



Prospects for Farmers' Support: Advisory Services in European AKIS
WP 4 – AKIS ON THE GROUND: FOCUSING KNOWLEDGE FLOWS SYSTEM | Topic 1
Country Report for Bulgaria

The effectiveness of advisory services in responding to demands of diverse types of small-scale farmers

The role of advisory services for the new established and semi-subsistence farmers in Bulgaria

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List of acronyms

MAF	Ministry of Agriculture and Food
NAAS	National Agricultural Advisory Service
RDP	Rural Development Programme
UAA	Utilized Agricultural Area

Executive Summary

The small-scale farms are the main group that is of importance for the development of the agriculture and rural areas in Bulgaria. This is a family type business and almost the entire required employment power is provided by the family members of the farmers. On average, only one family member is engaged in each farm (1.2 annual employment units). The share of small-scale agricultural producers with agricultural education or qualifications is very small, which is also characteristic of the bigger farms. Practical experience and traditions within agriculture are an advantage for small-scale farmers but they are also a motivation for the achievement of longer term goals. The small-scale farms usually rely on their own financial resources to fund their running and investment costs.

The aim of the present research is to analyze the role of advisory services for small-scale farmers, including new established farmers and semi-subsistence farmers in Bulgaria. To achieve this aim, the first step was, to identify and classify farmers' needs and demands for knowledge, skills and information; secondly, to describe the process, actors and methods to obtain and use knowledge; thirdly, to supply knowledge to the new small-scale and semi-subsistence farmers by NAAS and other organisations; and finally, to describe and graphically depict the knowledge flows between these groups and organisations.

To achieve this aim the following research objectives, research methods, and techniques were used. The study has been carried out over two levels (1) carrying out a literature review and researching other studies and (2) conducting empirical interviews in the Plovdiv region of South Central Bulgaria. The first part of the research focussed on an analysis of the literature on the topics of consultancy and communication with small-scale farmers in Bulgaria. The second part of the research concerned field research with two target groups – consultation organisations and small-scale farmers - newly established and semi-subsistence farms.

The consultancy services for the small-scale farmers can be divided in two groups. The first group consists of formal consultancy services provided by the regional offices of NAAS, private consultants, accountancy firms, trade companies for seeds and preparations, non-governmental organisations and municipal offices of "Agriculture". The second group consists of informal consultancy services and advice that is obtained by the small-scale farmers from family members with agricultural experience; from specialist-agronomists working in the local agricultural pharmaceuticals store, cooperation or big farms or from a fellow agricultural producer neighbour. Last but not least, the experts of the scientific institutions are also consultants, who offer specialised consultancies for various production activities, but this resource is not actively used by small-scale farmers.

1 Introduction

Nowadays, Bulgaria is characterised by a high rate of small-scale semi-subsistence farmers. The main reason for this is due to the 1990s land reform where land was reinstated to the pre-communist era owners in an extremely fragmented ownership structure (Swinnen, 1999). This fragmented ownership structure created a dual farming structure consisting of a small number of relatively large-scale farms over 50 ha (2.27%), who cultivate almost 83.27% of the utilized agricultural area (UAA) and many small-scale farmers with under 2 ha (83.16%), who cultivate only around 4% of the total UAA (Dirimanova, 2008). Medium sized farmers are rare in Bulgaria.

Small-scale farming is not only a product of the land reform but is also part of Bulgarian heritage. In the past, before the collectivization process, land owners cultivated small plots that were enough to produce sufficient food to sustain their large scale households. Sharecropping was widespread among the farmers. In the country, subsistence farming was sustained due to a low level of education, low managerial level, lack of capital, lack of off-farm opportunities and the hard times for living (Noev, et al, 2002). During collectivisation, farm owners worked small private plots (average size 0.38 ha) which made up 13% of the total agricultural land - one of the highest shares of Central and Eastern Europe (Davidova, et al., 1997).

In the present day, Bulgaria is characterised by many small scale farmers who use 203,930 ha of agricultural land or 5% of the total territory of the country. The distribution of agricultural land by type of use is: 64.3% - arable land, 26.0% - grassland, 8.4% - permanent crops and 1.2% - family gardens. The average size of the UAA for small farms is 2.4 ha, compared with 12.1 ha on average for all farms. Between 2005 and 2010 the land used by small farms decreased by about 20%, however, there was a significant increase in the average size of the UAA per holding – from 1.6 ha to 2.4 ha (Agrostatistic, MAF, 2010).

According to the Agrostatistic Department at the Ministry of Agriculture and Food (MAF), the structure of the small farms in 2010 was: (1) mixed production - 40.7%, (2) farms that specialised in animal production - 32.7% and (3) farms that specialised crop production - 26.6%. Small farms with mixed production had the highest share and included mixed crop production, mixed animal production and mixed crop and animal production.

In the years after the accession of Bulgaria to the EU, there was a big change in the structure of small-scale farms in terms of the production in which they specialised. The number and share of small farms specialised in animal production and mixed farms significantly decreased while the number and share of farms specialising in crop production increased by 25% between 2007 and 2010.

The distribution of arable land for all types of crops produced in small farms is: (1) the major share of the arable land is occupied by cereals (49.3%), (2) industrial (25.4%) and (3) fodder (11.9%) crops. During the period 2005-2010, there was a decline in the amount of land used for the production of cereals and an increase in land used for the production of industrial crops. The share of small farms in the land occupied by grain and industrial crops in the country was very small (less than 4%), their share in forage crops was about 15%, in vegetables around 29%, in potato production 27% and in orchards and vineyards - 17%. In

recent years, the land used for orchards and berry plantations has increased while it has decreased for vineyards.

The aim of this research is to analyse the role of advisory services for small-scale farmers, including newly established farmers and semi-subsistence farmers in Bulgaria. To achieve this aim, the first step was to identify and classify farmers' needs and demands for knowledge, skills and information; secondly, to describe the process, actors and methods to obtain and use knowledge; thirdly, to supply knowledge to the new small-scale and semi-subsistence farmers by NAAS and other organisations; and finally, to describe and graphically depict the knowledge flow among them.

To describe and analyse the performance of the knowledge flows and identify the 'best-fit' practices for advisory services, we will try to answer to the follow research questions:

- What kind of needs and demands do new small-scale farmers expect to be served by the advisory services?
- What is the role of the National Agricultural Advisory Services (NAAS) in co-operation with new-established and semi-subsistence farms?
- How does the provision of advisory services to new small-scale farming differ from the overall provision to the agricultural sector?
- What is the process to choose the methods and tools to support the small-scale farmers?
- What types of cooperation have been created by the owners of small-scale farms as a result of the co-operation with the NAAS?
- What is the impact of the new small-scale farmers for rural development?

To achieve this aim the following research objectives, research methods, and techniques were used. The study has been carried out over two levels (1) carrying out a literature review and researching other studies and (2) conducting empirical interviews in the Plovdiv region of South Central Bulgaria. The first part of the research focussed on an analysis of the literature on the topics of consultancy and communication with small-scale farmers in Bulgaria. The second part of the research concerned field research with two target groups – (1) consultation organisations (regional offices of NAAS, private consultation firms and one Foundation- the "Land – source of income" and (2) newly established and semi-subsistence farms in Plovdiv region.

2 Selecting and delimiting the case-study

The number of registered agricultural farms in Bulgaria is 370,490 and 85,770 of these are small-scale farms (Eurostate, 2010). Almost all small agricultural producers perform their operations as individuals and only 520 of the small-scale agricultural farms are registered as companies. The number of small agricultural farms significantly reduced from 2005 to 2010 – to about 68,000. In 2005 the number of small-scale farms was 153,900 and in 2010 the number had reduced by 44.3% to 85,770.

There are 6 regions in Bulgaria, according to NUTS 2 – North-West, North-Central, South-East, South-West and South-Central (Figure 1). Generally, the distribution of small-scale farms by regions corresponds to the distribution of all farms in the country (Table 1). For the purposes of this study South-

Central region, which includes 5 sub-areas, was selected: Kardjali, Pazardjik, Plovdiv, Smoliyan and Haskovo. The main reason for the selection of this region was the number of small-scale agricultural farms, 27,480 (32% of the total number for the whole country). In the other regions, the average number of small-scale agricultural farms is around 12,000-14,000 (12-14% of the total number for the whole country).



Figure 1: Map of regional level of NUTS2 in Bulgaria

Source: Ministry of regional development, Bulgaria

The average area of the agricultural land used in South-Central region is 4.2 ha. The majority of vegetables producers (48% of the country’s total) are located in this area, followed by grape producers (33% of the country’s total) and tobacco producers (55% of the country’s total).

Table 1: Distribution of farm holdings by regions

Regions	Bulgaria		Small scale farms	
	Number	%	Number	%
Northwestern	51,340	13.90	10,910	12.70
North central	43,320	11.70	12,070	14.10
Northwestern	43,780	11.80	11,050	12.90
Southeastern	56,980	15.40	12,260	14.30
South Central	109,510	29.60	27,480	32.00
Southwestern	65,560	17.70	11,980	14.00
Total	370,490	100.00	85,770	100.00

Source: Agrostatic, MAF (2010)

Four consultancy organisations were selected and interviewed for the purposes of this study: (1) the Plovdiv Regional office of the National Agricultural Advisory Service (NAAS), (2) two private consultancy companies and (3) one non-governmental organisation – the ‘Land Source of Income Foundation’. Fifteen agricultural producers (15) who were participating in measures 112 and 141 of the Rural Development Program (RDP) were interviewed, as well as two small agricultural producers who were not participating in any governmental or European programmes.

The selection of agricultural producers includes small farmers who perform their production operations in the district of Plovdiv. They are mainly newly established farms by young farmers and semi-

subsistence farmers. A list of agricultural producers was provided by the consultancy companies that were interviewed. Agricultural producers were randomly selected from this list and interviewed. The agricultural farms that did not participate in any European or governmental programmes were selected from a list provided by the regional NAAS office. These farms have used consultancy services provided by the regional office but did not participate in any of the programmes. Some of the criteria used for shortening the selection list of small-size agricultural producers were for their owners to be young and to be operating in the vegetable production sector. By selecting young farmers we were targeting the tracking of their production processes, where they are acquiring information and knowledge and to identify how actively do they use consultancy services. With such an analysis we will be able to summarize how small-sized farms are developing in Bulgaria and will construct a model showing the main relations between the different organizations providing consultancy services and the newly established and semi-subsistence farms.

Two types of questionnaires were developed. The first type of questionnaire was targeted at organisations providing consultancy services and the second type at the small-sized agricultural producers. The questionnaire designed for experts at the consultancy services organisations included questions that were targeted at understanding how they operate, provide assistance to and consult with the newly established small-sized and semi-subsistence agricultural farms. The questionnaire for the organisations was divided into several sections: (1) a short description of the organisation, (2) methods of information acquisition, (3) the knowledge and types of information that producers search for. The questionnaire for the agricultural producers was also divided into several sections to gain an understanding of: (1) which programmes they participate in, (2) how they search for information and knowledge, (3) who their main consultants are, (4) what type of assistance they get from the consultancy organisations, (5) what agricultural knowledge they have, and if they do not have any, how do they acquire it. The final section of the questionnaire was designed to obtain recommendations on how to improve the cooperation between the farmers and the consultancy organisations.

3 General description of the case study

In this study we focus solely on the region of Plovdiv (Figure 2, a traditional agricultural area with a sector of vegetable production. Prerequisites for the favourable development of this sector are favourable soil and climate conditions and the existence of educational institutions – the Agricultural University and the University of Food Technologies. Most of the agricultural producers who applied for measure 112 and measure 141 of RDP are located in the Plovdiv region. Other reasons for the selection of this region are the (1) variety of agricultural production; (2) large number of small vegetable farms; and (3) the highest number of new farms which are established by young farmers (measure 112) through the Rural Development Programme (RDP).

There are also plenty of semi-subsistence farms that are supported and are restructuring according to measure 141 of RDP in the region of Plovdiv. In order to investigate how the small-sized farms are operating and how frequently they use the consultancy services provided in the region of Plovdiv, this became the primary focus of this research. These small-scale farmers utilise 45% of the agricultural land and their average farm size is about 6.8 ha. The small-scale farmers mainly farm on rented land. For

instance, 77% of the land used by small-scale farmers in the Plovdiv region is rented compared to 23% which is cultivated by small-scale farmers who privately owners (Counting of MAF, 2010).



Figure 2: Map of Plovdiv region in Bulgaria
Source: Ministry of regional development, Bulgaria

The Plovdiv region has the highest number of approved projects resulting from RDP measures. The main measures to which the agricultural producers and candidate agricultural producers actively apply, are 112 (the establishment of farms by young farmers), 141 (the support of semi-subsistence farms) and 214 (agro-ecological payments). The regional office of NAAS in Plovdiv actively offers consultancy services on these measures for the agricultural producers free-of-charge. During the entire RDP programme (2007-2013), the experts of Plovdiv's regional NAAS office have carried out the greatest number of complex consultancy services - a total of 1,431. This is also the region with the most active applicants within the RDP (2007-2013).

The criteria for the selection of the prospective small-scale agricultural producer interviewees were: (1) to be vegetables producers, growing at least two types of crops; (2) to be of an economic size between 1-4 European economic units; (3) to be owners or hired by individuals aged 40 or under and (4) to be newly established or semi-subsistence farms. The reason for the age limit is that these young people are thought to be more active in their use of the different consultancy services than people over 40. The older small-scale farmers have experience and knowledge but rarely use specialised consultancy services.

The newly established agricultural producers have often not dealt with agriculture before and/or do not have the appropriate education for such operations. Such people frequently draw on the experiences of older family members, and seek consultancy services and information from various sources (the Internet, specialised literature and media). The participants in RDP must undertake 150 hours of specialised training that is directly related to their production sectors and such training allows them meet other agricultural producers in a similar position and also to get acquainted with specialists who may become their consultants in the future.

4 Methods and data collection

The research process was carried out in two stages. During the first stage, a literature review was used to allow for: (1) an analysis of the documents relating to establishing new farms and small-scale and semi-subsistence farms in Bulgaria, and (2) an analysis of administrative reports to determine the area of study. Also, statistical data was collected from the National Statistical Office, MAF (Annual agrarian reports) and NAAS (Annual reports). The RDP was used to obtain specific information related to small-scale farming in Bulgaria for the next programme period of 2014-2020.

The empirical part was carried out in two stages. In the first stage, the interviews were conducted with 4 advisory organisations: Plovdiv regional office of NAAS; two private advisory firms; and one foundation “Land – Source of Income”. These organisations actively work with newly established small-scale farmers and semi-subsistence farmers. Several criteria were used to select the advisory organisations for this study. Firstly, the advisory organisations needed to hold different statuses e.g. public, private, farmer based or NGO. Secondly, the organisation needed to work and support the small-scale farmers, and thirdly provide consultancy services for vegetable production. The chosen advisory organisations are one from the public sector - Plovdiv region office of NAAS, two from the private sector (two local consultancy firms which mainly work with small-scale farmers) and one from an NGO – Foundation “Land Source of Income”. No farmer based organisations or professional associations were selected because they are not very appropriate forms of advisory services for the small vegetable producers.

The main research topics in the proposed questionnaire to the experts were: (1) to provide a short description of their organisations; (2) to illustrate how they work with the newly-established and semi-subsistence farmers; (3) to highlight what types of information and knowledge they offer to the farmers; (4) to show what methods they use to assist their clients.

During the second stage of the study, interviews with small scale farms using a questionnaire were conducted. These selected farmers had to produce vegetables and to be under the age of 40. In order to show diversity, several groups of small scale farms have been selected, namely:

- Newly-established farms by young people (112 development measure) - 5 farms,
- Semi-subsistence farms (141 development measure) - 6 farms,
- Small-scale farms that follow two RDP measures (141 and 214 development measures) - 4 farms,
- Small-scale farms managed by young people that do not participate in an RDP scheme- 2 farms.

The selected farms were chosen by the list of names proposed by the regional office of the NAAS, private advisors and interviewed foundation. The questionnaire used for the small-scale farmers included two types of questions, closed and open. Closed questions were related to farmers’ basic information such as age, education, number of members working at the small farm, produced crops, cultivated area, name(s) of consultant(s) and participation in development measures. The open questions included topics related to their production, the needs of information and knowledge to manage the farm; their interactions with their advisory organisations.

Implementing the open-ended questionnaire created confidence among respondents, which in turn guaranteed the quality and reliability of the information that was collected. All interviews were completed with the recommendation to facilitate the process of information and knowledge exchange with the newly-established and semi-subsistence farmers by making use of their local consultants. In addition, they highlighted how knowledge was applied in practice.

5 Results

5.1 New small-scale farmer's needs and demands for knowledge

The small-scale agricultural producers in Bulgaria who require advice and use different formal and non-formal consultancy services are: (1) newly created farms established by young people, (2) semi-subsistence farms and (3) small-scale farms that do not participate in any national and European programmes.

Each group of the small-scale agricultural producers was studied individually in order to be able to identify and classify their knowledge, skills and information needs:

- **Small-scale farms established by young people.** This group of agricultural producers was established through RDP measure 112. The farmers are aged between 18 and 40 and were registered as agricultural producers for at least 14 months before they applied for the assistance from the measure. The young farmers who have applied or are approved have a high-school or university diploma in the subjects of agriculture, veterinary medicine or agricultural economics, or have a certificate for completion of a 150-hours course in one of these fields. Small agricultural producers who are certified to carry out organic production are also eligible to apply for measure 214 "Agri-environment payments". These small-scale agricultural farms are established by young people for a period of 5 years and are supported with 25,000 Euros. The sum is paid in two parts – 50% of the money, which is the BGN equivalent of 12,500 Euros, is paid when the project is approved and the remaining 50% is paid after an audit in the third year. This group of young farmers, who, in most cases, do not have any agricultural education, require different types of consultancy services. The preliminary advice they need relates to the development of business projects which are prerequisites for applications to measures 112 of the RDP. This service is free if they use the regional offices of NAAS, but is an expense if they use the services of private consultancy companies. Through the interviews with the young farmers we found that they require various consultancy services related to their productions. They mainly look to informal specialised consultancies for advice: e.g. family members who are experienced in agriculture; agronomists who work in the local agricultural pharmaceuticals stores; or neighbours, who are developing similar agricultural activities. They frequently use accountants or accounting companies for assistance with tax and accountancy documents. These relations are formal and the farmers pay for these services. Almost all of the people interviewed said that they are not using the consultants who prepared their projects for the RDP for advice related to their production activities. In addition, they keep very close relationships with their consultants but their questions and needs are mainly related to the implementation of their projects, the preparation of various administrative documents and on the

opportunities for participation in other RDP measures. The agricultural producers who used private consultants for the development of the projects for RDP measure 112 also stated they do not frequently use the services of the consultants who prepared their business plans for the programme.

- **Semi-subsistence farms.** The products of semi-subsistence farms in Bulgaria are mainly used for domestic consumption and to supplement the household income, but this type of farming has potential for future economic development. There are a large number of these types of farms in the country and they are usually underdeveloped. In order to be competitive in the Bulgarian and European markets they need to be restructured. For this reason a special measure- 141 - was included in the RDP, through which assistance is provided for the income of farmers which have the capacity and desire to restructure their farms. This support helps the agricultural producers to overcome the difficulties associated with the costs of restructuring their operations and will encourage their future development. A big advantage for the applicants to this measure is that the business plan required during the application process can be prepared free-of-charge by the regional NAAS offices. The experts of the organisations, in addition to the preparing business plans, will also assist with the preparation of application forms and will advise the agricultural producers on all questions related to their production activities free-of-charge. The measure is targeted to agricultural farms that are within an economic farm size of between 1 and 4 economic units. The support will be provided as a grant and the sum will be the BGN equivalent of 1,500 Euros per year for a maximum period of 5 years. After the 5 years of activities and investments due to the implementation of measure 141, it is expected that the semi-subsistence farms will be economically viable and market orientated and be competitive not only at the Bulgarian, but also at the EU market level. According to the interviewed agricultural producers, who participated in measure 141, they have all used the services provided by the regional NAAS office in the town of Plovdiv. They have mainly used the experts of the office for the preparation of the business plans required for the application process. They did not use other advisory services provided by the office and related to their production operations, but they are asking for advice from friends or family members who are agricultural producers, local agronomists, workers at the agricultural pharmaceuticals stores and seeds and fertilizers trade importers.

- **Small-scale agricultural farms that are not participating in any programmes.** The number of small-scale farms that do not participate in the RDP is high. One of the main reasons is they do not meet the requirements of the RDP measures they can apply for. For example, many of the farmers are over 40 years old or have been registered as agricultural producers for longer than 14 months, which makes them ineligible to apply for measure 112. Other producers have land ownership issues or do not wish to increase the economic units, which is a requirement for measures 112 and 141. Other reasons are that a lot of the small-scale producers do not wish to participate in any governmental and European programmes due to the high transaction and administrative costs associated with the implementation of the programme.

As a conclusion, the small-scale farmers from all groups in the Plovdiv region are interested in agricultural innovation and an implementation of the best agricultural practices. They frequently visit exhibitions, seek advice from the agricultural advisory offices or experts in the scientific fields. However, the main problem for them is not which innovation to implement but where to sell their products.

Unfortunately, NAAS and the private consultants do not offer advice in the areas of marketing and commercialisation.

5.2 Processes, actors and methods to obtain and use knowledge

The main methods for obtaining information and knowledge from the advisory organisations used by the small-scale agricultural farmers are:

- *Face-to-face at the office of the advisory organisation.* This is the most frequently used method by small-scale agricultural producers. They prefer to visit the advisory organisation on site and request the information they need or share the specific problem they need to solve with the expert.
- *Face-to-face at the agricultural farm* This method is actively used by experts of the regional office of NAAS in Plovdiv and by private consultants. The visits of the experts to the farms help them get acquainted with the activities performed; to assess the farm and to determine the improvements related to the maintenance of the soil in good agricultural and ecological state; to collect soil samples.
- *Over the phone.* This advisory method is only used only if good relationships between the agricultural producer and the consultant already exist.
- *Internet.* This method can be a major source of information and may only be rarely used depending on the age of the agricultural producer. Young farmers actively use the Internet for information searches specifically related to their production activities. They also regularly visit the State Fund "Agriculture" website looking for information related to all of the proposed programmes as well as the NAAS website. As long as the population of agricultural producers is ageing the Internet will continue to be rarely used or even not used at all.
- *Specialised magazines and literature.* The specialised literature is frequently used by agricultural producers. For example, the Land Source of Income Foundation issued 16 booklets up to the end of 2010 for its customers and small agricultural producers. Technologies and plant-protection activities of various agricultural products are presented in these booklets. Many small-scale farmers buy specialised literature related to specific products from the Agricultural University Plovdiv's bookstore including information materials related to the RDP application requirements, social and health insurance for agricultural producers, the growing of permanent crops, modern livestock breeding practices, etc., and those issued by NAAS.
- *Seminars or open days organised by the regional offices of NAAS.* The regional office of NAAS in the town of Plovdiv frequently organises different training seminars. They are actively using trainers from the Agricultural University and the scientific institutions in the region. These seminars usually have a specified subject and the participants are small-scale agricultural producers. During such organised events farmers not only meet experts who are working in the same area, but also producers with the same products or participation in a similar measure. During such meetings the participants have the opportunity to establish contacts with other producers.

Rarely used methods for obtaining information and knowledge from the advisory organisations used by the small-scale agricultural farmers are:

- *Correspondence via post or e-mail.* The correspondence between agricultural producers and consultants is rarely performed via e-mail or post. Most producers prefer to visit the advisory office or call the consultant over the phone.
- *Specialised TV broadcasts and other media.* There are such specialized broadcasts and magazines in Bulgaria. They provide information about good agricultural practices and everything new that is happening in the field of Bulgarian and European agriculture. The agricultural producers are not actively using this type of media due to time constraints.

As a general conclusion the provision of advice for the small-scale farms is mainly performed by the advisory services or at the farms. According to NAAS' information system, their consultants record an event only when the farmers visit NAAS office or in case of a visit of an expert to the farm. Information and advice provided distantly over the phone or via e-mail or during information events is not recorded in the system and is not included in the total count. During 2013, each of NASS' offices have worked, on average, with 722 agricultural producers and have provided, on average, about 2937 consultancies, which means that the consultancies provided were on average 245 per office (Annual Report of NAAS, 2013). The information above shows that the small-scale farmers have a high level of trust for NAAS' experts.

5.3 The supply of knowledge to the new small-scale farmers

The major consultancy organisations that provide consultancy services to small-scale farms operated by young farmers and semi-subsistence farms are: (1) the regional NAAS office in Plovdiv; (2) private consultancy companies; and (3) non-governmental organisations, like the Land Source of Income Foundation.

The Regional NAAS office in Plovdiv. The main activities of the regional office include: (1) provision of consultancy services to small-scale agricultural producers related to national and European programmes; (2) organisation and implementation of information campaigns amidst the agricultural producers; (3) support of the transfer and application of the scientific and practical achievements in the field of agriculture; and (4) the widening of the activities of NAAS in relation to human resources in agriculture – training Bulgarian farmers in the implementation of innovative production methods and practices that are environmentally friendly and rationally use the natural resources.

The consultancies are provided at the office, during visits to the agricultural farms, via the Internet and by phoning AGRO (07001 2476). For the past six months, 500-600 farmers were provided with advice and 100 farms were visited by the experts from the Plovdiv office. In total, 1500-1600 advisory meetings were performed. The main advice provided related to the support opportunities of measures 112, 141 and 214 of RDP 2007 - 2013, and within the area of agriculture and agricultural economics. The experts of the regional office organise and implement training in the form of seminars, demonstrations, lectures, themed meetings and workshops. The subjects of the training are defined by the agricultural producers themselves.

- The consultancies to *newly established small-scale farms* by young farmers (measure 112) are related to: (1) the implementation of a business plan, assistance with the documentation

required for the second payment, assistance with the implementation of a business plan throughout the year – according to each topic; (2) the provision of specialised advice; (3) the application of bio-agriculture and agro-ecological payments.

- The advice provided for the *semi-subsistence farms* (measure 141) mainly relate to business plan adherence and cross-compliance – farm management and maintaining the land in a good ecological state. Specialised advisory services for applied production technologies are also frequently used.
- The advice for *small-scale agricultural producers that are not participating in RDP* relates to: the new schemes for additional funding; specialised advice related to plant-protection activities; advice at the farm or over the phone.

The team of the regional office in Plovdiv consists of four members: one manager, who is an agronomist, and three employees (an agro-economist, agronomist and expert with skills and knowledge related to the food industry). The main advice provided is specialised advice in plant growing and the experts are also able to provide economic advice, but do not provide livestock breeding and product advice. Most of the advice provided is of an administrative nature. According to the director the regional office, *“there is still demand for information about establishment of farms by young people and the agricultural farms modernization program, despite of the fact that the measures have ended long time ago”*. His observations are that the office has two types of customers: *“...customers who are mainly receiving money according to different programmes and (2) customers who work in and are aiming for farm development...”*. According to his opinion, *“the private consultancy companies are servicing about 20% of the small farms and most of the private consultants are his former colleagues who have resigned from NAAS and have opened their own consultancy companies”*.

A massive information campaign related to the new RDP (2014-2020) was established in the last couple of months by MAF and NAAS. There will be information days and the number of personnel staff is expected to be increased and for the regional offices of NAAS to play a significant role in the provision of information to the small-scale agricultural producers during the new programme period. According to the results of a questionnaire carried out by NAAS at the end of 2013 and beginning of 2014, 92% of the respondents stated that they hope that the provision of advisory services will continue to be performed in the future by state experts, especially in the RDP project preparation phase. Another 58% have said that they also need advice during the project implementation phase. For 46% of the farmers the agro-technical advice they receive in relation to the growing of different varieties and livestock breeding are of significant value (Fermer.bg, 2014).

Private consultancy companies in the region of Plovdiv that are mainly advising small- and medium-sized agricultural farms.

The private consultancy company, with which the first interview was performed, was established by former NAAS employees. The main activity of the company is project development for the RDP measures. The number of projects prepared for measure 112 (for newly established farms by young people) – was 120. The consultancies offered to small-scale farmers are related to the development of business projects for the RDP, accounting services, performance of soil analysis and recommendations for

fertilising, offers for plant-protection, drip irrigation and balanced fertilising. The advisory services are free-of-charge for agricultural producers with whom the company has business relations and who have won projects. However new farmers have to pay a fee. The consulting process starts with a meeting at the office, then the farm is visited (on site) and the investment possibilities are assessed and the possible varieties that can be grown are discussed. Then soil analysis is offered and project development is proposed. Most of their customers do serious investments and develop small-scale agricultural business and have the intention to continue their participation in other measures of the RDP.

According to the experts, most of the newly-established small-scale farms are operated by people who have not worked in the agricultural sector before. Their approval and funding makes them look for different consultants during the creation of a new farm. According to their opinion, *the newly-established farms* are developing well but such farmers require different types of advice. Usually, they use the consultancy services of: (1) agronomists of the village or specialists of the scientific institutes of the Agricultural University Plovdiv; (2) agricultural producers with good experience; (3) seed, preparation, and fertiliser suppliers; and (4) the local agricultural pharmaceuticals specialists. They actively work with 60% of their customers and 35% of those customers whose projects they prepared and were funded do not use their specialised consultancy services. Only about 5% of all customers received funding but did not continue with agricultural activities.

The second private consultancy company that was interviewed offers the following consultancy services – business plans development, accounting services and specialised services in the agricultural and processing industries. The employees of the company are economists, accountants and agronomists but if they need specialised advisors, they hire in external experts. They offer regular meetings and consultancies at the office or on site for their customers. At the meetings organised for their customers they seek new funding options for existing productions built by their companies. They have developed "friendly" relations with the customers whom they have worked with for a long period of time. The number of newly established small farms is not very high, but those that are efficient show good results and continue to apply for other measures of RDP.

Land Source of Income Foundation. The main priorities of the foundation are targeted at increasing the capacity of local institutions and organisations for the support of the rural areas development process; establishing and strengthening of local partnerships for the preparation and implementation of projects targeted at the support of small-scale farmers; information distribution and the provision of advisory services related to the implementation of sustainable agricultural practices in areas with mixed ethnical communities; and the provision of financial support for the realisation of local economic initiatives in the agricultural sector and alternative business. The main target group are small-scale farmers from different ethnical groups. The foundation has developed a model for the integration of Romas into society by assisting with the development of their agricultural activities by providing them with the basic resources – land and funding. The programme is performing well and a lot of them are already active farmers. Many of the young farmers with Roma origin are also applying for measures 112 and 141 of the RDP. The foundation has prepared about 30 projects, but only 10 of them were approved for measure 112 and five for measure 141. The newly established farms by young Romas use mainly experts provided by the foundation who are agronomists, agro-economists and lawyers. The young farmers of Roma origin use

informal and formal advisory channels. The informal channels are neighbours, agricultural producers and specialists from the agricultural pharmaceuticals stores in their areas, while the formal ones are with the municipal offices of "Agriculture" and accountants.

*The small-scale agricultural farmers use **additional advisory services** provided by:*

- experienced or acting local agronomists,
- agricultural pharmaceuticals stores located in the villages, where the agronomist-seller is able to complete the plant-protection log books of the agricultural farmers of the village,
- neighbours – agricultural producers,
- family members with many years of agricultural experience,
- accountants or accounting companies,
- fertilisers, preparations, seeds, seedlings importers,
- markets, where they sell their production and acquire useful information,
- scientific institutes – NAAS invites agricultural producers to meetings with experts from the scientific units so they can direct their customers to the right specialists.

5.4 The knowledge flows for the new established and semi-subsistence farmers in Bulgaria

The main knowledge flows to the small-scale agricultural producers (farms, established by young farmers and semi-subsistence farms) in Bulgaria are illustrated in Figure 3. The figure represents the various sources of information and knowledge flow for the small-scale farms. We can group them based on the sector from which they receive different advisory services. The first group includes the public sector with its secondary administrative organisations – Directorate "Agriculture" and NAAS. The second group is the public advisory sector, which we may separate into formal and informal. The formal private advisory sector includes local agro-pharmacy, account advisors and import trade firms, while informal private advisors are family members, local agronomists and neighbour/ farm producers. The main sources of knowledge flows for farmers are:

- *In the **public sector***, the experts of Agricultural Municipal Services and experts of the regional offices in NAAS are the main provider of information and knowledge for small-scale farmers. **Experts of Agricultural Municipal Service**, mainly, provide information and knowledge related to direct payments. **NAAS experts** mainly offer support related to the development of business plans for the various RDP measures. Of course they also offer specialised services, however the uptake of these services by the small-scale farmers is low. The advisory services offered by such organisations are paid and formal. The experts of NAAS offer free-of-charge services for some RDP measures.
- *In the **private advisory sector***, private consultancy companies, agro-pharmacy stores, accountancy firms and import trade organisations are the main **formal** advice providers. **Private consultancy companies** are not often used by small-scale farmers because the consultations need to be paid. Agro-pharmacy stores, accountancy firms and import trade organisations are used most by the small-scale farmers. There is an **agro-pharmacy store** in almost every village and small-scale farmers use such stores not only for the acquisition of the required seeds, preparations or fertilisers but also for advice on various diseases or pests on the plants they are growing. The role of the specialists

from the agro-pharmacy stores is sometimes important for the preservation of a given production. Such consultancies are generally formal but free-of-charge. Specialists of the **accounting company** are generally used by the registered small-scale agricultural farmers. Such companies prepare the annual account reports and tax declarations of the agricultural producers as well as the required documents for the application for the second payment from the implemented projects connected to the RDP measures. These consultancies are formal and paid. Experts of the **commercial trade firms for seeds or preparations** provide formal and free-of-charge advice to all producers, who use the seeds and preparations sold by their company.

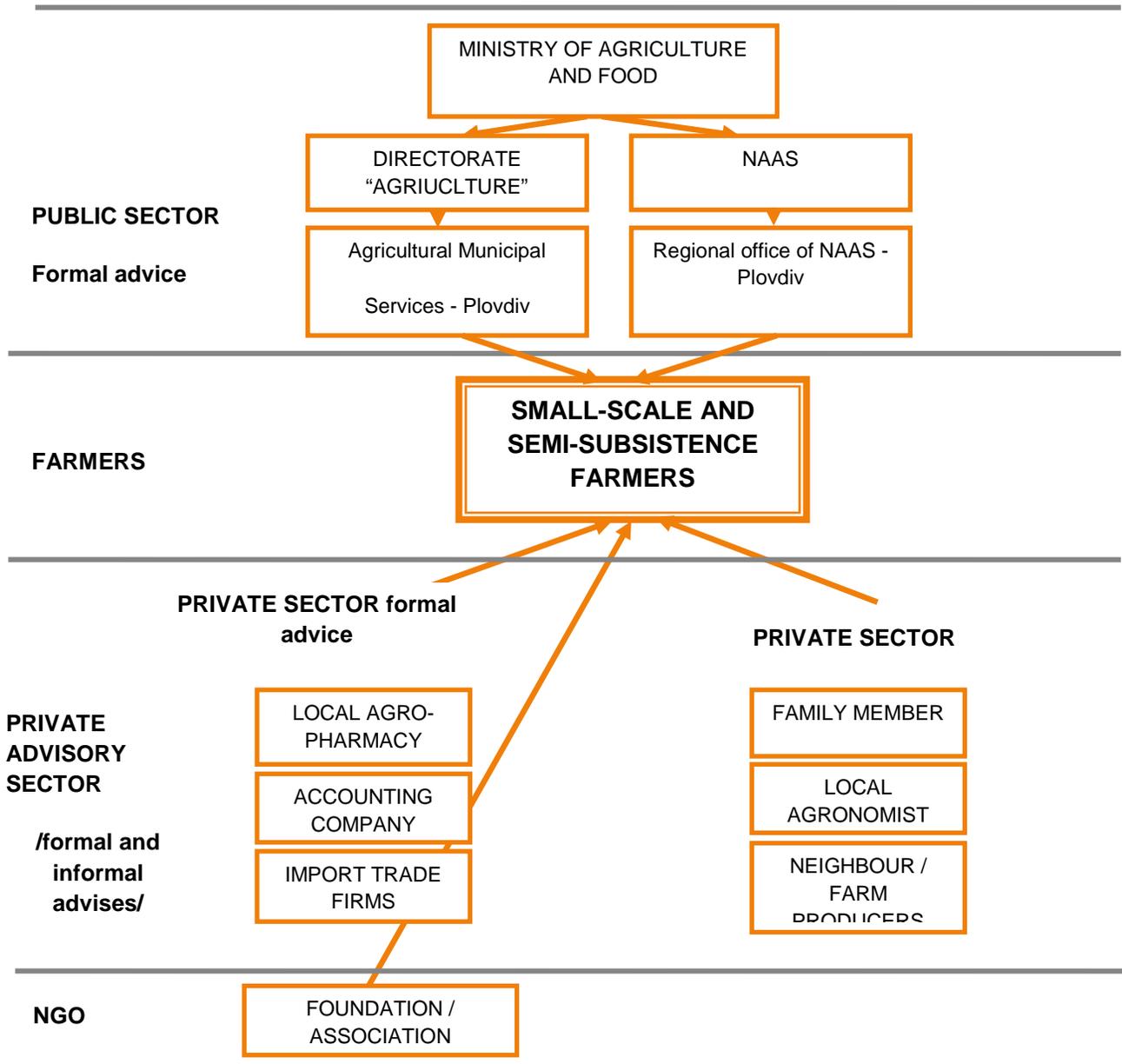


Figure 3: Knowledge flows to small-scale farms in Bulgaria
Source: own figure

- In the **private advisory sector**, family members or friends, local agronomists and neighbour or local farm producers are the main **informal** source of knowledge and information. Small-scale agricultural farmers frequently use **family members or friends** who are experienced in agricultural business for advice. These tend to be older farmers who have been growing various varieties for many years for domestic consumption. Many of the young farmers use such people as informal advisors on growing various products, fighting different diseases and pests, using old/new varieties or potential markets and for advice on selling their products. There are, also, **local agronomists**, who are retired or are working at the local cooperative with big-scale holders in almost every village. The services of such agronomists are preferred by small-scale farmers because he/she can quickly visit the farm and provide quick and adequate advice. In most cases such advisory meetings are free-of-charge and informal. It is the same situation for the local farmers. They are often knowledge providers for new-established and subsistence farmers.
- **Non-governmental organisations**. They can be foundations or sector associations. The advisors of such organisations can have a range of backgrounds/ key areas. For example, they often provide advice related to the potential programmes for small-scale farmers, and specialised consultations and protection of the agricultural farmers' interests. In most cases, farmers have formal relations with such organisations and advice is provided free-of-charge.

6 Discuss and assess the performance of the knowledge flows and identify best-fit practices for advisory services

The small-scale farms are the most important group for the development of agriculture and rural areas in Bulgaria. This is a family type business and almost all of the farm employment is provided by the farmers' family members. On average just one family member works on a farm (1.2 annual employment units). For the period 2005 to 2010 there was a significant decrease in the employment and labour investments in the small-scale farms when the number of permanently employed individuals performing agricultural operations in small-scale farms reduced by about 48%.

The share of small-scale agricultural producers with an agricultural education or qualification is very small, which is also characteristic of the bigger farms. Only 0.7% of small-scale farmers have an agricultural university diploma, 3.1% have a general agricultural education and the rest do not have any agricultural education and instead have only practical experience. Practical experience and a tradition in agriculture were an advantage for small-scale farmers, but they also acted as a motive for the achievement of long-term goals.

The small-scale farms usually rely on their own financial resources to fund their running and investment costs. They have a low credit rating due to a lack of assets that can serve as credit security and a high risk of their agricultural operations. On the other hand, the low level of investment of the farmers means they lack stability but on the other hand they have a high autonomy in terms of making investment decisions.

Reliance on only one's own resources is a limiting factor for farm development. Furthermore the shortage of available financial resources is a restraint in terms of investment in the acquisition of land, agricultural equipment and diversification towards new operations. Another important factor is limiting the number of applications for the investment programmes for financial support that require investment re-funding.

Eighty percent of the farmers interviewed in relation to measure 141 of RDP shared that they have always lived in the same location, they are not planning to migrate and their main activity is agriculture. These farmers are motivated to continue to develop themselves in agriculture and to restructure their farms. Fifteen percent of the small semi-subsistence farmers live in villages, but are also engaged in non-agricultural activities. Only 5% said that they have applied for the measure in order to help people close to them who are dealing with agriculture.

About 65% of the young farmers stated that they applied for the rural development measure because they were eligible. Their main purpose was to receive the money but the management of newly-established farm was performed informally by a family member who was experienced in agriculture. About 25% stated that they manage the newly created agricultural business by themselves but generally rely on support from family members who have experience in agriculture. About 10% stated that they do not get enough support from family members and are trying to develop the agricultural operations by themselves with the assistance of consultants and friends.

The small-scale plant-growing farmers mainly sell their production to wholesale dealers and the livestock breeding farms are selling to processing companies. Due to the high market power of the middlemen and processing companies, small producers do not get the best market price. The small batches and inconsistent production quality also diminish the market positions of such farms further. The lack of skills and knowledge of the small-scale farmers with regards to marketing studies and a lack of awareness of the market situation worsens their market positions and reduces the abilities of the agricultural producers to respond promptly and adequately to the market tendencies further still.

The establishment of producer organisations is an undesirable form for many small producers. The lack of organisations for small-scale producers does not allow the farms to utilise the opportunities for European funding in the sector and to offer their products to the market. The direct sales of small producers are performed through informal channels and access to formal channels is limited due to their need to focus their time and money on their production. A lot of small-scale farmers believe that consumers in the country are ready to support them. The reasons are good production quality, the good taste of the products and the concern of the producers for the environment. In addition, many of the interviewees believe that they contribute to the preservation of the social life and improvement of the economic situation in their rural areas.

The strengths of the small-scale farmers in Bulgaria are that they are strongly motivated, flexible and independent in the management of their operations and decision making; they have experience and a tradition in the production process; they have production practices targeted to the preservation of the natural resources; a connection to local communities and preference to the lifestyle of the rural areas; and an established system for advice in agriculture, science and education. These strengths have a

positive influence over the viability and stability of small-scale farms and lead to a strong contribution towards the development of rural areas in Bulgaria.

The weaknesses of the small-scale farms are: low productivity, high costs, low competitiveness and the small income earned from the farm. This list of the weaknesses is long and it also includes: (1) low level of production mechanisation; (2) inappropriate specialisation; (3) unfavourable age and educational structure of the farm managers; (4) insufficiently qualified work force; (5) missing or badly maintained irrigation infrastructure; (6) poor credit ratings; (7) a low level of cooperation between producers; (8) low level of integration between the agricultural and processing sector; (9) insufficient usage or searching for information, advisory services and training; (10) difficulties associated with access to agricultural advice to farms located away from the municipal centres; and (11) an underdeveloped system for technology transfer towards small-scale agricultural farms.

As a conclusion, the analysis shows that the weak points of the small-scale farms are the lack of specialised agricultural and agro-economic education of their owners and the lack of a qualified workforce. Due to the above, *the improvement of access to and usage of information, consultancy services and training* is an important necessity of the small-scale farmers. Small-scale farmers have needs with regards to obtaining information, training and consultancy services in the various areas related to innovations, production methods and farms management. They also need the stimulation for searching of knowledge in the following forms: personal consultancies, participation in short-term information events and training and attendance at different demonstration events. The accumulation of knowledge for new technologies is another requirement for the sustainable development of small-scale farms. In such regard this knowledge is required to improve the activeness of scientific for the development and transfer of new products and technologies that are appropriate for small-scale farms and the development of the interaction with NAAS structures that can be the connecting link or dispatch unit between the scientific organisations and agricultural farmers.

Best fit practices identified are small subsistence farmers, who have the capacity and desire to restructure their farms and newly-established farms by young people.

7 Conclusions

Highlighting conclusions on the goals/research questions:

What are the challenges new small-scale farmers pose to advisory services?

The main challenges that small-scale farmers pose to advisory organisations (both public and private) are mainly related to their participation in different rural measures, specialised knowledge related to their farming and the realisation of their farm products. For the first two challenges they receive adequate advice but for the third challenge they are often faced with having to find a solution alone. Several rural measures appeared to be important for the small-scale farmers in the country such as a measure targeted at the restructuring of the semi-subsistence farms and improvement of their viability and market orientation, and measure that was targeted at the establishment of new farms. The measures

were targeted at the support of farms of small economic scale, where 60% of the semi-subsistence farms are operating in the vegetable growing sector, while the other 40% are evenly distributed in the sectors of bee-keeping, livestock breeding and mixed farms.

Are new small-scale farmers knowledge creators?

Most of the small farmers are trying to solve their problems and create different solutions. They often use their knowledge that they have from off-farming activities and implement it in their farming. For example, some small farmers who hold an education in engineering create their own drip irrigation in their vegetables fields, others with an education in economics individually organise their annual accounts and tax declarations. Therefore, all the different knowledge which these small-scale farmers hold helps to effectively organise their farm and their production.

How does the provision of advisory services to new small-scale farming differ from the overall provision of agriculture advice?

The advisory services for small-scale farmers are mainly provided by the experts of the regional offices of the NAAS. NAAS, as the only beneficiary for the provision of agricultural advice and consultancy services in Bulgaria, support small agricultural producers that were eligible to apply for several rural measures. The advisory services provided by the regional offices of the NAAS include business plan development and the preparation of the application form for financial support, advice related to the implementation of the requirements for the maintenance of land to a good agricultural and ecological state; advice related to overcoming the problems of environment preservation in agriculture. Some small-scale farmers have often used and received advice from formal advisory services by the private consultants, by accountancy firms, by trade companies for seeds and inputs; by non-governmental organisations and municipal offices of "Agriculture". The reason is that not all of the experts of in NAAS have all of the specific knowledge that farmers demand from them. Small-scale farmers in Bulgaria frequently use informal advice from family members with agricultural experience; from specialist-agronomist working in the local agro-pharmacy stores, co-operations or big holders and from neighbours who are also agricultural producers. Last but not least, the experts of the scientific institutions are also consultants who offer specialised support for the various production activities developed at such farms, but this resource is not actively used by small-scale farmers. Therefore, we may summarise that small-scale farmers receive knowledge and information from a diverse range of advisory providers compared with large commercial farmers, who mainly use consultants from private companies and trade organisations.

What types of novel methods addressing the specificities and needs of small farmers have been developed?

The novel methods, which were developed for specific needs of small-scale farmers in Bulgaria refer to: the realisation of new methodological and technical approaches for their production; new methods for solving technical problems; propositions for a different structure of breeds of livestock and livestock technologies; and the implementation of new trends in mechanisation and irrigation equipment, etc. Although many small-scale farmers have already used advisory services and implement novel methods in their production in Bulgaria, many others have insufficiently used public advisory services, traditional

methods of production and rarely participate in training. The main reasons are poor access to the regional offices of the NAAS from the farmers of the remote regional areas and poorly developed mechanisms for technology transfer. Weaknesses in the area of the transfer of knowledge are the lack of demands by small-scale farmers to use external services and information which has a negative impact on implementing new technologies, for productivity growth and for the effective use of natural resources.

How do small-scale farmers resort to ICT as a tool to get knowledge and information?

The ICT as a tool to get knowledge and information is not well-developed in the country and it is rarely used by small-scale farmers in Bulgaria. The study shows that only a small number of young and educated farmers use ICT as way to get information. Most small-scale farmers are not very familiar with ICT and mostly prefer to use traditional methods. For example, they often visit the offices of advisory organisations and prefer face-to-face communication with the experts rather than by phone or email. Therefore, the ICT can be a useful way to get knowledge and information but it is still too early for this tool to be used widely by Bulgarian small-scale farmers.

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