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# Knowledge management in the process of building competitiveness and innovativeness of rural areas

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## Abstract

*Rural area development in Poland is a very complicated process, which involves many subjects and the problems which require a solution are usually complicated and fixed through decades. Currently socioeconomic development gained new character and accelerated because new properties of external environment determined an unprecedented increase in the value of knowledge. Knowledge becomes a new instrument of changes. Research on knowledge management usually focused on a single subject (enterprise or organization). Presented research undertakes investigations using a process approach, i.e. focuses on the process involving numerous subjects which are in mutual interactions, where cooperation and exchange of information are of key importance for the final effect. Research problem proposed research sounds: Can solutions worked out as a part of the conception of knowledge management be a stimulant for the development process occurring in rural areas? The main research objective is an adaptation of the conception of knowledge management for the needs of sustainable socioeconomic development of rural areas, particularly for building their competitiveness and innovativeness. Combining a difficult process of socioeconomic changes which very slowly occur in rural areas with modern management conceptions present in the most innovative companies raises hope.*

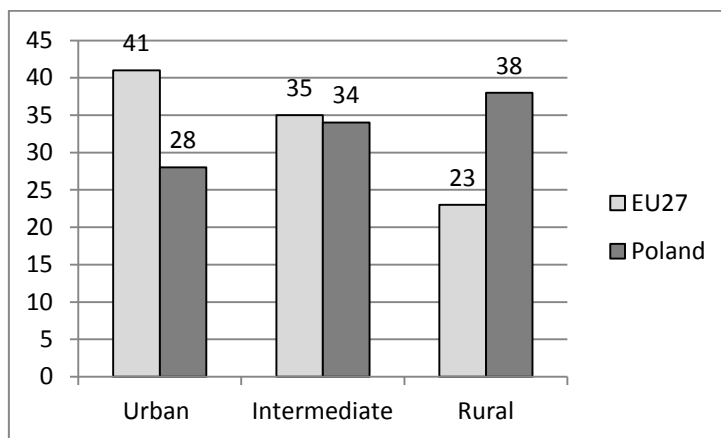
**Keywords:** knowledge management, rural development, regional competitiveness, innovation.

## Introduction

The main purpose of this paper is to define research assumptions related to implementing the knowledge management idea in the process of rural development (on the example of Poland). The year 2014 marks a quarter of a century since the beginning of a fundamental system transformation in Poland and 10 years since our country joined the European Union. The system transformation, which in the scale of the whole economy (in the macroeconomic dimension) caused such enormous changes and brought advantages noticeable already during the first decade of reforms, in the case of agriculture and rural areas was much slower. Currently socioeconomic development gained new character and accelerated because new properties of external environment determined an unprecedented increase in the value of knowledge. Knowledge becomes a new instrument of changes.

Rural area development is a very complicated process, which involves many subjects and the problems which require a solution are usually complicated and fixed through decades. It is worth to emphasize again that development of rural areas concerns 93% of the area of Poland and almost 15,000,000 people that is 38% of the total population of the country. Rural areas represent also 93% of the territory of the EU-27, with 23% of the population living in predominantly rural areas and 35% in significantly rural areas (fig.1.).

**Figure 1.** Population (% of total population) by urban-rural typology.



Source: based on “Eurostat newsrelease” no 51/2011 – 30 March 2012.

Knowledge becomes the main instrument of changes, it is worth to take care about its proper management also in rural development (Espancia, 2014, Mięka, 2012, Ziemiańczyk, 2011). Research on knowledge management usually focused on a single subject (enterprise or organization). Proposed research undertakes investigations using a process approach, i.e. focuses on the process involving numerous subjects which are in mutual interactions, where cooperation and exchange of information are of key importance for the final effect.

The subject of research is: Can solutions worked out as a part of the conception of knowledge management be a stimulant for the development process occurring in rural areas?

The main research objective is an adaptation of the conception of knowledge management for the needs of sustainable socioeconomic development of rural areas, particularly for building their competitiveness and innovativeness.

### **Theoretical background**

The Polish countryside becomes less and less agricultural, which can be seen in various aspects of life. About 60% of rural dwellers are in no way connected with agricultural production or agricultural land use. Only one third of rural dwellers lives mainly or only on farming, but even this community is dwindling fast. Nevertheless, high employment in agriculture (12% of all people employed in the national economy, 5% in the EU27, EU Agricultural Economic Briefs, 2013) is still a fact, which connected with other characteristics of Polish agricultural causes that labor productivity in this sector of economy reaches only 30% of average productivity in the UE-27 agriculture.

Since 2000 the number of rural dwellers has grown continuously (Wilkin, Nurzyńska 2012). Rural community in Poland is relatively young in comparison with the other European countries, which should affect the absorption of new solutions and proposals for development.

There are 2172 districts (gminas) in rural areas in Poland. They are greatly diversified considering economic, demographic and social indicators. Rural development is strongly

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influenced by historical heritage, as evidenced by current diversification of the country overlapping the country division under partitions.

The instruments of regional policy focused on improvement of territorial cohesion prove less efficient and are unable to change the historically formed economic structures. The objective of rural development is realized, depending on their location and historically shaped structures, according to various scenarios. There is no one recipe for the development of these areas, even within one region.

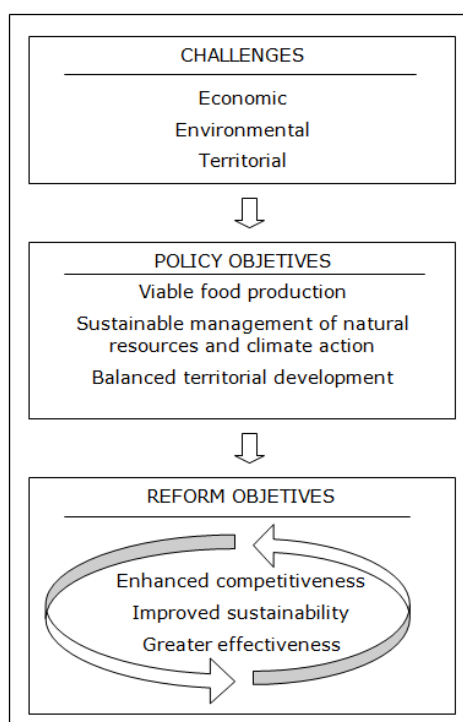
Per capita income in rural areas makes up about 80% of the national average. It denotes a considerable income rise in the country, particularly in comparison with the end of the 1990ties.

Already 50% of rural dwellers use the Internet. Owing to the EU funding the state of technical and social rural infrastructure is improving fast. The country becomes more and more involved in the worldwide information flow and subjected to the influence of global patterns. A phenomenon of a conflict between the country and the city, previously widely signaled and discussed, is disappearing. However, this improvement is not accompanied by socioeconomic polarization of the country. Rural youth has increasingly higher educational and material aspirations, hardly different than the aspirations of young people from the city. Among those aspirations the perspective of being a farmer seems hardly attractive. There are no significant differences in the attitudes of young people in the country and in the city towards the challenges posed by the labor market, including professional and spatial mobility.

Despite its disadvantages and civilizational backwardness, the country becomes increasingly often chosen as a place of residence. Even 50% of rural youth and 13% of city youth declare a willingness to live in the country. Increase in non-farming rural population, including new dwellers, strongly affects rural identity and social structure.

Seeking the way to improve the competitiveness and innovativeness of rural areas is especially timely in the context of new programme period 2014-2020 and “Europe 2020” strategy, whose objectives: intelligent increase based on knowledge and innovations; sustainable increase – transformation towards low emission economy, efficiently using the resources and competitive and increase favoring social inclusion – supporting the economy characterized by a high level of employment and ensuring economic, social and territorial cohesion (European Commission, 2010). New challenges and aims are presented in the fig.2.

**Figure 2.** The CAP post-2013: From challenges to reform objectives



Source: Based on Overview of CAP Reform 2014-2020, December 2013.

People are working smarter across all sectors of the economy. Therefore, a proper knowledge management in the institutions supporting rural development seems to be the basis for constructing competitiveness and innovativeness in these areas.

Proper coordination of the processes connected with knowledge in local and regional environments will undoubtedly add to creating a knowledge based society. All countries of Central and Eastern Europe face a necessity to create their own innovative competences gradually gaining independence from a simple takeover of technologies and organizational patterns, but also in a wider sense, from social patterns of the countries higher advanced in economic and social development.

Development policy must skillfully accommodate the market and public domains, combine market competition and partner public management, and implement multi-level joint management realized as a modern model of development (economy network). At the same time the multi-level joint management is a difficult mechanism coordinating autonomous activities and interdependent subjects. Its application requires an institutional capacity for simultaneous use of various instruments: not only compulsion or money (i.e. hard means) but also sense and mutual obligation (i.e. soft means).

### **Theoretical aspect of the knowledge management in the process of rural development**

At the base of all research works – here: for investigating the level of knowledge management use for the functioning of the rural development system – it is necessary to establish a uniform terminology. It refers particularly to the understanding of the expressions:

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knowledge and knowledge management, adopting typology of knowledge and processes in which knowledge participates but also the expression of knowledge management system.

One of the problems of contemporary knowledge management conception is the way of understanding knowledge. Research assumes a wide concept of knowledge, regarding it as flexible and dynamic “substance”, intangible and constituting a result of thought transformation of the information sets possessed and gained by a human being. Such approach to knowledge allows to treat its resources in a flexible and unlimited way, undisturbed by a confirmation or raise of conviction. It allows to distinguish diverse kinds of knowledge, yet it seems that it does not simultaneously force or prefer a wide consideration (as a dominating element) in the framework of knowledge management system, the information system and IT technologies used by it.

The basic division of knowledge forming a theoretical basis for the research uses division into open and hidden knowledge popularized by I. Nonaka and H. Takeuchi (1997, 2000, p.80-82), and the division of knowledge presented by P.R. Gamble and J. Blackwell (2001, P.126). Basing on these approaches, three main kinds of knowledge have been adopted: personalized (in mental form, accessory to a human being, which is further divided into tacit and explicit), codified (registered by means of signs, figures and symbols, etc. in documents, catalogues, databases, publications, etc.), embedded (set of products of human activity, e.g. processes, products, services, systems, technologies or brands).

Analyzing the essence of management, knowledge management may be presented at least in four ways, i.e. as functional, process, instrumental and institutional (Tab.1) (Mikuła et al. 2012). At the basis of prepared investigations, functional approach will be the dominating way of understanding the essence of knowledge management. Therefore, knowledge management in the system of rural development will involve the realization of the main functions of management focused on the resources of personalized, codified and established knowledge, the processes with their participation and the conditions of realization of the processes to make possible achievement of the assumed goals.

The assumed concept of operational tasks of knowledge management, identifies ten main processes with knowledge participation (identification, transfer, accumulation, selection, creating, combining, recording, saving, assessment and application), among which the processes of identification, accumulation, transfer, creating and application of knowledge will be the subject of investigations in the framework of identification of knowledge management system in rural areas.

Assuming only five main processes with the participation of knowledge for the research purposes, requires their further specification and some degree of aggregation with the other tasks of knowledge management. Therefore, the identification will be understood as a process of location and initial assessment of the usability of “encountered” knowledge resource for application in the organization. Accumulation means gathering and storing of knowledge in codified form, which may be also accompanied by saving knowledge (e.g. in electronic form). The transfer will be perceived as a wide process involving knowledge acquisition for its application, sharing knowledge, making it available and knowledge dissemination. Creating is a process of generating new knowledge for the organization, however, it may also involve combining the existing knowledge resources for innovations (i.e. as a diffusion of knowledge). Application of knowledge is its use for the realization of the organization’s tasks and reaching the assumed goals. Application of knowledge may be oriented on developing strategies, realization of operational tasks, shaping the course of processes, solving the problems which appear, etc.

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**Table 1.** Definitions of knowledge management

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**Knowledge management**

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In the functional meaning:

Management comprehensively comprises realization of the management function, focused on the resources of personalized, codified and established knowledge and processes with their participation, but also on conditions for these processes realizations on the way to make possible reaching the goals of the organization.

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In the process meaning:

Standardizing and discretionary procedures aiming at creating an appropriate environment, which will make possible efficient implementation of knowledge strategy and knowledge management strategy and realization of operational functions, i.e. implementation of organizational systems with a proper construction, optimizing main processes connected with knowledge, climate, culture and organizational structure, which will direct people to knowledge development, sharing it and proper use.

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In the instrumental meaning:

Involves a proper selection and use of the instruments supporting the course of main processes with participation of knowledge on all levels and in all areas of organization. The set of instruments is wide, comprising economy-financial, legal, social, organizational and technical instruments. The instruments may also comprise, among others, organizational systems contributing to realization of operational functions, such as information system, motivation system, controlling system, etc.; strategies of various levels of the organization; a number of tools, such as Internet, intranet, databases, interview rooms; but also methods, e.g. debates, quality circles, kaizen, brainstorm, etc., on which it bases and which knowledge management system uses.

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In the institutional meaning:

Comprises a system of positions and employee teams (strategic and operational level of the organization, formal and informal organization), which fulfill the functions and realize the tasks in the area of knowledge management in the organization

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Source: Mikula et al. 2012 p.53.

The next problem which should be solved on the basis of research works is the system of knowledge management. Considering the discussion about its essence and components (e.g.: Maier 2002, Mikula 2012) there may be assumed a wide or narrow understanding of this system. In the narrow approach, it is a systemic platform constructed by information and communication technologies based on computer technology. It supports the realization of all operational tasks, i.e. the processes with the participation of knowledge. In a wide (static) approach, knowledge management system will be regarded as a set of principles, methods, means, sets of knowledge (including information), people, networks and their interrelations, which allows to adopt and realize strategies and tasks of knowledge management to reach the organization's goals.

It is assumed that, one of the basic goals of knowledge management system concerning rural development is obtaining the desired level of competitiveness through generating and application of knowledge resource characterized by rarity and innovativeness, allowing to achieve:

- Modern and diversified economic structures,
- Developed sector of small and medium sized enterprises,

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- Cooperation of economy with science to improve the quality of manufactured products and services,
  - Advanced technical infrastructure (including communication),
  - Efficient marketing of products and services in rural areas.

The discussed knowledge management system, support for:

1. Creating conditions for functional integration with cities, i.e. including the rural areas surrounding cities in the development processes.
2. Creating development and absorptive potential of rural areas.
3. Increasing professional and spatial mobility of the inhabitants.
4. Making use of the natural environment assets and cultural heritage.
5. Development of cities with the second-level status - establishing local development centers.
6. Creating conditions for increasing off-farm investments.
7. Local development for the improvement of living standards, tourist and investment attractiveness.

### **Knowledge management as an element of regional competitive advantage**

In the era of knowledge-based economy, the role of human factors and his skills in creating and improving competitive advantage of a given area or enterprise is growing.

It is beyond doubt that knowledge and innovation play a key role in economic development (Massa, Testa, 2009; Kebede, 2010; Farzin, 2014). At the macro level, the accumulation of knowledge constitutes an underlying factor of sustainable economic growth. This is even more visible at the regional level, as geographic disaggregation only highlights differences in development.

There are numerous definitions of the competitiveness of enterprises, however, most frequently it is perceived as the ability to produce goods and services which meet the test of international markets, while at the same time maintaining high and sustainable levels of income or, more generally, the ability of (regions) to generate, while being exposed to external competition, relatively high income and employment levels (European Commission, 1999).

However, competitiveness is an expression referring not only to enterprises, but also to the economy to the worldwide, international, national and local level. Interregional competitiveness determines the market and economic position of a given area. An appropriate way to emphasize the natural, social, cultural and investment assets, as well as the optimal level of their utilization creates the environment favoring economic development, which in result raises the standard and quality of life of the local communities.



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The notion of the region has evolved as a unit of innovation, economic growth and an appropriate scale to resolve the challenges of sustainable development (Bellamy et al., 2003). A key question for policymakers at the regional and local level is how to provide the right conditions for generating the growth of more knowledge-intensive forms of economic activity within the context of dynamic innovation systems or learning regions. Communities and regions, like companies, need to innovate and adapt to remain competitive (Gertler, Wolfe, 2004).

The term of competitiveness of a region exposes its four key elements (Annoni, Dijkstra, 2013):

1. Living standard of the inhabitants,
2. Conditions for conducting economic activities by enterprises,
3. Possibility to attract investors,
4. Location of institutions and events of national or international range.

Differences in the productivity and innovativeness in regions are by regional inequalities determined, whose existence may be regarded as a symptom of competitiveness of individual territorial units.

Proper knowledge management may build competitive benefit of the area. Efficient seeking and acquisition of knowledge given an advantage in the struggle for investors, dwellers, external financing, realization of innovative projects and enterprises. Also the role of the public sector in developing regional innovation systems as being one of building systemic linkages that transfer knowledge and innovation within and beyond the regional economy was identified (Cooke, Memedovic, 2003).

Local self-governments have their own tasks, many of which concern supporting rural development. Has the realization of these tasks been included in an efficient knowledge management system? Does such system exist? There are many different institutions and organizations at the local, regional and national level responsible and involved in rural development policy. They formulate strategic plans, new development directions, and analyses. There is a huge knowledge resource acquired by many people in various locations. The close collaboration and easy access to these resources for all involved in supporting the rural development should be a basis. The region (area) can be competitive only when it is able to adapt to new conditions more quickly than the other regions. Therefore, knowledge management processes and their directions are preponderant. A clear specification of the role and tasks of KM for the individual participants of the whole system (process) seems to be crucial.

Constant changes outside and inside the region, enforce the management to have the most recent information from which knowledge is generated. In practice, a great disparity often exists between the possessed knowledge and ability to use it. Moreover, the same knowledge resources are often from various sources acquired (duplication).

Strategic importance for the rural areas development have public and private institutions whose activities and cooperation lead to generation, adaptation and transfer of knowledge to the region's economy and its institutional, organizational and social environment.



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Its socioeconomic growth rate and competitiveness, depends now to a lesser extent on natural and material resources and more on intangible forms of capital, i.e. most of all on people - educated, creative, innovative, having the ability and willingness to cooperate, and capable to absorb the innovations.

In its essence, management is the transformation of knowledge to make region capable of reaching success, competitive advantage and increase their value, whereas in case of local self-government to let them efficiently realize their tasks to improve the life standards of local communities.

Management of knowledge and human capital is strategic and influences the value of organizations, institutions, regions and their competitive advantage (du Plessis, 2008).

## **Methodology**

The first task of the undertaken research is diagnosing and assessment of current applied solutions concerning creating, flow and use of knowledge among the subjects (institutions) involved in rural development. There are numerous institutions involved in rural development, including the state ones, local governments and non-governmental organizations (NGOs).

In presenting scientific research, both primary and secondary data are used. Primary data are collected through direct interviews with selected respondents (chiefs, leaders) and survey studies in the institutions dealing with the rural areas development. i.e. commune offices, Local Action Groups (LAG), Agricultural Extension Centers, Agricultural Market Agency, Agency for Restructuring and Modernization of Agriculture (ARMA), Technology Transfer Centers. Secondary data result the available scientific literature, statistical data and policy documents.

Combining a difficult process of socioeconomic changes which very slowly occur in rural areas with modern management conceptions present in the most innovative companies raises hope.

Rural areas are complicated field of human activity, which changes under the influence of economic, technical, social and natural, but also political factors. It is a most diversified area not only on the international scale, but also inside the individual countries and regions. This diversification is an advantage and great asset, but also a hindrance for the researchers of this sphere of human activity (Wilkin, 2010). Considering the quality of expected results the research team will focus on one Voivodeship (region) taking into consideration its specific character, conditionings and possibility to use its potential in view of building competitiveness and innovation of the region.

## **Results**

Scientific research in the frame of presenting problem, actual and responding to the challenges of the Knowledge Based Economy, are focusing on:

- Diagnosis of the knowledge management process among the subjects involved in rural development,
- Assessment of the effect of knowledge management on the competitiveness and innovativeness of the area,

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- Theoretical model of the effect of knowledge management to strengthen the competitiveness and innovativeness of rural areas basing on local conditions and principles of sustainable development.

A successful implementation of knowledge management on the grounds of socioeconomic transformations in the country will contribute to further seeking the ways, methods and tools to rationalize constructing of the Knowledge Based Economy.

## **Discussion**

Results of initial studies convince the Authors about the advisability of adopted assumptions. Constructing knowledge-based competitive advantage becomes the only efficient measure in the context of continuous changes and globalization of economy. The managing persons should equally focus on the external environment and internal conditions of the region. Both the environment, external and internal conditions, internal procedures, basic skills, techniques of teamwork are important for reaching a fixed competitive advantage. Competitive advantage relies on mastering the applications, which themselves are knowledge and secret. They require outlays of financial and human capital and are not commonly available. Knowledge as a resource which may be a fundament of strategic advantage is everywhere, outside and inside of subjects, in documents, in the heads of administrative employees and communities interested in the development. A region which intends to build its competitive advantage on this resource must manage it properly. In the era of knowledge, only constant work on the knowledge and the system of its management strengthens position of this region offering an opportunity for development or being the leader.

In Poland the pre-accession period and the years after the UE accession led to an acceleration of institutional reforms and many changes in agriculture and rural areas. "Report about the state of the country. Polish Country 2010" express the opinion, that a relatively short period after the accession was crucially important for Polish country and agriculture (Wilkin, 2010). A process of changes started, which has been successively improving the moods of rural dwellers. Beside the pessimism and lack of faith in the future, which prevailed by the end of the 90ties, positive attitudes and hope appeared.

However, the process of changes has only just started and there is still a lot to be done, many problems facing rural areas remain to be solved and require mobilizing people, both in the central and local level (particularly in the institutions involved in rural development).

The report of J. Wilkin (2010) stated what "has not been done" in the process of changes. The author mentions some of important problems:

- Rural areas do not have an efficient lobby, which would act for their development. Economic diversification in the country is very slow, there is a lack of leadership, suitable institutions or social capital. Ensuring sustainable rural development remains a necessity, a task and a challenge.
- Attempts at introducing appropriate reforms and strengthening the institutions responsible for knowledge transfer to agriculture have failed. Only a minor part of the farms (below 20%) may be regarded as science-based agricultural units.

Research has demonstrated that reasons of poor innovativeness of Polish regions may be sought among others (Gorzelać et al., 2006):

- Low level of knowledge about the role of innovation of the representatives: of the entrepreneurship sphere, self-government authorities and science sector,

- In development of the region's economy,
- In the lack of connections between persons generating scientific product and its potential recipients,
- Lack of efficient instruments for creating the connections mentioned above.

Therefore, the effect of suggested project may be the elimination of these barriers, mainly through developing a system of efficient knowledge management in the region. The Lisbon Strategy empathized the importance of knowledge in creating competitiveness not only among enterprises but whole regions.

## **Conclusions**

The paper presented an idea of knowledge management using a process approach, focusing on the process involving many engaging subjects, where cooperation and exchange of information are of key importance for the final effect.

Because knowledge becomes the main instrument of changes, it is worth to take care about its proper management. The role of knowledge management in creating competitiveness and innovativeness of enterprises has been often emphasized (Griffiths, Remenyi, 2008; Lai et al., 2014; Jarrahi, Sawyer, 2013). However, the same strategic objectives of development are posed for the local and regional self-governments. They are treated on the market as units offering specific services and products. On the other hand, conditionings of their operation are different than for commercial enterprises. Obviously, self-government units may be also regarded as independent, organizationally coherent institutions, however the context in which they operate is different.

Therefore, justified seems the approach to the problem of knowledge management in rural development, and not inside the specified organization as it has been done so far.

In the process, individual institutions are treated as units responsible for the realization of subsequent tasks in the area of knowledge management. We should trust that proper knowledge management in rural development will result in improving their competitiveness and innovativeness, like it does in case of enterprises.

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