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ANALYSIS OF THE COMPETITIVE POTENTIAL OF ORGANIC HORTICULTURAL HOLDINGS (RESULTS OF RESEARCH)

ANALIZA POTENCJAŁU KONKURENCYJNEGO EKOLOGICZNYCH GOSPODARSTW OGRODNICZYCH (WYNIKI BADAŃ)

Key words: organic farming, competitiveness potential of farms, material and immaterial resources
Słowa kluczowe: rolnictwo ekologiczne, potencjał konkurencyjny gospodarstw rolnych, zasoby materialne i niematerialne

Abstract. The paper presents the outcome of the competitiveness potential analysis in organic horticultural holding. The analysis is based on the survey conducted among organic and conventional farms in the Lublin Province. The author gives a definition of the competitive potential and presents an example of the competitiveness potential structure of the individual farm. On the basis of the conducted research, the author tries to identify the sources of the competitive advantage of organic farms. For that purpose, most of the material and immaterial resources have been analyzed separately.

Introduction

In the time of globalization, food market operators have to face strong competition under the market economy. Economic entities try to make the most competitive offers regarding price, quality and other transactional characteristics [Kamerschen, McKenzi, Nardinelli 1991]. We can say that strong competition stimulates their growth and development. The competitiveness capability of these entities is determined by their competitiveness potential which consists of material and immaterial resources that the entities administer. Farmers use various tools to create, enhance and maintain their competitive advantage. The methods will be more efficacious if they are based on the strengths of the farmers.

The aim of the paper is to present the results of analysis of the organic farmers' competitiveness potential. The analyses are based on the survey conducted among horticultural holdings in the Lublin Province.

Material and methods

The competitiveness potential of organic farms was evaluated on the basis of research conducted among two groups of farmers (using organic and conventional methods of production) in the years 2007-2008. The horticultural holdings investigated were located all over the Lublin Province. Producers whose farms had been certified for at least five years were interviewed. Both samples were representative of general populations. The author personally interviewed 83% of the farmers. The rest of the respondents filled in a questionnaire by themselves and posted it. There were no differences between the results obtained from the interviewed farmers and the respondents filling in a questionnaire on their own.

Competitive potential

The competitiveness potential can be defined as „the system of both material and immaterial resources which allow the enterprise to compete efficaciously on the global market" [Godziszewski 1999]. Only some of the resources are crucial to effective and efficacious performance. The competitiveness potential consists of the resources that the farm owns, uses and administers. The resources may belong to the producer, his suppliers, partners and consumers' bodies. It should be

beneficial to have an access to a wider range of resources such as knowledge, competences, infrastructure, equipment and investment capacity [Adamowicz 2007].

Recently, the significance of immaterial resources has been emphasized. Even if we cannot see the immaterial resources, they are valuable for the economic entity. However, we cannot evaluate them until the enterprise is sold. The profitability and competitive advantage of the enterprise is usually based on the immaterial resources. We can compare them to the roots of a tree. The trunk, branches and leaves are visible like an enterprise on the market. Intellectual capital is invisible but presents a great value for the enterprise like roots for the trees [Skrzypek 2003].

The whole theory of enterprise competitiveness can apply to farms to a very limited degree because farmers operate on the markets with near-perfect competition. Polish producers of organic fruit and vegetables hardly compete with each other but they compete with producers of conventional fruit and vegetables on the domestic market and with the producers of both organic and conventional fruit and vegetables from abroad. That is why we should analyze the competitiveness of the entire market segment made up of organic horticultural holdings. We can find an example of the competitiveness potential structure of the individual farm in Table 1. All the resources have been divided into seven categories. Two of them consist of material resources (financial and objective resources), and the other five are immaterial ones (market resources, intellectual capital, people, organizational resources and relational resources) [Bratnicki 2000].

Table 1. The competitiveness potential of the individual farm (suggested example)

Material resources		Immaterial resources				
Physical resources	**Financial resources**	**Organizational resources**	**Market resources**	**Human resources**	**Relation resources**	**Intellectual capital**
Land Location Buildings Technical infrastructure Means of transport Machinery Techniques and techno-technologies Stock	Net assets Market size Return on own capital Cash and amounts due Loans and credits Liquidity Access to external financial sources	Farm size Organizational structure Developed processes and rules Strategy and operating systems Quality management System of decision making Job organization Distribution and logistics organization	Suppliers and customers network Formal and informal relationship with other farms Contacts with consumers	Competences, skills, experience and knowledge Willingness to learn and self-develope Ability to follow the market Entrepreneurship Involvement Innovation and creativity Elasticity Risk inclination	Cooperation with other holdings Cooperation with suppliers and customers Relationship with employees Labour relations Employees loyalty Reputation of the farmer, his family and farm Contacts with institutions which administer a great knowledge (universities, R&D units, advising and training units) Relations with inspection bodies Informal relationship with decision-makers Ability to lobby in favor of farm	Technologies and processes Quality certificates Network or alliance membership (e.g. cluster, producers' group, association) Innovations Information and communication Unique abilities

Source: own calculations on the basis of research conducted in the Lublin Province, Kurek 2005.

Results and discussion

Initially we can say that the investigated conventional farms had better competitive conditions than the organic farms surveyed. This is shown by the following properties:

– the marginally larger conventional farm area (15.8 ha UAA) than the organic farm area (14.7 ha UAA),
– a higher percentage of large farms (30 ha UAA and more), organic farms – 4.7%, conventional farms – 16.7%,

– marginally better soil quality,
– a somewhat more convenient land stretch,
– a bigger share of orchards in the utilized agricultural area (organic farms – 29.1%, conventional farms – 36.7%),
– a bigger area of orchards in an average farm (organic farms – 4.3 ha, conventional farms – 5.8 ha),
– a bigger share of industrial crops in the utilized agricultural area (e.g. tobacco, sugar beet and rapeseed); organic farms – 0.9%, conventional farms – 3.8%,
– a smaller share of permanent pasture and hay-meadows in UAA (organic farms – 14.7%, conventional farms – 7.9%).

Table 1 was used to analyze the competitive potential of the investigated organic farms. In spite of technical progress, the main means of agricultural production is land. It cannot be replaced. To price the land of the investigated farms an estimation rate method was used. This rate was calculated on the basis of the type of agricultural area, soil quality and economic region in which the lot is located. A standard used in the pricing depends on a certain amount of rye yield [Bud-Gusaim 2005]. When the farm land was priced with this method, it turned out that in 2006 the value of land in the investigated farms was:

In organic farms	In conventional farms
18 429.44 PLN per 1 holding	25 053.97 PLN per 1 holding
1 657.21 PLN per 1 ha UAA	2 034.63 PLN per 1 ha UAA

This method of land evaluation may be good for comparisons but it does not show the market value of land. The following data of 2006, published by the Statistical Office in Lublin, evidence this: arable land, class I, II, IIIa – 10 153 PLN per ha, class IIIb, IV – 7540 PLN per ha, class V, VI – 5269 PLN per ha. The share of permanent pasture and hay-meadows in the global area of the surveyed farms was not so big that the price of land was so much lower. An asset of this method is that it takes into consideration three important factors affecting the price [Bud-Gusaim 2005][1] .

The competitive advantage of conventional farms in this field comes from a smaller share of permanent pasture and hay-meadows in the global area and higher soil quality. It should be mentioned that this method of pricing farm land does not take into consideration the method of production. It is possible that soil management matters when farm land is priced. The more so that organic methods of production enhance soil fertility and productivity [Babik, Kaniszewski 2005].

The buildings owned by the investigated farms were valued on the basis of the insurance policy for 2006. The average value of the buildings in 2006 was as follows:

Buildings	Organic farms	Conventional farms
Farm buildings [PLN]	70 181.36	136 068.66
House [PLN]	96 870.27	104 552.17
All the buildings [PLN]	167 051.63	240 620.83

The average value of the buildings was higher in conventional farms. It was mainly the result of more frequent presence of cold stores (with an average value of 165 000 PLN). The value of farm buildings in conventional holdings also increased due to piggeries and tobacco drying houses (the scale production of pigs and tobacco was much higher in conventional farms).

Unfortunately, we did not manage to get sufficient data to evaluate the irrigation system of the investigated farms. Similar percentages of organic and conventional farms had an irrigation system (about 40%), this being mostly a droplet watering system. A few farms had also sprinkling machines. Nor did we get sufficient data to price the orchards and the livestock of the investigated farms.

A reconstruction method was used to price means of transport and farm machinery. This method consists in a seeking the current value of exhaustible tangible resources which are in use

[1] It is a simplified procedure of pricing farm land because the method does not take account of the land stretch, surroundings, soil management, technical, economic and social infrastructure, and demand.

and still in working order [Bud-Gusaim 2005]. A reconstruction value equals the cost of gaining the same or very similar tangible means [Gębska, Filipiak 2006]. The value of means of transport and machinery in the investigated farms was based on an estimate by respondents and Internet auctions. Table 2 presents the value of these assets. We can see in Table 2 that the investigated organic farms did not have an advantage over conventional farms in the means of transport and machinery.

Localization of the investigated farms is another physical resource. The investigated organic farms were situated in a better way than conventional farms (taking into consideration the tax zone).

Table 2. The value of means of transport and farm machinery in the farms surveyed (at the end of 2006)

Value of means of transport and farm machinery	Organic farms	Conventional farms
Per 1 holding [PLN]	101 301.00	139 850.00
Excluding passenger vehicles per 1 holding [PLN]	90 005.08	122 884.62
Per 1 ha UAA [PLN]	6 813.84	7 982.50
Excluding passenger vehicles per 1 ha UAA [PLN]	6 054.04	6 933.43

Source: own study.

Table 3. Financial results of the investigated organic and conventional farms (2006)*

An average gross agricultural income	Organic farms	Conventional farms
PLN/1 ha UAA	3 934.79	2 574.05
PLN/1 holding	60 282.70	40 568.75
PLN/1 household member	13 911.39	7 606.64

* in 2006 all the organic farms were profitable, while 93% of conventional farms obtained positive financial results.
Source: own study.

Financial resources make up another component of the competitive potential of farms. The value of agricultural gross income, calculated by subtracting direct and indirect costs of production from the final gross output [Kuś 2005], is expressed as per 1 holding, 1 ha UAA and 1 household member (Tab. 3). Despite the somewhat better organizational and productive conditions in the investigated conventional farms, their earning capacity was smaller for each indicator (Tab. 3).

To judge the competitive advantage of investigated organic farms in terms of income, we can also use the data from public statistics. The average monthly available household income per 1 agricultural household member in 2006 amounted to: 1 132.68 PLN in the organic farms surveyed and 464.84 PLN in Poland [Rocznik Statystyczny Województw 2007]. Therefore, the average monthly available household income per 1 household member in the researched organic farms was almost 2.5 times higher than the average monthly available household income per 1 agricultural household member in Poland (Tab. 3)[2]. Moreover, more than half of the investigated organic farms had additional sources of income. Most often these were a full-time job, old-age or disability pension, an occasional job, running a purchasing center for soft fruit (on commission), non-agricultural activity of the agricultural holding and a combination of above-mentioned sources of income.

Even if we do not take into consideration non-agricultural sources of income, it turns out that the average monthly available household income per 1 household in the researched organic farms was more than twice higher than the average monthly available household income per 1 household in Poland (Fig. 1). The good financial standing of the organic farms also results from the higher monthly available household income per 1 household than the average values of monthly available household income per 1 household in all types of households in Poland (Fig. 1). A higher income means a better ability for investment, self-development and creating efficacious competitive tools.

The competitive potential of the investigated farms can be enhanced by an easy access to external financial sources. When this survey was conducted, the studied organic farms were mostly supplied with fertilizers and pesticides by the purchasers of their products because these means of production were not freely available on the market. The organic farmers usually signed a contract with their buyers who delivered fertilizers and pesticides in advance. The payment was deferred until the farmers delivered their fruit and vegetables. The studied conventional farmers usually bought fertilizers, pesticides and herbicides in the local stores which credited their sales charging a low interest rate. Hence, we can say that the studied organic farms had a somewhat easier access to external financial sources.

[2] The average monthly available household income per 1 household member in the surveyed conventional farms amounted to 613.36 PLN and was also higher than the average value of the income in Poland.

Subventions are another external financial source. Taking into consideration all the support for Polish organic farms financed from both European and national funds, it turns out that the biggest payment comes from the agri-environmental programme under the Rural Development Programme (2004-2006 and later 2007-2013) [Sazońska 2007]. All the investigated farmers, who used organic methods of production, benefited from this programme. The average payment was up to 13 120 PLN per 1 organic farm. It was 58% of the total sum of subsidies that the farms received from public funds in 2006 and 13% of their average agricultural gross income. The possibility of benefiting from the agri-environmental programme gives the organic farms a competitive advantage.

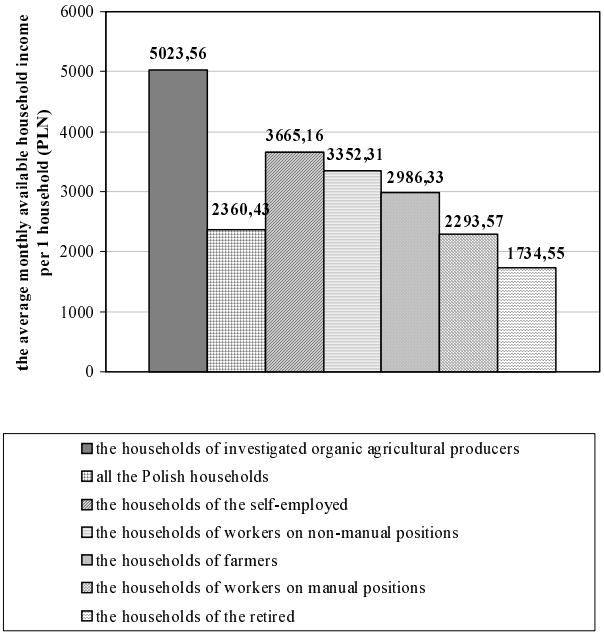

Figure. The average monthly available household income in the investigated organic farms and respective types of Polish households (2006)
Source: own calculations on the basis of conducted research and Rocznik Statystyczny Rolnictwa... 2007.

Farm size is a crucial organizational resource of each agricultural holding. In 2006 the average area of an organic agricultural holding in Poland equaled 21.43 ha UAA. Thus, it was 2.8 times bigger than an average private farm in Poland (with area of 7.7 ha UAA). The average area of the investigated organic farm (14.69 ha) was smaller than the average area of an organic agricultural holding in Poland in 2006 but it was still almost twice bigger than an average private farm in Poland and more than twice bigger than an average private farm in the Lublin Province (6.5 ha) [Rocznik Statystyczny Województw 2007]. Larger farm size determines a larger production scale, which should be beneficial, resulting in lower costs of production, sales facilitation and in better terms of contracts.

Connections with suppliers and customers make up an important part of the immaterial resources of organic farms. The survey showed that the connections of organic farms with their suppliers and customers were more advantageous. The investigated organic farmers more often signed long-term agreements with their customers; they had more opportunities to negotiate purchase and selling prices; their contractors were more likely to meet the dead-line; in the organic farmers' opinion, their customers were more satisfied with their offer.

The specific character of relations between the organic farmers and their contractors arises from the meetings and trainings organized by the contractors and from visits paid to the farmers. Hence the farmers are not anonymous for their contractors.

The fundamental element of immaterial resources in any enterprise are the people. On average, the owners of investigated farms were 44-45 years old. Consequently, they had considerable experience in running a farm (usually more than 20 years). Most of them completed secondary education. The level of official education was somewhat higher in the case of the owners of the studied conventional farms. However, in the author's opinion, the farmers running organic agricultural holdings are exceptionally knowledgeable about organic methods of production and keep up with the market changes. Moreover, they are more eager to keep the records of their farm income and expenditures. These records allow the farmer to forecast the future production and financial standing of his farm. The studied farmers using organic methods of production are exceptionally open to innovation, have receptive minds and are not afraid of novelty. All the organic farmers try to expand their knowledge about the technology of production and the organic market structure,

while only about 20% of the studied conventional farmers tried to expand their production and market knowledge[3]. Table 4 presents how the studied farmers deepen their knowledge.

We can see in Table 4 that almost all of the studied organic farmers deepen their knowledge by continuous participation in trainings, seminars and conferences. The meetings are usually organized by purchasers and public Agricultural Extension Service Centers. During the meetings the farmers establish and maintain contacts with other producers, suppliers, purchasers and advisory bodies. Most of the organic farmers cooperate with other participants in the food chain. Such cooperation enlarges the relation resources of the farms. By being part of the wide cooperation network, the farmer may take advantage of the resources owned and controlled by other participants of the food chain. Most of the studied organic farmers read specialist books and periodicals. Although the community of the organic farmers in the Lublin Province is expanding all the time, the producers know each other. They are usually friendly and helpful towards one another; they cooperate rather than compete.

Table 4. The ways of deepening the farmers' knowledge about the methods of production and the market

The ways of deepening farmers' knowledge	Organic farms		Conventional farms	
	number of indications (N=53)	test trial percentage (N=53) [%]	number of indications (N=27)*	test trial percentage (N=27) [%]
Trainings, seminars, conferences	50	94,3	5	18,5
Cooperation with other participants in the food chain	44	83,0	-	-
Specialist literature	43	81,1	1	3,7
Food fair	30	56,6	-	-
Internet	5	9,4	-	-
Receiving trips	5	9,4	-	-
Participation in trips	4	7,5	-	-

* 27 conventional farmers answered this question so the test trial equals 27 (not 30).
Source: own study.

The conducted research indicates that continuous development is one of the characteristics of organic farms. More than 95% of the owners of organic farms admitted that they developed their holdings (while only about 60% of conventional farmers developed their holdings). The ways of this development vary, which evidences, inter alia, the organic farmers' innovative attitude. About one third of the organic farmers are going to enlarge the farm size and the production scale. However, they have some problems with that because of the lack of offers of farmland sale or lease. Only two of the conventional farmers plan to enlarge their farms. About 30% of both organic and conventional farmers are going to modernize their holdings by buying a high-tech equipment. They often plan to upgrade the quality of fruit production by using high technology. The organic farmers focus on adjusting to the market requirements. That is why many of them are planning to increase production of soft fruit which is most desired on the Polish organic market. To keep pace with the market the organic farmers introduce new plant species, produce to order, widen the range of products, change the production structure etc. It is always risky to change a specialization of production as one is often likely to suffer a loss in the beginning. The organic farmers' inclination to take such a risk means that organic production is profitable and they can afford a possible loss. We should also mention the novel projects of organic farmers such as building a drying-room for fruit and vegetables, taking advantage of solar energy in a farm, building a cold store etc. Typical resources of organic farms comprise progressive improvement and development, involvement in farm issues, ability to keep pace with the market, the spirit of enterprise, willingness to take a risk, innovations and creativity. These resources were also found in conventional farms but this is not a representative sample of Polish farmers.

[3] It seems to be important to mention that some farmers noticed that most agricultural consultants focused on subsidies from EU funds and neglected production matters. At the same time the farmers postulated that paid advisory services in agricultural production should be developed.

The competitive potential is also built with intellectual capital. This capital is created by the organic certification process. The certificate is an evidence of the fact that the process of production met the requirements of organic agriculture and the production was controlled. The certificate guarantees high biological quality of agricultural products which results from the condition of the environment. The competitive advantage of organic farms should be based on the quality of products. Intellectual capital is also created by the unique skills of organic farmers. Running an organic farm requires special knowledge and skills. Comparing the number of organic farms (3504 in 2006) with the total number of individual farms in Poland (1 806 395 in 2006), we can say that only 0.19% of the farm owners acquired this special knowledge and skills [Rocznik Statystyczny Województw 2007, Rocznik Statystyczny Rolnictwa… 2007].

Conclusions

The competitive potential analysis in the investigated farms showed that the farmers using organic methods of production did not have an advantage over conventional farms in the most categories of material resources (the value of farm land, buildings, means of transport and machinery). We can notice an advantage of the organic farms over the conventional farms in terms of immaterial resources which are a weighty assets of the organic farms. The immaterial resources comprise relations with suppliers and purchasers, cooperation with other farmers, continuous deepening of the knowledge about methods of production and market issues, progressive improvement and development. It is important to note that in 2006 the gross agricultural income of organic farms per 1 ha UAA was higher than the income of conventional farms (even if we assume that the investigated conventional farms had better initial competitive conditions than the surveyed organic farms). What is more, the average monthly available household income per 1 household in the investigated organic farms in 2006 was much higher than the average monthly available household income per 1 agricultural household in Poland (and in all types of households in Poland). Agricultural income can be treated both as a financial resource and as a result of competition which testifies to the farm's competitiveness position.

Bibliography

Adamowicz M. 2007: Sieci współpracy, grona i terytorialne systemy produkcyjne jako koncepcja rozwoju obszarów wiejskich. *Rocz. Nauk. SERiA*, t. IX, z. 2, p. 15-21.

Babik I., Kaniszewski S. (red.) 2005: Ekologiczne metody uprawy warzyw. CDR w Brwinowie Oddział w Radomiu, Radom, p. 8.

Bratnicki M. 2000: Kompetencje przedsiębiorstwa. Agencja Wydawnicza Placet, Warszawa, p. 48.

Bud-Gusaim J. 2005: Taksacja rolnicza. Wyd. SGGW, Warszawa, p. 56, 157-158.

Gębska M., Filipiak T. 2006: Podstawy ekonomiki i organizacji gospodarstw rolniczych. Wyd. SGGW, Warszawa, p. 35.

Godziszewski B. 1999: Potencjał konkurencyjności przedsiębiorstwa jako źródło przewag konkurencyjnych i podstawa stosowanych instrumentów konkurowania. [W:] Budowanie potencjału konkurencyjności przedsiębiorstwa (red. M.J. Stankiewicz). TNOiK „Dom Organizatora", Toruń, p. 77.

Kamerschen D.R., McKenzi R.B., Nardinelli C. 1991: Ekonomia. Fundacja Gospodarcza NSZZ „Solidarność", Gdańsk, p. 46-48.

Kurek A. 2005: Kapitał intelektualny w rozwoju rynku żywnościowych produktów ekologicznych w Polsce. [W:] Materiały VIII Międzynarodowej Konferencji Naukowej „Kapitał intelektualny jako szansa na poprawę jakości zarządzania w warunkach globalizacji" (red. E. Skrzypek). UMCS, Lublin, t. I, p. 445-460.

Kuś J. i in. 2005: Kompleksowa ocena gospodarstw ekologicznych oraz wybrane aspekty funkcjonowania rynku żywności ekologicznej. IUNG-PIB, Puławy, p. 18-19.

Rocznik Statystyczny Województw 2007. GUS, Warszawa, p. 48, 114, 612.

Rocznik Statystyczny Rolnictwa i Obszarów Wiejskich 2007. GUS, Warszawa, p. 211.

Sazońska B. 2007: Przestawianie gospodarstwa rolnego z produkcji konwencjonalnej na ekologiczną. CDR w Brwinowie Oddział w Poznaniu, Poznań, p. 3-6.

Skrzypek E. (red.) 2003: Miejsce zasobów niematerialnych w kształtowaniu wartości przedsiębiorstwa. [W:] Materiały VI Międzynarodowej Konferencji Naukowej „Wpływ zasobów niematerialnych na wartość firmy". UMCS, Lublin, t. I, p. 63-67.

Streszczenie

W pracy zaprezentowano wyniki analiz dotyczących potencjału konkurencyjnego ekologicznych gospodarstw ogrodniczych. Analizy oparto na własnych badaniach empirycznych przeprowadzonych w dwóch grupach gospodarstw – ekologicznych i konwencjonalnych, w województwie lubelskim. Przedstawiono definicje potencjału konkurencyjnego oraz przykładowe elementy struktury potencjału konkurencyjności indywidualnego gospodarstwa rolnego. Autorka, na podstawie badań własnych, podjęła próbę identyfikacji źródeł przewagi konkurencyjnej osiąganej przez gospodarstwa ekologiczne. W tym celu analizowane są poszczególne materialne i niematerialne zasoby badanych gospodarstw.

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