

Overcoming barriers to efficient farm management: the role of knowledge and information management in the rural advisory sector

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Abstract

This study was conducted among agricultural advisors employed in both the public agricultural advisory centres as well as in private consulting firms. The aim of the study was to analyse and evaluate the importance of knowledge and information in the problem solving process of clients receiving advice. In the study, the following objectives were identified: analysis of the source of knowledge and information, assessment of the impact of agricultural information and knowledge system on the farm efficiency and development. The study involved 3,921 agricultural advisors based in Poland. The research sample elicited 475 detailed responses. Hence, information obtained during the study may provide a solid basis to reach general inferences. An analysis of the data elicits the conclusion that knowledge and information management are essential tools in the process of providing advice to clients, for the problem solving process, and therefore in making the best decisions. The modern economy is based on knowledge. This applies equally to the agribusiness. Knowledge management in this sector differs from this type of processes in other departments and sectors of the national economy due to the nature of agriculture. However, the significance of these processes is increasing and now it's also an important part of management in agribusiness.

Key words: advisory, farm management, knowledge system, information

JEL Classification: Q13, Q16

1. Introduction

Knowledge and information are the most important factors to economic growth and development. To a large extent, they determine the competitiveness of an organization in every part of the national economy. These are valuable resources of an organization, inherent in the people (employees, members of the organization) [Gamble, Blackwell 2001]. The management of this resource is based not only on the problem of acquisition and ownership of knowledge, but above all on the knowledge of the methods of obtaining it and the ability to achieve the objectives [Kłak 2010]. According to Kisielnicki [2004], knowledge is an “intangible resource of an organization related to human activity and referring to data, information, procedures, experience and education”. Raw data is turned into information once it is ranked and classified, and then transforms into knowledge where it can be used to solve problems or to gain a competitive advantage. For Drucker [1995], skilful use of knowledge means reducing “the gap between available resources of knowledge - and the knowledge needed to make a decision”. Drucker emphasizes the practical dimension of knowledge management. Wawrzyniak [2001] stated that “the main problem in terms of knowledge management is not its acquisition and collection, but the application into practice”.

Knowledge is the processed equivalent of information, available for practical use. Information has a quantitative character, whereas knowledge is qualitative and intangible in form, but also verifiable in practice, e.g. in effective management. According to Skrzypek [2011] knowledge is used and applied by man and is the source of human competence and efficiency. It is also a driving force for creating new solutions and implementing innovation in organizations.

Today, much study is devoted to knowledge and information management in the theory of organization and management, especially in the content of training organizations and across the knowledge-based economy. The importance of knowledge within human resources – which one of an organization’s most valuable resource - is well understood nowadays. Information is viewed as a major production factor in terms of current organizational and management theory, and it relates to technical and organizational progress [Grudzewski, Hejduk 2007].

Knowledge management in organizations is a continuous process consisting of several stages. Among these are: searching for information, creating knowledge, accumulating knowledge and information, developing knowledge and transmitting knowledge. This is especially relevant in the rural economy advisory process. This paper examines the process of cooperation between agricultural advisors in Poland with their clients in the context of the transfer and development of knowledge. The Polish agricultural advisory system consists of boards financed from the State budget, namely: the Agricultural Advisory Centre (employing approximately 90 advisors), provincial advisory centers (almost 4,000 advisors), and the Agricultural Chambers (around 130 employees, including advisors). The system also includes private companies - among them what are known as accredited private entities operators, which may participate in the Rural Development Programme subject to accreditation from the Ministry of Agriculture. The current list of accredited bodies numbers about 170 private advisory companies, operating in both farming and forestry [www.mrirw.gov.pl, www.cdr.gov.pl]. Other than these accredited companies, a variety of private consulting firms, foundations, and associations operate, each providing some form of advisory service.

In general, it is apparent that one of the most important quality control factors for these aforementioned bodies and organizations are the staff and their competencies. It is necessary to identify features that determine the level of the competency skills for advisors. These are taken to be their respective qualifications, professional experience and interpersonal skills. On the basis of his research conducted among employees of provincial advisory centers, Parzonko [2012] states that the advisor is a qualified person “usually having (undertaken) a higher agricultural course, with extra-curricular competencies as required by their prospective employer, such as methodical, communication or organizational skills,, that he/she obtains in the process of training (e.g. post-graduate courses) and vocational training (courses and continuing professional development seminars)”.

According to Maziarz’s definition (1984), the term advisor means “transmitting adequate information to customers and ensuring or encouraging them to work towards improving the farm organization”. A more modern definition of advisor takes a slightly different approach, tailored to the need of present-day clients. However, the starting point is still concerned with the use of information and the transfer of knowledge as a precursor to enable clients to make the best decisions [Kiełbasa, Kania 2014].

Currently, a key role is given to the “Participation methods” in the advisory process. This paper focuses on these methods – in the context of cooperation between advisors and their clients. The “Participation method” allows the advisor and the client to gain a synergy effect from the advisory process. From this perspective, the cumulative effect is that better results are obtained by combining the knowledge of farmer and the advisor. It is then possible to replicate the effect through an individual action. According to Kisielnicki [2004], the conditions necessary for this synergy effect are: the appropriate knowledge resources, good quality and reliable information, access to facilities, and both the acquisition and transfer of knowledge and information. Therefore, it is important to have access to the sources of knowledge and information, as well as the cost of obtaining the data. An appropriate method for selecting information channels is also very important, or (where this is lacking) the ability to construct them [Parzonko 2012].

This paper refers to the sphere of agribusiness and farm management. There are specific types of entities and organizations in the agribusiness, in which management functions take on slightly different aspects than in other economic organizations [Nowakowska-Grunt, Skowron-Grabowska 1998]. These differences should be taken into account in the analysis of knowledge management processes. However, it doesn't change the fact that knowledge and information are consistently cited as key factors in achieving a competitive advantage, able to improve competitiveness and overcome the barriers to development and expansion [Kielbasa 2012]. Organizations operating in the sphere of agribusiness face specific barriers, which are primarily the result of natural conditions. There are also barriers arising as a result of small-scale production, lack of funds for investment or capital accumulation, low income from agricultural activities, poor technical equipment, or lack of access to the knowledge and information resources, etc.[Sulewski 2008]. Despite significant differences, farms and organizations operating in the agribusiness sector are subject to the same economic conditions offered in a free and competitive market, alongside organizations operating in other sectors [Firlej 2008]. In an era where business leadership is so reliant on knowledge, knowledge and information management takes on an added importance in searching for new solutions and implementing innovations.

2. Data and Methods

This study was conducted using the opinion survey method, which is used for descriptive, explanatory or exploratory purposes. These methods provide easy access to the research sample. The purpose of this kind of survey is to take a representative sample and build up a wider picture of the attitudes and opinions of a larger population. The random selection method allows us to extrapolate the results and predict wider patterns [Babbie 2016].

To obtain data, a questionnaire was devised and sent to all the advisors on the accredited list, managed by the Agricultural Advisory Centre in Brwinow [www.cdr.gov.pl]. In total, the list contains 3,921 registered agricultural advisors, forestry advisors, agro-environmental specialists, and nature experts. The results of this empirical research was that 475 detailed responses were received, representing 12.1% of the total study group.

The results were analysed using the induction, deduction and comparison methods. Also simple methods of descriptive statistics were used, as well as ranking analysis of the selected topics.

The objective was to determine how knowledge and information impact on the advisory process and improve management efficiency. Specific objectives were to analyze the sources of knowledge and information of the respondents (advisors and experts) and evaluate selected elements of the system of knowledge and agricultural information. This paper also addresses the impact of information and knowledge on the farm development, and the evaluation of cooperation between advisors and their clients in this field. The responses represent the opinions of agricultural and forestry advisors, as well as the nature experts, and provide a base for an informed assessment of the chosen topics.

3. Results and Discussion

There were 475 agricultural and forestry advisors, nature and agro-environmental specialists in the sample, both from public and private consulting companies in Poland. The selection was random, based on the list of advisors [www.cdr.gov.pl], which is freely available to farmers and entrepreneurs.

The most important issue from the author's perspective was the need to test the extent to which knowledge and information is a "work tool" for the advisor. The author was concerned with methods of farm organization and management, and in particular how knowledge assists in optimizing the decision-making process.

All respondents in the sample had undertaken higher education (63.3% in agricultural faculties). Those who didn't have an undergraduate agricultural qualification had completed training or post-graduate studies. The responses demonstrate that the advisors are more likely to acquire additional knowledge from the Internet, to complement or extend skills. Almost all respondents took part in various training activities, which allowed them to supplement their knowledge, or to obtain current information to solve client problems that were new or unfamiliar. Hence, the effectiveness and usefulness of this online source of knowledge was assessed as the best by the advisors (Table 1).

Table 1: The effectiveness of selected sources of knowledge in the opinion of respondents (n = 475)

Sources of knowledge	Ranking	Number of responses (N)	Dominant (D)	Average rating \bar{x}
Internet	1	452	1	1.59
Training	2	459	1	1.73
Other*	3	50	1	2.26
Newspapers and magazines	4	403	2	2.35
Literature and handbooks	5	339	3	3.11
Post-graduate studies	6	228	3	3.65

Source: own resource

*) respondents were able to add additional information

The advisors also listed other ways of learning and complementing their knowledge. There were meetings with other advisors in the country or abroad, discussions with clients, meetings with researchers and employees of the research institutes, as well as conferences and seminars, briefings on regulations and legislation, and TV (programmes for farmers). Respondents made use of trade publications, but rarely searched through academic literature. Given the number of respondents it is noted that a relatively large group of advisors graduated from post-graduate studies in different fields and use acquired knowledge in practice (Table 1).

Figure 1 shows the assessment of the selected methods of knowledge acquisition, taking into account the frequency of their use by the respondents. Selected knowledge sources were evaluated by the advisors on a scale of 1 to 6, where 1 is the most frequently used source, and 6 – sporadically or not at all (Fig. 1).

For level 1, the source of knowledge that the respondents use most often, were: the Internet and training. Respondents were free to indicate alternative answers, which they added to the questionnaire. The advisors reported that they rarely derived useful knowledge from sources such as handbooks or materials from post-graduate studies (Fig. 1). Frequency of use was lower (Fig. 1), due to the nature of this method of supplementing knowledge and the higher costs of access (i.e. fees for participation in post-graduate studies).

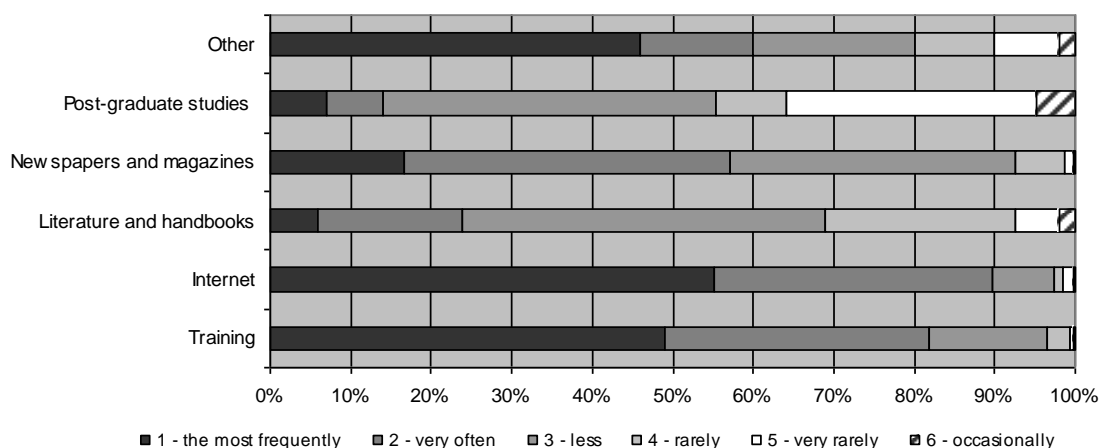


Figure 1. An evaluation of selected sources of knowledge by frequency of use by respondents (n = 475)

Source: own resource

In terms of the sources of useful information offered by those providing advisory services to clients, the respondents were invited to assess the following options: training, the Internet, agricultural magazines, scientific papers, information gleaned from colleagues, friends and family (Table 2). Some respondents also gave other sources of up-to-date information that they often use, e.g. information from clients, explanatory text of legislation, information from government agencies, academic institutions or public conferences, trade shows and fairs, universities and research institutes, as well as companies providing products and equipment. The advisors ranked options in terms of the frequency of use, as well as the quality of information. This made it possible to develop a league table of the most frequently used sources of information which, in the opinion of respondents, is most useful in solving their clients' problems.

The ranking of these sources of information is similar to the ranking of sources from which knowledge is drawn. According to the respondents, the most important source for obtaining up-to-date and useful information to improve the quality of advisory services was training. The Internet is in second place, followed by as agricultural publications and "other sources" as volunteered by the advisors (Table 2).

Table 2: The effectiveness of selected sources of information according to the respondents (n = 475)

Sources of information	Ranking	Number of responses (N)	Dominant (D)	Average rating (\bar{x})
Training	1	449	1	1.60
Internet	2	441	1	1.68
Newspapers/magazines	3	396	2	2.43
Other*	4	32	1	2.47
Colleagues	5	376	2	2.68
Scientific papers	6	331	3	3.09
Friends and family	7	246	3	4.16

Source: ownre source

*) respondents were invited to suggest alternatives

Figure 2 shows the results of the evaluation of selected sources of information in terms of frequency of their use at work. It is noted that more than 60% of respondents highlighted training as a source of up-to-date information required for professional advisory purposes (Fig. 2). Half of the respondents update their knowledge bank using the Internet (websites, email, social networking, etc.). In terms for locating current market data, agricultural trade magazines were important to one in five respondents. Only 10% cited scientific or semi-scientific papers and research studies published by universities or research institutes (Fig. 2).

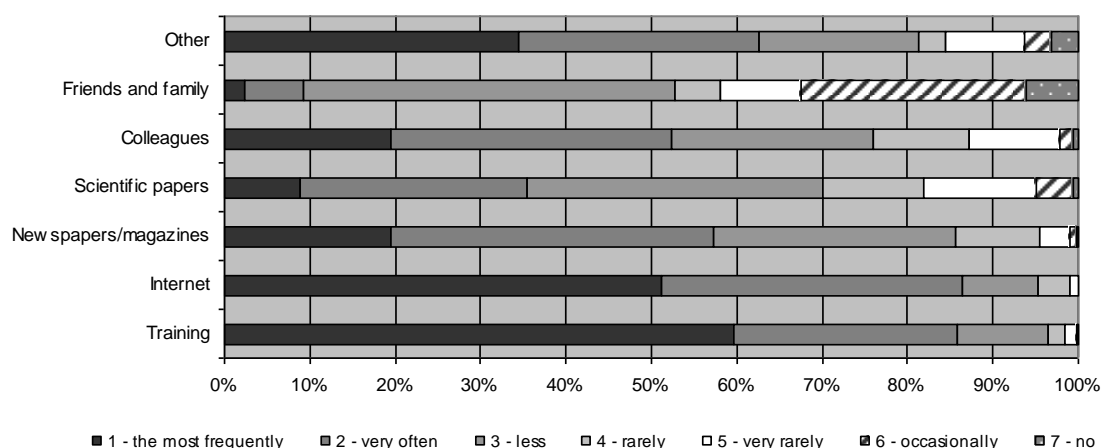


Figure 2. An evaluation of various sources of up-to-date information in terms of the frequency of use by respondents (n = 475)

Source: own resource

For next stage of the survey, respondents were invited to evaluate the providers of agricultural knowledge and information. The following bodies were taken listed: agricultural universities, research institutes, public advisory institutions and the (public) Agricultural Advisory Centre, as well as private advisory bodies, consultancy companies and companies providing advisory services of some description. Table 3 shows a league table of these selected sources of knowledge and agricultural information, together with the number of ‘votes’ and a weighted average score based on the assessments offered by the respondents. The results are shown graphically in Figure 2 (above)

Table 3: Ranking of selected institutions/organizations in the provision of knowledge and information services to farm managers (n = 475)

Source of knowledge	Ranking	Number of responses (N)	Dominant (D)	Average rating \bar{x}
Public advisory institutions	1	444	1	1.73
Agricultural Advisory Centre	2	422	2	2.11
Research institutes	3	405	2	2.17
Universities	4	396	2	2.31
Companies providing advisory services	5	315	3	3.19
Private consultancy companies	6	326	3	3.52

Source: own resource

According to the respondents, the most important institution providing knowledge and information is the public advisory institutions, which are local government units providing services for farmers and rural inhabitants. In second place is the Agricultural Advisory Centre - a body dealing, among others, with the training of agricultural advisors, experts, teachers of agricultural schools, etc. Also, research institutes and universities play an important role in the transfer of knowledge and information.

Figure 2 shows the assessment relating to the role of those institutions and organisations in the process of the transfer of knowledge and information. The advisors assessed the six institutions/organizations on a six-level scale (1 - 6), where 1 is the most important link, and 6 the least. Public agricultural advisory offices were identified as the most important sources of knowledge and information (53%), as well as the Agricultural Advisory Centre (33%) and research institutes (31%) (Fig. 2).

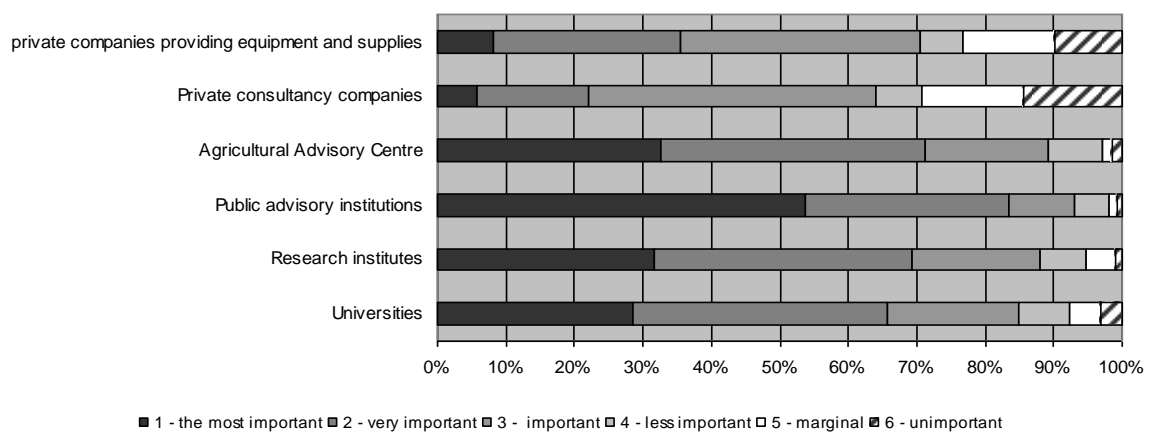


Figure 3. Respondents' assessment of the part played by sources of knowledge and information regarding farm management (n = 475)

Source: own resource

In the opinion of the advisors, neither private advisory institutions engaged in agriculture and rural development, nor private companies providing equipment and supplies, play a significant role in the development of knowledge and information systems in agriculture. Almost 35% of respondents considered private advisory institutions to be less important to sharing knowledge and information with farmers and rural inhabitants. Similarly, 30% acknowledged the importance of private companies selling equipment and providing other production items (fertilizers, pesticides, etc.) (Fig. 3).

The advisors also evaluated the impact of knowledge and information which they provide in terms of farm development. Almost 90% of respondents scored the impact as 'very large' or 'large' (Fig. 4). Only one in ten considered there to be no association between knowledge delivered to clients and farm management efficiency improvements on the part of their clients.

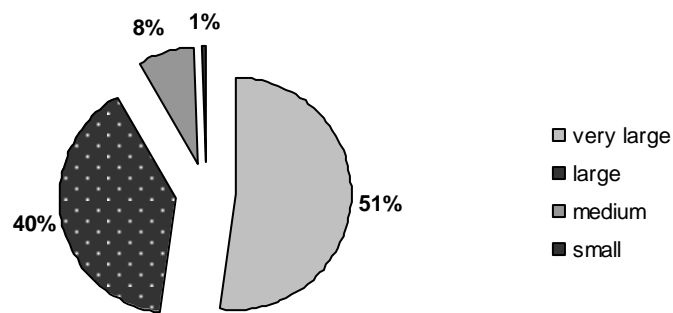


Figure 4. An assessment by respondents of the impact of knowledge and information to farm management efficiency (n = 475)

Source: own resource

The degree of cooperation between advisors and their clients very often takes what is termed as the participation form. This approach assumes a link between the advisor's knowledge and that of the farmer (client). The idea behind such an approach in the process of advising a client is to add value by combining more theoretical with practical knowledge, in order to achieve the best solution. In the majority of cases (Fig. 5) it is assumed that the level of cooperation between respondents and farmers is reflected in the degree of mutual trust, understanding and confidence that the advice will solve the problem effectively and that it is the best available advice. According to the respondents, farmers usually (but not always) supply all the necessary information and participate in the problem solving process. In the sample, only 16% of advisors (Fig. 5) stated that they were sure that farmers had always provided all the necessary data and had fully participated in the problem solving process.

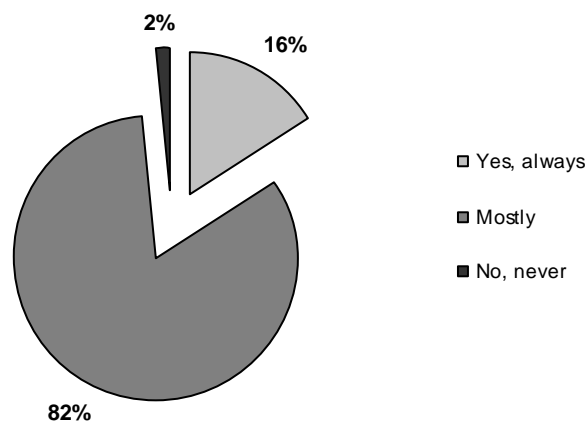


Figure 4. Advisors' assessment of the level of farmer participation in the process of knowledge development

Source: own resource

Among the respondents were also people who indicated that farmers never provide all the necessary data, due to a lack of knowledge in this area, lack of accord between the advisor and client or a desire to conceal (disguise) certain information. In such situations, there is a threat of information gap, which significantly hinders the process of problem solving. Information gaps occur due to the difference between information possessed and information required to

solve a given problem. The more complex a problem, the greater is the prospect of information gap. A lack of cooperation in the context of combining knowledge and information raises questions over the rationality of any decisions taken.

4. Conclusion

On the basis of the survey, it is apparent that the development of better (more optimal) solutions for clients is highly reliant on the possession of reliable and up-to-date knowledge and information. The analysis of the sources of knowledge showed that advisors usually complement their knowledge through participation in training, and frequently search the Internet to update their knowledge bank. Considering the Internet as a primary source of information, advisors should be aware that the quality of information on the network can be suspect or misleading. The quality of information is not only dependent on time factors, but also on credibility of sources. The high degree of Internet use is most likely due to ease and speed of access.

On the other hand, taking into account the institutions and organizations as a source of knowledge, the highest rated were public advisory offices and the Agricultural Advisory Centre as sources of knowledge and information generation and transmission. In the sample, the majority of respondents reported a level of cooperation with public advisory offices and the Agricultural Advisory Centre, so therefore it is unsurprising that those two organizations were highly rated. Public advisory institutions are, in the opinion of respondents, reliable and objective sources of information, as opposed to private bodies (particularly those keen to sell services and goods).

Respondents were aware of the importance of knowledge and information in the process of organization and management. Having the knowledge and good quality information allows the client to achieve an economic advantage and become more competitive. Respondents noted the impact of transferred knowledge and information on the fortunes of the agricultural enterprise and client businesses. Furthermore, client participation in the process of knowledge and information transfer was regarded with great importance. The combination of the advisor knowledge bank and of information gleaned from clients may determine the success of the Polish advisory system, through what is term as the synergy. In cases where reliable information is absent, there is a risk of information gap which is likely to impede the implementation of a best-scenario solution to a client's problem.

The research has enabled the author to draw the following conclusions:

1. The Internet, which was most often used by the advisors operating in the sphere of agribusiness in order to update information, is not always reliable as a source of quality information. When using this source of information, it is necessary to apply relevant criteria in order to filter through the results. Using the Internet as a primary source is also dependant on the degree to which the advisor is familiar with the given problem, and with the client's expectations.
2. Public advisory institutions play an important role in the agricultural knowledge and information management and transmission system. It is regarded by both advisors and clients to be a reliable and objective source of information. Advisors and clients also assess the agricultural advisory bodies as making an important contribution to raising the knowledge bank of farmers and rural inhabitants. Considering this, the activities of public advisory bodies should be supported and developed, for example into new areas of agribusiness, organization and management.

3. Knowledge and information are important factors affecting the quality of advisory services. Appropriate levels of knowledge and advisors having access to reliable information improves the quality of those advisory services and best informs client actions and decisions. This allows them to overcome barriers to efficient farming and organizational management. Furthermore, possession of the appropriate level of knowledge and up-to-date information influences strategic decision-making in the field of the development of today's agribusiness. Therefore, it is clear that a process of synergy is taking place – the long-term benefit of combining the advisor's knowledge bank with the practical experience of the farmer.

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