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THE ROLE OF THE INNOVATION BROKER IN THE FORMATION OF EIP-AGRI OPERATIONAL GROUPS

Key words: EIP operational groups, innovation, rural development, agricultural consulting, innovation broker

ABSTRACT. The European Innovation Partnership for Agricultural Productivity and Sustainability (EIP-AGRI) is part of the support for agricultural economic development. EIP-AGRI operational groups are groups of people who are working together on an innovation project funded by Rural Development Programs (RDP). Their essence is to transform innovative ideas into real solutions. The coordination of the formation process of operational groups has been entrusted to agricultural advisory units, especially to innovation brokers working there. The aim of the study was to determine the role of the innovation broker in the formation of EIP-AGRI operational groups. Mechanisms of innovation support in the agricultural sector were presented, paying particular attention to the tasks of the National Network for Innovation in Agriculture and Rural Areas (NRN) and the Measure "Cooperation" implemented under RDP 2014-2020. The "e-Networking" operation implemented by the Pomeranian Agricultural Advisory Centre in Lubań (PODR) in 2020-2021 was analysed and a survey study was conducted using an original survey questionnaire prepared on the Webankieta platform. The conducted survey shows that the role of an innovation broker is, first of all, to support entities interested in cooperation in obtaining funds for innovative activities, prepare project proposals and documents related to the functioning of the EPI operational group and identify entities willing to undertake cooperation as well as to assist in its establishment.

INTRODUCTION

Innovation is considered to be a significant condition of socio-economic development and an element of success of modern market entities both in the national and international arena [Goryńska-Goldmann, Wojcieszak 2017]. In the new phase of economic and social development, called knowledge society and knowledge economy, which the economically leading countries of the world have achieved, innovation plays an extremely important

role and has become a very important factor of sustainable and balanced development. The current regulations of the European Union for rural development recognize the paramount role of innovation and creativity and resulting benefits for rural residents [Sikorska-Wolak et al. 2014]. The purpose of innovative activities in agriculture is mainly to improve the competitiveness of manufacturing activities, reduce the impact on climate change, ensure a stable food supply and rationally manage natural resources, including the protection of land used for agriculture, environmental protection and biodiversity. Innovation in agriculture is defined differently. Common to all approaches is the fact that the concept of innovation includes all qualitative changes characterized by novelty and originality in the world, region, country, industry or enterprise. Most often, innovations are classified as product ones or organizational ones, while in the sphere of agriculture, ecological innovations or eco-innovations are also distinguished. A product innovation will be the introduction of a new product or service or a significant improvement of its features or intended use. Any modification of a product that increases its competitiveness and attractiveness for the buyer is considered a new product. Innovative products may be both products manufactured by using traditional methods (e.g., organic, traditional or regional products) and those manufactured using genetic modifications. Low-processed, fat-reduced foods and functional foods, i.e., foods with documented health benefits, are also considered product innovations. However, organizational innovations in agriculture have been created as a result of mechanisms supporting rural development under the Common Agricultural Policy and include clusters and cooperation networks. On the other hand, eco-innovations may be of both product and organizational innovation character. The term "eco-innovation" refers to all forms of innovation – technical and non-technical – that create opportunities for businesses and benefit the environment by preventing or reducing negative environmental impacts or by optimizing resource use [Wielewska 2019]. There are all forms of modification aimed at significantly reducing negative environmental impacts, achieving greater efficiency and accountability in health, food security and the sustainable use of natural resources, mainly energy and water [Jeżyńska 2016].

SUPPORT FOR INNOVATION IN THE AGRICULTURAL SECTOR

The European Innovation Partnership for Agricultural Productivity and Sustainability (EIP-AGRI) is part of the support for agricultural economic development. The implementation of EIP-AGRI is done through Horizon 2020 – a European Framework Programme for Research and Innovation and national and regional rural development programs, the European Regional Development Fund and national resources. In Horizon 2020, in Society Challenges – Food Security, sustainable agriculture and forestry, marine and inland water research and bio-economy activity – two types of projects that can be

implemented under EIP-AGRI are indicated, namely multi-actor projects and thematic networks. Multi-stakeholder projects aim at solving specific problems by creating an appropriate consortium of practice, organization and scientific entities within an operational group. Thematic networks, on the other hand, deal with the collection and processing of knowledge and practice available in a given issue and its dissemination to those interested [Jeżyńska 2016]. The National Network for Innovation in Agriculture and Rural Areas (SIR) operates as part of the National Rural Network and is funded by the Technical Assistance of RDP 2014-2020. Its task is to create innovative partnerships by spreading innovation and creating innovation groups for innovation. Network partners may include farmers, groups of farmers, agri-food sector entrepreneurs, research institutes, universities, advisory centers and companies, business environment institutions and other entities involved in agricultural and rural development [Moschitz et al. 2015, Knierim et al. 2017, Bomberski 2020, McCarthy et al. 2021].

According to Andrzej Wiatrak, the concept of network can be given in technical, organizational and economic terms [Wiatrak 2016]. The economic dimension is of particular importance, as it verifies profitability, operational efficiency and effectiveness. A network organization is defined by the author as a collection of autonomous units that form a common structure to carry out specific activities and are linked together by corporate bonds. Network organizations can be divided by types, specialties, and scope into [Lamparska 2016]:

- product networks formed to pool resources, raw material sourcing and logistics,
- standard networks defining quality and service systems and its processing and certification,
- supplier and customer networks, e.g., Short Supply Chains,
- regional networks, such as a group of local organic food producers,
- research or innovation networks.

The main idea of SIR is to support innovation in agriculture, food production, forestry and rural areas by bringing together farmers, entrepreneurs, representatives of agricultural advisory bodies, research institutions and universities. SIR enables the exchange of knowledge and experience between science and practice and promotes the implementation of innovative solutions in the agri-food sector and in rural areas [Jeżyńska 2016]. In contrast, the specific objectives of the SIR revolve around [Radomski et al. 2016, Drozdowski 2017]:

- enhancing the establishment and functioning of contacts between farmers, advisory bodies, scientific entities and entrepreneurs in the agri-food sector,
- enabling the exchange of expertise and good practices in agricultural and rural innovation,
- assisting the creation of operational groups for innovation and the preparation of projects by these groups.

SIR tasks, at a national level, are coordinated by the Agricultural Advisory Centre in Brwinów (CDR) and its branches in Kraków, Poznań, Radom and Warsaw. The Warsaw branch office is the place of operation of the Team for operation of SIR, and its members include specialists evaluating formally and substantively national applications submitted by SIR partners to CDR and voivodeship applications submitted to voivodeship agricultural advisory centers. On the other hand, at a regional level, the tasks of SIR are carried out by 16 provincial agricultural advisory centers [Grochowska 2015]. The choice of these institutions was determined by many years of experience in the agricultural sector, extensive experience with science and practice, as well as the trust of Polish farmers in public advisors. The existence of district advisory teams allows for direct access to persons and entities interested in innovations. The effective implementation of SIR assumptions is possible thanks to advisory staff with many years of experience in cooperation with farmers, entrepreneurs operating in rural areas or scientific and research units [NEB 2021]. Each of the 16 provincial agricultural advisory centers has SIR coordinators along with innovation brokers responsible for direct contact with entities involved in development. The project is to be financed by the European Agricultural Fund for Rural Development (EAFRD). The innovation broker is also responsible for providing advice and assistance in establishing, functioning and organizing operational groups, as well as assisting the development of innovation projects by these groups [Wiatrak 2018]. The tasks of the innovation broker within SIR include, in particular:

- identifying potential partners in the broker's area of operation and establishing contacts/ cooperation with them and carrying out activating activities,
- assisting the formation and organization of the operational group, assisting the preparation of necessary formal documents related to the operation of the group,
- assisting the preparation of, among others, a business plan for operation and a feasibility analysis for the project,
- assisting the preparation of an application for the implementation of projects,
- continuous monitoring of the work of the operational group to which the broker contributed [SIR 2021a].

Implementing innovative projects in practice prepared by EIP-AGRI operational groups is enabled by financial support realized through the action "Cooperation" [B. Trajer, M. Trajer 2018]. These projects may concern a specific production direction (e.g., cattle or pig farming, fruit and vegetable production) or a group of issues (e.g., new plant varieties, the reduction of water and soil pollution, animal welfare, the improvement of the marketing chain organization system) [Nosecka 2018]. So far, four calls for project proposals have been carried out under the Cooperation Action.

Voivodship	Call I		Cal	ll II	Call III		
	complex projects	funded projects	complex projects	funded projects	complex projects	funded projects	
Dolnośląskie	4	0	5	4	10	3	
Kujawsko-Pomorskie	3	2	10	3	14	6	
Lubelskie	5	1	10	1	17	3	
Lubuskie	4	0	3	1	4	3	
Łódzkie	8	1	14	4	12	6	
Małopolskie	2	0	5	2	12	7	
Mazowieckie	18	1	20	6	29	11	
Opolskie	4	2	0	0	1	0	
Podkarpackie	7	2	5	2	8	2	
Podlaskie	4	0	1	0	5	1	
Pomorskie	5	1	2	0	5	1	
Śląskie	1	0	2	0	6	3	
Świętokrzyskie	1	0	0	0	6	2	
Warmińsko-Mazurskie	7	0	3	0	4	0	
Wielkopolskie	15	1	8	1	16	3	
Zachodniopomorskie	2	0	2	0	5	2	
Total	90	11	90	24	154	53	

Table 1. Number of projects submitted and funded with the "Cooperation" measure under RDP 2014-2020 by province

Source: Data from the Department of Delegated Measures of the Agency for Restructuring and Modernisation of Agriculture (as at 7.10.2021)

The analysis shows that the interest of beneficiaries in submitting innovative project applications systematically increased, as did the number of applications obtaining cofinancing. During the three calls, most applications were submitted in the Mazowieckie Voivodeship, and the least in the Opolskie Voivodeship. Information on the fourth call for project proposals under the "Cooperation" Measure for the operation of the "Establishment of short supply chains" is presented in Table 2.

It should be noted that the largest number of applications for pro-innovative projects was submitted in the Mazowieckie and Podlaskie voivodeships, and the smallest in the Podkarpackie, Śląskie and Zachodniopomorskie voivodeships. Starting December 31, 2021, operational groups forming "Short Food Supply Chains" can apply for financial assistance under the "Cooperation" measure of RDP 2014-2020. The call for applications will last until January 31, 2022 [SIR 2021b].

Voivodeship	Number of applications in call IV				
	submitted	placed on the ranking list			
Dolnośląskie	11	8			
Kujawsko-Pomorskie	10	4			
Lubelskie	17	8			
Lubuskie	10	5			
Łódzkie	16	5			
Małopolskie	17	8			
Mazowieckie	32	11			
Opolskie	11	10			
Podkarpackie	2	1			
Podlaskie	25	14			
Pomorskie	9	5			
Śląskie	3	2			
Świętokrzyskie	9	5			
Warmińsko-Mazurskie	15	3			
Wielkopolskie	14	8			
Zachodniopomorskie	3	0			
Total	204	97			

Table 2. Number of project applications submitted and ranked under the "Cooperation" measure under the "Establishment of short supply chains" of RDP 2014-2020 by voivodeship

Source: Data from the Department of Delegated Measures of the Agency for Restructuring and modernization of Agriculture (as at 7.10.2021)

RESEARCH MATERIAL AND METHODS

The aim of the study is to determine the role of the innovation broker in the creation of EIP-AGRI operational groups. An analysis was carried out by the Pomeranian Agricultural Advisory Centre in Lubań (PODR) in the 2020-2021 operation entitles "e-networking", which aimed at creating operational groups for innovation (EIP) in the difficult conditions of the COVID-19 pandemic. In addition, a survey was conducted using a proprietary survey questionnaire compiled on the Webankieta platform between September and October 2021. The survey was addressed to all 200 people who showed interest in the e-grid operation

as a result of encountering information on the Internet. The response yielded 85 correctly completed surveys (42.5%). This group included 34 people who participated in the entire project (webinars and coaching sessions) as well as people who, for various reasons (most often time constraints), only attended information meetings and webinars (25 surveys) or did not even start (26 surveys). Among the respondents, 51 (60%) were male and 34 (40%) were female. The age structure of the respondents was as follows: 13 (15%) aged up to 30 years, 59 (70%) aged 31-50 years and 13 (15%) aged over 51 years. 60 (70%) had a higher education, 21 (25%) had a secondary education and 4 had a basic vocational education (5%). Agricultural (or horticultural/orcharding) activity was conducted by 35 people (41%), work on the farm with work outside the farm was combined by 23 people (27%), and 27 people (32%) declared no connection with work on the farm.

Descriptive, tabular, and graphical methods were used to analyze and present the materials. The Net Promoter Score (NPS) method was used to determine the satisfaction level of coaching session participants. The NPS indicator is obtained by calculating the difference: expressed in percentage (in relation to all respondents (buyers)) – of active brand advocates and active brand detractors. The NPS method is a method used to directly measure the level of customer loyalty – its declaration, rather than satisfaction. However, it also serves to measure satisfaction, indirectly, for although loyalty in the behavioral sense may or may not be a consequence of satisfaction, the manifestation of loyalty in the sense of recommending a service provider or product to a friend is certainly conditional, in the vast majority of cases, and based on satisfaction [Hall 2013].

RESULTS

In the years 2020-2021 employees of the Pomeranian Agricultural Advisory Centre in Lubań (PODR) implemented the project "e-Networking". All activities undertaken within the framework of this project were carried out with the use of ICT tools, with the application of the coaching method, which, at that time, was an innovative solution, not yet implemented in Polish conditions. At the first stage, an e-marketing campaign was carried out (e.g., through community forums and industry platforms), as well as a series of meetings with innovation brokers of PODR in Lubań in order to recruit participants to the second stage of the project, which included the organization and implementation of a series of e-meetings of selected thematic groups with a coach. The result of the coaching activities was the creation of informal operational groups working on innovation. At the third stage, a series of e-meetings based on the coaching method were conducted, during which innovation projects were developed. The fourth stage consisted of supporting participants in the preparation of project proposals and their submission in the 4th Call for Proposals of the "Cooperation under RDP 2014-2020". On the basis of the analysis of the carried out e-meetings, within the framework of this operation, a high level of engagement of PODR brokers in Lubań is noticeable, mainly at the stage of information meetings and webinars introducing participants to the essence of the measure «Cooperation» in the subject "The establishment of short supply chains" and the possibilities of cooperation within the framework of operational groups of the EIP and at the stage of preparation of project applications. In total, the participants of "e-Networking" formed 6 operational groups and prepared 6 project proposals, of which 5 were placed on the ranking list.

The support of the innovation broker in the process of establishing EIP operational groups is very important. This is indicated by the survey results obtained. Respondents were asked a question about the role of innovation brokers and its assessment on a 7-degree Likert scale (where: 1 - definitely not important, 2 - not important, 3 - not very important, 4 - moderately important, 5 - motor and, 6 - very important, 7 - decisive).

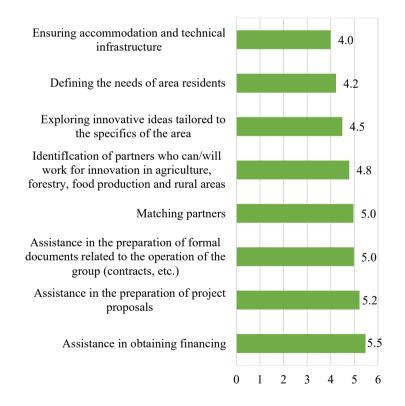


Figure 1. Evaluation of the role of the innovation broker in the creation of EIP-AGRI operational groups in the opinion of respondents (mean score on a Likert scale of 1-7, 1 - strongly unimportant, 7 - decisive)

Source: study based on own research

The respondents perceive a great role of the innovation broker in creating conditions for setting up and functioning operational groups. The highest expectations of the respondents were mainly related to the generally defined assistance in obtaining funds for innovation activities (mean score of 5.47). Equally important was assistance related to formal and legal issues, such as the preparation of project proposals or documents related to the operation of the group (mean scores: 5.22 and 4.98, respectively). Operational groups formed under the "Cooperation" short supply chain measure are based on a network of min. 5 farmers who jointly deliver food products to consumers using web-based tools. The object of the action is to organize production, distribution and transactions between the food producer and the consumer in order to minimize the number of intermediaries involved in the process. Therefore, respondents expect innovation brokers to act by identifying entities willing to cooperate and help them cooperate (mean scores: 4.78 and 4.96, respectively). This is also confirmed by the results of Laurens Klerkx and Leeuwis Cees [2009]. On the other hand, the provision of technical or housing infrastructure was less important to the respondents (mean score of 4.0). The analyzed "e-networking", where the coaching method was applied, may be treated

The role of the innovation broker	Likert rating scale 1-7*						
	1	2	3	4	5	6	7
	% indications						
Assistance in obtaining financing	0	5.9	3.5	18.8	16.5	20.0	35.2
Assistance in the preparation of project proposals	4.7	2.3	9.4	12.9	20.0	21.2	29.4
Assistance in the preparation of formal documents related to the operation of the group (contracts, etc.)	5.9	7.1	7.1	17.6	15.3	20.0	27.0
Partner matching	5.9	4.7	9.4	16.5	20.0	17.6	25.9
Identification of partners who can/ will work for innovation in agriculture, forestry, food production and rural areas	7.1	4.7	10.6	17.6	23.5	14.1	22.3
Exploring innovative ideas tailored to the local area	7.1	11.8	10.6	18.8	17.6	15.3	18.8
Defining the needs of area residents	8.2	11.8	15.3	18.8	20.0	11.8	14.1
Providing accommodation and technical infrastructure	12.9	14.1	15.3	18.8	10.6	12.9	15.3

Table 3. The role of the innovation broker in the formation of EIP-AGRI operational groups according to the respondents

* 1 – definitely not important, 2 – unimportant, 3 – not very important, 4 – moderately important, 5 – important, 6 – very important, 7 – decisive

Source: study based on own research

Reasons for participating in	Total	Total Age [years]			Education			
the project	N = 85	≤ 30 N = 13	31-50 N = 59	≥ 51 N = 13	higher N = 60	secon- dary N = 21	voca- tional N = 4	
				%				
Opportunity for professional development without leaving home	36.47	23.1	35.6	53.8	36.6	38.1	25.0	
Opportunity to network with other farmers/ entrepreneurs	36.47	38.4	33.9	38.4	45	19.0	0	
Opportunity for personal development without leaving home	36.47	23.1	16.9	38.5	21.6	28.5	0	
Obtaining grants from EU funds	30.59	38.4	33.9	46,2	33,3	23,8	25.0	
A convenient form of contact with experts and PODR specialists	30.59	7.7	32.2	46.2	28.3	38.1	25.0	
Willingness to improve communication skills using modern media	29.41	23.1	28.8	14.03	31.6	28.5	0	
Convenient form of contact with project participants	20.00	15.4	18.6	30.8	23.3	14.3	0	
Positive examples of already implemented projects	14.12	7.7	15.2	15.4	16.6	9.5	0	
Searching for additional sources of income from the implemented agricultural activity	14.12	15.4	13.5	15.4	15.0	14.3	0	
Seeking additional sources of income from implemented business activities	14.12	15.4	13.5	0	11.6	14.3	0	
Persuasion of a PODR advisor	12.94	0	16.9	7.7	13.3	9.5	25.0	
Other	1.18	0	1.7	7.7	0	4.7	0	

Table 4. Reasons for participation by age and education level of respondents

* Respondents could indicate more than one answer

Source: own research study

as a response to the rural inhabitants' demand of discovering innovative ideas tailored to the specific nature of a given region and the capabilities of its inhabitants (mean score: 4.49). SIR innovation brokers are advisors with many years of experience in rural development work. Therefore, it is not surprising that the respondents rated their role in defining the needs of the inhabitants of a given region highly (mean score: 4.22). Table 3 presents detailed data indicating how the ratings of particular roles of innovation brokers evolved.

The opinions of the respondents regarding the role of the innovation broker in the process of establishing EIP operational groups are reflected in the reasons why respondents showed interest in the implemented e-networking operation. As can be seen from the data presented in Table 4, one of the more frequently mentioned motives was the possibility of establishing cooperation with other farmers/entrepreneurs (36.47% indications) or the possibility of obtaining subsidies from EU funds (30.59% indications). Also, the adopted remote form of implementation of the operation was a compelling argument to encourage participation.

In order to examine the level of satisfaction with participation in the project carried out using the coaching method, the Net Promoter Score (NPS) was calculated. A group of 34 respondents (people who participated in all stages of the e-Network operation) were asked whether they would recommend participation in such or similar projects using the coaching method to their friends. They marked their answer on a scale from 0 to 10, where 0 meant that they would definitely not recommend it and 10 reflected the highest probability of recommendation. Based on the respondents' answers, they were classified into 3 groups:

- 1. Promoters (41.18%) people who marked 9-10 on the response scale, i.e., active advocates recommending similar initiatives to others).
- Neutral (41.18%) people who marked 7-8 on the response scale, i.e., passive consumers (people who are satisfied but disloyal and unlikely to recommend this type of experience).
- 3. Critics (17.64%) people who marked 0-6 on the response scale, i.e., active critics (people who are dissatisfied with the service and spread negative feedback).

NPS index = % Promoters – % Critics

The NPS index was obtained at a level of 23.53%. It is assumed that a positive index indicates good standards and with a score higher than 50 we can talk about success. Taking into account that the coaching method, in the case of agricultural consulting in Poland, was used for the first time, an indicator of 23.53% can be evaluated as a very good result [Parzonko, Krzyżanowska 2021].

Of those who took part in the survey, 52.9 % would take part in a similar project again, 29.5 % had no opinion and only 17.6 % said they would not be interested. The active attitude was mainly shown by those with a higher level of education.

SUMMARY

The establishment and operation of operational groups for innovation in the agricultural sector is possible thanks to the "Cooperation" Measure implemented under the Rural Development Programme 2014-2020. Data from the Department of Delegated Measures of the Agency for Restructuring and Modernization of Agriculture (7.10.2021) shows that 185 projects have been financed so far (of which 97 under "The creation of short supply chains"). The units coordinating the process of forming EIP operational groups are agricultural advisory centers, where SIR coordinators work together with innovation brokers.

On the basis of the analysis of the e-networking operation carried out by PODR in Lubań and the conducted questionnaire research among people who participated in this operation or showed interest in this initiative, the following conclusions can be formulated:

- 1. The task of innovation brokers is, among other things, to set up operational EIP groups; for this to be possible, a good innovative idea, the right partners and a solid action plan are needed.
- 2. The respondents perceive a great role of the innovation broker in obtaining funds for innovation activities as well as preparing project proposals and documents related to the functioning of the group.
- 3. Respondents expect innovation brokers to act by identifying entities willing to cooperate and help them to cooperate.
- 4. The effectiveness of the brokers' actions depends on the methods applied. The coaching method and the use of the remote form in the implementation of the e-networking project was positively received by the participants and resulted in the creation of 6 groups and the preparation of 6 project proposals, 5 of which were placed on the ARiMR ranking list of proposals qualified for funding.

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ROLA BROKERA INNOWACJI W POWSTAWANIU GRUP OPERACYJNYCH EIP-AGRI

Słowa kluczowe: grupy operacyjne EIP, innowacyjność, rozwój obszarów wiejskich, doradztwo rolnicze, broker innowacji

ABSTRAKT

Elementem wsparcia rozwoju gospodarki rolnej jest Europejskie Partnerstwo Innowacyjne na Rzecz Wydajnego i Zrównoważonego Rolnictwa (EIP-AGRI). Grupy operacyjne EIP-AGRI to grupy osób, które współpracuja ze soba w ramach projektu innowacyjnego finansowanego z Programów Rozwoju Obszarów Wiejskich (PROW). Ich istota jest przekształcanie innowacyjnych pomysłów w rzeczywiste rozwiązania. Koordynowanie procesu powstawania grup operacyjnych powierzono jednostkom doradztwa rolniczego, a w szczególności pracującym tam brokerom innowacji. Celem opracowania jest określenie roli brokera innowacji w tworzeniu grup operacyjnych EIP-AGRI. Przedstawiono mechanizmy wsparcia innowacji w sektorze rolnictwa, zwracając szczególną uwagę na zadania Krajowej Sieci na Rzecz Innowacji w Rolnictwie i na Obszarach Wiejskich (SIR) oraz na Działanie "Współpraca", realizowanego w ramach PROW 2014-2020. Analizie poddano realizowana przez Pomorski Ośrodek Doradztwa Rolniczego w Lubaniu (PODR) w latach 2020-2021 operację, "e-sieciowanie" oraz przeprowadzono badanie ankietowe, w którym posłużono się autorskim kwestionariuszem ankiety, sporządzonym na platformie Webankieta. Z przeprowadzonych badań wynika, że rolą brokera innowacji jest przede wszystkim wspieranie zainteresowanych współpracą podmiotów w pozyskiwaniu funduszy na działalność innowacyjną, przygotowanie propozycji projektów i dokumentów związanych z funkcjonowaniem grupy operacyjnej EPI, identyfikowanie podmiotów chcacych podejmować współprace oraz pomoc w nawiazywaniu współpracy.

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