

Officially CAFS is responsible for providing advices also to forest owners, though just three of their advisors are forestry specialists. Support on this field is also provided by the Slovenian Forest service. Activity is financed as a public service (almost 70 %). One of the reasons for the situation is that this institution is also in charge of the supervision for this sector (conflict of interests).

The later organisation is responsible for providing expert support to forest owners in forest management, though all economic issues regarding the forest are managed by the Farm Advisory Service (FAService) within CAFS. The institute is organised within the Central Unit in Ljubljana and has 14 regional units. Regional units are divided into local units, and furthermore into Forest Districts. Slovenian Forest service employs less than 700 people, mostly forestry experts

There are very few private companies and private consultants that provide support to farmers on basic agriculture and forestry issues, as the market for this type of service is centralised. However, the consultancy support to the organisation and management of producers groups, marketing, etc. is established. In i2Connect AKIS survey just one private advisor respond on it.” (Erhart 2014:18)

5 Summary and conclusions³

5.1 Summary and conclusions on sections 1 and 2

Agricultural production is taking place on predominantly small scale farms and is reflected also in the terms of standard output distribution. Almost 70% of farms fit into the 2.000 - 5.000 € of standard output. Slovene farms are run by managers with unfavourable ageing and educational conditions (30% of them are older than 65 years) and only 1.3% of farm managers have completed their studies on agronomy on tertiary level.

The structure of the institutions that form AKIS in Slovenia is diverse. The first three groups are comprised of a) the public sector with the Ministry for Agriculture and affiliated bodies, b) 18 research and education institutions and c) a group of public institutions that provide public services. Next, three groups are private interest-driven institutions that consists of a) farmer-based organisations, b) private advisory organisations, and companies and c) NGOs. Cooperation and knowledge transfer among AKIS actors is very diverse and it varies from traditionally strong cooperation to more declarative.

In chapters that refer to the FAS and FASystem, it is clearly stated that the adaptation of service to the changed situation on the market must accrue and this is also the issue in research, especially in education sector. The researches focus is on the basic research while work on the applied research is significantly smaller. Another issue is that the key focus of education programs on faculties and in secondary schools is technology, though students do not get enough knowledge on farm management (economy) as well as sustainable management. The whole knowledge (priorities) chain must be rebuilt.

Also the supply chain should be organised as a system of strong interdependent stakeholders. It is not possible to have a successful food processing industry without farmers that will cost-effectively grow quality agricultural commodities. Farmers will need to put more efforts into adopting to the market conditions.

CAFS is key farmers-based organisation, but farmers' membership in this organisation is defined by the law. It is an organisation that represents farmers' interests (to the government and society) while on the other hand it provides

³ This chapter closely relies on Erhart 2014, p. 20 – 21.

public FAS including implementation of CAP and national regulations (in the name of the government) to the farmers. According to an expert opinion, this organisation has strong political power and it has a very difficult task in balancing farmers' interests with government's interests.

5.2 Summary and conclusions on section 3

FAS has operated within CAFS for over a decade and is well recognised by the farmers. It is organised within eight territorial Agricultural and Forestry Institutes and 59 local units and employ over 300 advisors with different type of specialisation. As such it is very accessible to all farmers, especially to small farmers. In addition to the EU regulated basic requirement, Slovenia FAS provides wider scope of services as economic diversification, FADN, support to agriculture associations, organisation of different national competitions, etc. Its Annual Programme of Activities is confirmed by the government who also provides funds for the implementation.

One of the key Slovenian FASystem characteristics is centralisation. FAS and public service in forestry are assigned to two public institutions with very strong political position. As a result, private consultancy market is literally undeveloped. Changes in this sector started and will be in greater scope implemented in the next RDP programming period. It is necessary to stress that public FAS is important and some of today services must be preserved, yet opening the market for private consultants could contribute to faster development of farms as well as to the development of advisory service.

Information campaign on subsidies and later support to farmers is one of the tasks performed by FAS advisors. Farmers can enter data in digital information system themselves or exclusively with the help of FAS advisors (CAFS). One could argue that this is monopoly situation, as service is (this year) in full paid by farmers, but others claim that this is part of advisory service to farmers (directing the development of farm) that assures efficiency in measure implementation. It is also common opinion that FAS advisors put too much importance and their time to subsidy campaign instead of work on development of farms.

All institutions, including CAFS, agree that FAS advisors competence and knowledge will need to be improved in addition to more close cooperation with farmers and use new communication tools. Situation on the market, at least as big farmers are concerned, has changed. Although farmers are relatively conservative,

it is evident that the most successful farmers are willing to pay for good advice and that they are able to find information on new technologies by themselves (e.g.: via internet, compare offers of different technology producers or visit farms with advanced technologies). Another issue is that farmers need support that will provide holistic approach to the farm development, therefore support must be provided by group of experts that cover all relative issues. This amongst others is one key change that also must be adopted in FAS.

The key issue in all public sectors is also the average age of employees, which results from the restriction of employment in the public sector. This approach prevents employment of new young people that would bring new knowledge and new approaches to the service. Consequently adoption of FAS to changed market situation and different farmers' needs would be even harder.

On national level, legal ground documents for change in AKIS are strategic documents that determine Slovenia's vision and goals in agriculture by 2020 - Resolution on strategic guidelines for the Slovenian agriculture and food sectors by 2020 – "Food for Tomorrow" and Research and Innovation Strategy of Slovenia 2011-2020. This also reflects in the first draft of the Rural Development Programme of the Republic of Slovenia for period 2014 – 2020, as in line with the article 36 the support to European Innovation Partnership is predicted and the key partners (food processing industry, NGO, farmers, consultants and researchers) are clearly stated. The obligation to encourage this process probably rests on research and education institutions.

Last but not the least important is the fact that Slovenia must clearly define its priorities. It is not possible to achieve a higher level of self-supply with food and at the same time protect mayor share of land with very strict environmental measures (e. g.: Natura 2000). We must find some kind of compromise. In addition, it is also necessary to ensure coherent politics (planning) of different sectors (e.g.: forestry and rural development) and lead consistent long- term politics in the sector as well as with AKIS on all levels, as structure changes are a long- term process.

6. Acknowledgement of partners, information sources and gaps

In addition to the previous AKIS report (Erhart 2014), policy documents and other literature were used to compile information on the main structural characteristics in the Slovenian agriculture and for describing the actors engaged in the Slovenian AKIS.

The mentioned previous report from Erhart (2014) can be retrieved from https://430a.uni-hohenheim.de/fileadmin/einrichtungen/430a/PRO_AKIS/Country_Reports/Country_Report_Slovenia_21_05_14.pdf.

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