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ORGANIC FARMING AS REGIONAL SMART SPECIALIZATION IN PODLASIE IN LIGHT OF QUANTITATIVE AND QUALITATIVE RESEARCH

Key words: organic farming, development barriers, smart specialization, Podlasie

ABSTRACT. The article aims to present the results of research on the prerequisites for the development of organic farming in a region recognized as Regional Smart Specialization. Due to growing consumer interest in the standards of food available on the market, the list of National Smart Specializations includes an entire section dedicated to "High quality food" and under it the "Production of organic, traditional and regional food". Only few Polish voivodships placed this sector on the regional list, thus giving organic farming priority in the process of financing research and investment. The voivodship, which not only excels in the statistics of organic production in the country but, what is important, treats this activity as its smart specialization is the Podlaskie voivodship. To assess the conditions for the development of organic farming in Podlasie, the data regarding the number of certified organic farms as well as the opinions of local stakeholders concerning the future of this sector in the region were analyzed. Including qualitative research results in the analysis process allowed to indicate the prognosis for the possible development of this sector in the voivodship.

INTRODUCTION

Society in the 21st century is increasingly discussing issues of environmental protection, sustainable development, and the necessity to care for natural resources. Global trends are reflected not only in international agreements, but also in the substantiation of local policies. The upcoming financial perspective (after 2020) of the European Union's policy in the field of agriculture and food production will also largely reflect growing interest in environmental issues, the best example of which is the so-called European Green Deal presented on December 11, 2019 by the newly established European Commission [EC 2019]. One of its goals is the production of safe and high-quality food. Organic farming practices are the focus of not only policy-makers, but also society in general (consumers) – as they combine sustainable agri-food production methods with the production of high-quality food. Therefore, there is a need for scientific research on factors determining the interest of agricultural producers, local governments and institutions related to the agricultural sector towards the implementation of pro-environmental and sustainable food production techniques [Jasiński et al. 2014]. Special importance within this research issue is

directed towards the assessment of organic farming in terms of its efficiency[1] [Bańkowska et al. 2018] and socio-economic sustainability [Drygas et al. 2017][2].

Since 2013, a team of scientists from the Institute of Rural and Agricultural Development of the Polish Academy of Sciences (IRWiR PAN) researches conditions for the development of organic farming. In this article, based on data obtained within several projects conducted by IRWiR PAN, a brief synthesis of research results on the development of organic farming in a region recognized as Regional Smart Specialization is presented. An attempt was also made to compare the results and conclusions drawn in nearly simultaneous quantitative and qualitative research within two independent projects devoted to the determinants of organic farming development in Podlasie.

MATERIAL AND METHODS OF RESEARCH

Several reasons predetermined the choice of the Podlaskie Voivodship for this research. It is a special region on the map of Poland, which from a 2014-2020 perspective indicated the production of organic food as its smart specialization. Its specific nature is also evidenced by selected indicators of development potential [Nazarczuk 2013, p. 92], such as a relatively high (31.6% in 2016 [GUS 2017, p. 267]) share of protected areas and the lowest population density in the country [GUS 2019, pp. 68-69]. As Andrzej Mantaj et al. [2017] indicates, there is a strong relationship between population density and socio-economic development, which, in the case of rural areas, determines the persistence of ongoing processes. In 2018, within two independent research projects implemented in the Podlaskie Voivodship (KSOW Podlasie[3], LIFT[4]), the IRWiR PAN team conducted quantitative and qualitative research aimed at collecting data and opinions illustrating the conditions and development potential of organic farming in the region.

Quantitative data (covering 2016-2018) obtained from the database of the Main Inspectorate of Agricultural and Food Quality Inspection in Warsaw (GIJHARS) were used to assess the production potential and development conditions for the market production of organic products in the Podlasie region. Based on detailed data for 2017 from 1,068[5] certified organic farms (recognized as potentially market-oriented), an in-depth analysis

[1] In order to verify economic viability of particular types of production based on the continuous application of organic farming practices with a positive or neutral impact on the environment (see [Tyburski 2017]).

[2] The proof of issue relevance is the placement of "Production and the evaluation of quality of organic, traditional and regional foodstuff" on the list of National Smart Specializations [MR 2019]. They define economic priorities in the area of research, development and innovations, the identification of which should enable to reveal economic and scientific areas, in which the national economy has a chance to standout on an international arena. Organic farming was chosen as one of the Regional Smart Specializations of the Podlaskie Voivodship [RPWP 2015].

[3] Financed by the framework of KSOW Podlasie project "Barriers related to the production of organic foodstuff in the Podlaskie Voivodship" [Bańkowska et al. 2018].

[4] LIFT: Low-Input Farming and Territories – Integrating knowledge for improving ecosystem based farming [https://www.lift-h2020.eu]. This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 770747.

[5] The method for the selection of 1068 farms for analysis is elaborated in the full report [Bańkowska et al. 2018].

of the regionalization of organic crops and livestock production was carried out for the entire voivodship[6].

Qualitative data for analysis was taken from individual interviews of the KSOW Podlasie project [Bańkowska et al. 2018] and from the "hybrid forum" carried out in the LIFT project.

Information obtained within both projects concerned, among others, the advantages of Podlasie in terms of the possibilities to develop organic food production, institutional barriers to implementing ecological practices, as well as the issue of innovation in organic agricultural production. Objectives of the research were, among others, identifying and explaining how socio-economic and political factors influence the development of organic farming. As part of these projects, attempts were also made to assess the efficiency and sustainability of development of such an agricultural production system, the prospects for its further development in Podlasie, and whether organic farming can be a development factor on a regional scale.

RESULTS OF QUANTITATIVE RESEARCH

Quantitative analysis allowed to merge and compare the results describing the organic production and processing sector in Podlasie with nationwide data, as well as define local differences (in production, efficiency and structure) within the voivodship. The Podlasie region, in the analyzed period, was one of the leading producers throughout Poland in terms of the number of organic producers and area of arable land under organic production. During 2016-2018, Podlasie organic producers accounted for ca. 15% of overall organic agricultural producers in the country, which allowed to rank the voivodship top second in the country. In terms of arable land area under organic production, Podlasie ranked third nationwide.

In the certified organic farms area structure of Podlasie, in 2017 (Table 1), arable fields dominated (77%), permanent grasslands constituted 19.7% and orchard area equaled 2.9%.

It should be noted that as much as 47% of the area used by certified organic farms (on a voivodship scale) was for land cultivated with fodder crops. Organic farming regulations allowed for the sole certification of crops without the necessity to certify the production of livestock (if applicable) – that is why not all of the surveyed farms, despite showing cultivation of fodder crops, declared organic livestock production. Analysis of quantitative data also allowed to observe the regionalization of particular specializations of researched farms[7].

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[6] It is worth mentioning that quantitative analysis has shown that – according to the implemented methodology – only ca. 30% of certified organic farms in the Podlaskie voivodship could be assumed to have a real potential for the commodity (market) production of organic foodstuff and raw materials.

[7] The region specializing in organic cattle farming (where over 60% of overall voivodship organic cattle was kept) was the Suwałki district, which had one of the highest fodder crop shares in the voivodship's structure. Almost 30% of all organic dairy cows in Podlasie were kept in this district, followed by Łomżyński district – 20% of all dairy cows in the voivodship and Bielsko (12%). Organic sheep production was concentrated mainly in the Hajnowski and Sokólski districts (they concentrated over 2/3 of the sheep population with an organic certificate in Podlasie – yet with no relevant increase in the share of fodder crops). 40% of organic laying hens were kept in two districts – Augustów and Suwałki. The district that stood out in the voivodship was also the city of Białystok, in which the share of orchards in the utilized agricultural area under certified organic farms exceeded 22%.

Table 1. The structure of the total production area of 1,068 certified organic farms in the Podlaskie Voivodship divided into districts

Districts	Total area [ha]	Structure of total area, including [%]			Structure of sown area, including [%]					
		orchards	permanent grassland	sown area	cereals	industrial crops	vegetables	leguminous crops	strawberries and wild strawberries	fodder crops
Augustowski	1,039.5	5.4	28.8	65.9	24.4	0.4	1.3	0.2	0.1	33.3
Białostocki	1,973.3	2.2	25.2	72.6	37.5	0.8	0.6	3.3	0.0	26.9
Białystok*	1,279.3	22.7	11.7	65.6	31.7	4.6	0.4	4.1	0.0	19.6
Bielski	1,102.1	5.5	20.6	73.9	39.1	7.8	1.7	1.9	1.0	16.1
Grajewski	406.0	1.1	28.1	70.9	30.8	5.9	0.2	1.3	0.0	29.5
Hajnowski	964.0	9.1	35.9	55.0	23.7	3.7	1.8	6.9	0.1	13.1
Kolneński	1,539.5	0.7	7.6	91.7	45.0	0.0	0.0	0.2	0.1	41.2
Łomża*	138.6	0.0	39.6	60.4	25.9	0.0	0.0	0.0	0.0	6.9
Łomżyński	1,428.3	2.3	27.4	70.2	44.9	0.4	0.7	3.4	0.1	16.5
Moniecki	183.4	0.9	13.3	85.8	10.8	35.3	3.7	0.1	0.0	35.2
Sejneński	1,970.7	1.2	13.4	85.4	31.1	0.0	0.4	0.3	0.0	50.2
Siemiatycki	882.5	8.5	5.4	86.2	31.1	10.7	3.5	10.3	0.4	27.9
Sokólski	3,013.8	6.0	20.4	73.7	48.9	0.2	1.2	9.7	0.6	11.6
Suwalski	9,291.4	2.6	11.6	85.8	21.9	0.1	3.0	0.6	0.1	59.1
Suwałki*	766.7	0.8	15.9	83.3	20.4	0.0	2.2	0.3	0.0	59.9
Wysokomazowiecki	423.9	27.2	20.0	52.9	14.3	0.5	0.5	1.5	0.0	27.0
Zambrowski	72.8	11.7	7.5	80.8	44.9	0.0	0.6	0.0	0.1	34.9
Voivodship (total)	2,6475.7	4.7	16.8	78.6	31.0	1.5	1.7	2.7	0.2	38.4

* city with district rights

Source: own aggregation based on [GIJHARS 2017, 2019]

RESULTS OF QUALITATIVE RESEARCH

The recognition of organic farming as a Regional Smart Specialization in the Podlaskie Voivodship should be supported by priority access to public funds (see Recommendations in Bańkowska et al. [2018]). Taxpayers financing public support measures are interested in supporting directions having a real impact on the existence of residents of a given region (see [Foray et al. 2011]). In order to legitimize the recognition of organic farming as a Regional Specialization, it is important to indicate the extent to which this sector provides its citizens with goods beneficial for the region's development (see Jasiński et al. [2014]). In order to research this issue, a workshop in the form of a "hybrid forum" was conducted in the Podlaskie Voivodship in 2018, the participants of which discussed whether organic farming could be innovative (Table 2). Bearing in mind that the perception of these issues may differ, from the point of view of individual groups of stakeholders, representatives of local governments and NGOs, farmers, consumers and people from the broadly understood agribusiness environment were invited to participate in the study.

An analysis of key opinions obtained as part of the LIFT "hybrid forum" shows that only farmers notice the need to bear the costs of innovation in organic farming. Other stakeholder groups do not deny innovations in organic farming or indicate that this technology is innovative in itself because it requires a large amount of knowledge. It should be noted, however, that in the opinion of consumers, innovation in organic farming should be less related to production methods, and to a greater extent to distribution, logistics and commercial processes that would make organic food cheaper. On the one hand, this may indicate that consumers consider organic food as food most often produced by traditional methods and, on the other hand, clearly indicate the need to reduce the price of organic products for the final recipient of this type of food.

At the same time, among the recommendations prepared by the team of researchers, based on individual interviews under the KSOW Podlasie project, was the indication that in the case that voivodship authorities decide to develop organic farming under Regional Smart Specializations, it would be wise to use the endogenous potential of the region, as it is a common association among the respondents (consumers) of Podlasie, who associate it with nature, environmental cleanliness and ecology in a broad sense. Perhaps it is worth betting on the promotion of Podlasie as "the most ecological voivodship in Poland" – in this case the development of organic food production would not remain in the sphere of discussion, but instead would become a necessity and a real development opportunity for Podlasie farmers and processors.

Farmers during both qualitative researches emphasized that achieving real profit from organic production is one of the key motivators for the implementation of ecological techniques and innovation. However, researchers have observed differences in perceptions and suggestions on how to overcome non-monetary development barriers voiced by other stakeholder groups. A key barrier voiced in most of the interviews was that the farmers in Podlasie show a great reluctance to associate and cooperate. In the opinion of respondents, a lack of assistance (support programme) dedicated to farmers willing to process agricultural produce and small processing plants is also an important barrier. In the development of local processing and increase in the value added of local production,

Table 2. Key opinions in the discussion "can organic farming be innovative?"

Types of stakeholders and their key opinions regarding the development and innovativeness of organic farming in the region
FARMERS: – The necessary condition for the transfer of innovation is the availability of adequate capital. – Organic farms are usually small and there is a need to combine their efforts and identify entities that could lead in this process. – Achieving real profit is one of the key motivators for implementing ecological techniques and innovation. – State support is of key importance for the transition to organic farming and the implementation of innovative practices in it. Currently, there are too many state institutions that perform control functions and too few institutions that are aimed at support and advice.
AGRIBUSINESS ENVIRONMENT: – Ecology is innovative by default. The use of ecological technologies requires vast knowledge, training, a reasonable reflection on the choice of means and methods, and the use of precise practices and tools. – It is necessary to make consumers aware of high-quality organic food and its relation to the price of the final product. – Education from an early age and the development of healthy habits among consumers, as a conscious consumer makes choices towards higher quality, not lower price.
AUTHORITIES AND LOCAL ADMINISTRATION: – There is a need to educate farmers about existing opportunities to switch to organic production and the availability of innovative solutions. – There is a need to support farmers producing locally, and thus influencing local natural resources in the process of finding buyers for their products. – The innovative role of local authorities could be joining the communication process between organic farmers and entities involved in processing.
NON-GOVERNMENTAL ORGANIZATIONS (NGOs): – Only limited time is available to minimize and reduce the effects of climate change, and an ecological approach to agriculture is one of the ways of achieving this goal in an innovative way. – Public understanding that ecological techniques are beneficial in the long term is needed.
CONSUMERS: – Innovation in organic food production should not be sought in farm production processes, but in distribution and storage. – It would be innovative to find solutions that would make locally produced food cheaper than foreign products available on the market, which would translate into shortening the chain of intermediaries between the farmer and the consumer, increasing the price availability of organic food.

Source: own research within LIFT project [2018]

interviewees also pointed to the opportunity to counteract the region's depopulation trends (especially in the context of the outflow of young people).

What came as unexpected was the relatively low creative approach of local authorities towards the development of organic farming – in particular in the context of including organic food production as one of the Regional Smart Specializations of the Podlaskie Voivodship. As part of the 2016 research carried out by the IRWiR PAN team, many positive, active and effective ways of engaging local governments in the development of organic farming were shown, which could potentially serve as a model – a specific set of good practices – for other LGUs [Jasiński, Śpiewak 2016].

Research among representatives of organic farmers, their associations and groups showed that there is a real need for local authorities (of all levels) to join in the preparation of professionally equipped facilities for organic food trade. Farmers clearly indicate that marketplaces themselves (so-called "biomarkets") are not all that is needed. They suggest that "local governments allocate funds for the functioning of places dedicated to the trade of organic products" – not ordinary marketplaces, but more of roofed premises (one or several) with refrigerators, refrigerated counters, etc. It is about preparing places where organic producers could sell their products locally (processed products, not just primary production). Farmers, based on their own experience, however, warned against errors evident in already implemented programmes dedicated to the creation of bazaars / local commercial markets – in their opinion quite often after the project financing ends all activities cease to continue without external funds. According to the respondents, there should be at least one such professional place for trading organic food in each district – but it would be sufficient to start with the creation of such facilities in key urban centers in a given voivodship, where a greater consumer awareness is present and a greater demand for organic products exists.

All stakeholder groups in both independent studies pointed to the important role of education and training of consumer awareness, especially in the area of developing new food consumption habits among the youngest citizens in the region.

SUMMARY

Information obtained within two independent research projects regarding the development of organic farming in the Podlaskie Voivodship indicates that there is a social consistency towards the perception of this economy sector as a regional specialization and potential development niche of the voivodship.

However, the practical implementation of this assumption – despite the natural advantages of the Podlaskie Voivodship, requires institutional efforts and the involvement of additional resources. Local farmers primarily point to the cost-intensive aspect of implementing ecological practices and innovation in this area.

Considering that – as quantitative research shows – only about 30% of certified organic farms in Podlasie could be considered as having real market (commercial) production potential with regards to organic food (or organic raw materials), it is impossible for there to be a positive prognosis for mass investments in ecological innovations. That is why, among the conclusions based on quantitative research, there is one that states there is a need to introduce a supporting programme aimed at investments for processing (mainly

for small producers), storage and trade – to increase the scale of production and agricultural income and also to lower the dependency of farmers on consumer behavior, in particular when the market price is low (unfavorable for farmers). Due to such support, a higher share of raw organic products would be processed in the region and would not go abroad with low value added. The development of the broadly understood service sector (processing, consulting, financial and technical) for organic farming could be a priority in regional development policy, being also an opportunity to counteract negative demographic trends in the voivodship.

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ROLNICTWO EKOLOGICZNE JAKO REGIONALNA INTELIGENTNA SPECJALIZACJA NA PODLASIU W ŚWIETLE BADAŃ ILOŚCIOWYCH I JAKOŚCIOWYCH

Słowa kluczowe: rolnictwo ekologiczne, bariery rozwoju, inteligentna specjalizacja, Podlasie

ABSTRAKT

Celem opracowania jest przedstawienie wyników badań nad uwarunkowaniami rozwoju rolnictwa ekologicznego w regionie uznającym ten dział gospodarki za regionalną inteligentną specjalizację. Ze względu na rosnące zainteresowanie konsumentów standardami żywności dostępnych na rynku, na liście Krajowych Inteligentnych Specjalizacji umieszczono cały dział poświęcony „Żywności wysokiej jakości", a w nim „Produkcję żywności ekologicznej, tradycyjnej i regionalnej". Tylko nieliczne z polskich województw umieściły ten sektor na liście regionalnej, przyznając w ten sposób rolnictwu ekologicznemu priorytet w procesie dofinansowywania badań i inwestycji w tym zakresie. Województwem, które nie tylko przoduje w statystykach produkcji ekologicznej w kraju, ale co ważne – traktuje ten dział jako swoją inteligentną specjalizację, jest województwo podlaskie. Dokonując oceny uwarunkowań rozwojowych rolnictwa ekologicznego na Podlasiu analizie poddano dane liczbowe dotyczące certyfikowanych rolniczych gospodarstw ekologicznych oraz opinie lokalnych interesariuszy, dotyczące przyszłości tego sektora w regionie. Uwzględnienie w procesie analiz wyników badań jakościowych pozwoliło na wskazanie prognoz odnośnie przyszłości tego sektora w województwie.

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