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STRATEGIES IMPLEMENTED IN POLISH FARMS AND RESULTING INNOVATIONS

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Abstract: The article discusses the issue of strategies implemented in Polish farms and innovations created as a result. On farms, as well as in enterprises from other industries, net income is assumed as the main goal. In order to achieve it, the direction of development is defined, which may be manifested, for example, by directing production, modernization of the farm or increasing production efficiency. To this end, a strategy is created and implemented in the farms, as a result of which innovation takes place. The objective is to achieve a competitive advantage and maximize net income. Research purpose of this work is to identify the implemented strategies and innovations introduced, as a result, in Polish farms.

Keywords: innovation; farm; strategy, development, agricultural enterprise.

1. Introduction

The growth of farms is unquestionably influenced by the growth of the region's competitiveness, since the farms shape and develop, among others, the landscape, culture, tradition and economy in a given area. Farms, in terms of the way they conduct business, are similar to entities in other market segments, and their main goal is to obtain net income. While striving to achieve the goal, they develop and implement business strategies that may lead to innovation. The strategy allows to set the direction of development and allows to gain competitive advantage, which has an impact on the maximization of net income.

Specialization and diversification are examples of strategies for creating innovation. Małgorzata Juchniewicz also points to the model of open innovations. It is based on the creation of a wide network of connections and relationships between many organizations, external partners and private individuals. The model results from the possibility of including more stakeholders and building interactive relations with them in real time (Juchniewicz, 2014).

The development of farms and the selection of strategies are influenced by the following related trends (Kulawik, 2015; Swinnen, Riera, 2013):

- development of technologies and production directions,
- change in eating habits of people,
- increasing environmental awareness,
- integration of the agricultural sector with other sectors, such as biotechnology or energy, resulting from the evolution towards bioeconomy.

It should be remembered that, in Poland, agricultural holdings constitute a significant group of entities and, according to the data included in the agricultural census, in 2016, there were 1410.7 thousand of them (Statistics Poland, 2017a).

The way of defining them is also important. There are several definitions in the Polish law, that have arisen for the purposes of specific regulations. This leads to difficulties in identifying whether an entity in a given situation can be called an agricultural holding. In this work, the definition included in the act on shaping the agricultural system was adopted, i.e. "an agricultural holding is understood as an agricultural area, including forest land, buildings or their parts, equipment and stock, if they constitute or may constitute an organized economic unit, as well as rights and obligations related to running a holding […] exceeding 1 ha of agricultural land" (Journal of Laws of 2003, No. 64, item 592).

What also deserves attention is the function assigned to them, which significantly affects the development, particularly of small farms. Through their prism, one can perceive an agricultural holding as a multifunctional entity, that has a complex role in the economy of the country and the region. Attributed to them, among other functions (Dudzińska, Kocur-Bera, 2013), there are:

- production,
- biodiversity,
- environment,
- social functions,
- economic basis,
- service,
- a buffer against poverty.

The production function ceases to be the basic activity, while an extensive range of functions creates many possibilities. Moving away from the usual pattern of functioning also determines a broader view of the business.

A variety of definitions, changing social trends, assigning new functions and evolution towards bioeconomy result in an increase in demand for agricultural products, but perceived on a wider scale than in the traditional understanding (Swinnen, Riera, 2013). It requires the implementation of an appropriate strategy by the farm, which will allow to achieve a competitive advantage and, as a result, net income, while reducing the risk of the entity's

collapse. According to the adopted definition, the strategy is a plan defining long-term direction and scope of the organization's activity, achieving its advantage in a changing environment, in order to meet the expectations of stakeholders, thanks to its configuration of resources and competences (Johnson, Scholes, Whittington, 2010). It allows to organize knowledge about the market environment, in which the farm operates, and identify the opportunities and threats present in it, as well as the strengths and weaknesses of the entity. It also allows to determine a well-considered, rational direction of development, as well as establish and focus attention on the main goals (Demecki, Żukowski, 2010).

The analysis of the environment and the subsequent development of the strategy allows the introduction of innovations on the farm, i.e. "solutions that significantly change the usual organizational forms of the company, and thereby approximate the implementation of its objectives" (Stępniak, Kucharska, 2012). They can refer to a specific area of management, which makes it possible to distinguish product, technological (process), marketing or organizational innovation.

Agricultural holdings have potential in the area of strategy implementation and application of innovations, reflecting what new products, services or processes they offer. The most influential factors for this are:

- Poland's accession to the European Union and access to the EU funding sources;
- entrepreneurship of farm managers, which manifests itself in the ability to see trends, seize opportunities and create alternative forms of agricultural activity, as well as new products;
- openness to foreign markets and the possibility of benchmarking in the field of agricultural activity;
- increase in the level of education among farm managers;
- combining scientific achievements with running a farm.

The factor that undoubtedly influences current development of farms is the accession of Poland to the European Union. Access to funding sources from programs created by the European Union is now almost an inherent element of every investment. The binding Common Agricultural Policy, as well as access to the EU programs, allow to obtain funds for investments related to, for example, the development of construction, technical or technological infrastructure. This factor can be defined as a catalyst for the development of farms, which could not occur under other conditions (Bereś, Krawiec, 2015).

The managers of farms form a diverse group, which more and more often consists of young people with higher education, willing to invest and risk, who are also entrepreneurial. Over the last dozen or so years, farmers' education has undergone significant changes. A significant increase occurred in the number of farmers with general higher education, from 2.6% in 1996 up to 9.97% in 2010. A significant improvement in the level of education also took place in the area of secondary education. An increase was recorded from 17.25% in 1996 up to 31.03% in 2010 (Janc, Czapiewski, 2016).

As in the case of other sectors of the economy, market trends have an influence on business and strategy development of an enterprise. Consumers and potential recipients, as well as identification of trends associated with them, is a very important factor, directly affecting the development of each company (Matel, 2015). An important role is also played by trends related to the direction of development of national and global agriculture associated with the form of production. They result, among others, from the development and implementation of production technologies, and their aim is to reduce costs and efficient use of resources by introducing improvements and improvements to the production process.

2. Methods

The research purpose of the article is to identify the implemented strategies and the innovations introduced, as a result, in Polish farms.

The publication uses both short and continuous scientific publications, as well as mass statistical data, the source of which is information contained in the reports issued by the Agricultural and Food Quality Inspection (IJHARS) and Statistics Poland (GUS). Statistical analysis was based on comparative analysis (dynamics) and structure analysis. The results obtained were presented in a descriptive and tabular form.

3. Implemented strategies and innovations introduced on farms

The period of rapid development of farms began with the accession of Poland to the European Union in 2004 and the possibility of applying for financial grants from EU programs. It was also the beginning of an increase in the requirements related to running a business, change in the agricultural policy, as well as opening the economy to the European market. Opportunities and threats resulting from this, as well as the analysis of strengths and weaknesses of farms, led to the implementation of strategies to a greater extent, which, by implementing new or lesser-known solutions, significantly affected the conduct of business. While recognizing new development opportunities, farmers strive to go beyond the known and replicated schemes of action, which results in introducing innovations.

When analyzing the development of farms, it is possible to identify strategies described by M. Porter, as well as the strategy of diversification. Porter distinguished the strategy of diversification, concentration and cost leadership (Porter, 1998).

The concentration strategy is based on a market niche, identified for a group of buyers, a specific segment of the product range or geographical area. This means that the company focuses on high-quality service provided to a specific segment. As a result, the company may achieve diversification, resulting from lowering costs by better satisfying the segment's needs (Lubomirska-Kalisz, 2015).

An example of implementation of this strategy is organic production, which, after Poland's accession to the European Union, has become a popular activity (Instytut Rozwoju Wsi i Rolnictwa, Polska Akademia Nauk, 2017). The reasons for this are (Grabarczyk, Wrzesińska, Kowal, 2015):

- possible financing for organic production,
- opening to western markets, characterized by a demand for this type of products,
- decrease in profitability of production of conventional food products,
- decrease in trust in relation to the quality of conventional products,
- intensifying the negative impact of agriculture on the environment,
- development of the trend related to healthy eating.

Nonetheless, imprecise EU and national regulations regarding organic production allow for the occurrence of fraud. Walnut growing is an example. According to the regulations, in order to receive co-financing in the amount of PLN 1800/ha, the minimum number of trees owned was 50 pieces/ha. In practice, this means that a significant part of the area designated for cultivation has become fallow (Nachtman, 2014).

A farm that manages organic production should be called an organic farm. Statistics Poland defines such an entity as "a farm using ecological agricultural production methods, which has a certificate issued by a certification body or converts its methods into organic agricultural production methods (under the control of the certification body)" (GUS, 2016a).

In comparison to the total number of 1410.7 thousand farms, the scale of implementing the concentration strategy in the form of an organic production is not large. Table 1 presents the number of farms conducting organic production in individual years.

Noteworthy is the low level of this production before Poland's accession to the European Union, and then its rapid growth. The reason for the phenomenon was the increase in co-financing for organic production, resulting from the implementation of the Common Agricultural Policy and access to the EU support sources (Barłowska, Wolanciuk, Idec, 2017). However, as shown in Table 1, in the years 2014-2015, there was a decline in the number of organic farms. The reason was, among other things, the end of a five-year commitment and the resignation from further production by large-scale farms, as well as the introduction of a degressive rate of payments, along with the increase in the area of the farm (Instytut Rozwoju Wsi i Rolnictwa, Polska Akademia Nauk, 2017).

Table 1.
Number of certified ecological farms in Poland in particular voivodeships in the years 2000-2016

	2002	2004	2005	2006	2014	2015	2016
Dolnośląskie	37	89	81	178	1046	849	813
Kujawsko-Pomorskie	45	58	42	80	401	363	470
Lubelskie	162	210	144	371	1975	1825	1980
Lubuskie	17	18	14	63	1370	1202	1148
Łódzkie	19	33	23	67	508	478	497
Małopolskie	86	231	257	647	1378	1128	1093
Mazowieckie	123	191	179	422	2374	2147	2426
Opolskie	7	16	15	24	75	67	68
Podkarpackie	48	193	183	399	1475	1261	1252
Podlaskie	30	90	74	197	3432	3273	3437
Pomorskie	23	31	31	69	847	737	679
Śląskie	12	27	20	38	230	201	180
Świętokrzyskie	180	302	236	498	992	853	834
Warmińsko-Mazurskie	49	91	82	221	4234	4041	4142
Wielkopolskie	28	33	26	67	966	809	843
Zachodniopomorskie	16	70	56	163	3526	3043	2573
Total	**882**	**1683**	**1463**	**3504**	**24829**	**22277**	**22435**

Source: own study based on: Inspekcja Jakości Handlowej Artykułów Rolno-Spożywczych IJHARS, 2003, 2005, 2007, 2015, 2017.

As a result of the concentration strategy, an ecological product was created, which is an example of product innovation. Product innovation consists in introducing a new product or service, technological features of which differ significantly or operation of which has been significantly improved and can bring increased benefits to the consumer (Szymańska, 2012). Ecological products, due to a different production process, have a higher quality and bring greater benefits to consumers in the form of, for example, food free from plant protection products, thanks to which they differ from conventional products. Therefore, the equality mark cannot be put between these two types of products.

Growing demand for organic food, combined with the EU subsidies and entrepreneurial ownership, has influenced the development of business models, an important part of which is an ecological product (Hermaniuk, 2018). Agritourism is an example of such model, because the offered ecological products are an additional asset, influencing the attractiveness of a given place. It should be remembered, that the concentration strategy can turn into a differentiation strategy. In the case of organic production, one can speak about the occurrence of such a phenomenon.

The strategy of cost leadership consists in generating lower production costs, compared to competitors, without reducing the quality of products (Lubomirska-Kalisz, 2015).

The effect of applying a strategy is precision agriculture. The main element is farm management, supported by computer systems and GPS technology, to collect and analyze data on, among others, spatial diversity of crops in the field area. Data registration takes place, for example, while using a combine harvester equipped with a crop meter and GPS technology. Collected data, after proper processing, allows to create field maps. Maps prepared in this way

are used to identify areas for mineral requirements and then for point fertilization (Arseniuk, 2018). Introduction of precision agriculture into the structure of a farm has the following advantages (Walaszczyk, 2012):

- reduction of production costs,
- creating maps, concerning, for example, the use of mineral fertilizers,
- increase in production efficiency,
- acquiring knowledge about field variability,
- ensuring the optimal biological balance of the natural environment,
- reducing the negative impact of farm activities on the natural environment.

The use of precision farming systems is an example of technological innovation applied to an agricultural holding. Technological innovation is based on the results of scientific works and research activities (Szymańska, 2012). Precision farming is a whole set of research and technological processes, that create a system of agricultural activity. The systems, among others, adapt the elements of agrotechnics to changing conditions on particular cultivated areas. They can be defined as management using information technology in order to obtain greater benefits, while reducing costs and environmental contamination. It should be emphasized, that innovation can also be applied in other areas of the farm, such as animal husbandry or processing (Walczak, 2018).

The strategy of differentiation, similarly to the concentration strategy, is used in farms. It is about creating a unique value for the client. It may refer to such elements as: brand, product design, product features, sales network. The main assumption of the strategy is to distinguish the product features valued by the client from competitors.

Diversification allows to achieve an above-average profit rate, because it allows to maintain and increase market share (Lubomirska-Kalisz, 2015). Examples of applying the strategy of diversification in agricultural holdings, in addition to the organic production mentioned above, are regional and traditional products. Both types of products can be described with the term "brand", because they can be a showcase of both a region, not necessarily understood in geographical categories, as well as a farm (Jęczmyk, 2015). The cultural diversity of countries and regions in Europe is its great asset, which is why the idea of protecting agricultural products related to traditional production and of regional origin is an important element of the economy's development. Building a competitive advantage based on them is an important direction of farm dynamization, because it allows to obtain an additional or main source of income and reduce unemployment. In addition to that, the national and European legal system gives producers a chance to protect products, and thus ensure an advantage in the market (Grębowiec, 2017). Products created in this way include products, such as:

- jabłka sandomierskie (apples from Sandomierz),
- truskawka bielińska (strawberries from Bieliny),

- czosnek wójczański (garlic from Wełecz),
- fasola korczyńska (beans from Korczyn).

These, and many others, are the result of the application of the diversity strategy on the farm. Taking advantage of the opportunity, farms, in addition to the possibility of distinguishing their product, also gained legal protection against attempts to introduce other products under the same name. Brand building based on registered regional products allows the farm to distinguish them from other entities. Advertising and reaching customers is significantly simplified, because the name of the product gives the customers an idea of the quality level. Recognizing the benefits, and wanting to strengthen the effect of selling regional and traditional products, farms often also offer the possibility of buying them on the farm itself.

Innovation in the form of a traditional or regional product, that occurs as a result of application of the strategy, can be described as a marketing innovation. It involves using a new marketing method, resulting from a strategy or concept that is significantly different from the one used so far by the company. It may be related to the way the product is promoted or the change in its appearance. Marketing innovations also mean a modification of the image of a product or packaging and the development of a trademark and its application. The aim of marketing innovation is to increase sales by opening up to new markets, improving the product positioning system and satisfying customer needs (Szymańska, 2012). Customers' willingness to attach to the brand can bring relative benefits in the form of their loyalty, education and the habit of using the offered products. The effect can be strengthened by assigning the product to a specific region or farm. The product thus promoted gains uniqueness, a certain type of prestige and, thus, a different image in the minds of consumers against similar products.

Diversification is a strategy used in farms and consists in going beyond the previously serviced market. Applying the main division should be distinguished by related and non-related diversification. For the needs of this work, attention was focused on related diversification, which involves expansion into new markets, but those for which the entity has qualifications. The service of new markets is, therefore, similar to the existing scope of activity, which means there is no need to acquire new skills, on the contrary, it is a chance to develop already existing ones (Johnson, Scholes, Whittington, 2010).

Implementation of the diversification strategy in farms is expressed, inter alia, in the form of agricultural and non-agricultural services, such as agritourism. As a result, it is possible to manage unused resources, such as free rooms or working time. Table 2 presents the number of agritourism lodgings in Poland, along with the division into voivodeships.

Table 2.
Number of agritourism lodgings in Poland

	2013	2014	2015	2016
Dolnośląskie	70	64	67	71
Kujawsko-Pomorskie	19	19	23	24
Lubelskie	27	28	30	33
Lubuskie	25	22	23	26
Łódzkie	21	26	24	26
Małopolskie	90	100	96	89
Mazowieckie	45	40	41	44
Opolskie	13	16	16	16
Podkarpackie	73	72	67	66
Podlaskie	62	56	61	51
Pomorskie	94	89	88	85
Śląskie	44	42	43	42
Świętokrzyskie	30	36	40	38
Warmińsko-Mazurskie	78	89	88	88
Wielkopolskie	72	71	69	68
Zachodniopomorskie	37	34	35	35
Poland total	**800**	**804**	**811**	**802**

Source: own study based on: Statistics Poland, 2014, 2015, 2016b, 2017b.

Analyzing the above data, one can get the impression that it is not a very popular form of business. In fact, many farms, for various reasons, do not report such activities to municipal offices. Due to the lack of such important information, the actual estimation of the strategy implementation level is problematic. It should be noted, that the number of agritourism farms does not undergo a significant upward or downward trend, and in many regions, it is even stagnant.

The disadvantage of agritourism is the difficulty in implementing it in every farm. Chances of success grow when the farm offers unique environmental and natural conditions. The ability to combine agricultural activity with the environmental values of a given region gives grounds for possible success. A few elements should be distinguished, which make the agritourism offer of farms attractive. Factors that present significant value for the client are (Marcinkiewicz 2013):

- the opportunity to observe and participate in the life of the farm,
- the location in independent buildings or on the edge of the village surrounded by fields and attractive due to peace and silence,
- the opportunity to relax by the water, with the chance to practice water sports and fishing,
- holidays in the saddle, or the possibility of horse recreation,
- cultural values,
- ecological food,
- rest for families with children,
- ecological education,
- green schools.

The list of advantages increasing the attractiveness of an agritourism farm offer may be longer. The maximization of attractiveness is influenced by combining several assets within one entity. One should also remember about the risks associated with the implementation of the diversification strategy in this form. The risk results, among others, from the vulnerability to factors, such as the weather, on which the entrepreneur has no influence, and seasonality, which plays a significant role in the intensification of its operations.

Agritourism and agricultural services are examples of implementing organizational innovations in an agricultural holding. Innovation consists in changing the functioning of an entity by making an organizational transformation. The implementation of non-agricultural activities in the form of agritourism or agricultural services is associated with rationalization and an attempt to adapt to the expectations of customers. It does not require any sudden changes from the entity, as the basic activity favors serving the new market. This is because agritourism and agricultural services do not diverge in the nature of the operation from how the farm has been operating so far (Szymańska, 2012).

4. Summary

The functioning and development of farms are increasingly often influenced by the strategies implemented in them, allowing to set the direction of development and achieve a competitive advantage in the market, as a result of which net income is achieved. The strategies of concentration, differentiation, cost leadership and diversification presented in the work are only a few selected ways of dynamizing the development of a farm. Nevertheless, they show a wide spectrum of possible routes to achieve the goal.

As a result of a strategy, innovations are introduced, that have a significant impact on the development of agricultural holdings. They occur in the form of services, products, processes or technologies owned or offered by the entity. They become a key factor affecting the production and help in maximizing income. The importance of innovation in building the market position has undoubtedly been noticed, especially after Poland's accession to the European Union, by a wide group of farmers. An example is the increase in the number of organic farms.

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