RUCH PRAWNICZY, EKONOMICZNY I SOCJOLOGICZNY
Rok LXXXV – zeszyt 3 – 2023
https://doi.org/10.14746/rpeis.2023.85.3.08

MIROSŁAW STRUŚ,[a] MAGDALENA RAFTOWICZ[b]

THE SUSTAINABLE DEVELOPMENT PARADIGM VERSUS LAND CONCENTRATION PROCESSES

PARADYGMAT ZRÓWNOWAŻONEGO ROZWOJU A PROCESY KONCENTRACJI ZIEMI

The main purpose of this article is to answer the question of whether structural changes in agriculture are consistent with the concept of sustainable development. The adopted assumption is that both agriculture and all rural areas should develop in accordance with the paradigm of sustainable development, which means there is a need to abandon the mainstream neoliberal paradigm which currently dominates the economy. The research draws on the results of the Agricultural Censuses carried out in Poland in the years 2010 and 2020. As the conducted research shows, the processes of land ownership concentration in Polish agriculture are advancing, leading to the emergence of industrial agriculture, but contradicting the paradigm of sustainable development. These processes, however, have been occurring in an uneven manner, with their scale and dynamics depending on historical determinants. The concentration processes are predominantly noticeable in western and northern Poland, whereas in south-eastern and central Poland their pace is slower. This may result in the formation of a dual model of agricultural development in Poland, in which, on the one hand, industrial agriculture will function by striving to increase competitiveness through higher productivity, and, on the other, sustainable agriculture will also develop (in south-eastern and central Poland). Avoiding such a division would require a change in the approach to agricultural policy, primarily in terms of adjusting the tools aimed at influencing agriculture to regional conditions.

Keywords: sustainable development; neoliberal development paradigm; land concentration processes; Poland

Głównym celem niniejszego artykułu jest odpowiedź na pytanie czy przemiany strukturalne w rolnictwie są zgodne z koncepcją zrównoważonego rozwoju. W artykule przyjęto założenie, że zarówno rolnictwo, jak i całe obszary wiejskie powinny się rozwijać zgodnie z paradygmatem rozwoju zrównoważonego, co oznacza konieczność odejścia od dominującego w ekonomii głównego nurtu paradygmatu neoliberalnego. W badaniach wykorzystano wyniki Powszechnych Spisów Rolnych przeprowadzonych w Polsce w 2010 i 2020 r. Jak wynika z przeprowadzonych badań, w polskim rolnictwie postępują procesy koncentracji własności ziemi, co prowadzi do powstawania rolnictwa industrialnego, ale stoi w sprzeczności z paradygmatem rozwoju zrównoważonego. Procesy te zacho-

[a] University of Wroclaw, Poland / Uniwersytet Wrocławski, Polska
miroslaw.strus@uwr.edu.pl, https://orcid.org/0000-0002-1438-2025
[b] Wrocław University of Environmental and Life Sciences, Poland / Uniwersytet Przyrodniczy we Wrocławiu, Polska
magdalena.raftowicz@upwr.edu.pl, https://orcid.org/0000-0002-3022-6946

RPEiS 85(3), 2023: 119–134. *ISSN (Online) 2543-9170 ISSN (Print) 0035-9629*

dzą jednak nierównomiernie, a ich skala i dynamika zależą od historycznych uwarunkowań. Przede wszystkim procesy koncentracji widoczne są w zachodniej i północnej Polsce, w Polsce południowo-wschodniej i centralnej zachodzą one wolniej. Może to doprowadzić do ukształtowania dualnego modelu rozwoju rolnictwa w Polsce, w którym to z jednej strony funkcjonować będzie rolnictwo industrialne dążące do wzrostu konkurencyjności poprzez wzrost produktywności, a z drugiej strony rozwijać się będzie rolnictwo zrównoważone (w południowo-wschodniej i centralnej Polsce). Niedopuszczenie do takiego podziału wymagałoby zmiany podejścia do polityki rolnej, zwłaszcza w zakresie dostosowania narzędzi oddziaływania na rolnictwo do regionalnych warunków.

Słowa kluczowe: zrównoważony rozwój; neoliberalny paradygmat rozwoju; procesy koncentracji ziemi; Polska

I. INTRODUCTION

A debate over the direction of agriculture and the development of rural areas has been taking place in Poland for many years. The opinions expressed by the supporters of the neoliberal development paradigm, emphasizing the need to increase productivity, clash with the views presented by the advocates of sustainable development, who highlight the demand for maintaining a balance between the economic, social and environmental spheres. It seems that currently the public sphere is dominated by the conviction that it is necessary to develop agriculture in accordance with the paradigm of sustainable development. This is evidenced by the directions of activities performed at the EU (The European Green Deal), national and regional levels (e.g. 'Lower Silesia. Green Valley of Food and Health Program'). However, does this translate into practice?

The purpose of this article is to answer the question of whether the structural changes in agriculture are consistent with the concept of sustainable development. It is now widely assumed that both agriculture and all rural areas should develop in accordance with the paradigm of sustainable development. It means the need for abandoning the mainstream neoliberal paradigm prevailing in the economy, which is focused on the increase in productivity. The undertaken research problem fills the gap in the literature on the ongoing processes of land ownership concentration in Poland in the context of sustainable development.

II. LITERATURE REVIEW

1. Sustainable development paradigm

A paradigm, according to Thomas Kuhn's concept,[1] is defined as a common property of all people practising a given field of knowledge, or a 'matrix', be-

[1] Kuhn (1977).

cause it is composed of orderly arranged components, each of which requires further specification. A paradigm defines specific laws, theories and their applications, as well as models and scientific values.[2] Referring to such an interpretation, Michał Heller[3] emphasized that a paradigm does not necessarily cover the entire science, but it may dominate in one theory or in some narrow field of research. This means that also a fragmented study of a paradigm presents a scientific value *per se*. In turn, a paradigm shift occurs when more and more anomalies (both external and internal) appear in the current paradigm, which results in certain scientific revolutions. The definition of paradigms was presented in a slightly different way by Leszek Nowak[4], who recognized that these are certain concepts which define the type of explanation adopted in the given science at a given time as a model, or in other words – the type of final explanatory premises. Following such an approach, the researcher's entire attention is focused on the process of explaining (i.e. 'making operational sequences understandable'), rather than just ordering. The common feature of the presented approaches to the concept of paradigms is the need to both isolate and organize (i.e. explain) their specific designates: origins, definitions, values and actions that distinguish them from other paradigms.

The theories of economic growth based on an increase in GDP *per capita* represent the main foundation of the present-day neoliberal paradigm (mainstream economics).[5] In this approach, economic growth can be defined as the growing capacity of the economy to produce goods and services that, in theory, have no limits. Hans Binswanger[6] even talks about a growth spiral that keeps accelerating. However, the pressure or even the compulsion of growth, equated with the macroeconomic levers of the modern economy, cannot last indefinitely, due to the limited supply of natural resources and market failures. Serge Latouche[7] describes this hypothesis even more clearly, stating that: 'dirty, neoclassical growth cannot be infinite in a finite world'. In practice, it is primarily manifested by the continuously growing, high pollution of the environment and excessive consumption of natural resources, both the renewable and non-renewable ones.

This approach assumes that all external threats to development (e.g. a progressive climate crisis, which is a consequence of, for example, climate change, loss of biodiversity, excessive agricultural land use and water consumption, ocean acidification or depletion of the ozone layer),[8] can be overcome within this system, the best proof of which is the concept of sustainable development.

However, the neoliberal paradigm does not take into account endogenous threats: the ones generated by the system and economic development. On the contrary, it is claimed that all social barriers to development can be overcome

[2] Kuhn (1962).
[3] Heller (2011).
[4] Nowak (1987).
[5] Kiełczewski (2021).
[6] Binswanger (2013).
[7] Latouche (2010).
[8] Planetary boundaries.

as a result of economic development, and more precisely through an increase in productivity. The neoliberal paradigm identifies economic development with an increase in productivity, however, at the same time reduces the system to a market society. From the sociological perspective, the market society is dominated by interpersonal relationships based on economic exchange. On the other hand, from the economic viewpoint, it is a system in which the production and distribution of private goods is the domain of market mechanisms.[9]

The considerations resulting from this discussion can be summarized with the general conclusion that the sustainable development paradigm is not an alternative to the neoclassical paradigm, since it is only an extension of the existing paradigm, with the addition of a new development goal, namely the preservation of the ecosystem's sustainability and supporting a new market based on the purchase and sale emission allowances and rights to the natural environment. The creation of this artificial market further emphasizes the commitment to neoclassical values, which, however, neglect the fact that market prices do not reflect the actual environmental costs. The paradigm of sustainable development assumes that production technology is the source of environmental threats. Therefore, the carbon market is the most efficient means of reducing pollution, as the internalization of negative externalities is an effective incentive stimulating pro-ecological activities. If the moral aspects of this market[10] are ignored, its establishment raises economic concerns as well. It should be highlighted that excessive exploitation of the environment is directly related to the level of consumption and lifestyle, and not just technology alone. As long as one hundred years ago, Charles Gide[11] indicated that consumption is the ultimate cause of the entire economic process, and its importance is much greater than might be imagined. Consumption is excessive in relation to both efficiency and environmental potential. The radical paradigm of sustainable development as a strategic goal should aim for the reduction of global consumption, which unfortunately remains impossible to carry out in a free market economy.

2. Concentration processes in agriculture

Nowadays, one of the most important determinants of changes in world agriculture takes the form of globalization processes, which create a new economic order and transform the market mechanism so that it dominates on a supranational scale. Submitting agriculture to market mechanisms results in its commercialization: subordinating this form of production to the implementation of the profit maximization function. Globalization and new technologies work to the advantage of 'great property'.[12] Globalization is inevitably accompanied by powerful transnational corporations which operate mainly in

[9] Matysiak et al. (2015).
[10] Sandel (2012).
[11] Gide (1931).
[12] Raftowicz (2021).

the sphere of agri-food processing and trade. They prefer larger agricultural holdings, either due to new requirements regarding quality, timely deliveries and batch size, or because of lower transaction costs.[13] The concentration process was also stimulated by the emergence of new capital-intensive technologies and biotechnological advancement. Large agricultural holdings were predominantly the addressees of these changes, which significantly weakened the competitive position of smaller farms.[14] At the same time, the developing concentration processes were increasingly influenced by the growing competition on the European and world agricultural markets. This competition forced farmers to undertake actions stimulating the economic efficiency of production and using the economies of scale to reduce the unit production costs of agricultural products. In the course of globalization processes, the competition between economic entities keeps building up, which is associated with the expansion of sales markets as well as new technologies and innovations.[15] Additionally, in the case of agriculture, the imperfection of market structures[16] is a prerequisite for concentration. Agricultural markets are characterized by asymmetry in the form of high concentration of the production means suppliers and the recipients of agricultural products, and by a weak concentration of agricultural producers. The combination of increasing land acreages and horizontal and vertical integration[17] was the method to reduce imbalance in the structure of market forces.

Mirosław Struś[18] is right in stating that the processes analogous to urban development should not occur in rural areas, because they contribute to the loss of the original functions played by rural areas. Unfortunately, the pace and scale of changes dictated by the desire to accelerate the development of rural areas contributes to adopting new tasks that are not rooted in the rural tradition. Farmers are under continuous pressure from both processors and retailers who expect large batches of goods with standard characteristics. On the one hand, such attitudes favour actions increasing labour productivity, and on the other, they contribute to land ownership concentration. The strictly economic benefits resulting from improving the agrarian structure are indisputable. The processes of land and capital concentration in agriculture allow easy profit maximization. However, the industrial farming model has a number of disadvantages as well. Its main drawback is the fact that these processes are clearly in contradiction with the principles of sustainable development. In this regard, it is worth paying attention primarily to the outflow of human capital from agriculture and rural areas, monopolization of the agri-food sector, as well as increasing pesticide use and chemicalization in agriculture, which poses risks not only to food, but also to ecological security.[19]

---

[13] Birner, Resnick (2010).
[14] Zegar (2009).
[15] Rynio (2013).
[16] Le Vay (1983).
[17] Małysz 2002).
[18] Struś (2018).
[19] Kutkowska et al. (2016).

The negative consequence of this situation is the fact that larger and more productive agricultural enterprises employ fewer workers and damage the environment to a larger extent than small family farms.[20]

In the face of such threats, the new model of European agriculture and rural areas promoted by the Common Agricultural Policy highlights the need to promote such institutional solutions that would combine biodiversity with efficiency. Unfortunately, in a transaction-based free market economy (with few exceptions[21]), price still plays the crucial role. This, however, is not conducive to establishing lasting relationships between farmers and consumers. The absence of these relations exposes farmers to the dangers of cyclical fluctuations in the economic situation and reduces the profitability of agricultural production, especially for small-scale entities.[22] As a result, the atrophy of traditional family farms, mainly those up to 10 ha, is progressing, which threatens food security, mainly on a local and regional scale, and leads to the disappearance of the traditions and folk culture of which these farms remain the mainstay.[23]

III. MATERIALS AND METHODS

The research covering changes in the structure of agricultural holdings was carried out based on the example of Poland, which is ranked third in the European Union in terms of agricultural area after France and Spain. The agricultural area in Poland amounts to 18,608,000 hectares, which is more than half: 56% of the entire country.[24]

The research was carried out based on a critical analysis of the source literature and the data provided by the Agricultural Census 2010 and the Agricultural Census 2020. The comparative method was applied in the conducted research. Comparisons of the occurring land ownership concentration processes, both in time and in space, were also performed; 2010 and 2020 were used for the comparisons over time. The agricultural censuses were conducted in Poland in these years. This allowed obtaining comprehensive information on the transformations in Polish agriculture. By comparing the results of agricultural censuses, the directions of changes which took place in Polish agriculture were identified.

The division of Poland into voivodships (regions) was used in spatial comparisons. As a result, it was possible to identify these regions where the processes of land ownership concentration are occurring at the fastest pace, as well as the regions where such processes are slower.

The methodology adopted in the article allowed the formulation of two hypotheses:

---

[20] Becheva et al. (2019).
[21] Raftowicz et al. (2020).
[22] Struś et al. (2020).
[23] Ardakani, Bartolini, Brunori (2020); Solarz et al. (2023).
[24] Ministry of Agriculture and Rural Development (2019).

H1: Despite declarations at the national level about the need to implement the principles of sustainable development, the neoliberal development paradigm still dominates in rural areas. The created economic incentives are conducive to the concentration of land ownership and are aimed at the consolidation of industrial agriculture.

H2: The processes of land ownership concentration are influenced not only by the current agricultural policy, but also by the historical experiences of the particular regions.

IV. RESEARCH RESULTS

The systemic transformation initiated in Poland in 1989 brought about profound structural changes, also in Polish agriculture, and influenced the directions of rural development. Along with the commercialization of the economy and Poland's accession to the EU structures in 2004, which resulted in an unprecedented inflow of financial resources, a significant accumulation of capital took place, which changed the agrarian structure. Unfortunately, the currently observed phenomenon shows a decline in the number of agricultural holdings, especially small farms covering up to 10 ha, along with the simultaneous concentration of farmland in larger agricultural holdings: 50–100 ha and over 100 ha. Although these processes are relatively slow[25] in Polish conditions, they are becoming increasingly noticeable. The above statement is reflected in the Agricultural Censuses carried out in 2010 and 2020.

According to the data provided by the Agricultural Censuses, over the years 2010–2020, the number of agricultural holdings in Poland declined by approx. 12.7% from 1,509,000 to 1,317,000. This resulted from an evident decrease in the number of small farms covering an area of up to 10 ha. Over the analysed years, the number of such farms: up to 10 ha dropped from 116,000 to 976,000 (by approx. 15.9%). From the perspective of the paradigm of sustainable development, the decrease in the number of small farms is a negative phenomenon. As the previous studies show, it is the farms covering up to 10 ha that are capable of implementing most thoroughly the principles of sustainable development.[26] They constitute, for example the basis of the Socially Supported Agriculture (i.e. one of the pillars of the development under study).[27]

At the same time, in the period 2010–2020, the number of farms covering the area of 10–30 ha stabilized, whereas the number of farms exceeding the area of 30 ha increased. The growth in the number of agricultural holdings considered in Polish conditions as large (50–100 ha) and very large (over 100 ha) was particularly noticeable. This proves the development of Polish agriculture towards industrial agriculture, which simultaneously contradicts the para-

[25] Zegar (2009).
[26] Kutkowska et al. (2018).
[27] Struś (2018).

digm of sustainable development so favoured and promoted by the European Union. If the position of small farms was not clearly weakened, a hypothesis could be put forward about the formation of a dual model of agricultural development in Poland, where two equal orders function side by side: the industrial order (industrial agriculture) and the sustainable order (sustainable agriculture).

According to the Agricultural Censuses, between 2010 and 2020, the number of large agricultural holdings (50–100 ha) increased by 52.9% and very large ones (over 100 ha) by 30%. As a result, in 2020, approx. 26,000 agricultural holdings presenting an area of 50–100 ha and 13,000 farms covering an area exceeding 100 ha were functioning. In 2010, the respective numbers were 17,000 and 10,000, which is illustrated in Table 1.

Table 1

The number and share of agricultural holdings in Poland in 2010 and 2020

Agricultural holdings areas	Number of agricultural holdings [thousands]			Share of agricultural holdings [%]		
	2010	2020	Dynamics year 2002 = 100	2010	2020	Dynamics year 2010 = 100
Total	1,509	1,317	87.3	100.0	100.0	100.0
Up to 10 ha	1,160	976	84.1	76.8	74.0	96.4
10–30 ha	285	285	100.0	18.9	19.6	0.0
30–50 ha	36	44	122.2	2.4	3.3	137.5
50–100 ha	17	26	152.9	1.1	2.0	181.8
Above 100 ha	10	13	130.0	0.7	1.0	142.9

Source: Agricultural Census 2020. Report on the Results, Warsaw, 2021.

The dynamic increase in the number of large and very large agricultural holdings, combined with the liquidation of small farms, resulted in the fact that in 2020 the share of farms covering over 50–100 ha and over 100 ha amounted to approx. 2% and 1%, respectively, in the total structure of agricultural holdings. In 2010, these shares were at the level of 1.1% and 0.7%, respectively.

However, the advancing process of land ownership concentration is evidenced not only by the change in the number of farms. It is also important that the share of agricultural land in the stock of the largest agricultural holdings was higher.

In 2020, 13,000 agricultural holdings (1% of all farms) belonging to the largest area group used 25% of the national agricultural area and 20% of the national sown area. Comparing to 2010, the discussed group of farms recorded a 3% increase in the area of agricultural land characterized by good condition

and a 9% increase in the sown area. This increase was achieved, as in the case of other farms, at the expense of reducing the area of other agricultural land, permanent crops, fallow land and permanent pastures. In the discussed area group of farms, the decline dynamics in the above-mentioned land was much higher than in the total number of farms and amounted to, respectively: over 70%, approx. 65%, approx. 64% and approx. 30%.[28]

The higher number of very large agricultural holdings, combined with the increase in agricultural land resources at their disposal, entailed that negative methods of land management, from the perspective of sustainable development principles, became visible. The tendencies to increase the importance of monocultures at the expense of sustainable crops were intensifying. This was manifested by the increase in the area of land intended for industrial crops, including sugar beet, rapeseed and turnip rape. Over the years 2010–2020, the share of industrial crops in the total sown area went up by 10.5% from 1,171,000 ha up to 1,294,000 ha. In the same period, the area intended for sugar beet cultivation increased by 19.4% (from 206,000 ha to 246,000 ha), while for rapeseed and turnip rape it went up by 3.8% (from 945,000 ha to 981,000 ha).

Based on the research presented above, it can be concluded that the Hypothesis 1 (H1) has been confirmed. On a national scale, the importance of industrial crops is growing, which leads to an increase in the concentration of land. Large farms benefit from economies of scale, which strengthens their competitive position, but has negative environmental and social effects.

The concentration processes presented above also occur in voivodships, although the scale and dynamics of this phenomenon varies depending on the region. The largest agricultural holdings are located in the regions of northern and western Poland. The aforementioned situation is a consequence of historical processes which caused varied development of the individual Polish regions. It can even be stated that this situation shows the 'paths of dependence', outlined in accordance with North's concept, between the current development of agriculture and the heritage of partitions.[29]

Western and northern territories (the Lower Silesia [Dolnośląskie], Lubusz [Lubuskie], Opole [Opolskie], Warmia-Masuria [Warmińsko-Mazurskie], West Pomerania [Zachodniopomorskie], and partly also Pomerania [Pomorskie]) were incorporated into Poland in 1945. The integration of these lands was associated with the resettlement of the population and the development of agricultural structure from scratch. At the same time, it enabled the state authorities to implement the principles of the centrally planned economy in agriculture on a wider scope (than in other parts of Poland). As a result, the State-Owned Farms were established with greater intensity in both western and northern territories. As has already been mentioned, as a consequence of the system transformation after 1989, the State-Owned Farms were liquidated and the land was privatized. The sale and lease of land favoured the establishment of very large agricultural holdings (over 100 ha) in these areas.

[28] Agricultural Census 2020.

[29] North (1990).

Strong and relatively large agricultural holdings also developed on the lands which until 1918 were part of the Prussian partition (Greater Poland [Wielkopolskie] and Kuyavia-Pomerania [Kujawsko-Pomorskie]), whereas small farms dominated in the Russian and Austrian partitions.[30]

In 2010, the share of agricultural holdings covering the area of more than 100 ha was the highest in the following voivodships: West Pomerania (4.7%), Lubusz (2.9%), Warmia-Masuria (2.4%) and Lower Silesia (2.0%), and the lowest in Lesser Poland (Małopolskie) (0.1%) and Swiętokrzyskie (Świętokrzyskie) (0.1%), which is illustrated in Table 2.

Table 2

The number of agricultural holdings in 2010

Voivodship	Number of agricultural holdings [in thousands]						Share of agricultural holdings				
	Total	Up to 10 ha	10–30 ha	30–50 ha	50–100 ha	Above 100 ha	Up to 10 ha	10–30 ha	30–50 ha	50–100 ha	Above 100 ha
Lower Silesia	**62**	**45**	**12**	**2**	**2**	**1**	**73.0**	**19.1**	**3.4**	**2.5**	**2.0**
Kuyavia--Pomerania	68	40	23	4	2	1	56.6	34.0	5.8	2.4	1.1
Lublin	188	154	30	3	1	0	81.7	16.1	1.4	0.6	0.2
Lubusz	**22**	**16**	**4**	**1**	**1**	**1**	**69.1**	**20.5**	**4.0**	**3.5**	**2.9**
Lodzkie	131	102	25	2	0	0	79.1	19.2	1.2	0.3	0.2
Lesser Poland	154	149	5	0	0	0	96.2	3.3	0.2	0.1	0.1
Masovia	229	170	52	4	1	1	74.7	22.5	1.9	0.6	0.2
Opolskie	**28**	**19**	**7**	**1**	**1**	**1**	**66.3**	**23.4**	**5.2**	**3.1**	**1.9**
Subcarpathia	140	134	5	1	0	0	95.5	3.7	0.4	0.3	0.2
Podlaskie	84	47	33	4	1	0	54.8	39.0	4.6	1.1	0.3
Pomerania	**41**	**24**	**12**	**2**	**1**	**1**	**58.6**	**31.3**	**5.1**	**3.0**	**1.9**
Silesia	65	58	5	1	0	0	89.8	8.0	1.1	0.6	0.4
Swietokrzyskie	97	87	9	1	0	0	90.0	9.1	0.5	0.2	0.1
Warmia--Masuria	**44**	**20**	**16**	**4**	**2**	**1**	**47.6**	**37.0**	**8.3**	**4.7**	**2.4**
Greater Poland	126	79	37	5	2	1	63.5	29.8	4.0	1.8	1.0
West Pomerania	**31**	**18**	**8**	**2**	**2**	**1**	**57.6**	**26.1**	**6.2**	**5.5**	**4.7**

Source: Agricultural Census 2010, Warsaw: Central Statistical Office, 2011.

[30] Szymańska (2021).

In 2020, land concentration processes were most noticeable in the following voivodships: West Pomerania (6.6% share of agricultural holdings over 100 ha in the total number of farms), Lubusz (4.3%) and Warmia-Masuria (3.1%). A large share of the largest agricultural holdings in terms of area was also recorded in the following voivodships: Lower Silesia (2.8%), Pomerania (2.7%) and Opolskie (2.7%). The lowest share of the above-mentioned farms was observed in the following voivodships: Lesser Poland (0.1%), Swietokrzyskie (0.2%), Lodzkie (0.3%) and Subcarpathia (0.3%), which is presented in Table 3.

Table 3

The number of agricultural holdings in 2020

Voivodship	Number of agricultural holdings [in thousands]						Share of agricultural holdings				
	Total	Up to 10 ha	10–30 ha	30–50 ha	50–100 ha	Above 100 ha	Up to 10 ha	10–30 ha	30–50 ha	50–100 ha	Above 100 ha
Lower Silesia	53	37	10	2	2	1	70.5	19.6	4.5	3.7	2.8
Kuyavia--Pomerania	60	33	18	4	2	1	54.8	0.0	7.3	4.1	1.8
Lublin	161	126	29	4	2	1	78.3	18.4	2.5	1.2	0.4
Lubusz	20	14	4	1	1	1	65.0	32.1	5.7	5.1	4.3
Lodzkie	117	90	23	2	1	0	76.8	17.7	2.1	0.9	0.3
Lesser Poland	127	119	6	1	0	0	94.2	19.8	0.6	0.4	0.1
Masovia	208	152	48	6	2	1	72.9	20.0	2.7	1.2	0.4
Opolskie	25	17	5	2	1	1	64.6	4.7	6.3	4.8	2.7
Subcarpathia	114	107	5	1	1	0	92.9	22.8	0.9	0.6	0.3
Podlaskie	77	42	29	5	2	0	53.4	21.7	5.9	2.5	0.6
Pomerania	39	24	11	2	2	1	58.1	5.0	6.1	4.3	2.7
Silesia	50	43	5	1	1	0	85.4	37.6	2.0	1.5	0.7
Swietokrzyskie	80	69	9	1	0	0	87.0	28.7	1.3	0.6	0.2
Warmia--Masuria	43	20	15	4	3	1	48.4	10.4	8.8	5.9	3.1
Greater Poland	116	71	33	6	3	2	62.2	10.9	5.1	2.7	1.4
West Pomerania	29	16	7	2	2	2	54.5	33.8	7.1	8.1	6.6

Source: Agricultural Census 2020.

Although the compilation of data for 2010 and 2020 allows concluding that the situation in Poland in terms of land ownership concentration is stable, such a statement may be misleading and as it does not reflect the actual changes which took place. It is worth noting that over the analysed years the share of farms covering the area of more than 100 ha increased in the following voivodships:

– West Pomerania by 1.9 percentage points,
– Lubusz by 1.4 percentage points,
– Warmia-Masuria by 0.7 percentage point,
– Lower Silesia by 0.8 percentage point,
– Pomerania by 0.8 percentage point,
– Opolskie by 0.8 percentage point.

In the same period, in the case of Lesser Poland, this share remained unchanged, whereas in Swietokrzyskie Voivodship it increased by 0.1 percentage point. Thus, it can be seen that in the case of voivodships where the initial share of agricultural holdings covering the area of over 100 ha was the highest, the process of land ownership concentration was the most dynamic. It seems that we are dealing with a 'snowball' effect here. In the voivodships where large agricultural holdings were established in the early 1990s, the greatest accumulation of capital was recorded which, in turn, allowed for further purchase of land and enlargement of the land acreage. In the areas where agriculture was initially fragmented, the concentration process was much slower.

The analyses carried out above confirm Hypothesis 2 (H2). The currently occurring concentration processes result not only from the current agricultural policy but also from historical experience. Partitions, attempts to collectivize agriculture after World War II, and the need to redevelop the western and northern territories of Poland, resulted in a different agrarian structure in individual voivodships, which influenced the directions of changes in Polish agriculture after 1989.

The ongoing concentration processes resulted in an increase in the average farm area by 13.3% in Poland. In 2020 it was 11.1 ha, while in 2010 – 9.8 ha (Table 4).

Table 4

Average area of an agricultural holding [ha]

Voivodeship	2010	2020	Dynamics year 2010 = 100
Poland	**9.8**	**11.1**	**113.3**
Lower Silesia	14.9	17.1	114.8
Kuyavia-Pomerania	15.8	17.7	112.0
Lublin	7.3	8.5	116.4
Lubusz	19.8	21.0	106.1
Lodzkie	7.5	8.3	110.7

Lesser Poland	3.9	4.3	110.3
Masovia	8.5	9.4	110.6
Opolskie	18.0	20.3	112.8
Subcarpathia	4.3	4.9	114.0
Podlaskie	12.6	13.9	110.3
Pomerania	18.2	19.6	107.7
Silesia	6.0	9.8	163.3
Swietokrzyskie	5.3	6.2	117.0
Warmia-Masuria	22.9	23.9	104.4
Greater Poland	14.1	15.1	107.1
West Pomerania	29.8	30.9	103.7

Source: Agricultural Census 2020.

It is worth emphasizing that in terms of the average farm area, Poland is highly internally diversified. Also in this case, the differences result from different historical experiences.

The agricultural holdings located in western and northern Poland present the largest average area. The following voivodships are the leaders in this respect: West Pomerania (30.9 ha), Warmia-Masuria (23.9 ha) and Lubusz (21.0 ha). The farms located in Lesser Poland (4.3 ha) and Subcarpathia (4.9 ha) Voivodships are characterized by the smallest average area.

V. CONCLUSIONS

The research results presented in this paper confirm the adopted research hypotheses. First of all, land concentration processes are advancing in Poland. Despite declarations at the national level about the need to implement the principles of sustainable development, the neoliberal development paradigm still dominates in rural areas. The created economic incentives are conducive to concentrating land ownership and are aimed at the consolidation of industrial agriculture. The primacy of the economic sphere (focused on increasing productivity) over the social and environmental spheres is noticeable.

At the same time, strong competitive pressure, the possibility for taking advantage of the economies of scale, the demand for cheap food, the development of modern but also expensive technologies and, as a result, the possibility of achieving higher production efficiency may indicate that the concentration processes will keep intensifying in the years to come.

Unless there is interference by public authorities, these processes will be particularly dynamic in the regions where, due to historical experience, agricultural holdings remain economically the strongest: in western and northern Poland. This may lead to a dualism of agricultural development in Poland.

In western and northern regions of Poland, a model of industrial agriculture based on large and very large agricultural holdings, striving to become competitive on the European scale will eventually develop. It will be accompanied by the outflow of population from rural areas and a gradual marginalization of their importance, monopolization of the agri-food sector, as well as increasing pesticide use and chemicalization in agriculture, which poses a risk not only to food security, but also to environmental security.

At the same time, in central and south-eastern Poland the concentration processes will be progressing at a slow pace. This will contribute to the construction of agriculture in line with the paradigm of sustainable development. These farms will not be able to compete with large agricultural holdings in terms of prices, therefore their operations will focus on the production of organic and traditional high-quality products. The development of small farms will be stimulated by the increase in demand for high-quality, traditionally produced food among city residents and visitors.

Preventing the dual development of agriculture in Poland would require a change in the approach to agricultural policy. A uniform policy implemented at the national level should be abandoned in favour of regional agricultural policy using the tools adapted to the reality shaped in the course of the ongoing historical processes. However, such an approach seems impossible under the applicable law.

In addition, the concentration processes in the areas of western and northern Poland have already reached such a level that reversing them would require radical legal action, in particular the nationalization of land and its redistribution. However, such actions, taking into account both the history and the current situation of Poland, seem not only unrealistic but even detrimental.

The processes of land ownership concentration are influenced not only by the current agricultural policy, but also by the historical experiences of the particular regions. As a consequence, it can be concluded that the application of a uniform agricultural policy at the nationwide level does not guarantee that the concentration processes will be stopped and the transition to sustainable development will take place.

References

Ardakani, Z., Bartolini, F., Brunori, G. (2020). New evaluation of small farms: implication for an analysis of food security. Agriculture 10(3): 74. https://doi.org/10.3390/agriculture10030074

Becheva, S., Rioufol, V. (2019). Growing up. Agricultural Atlas 5(28): 36. https://issuu.com/hbseu/docs/agricultureatlas2019_web_190507

Binswanger, H.Ch. (2013). The Growth Spiral: Money, Energy, and Imagination in the Dynamics of the Market Process. Heidelberg, New York, Dordrecht, London: Springer.

Birner, R., Resnick, D. (2010). The political economy of policies for smallholder agriculture. World Development 38(10): 1442–1452.
Gide, Ch. (1931). Principes d'economie politique. https://gpthome69.files.wordpress.com/2019/12/principes_eco_politique_gide_1931.pdf
Heller, M. (2011). Philosophy in Science: An Historical Introduction. Berlin: Springer.
Kiełczewski, D. (2021). Koncepcja zintegrowanej teorii ekonomicznej zrównoważonego rozwoju. Między mainstreamem a heterodoksją ekonomiczną [The Concept of Integrated Economic Theory of Sustainable Development – Between the Mainstream and Economic Heterodoxy]. Białystok: Wydawnictwo Uniwersytetu w Białymstoku.
Kuhn, T. (1962). The Structure of Scientific Revolutions. Chicago: The University of Chicago Press.
Kuhn, T. (1977). The Essential Tension: Selected Studies in Scientific Tradition and Change. Chicago: The University of Chicago Press.
Kutkowska, B. (ed.) (2018). Rolnictwo Wspierane Społecznie – badanie szans rozwoju małych gospodarstw rolnych na Dolnym Śląsku w aspekcie produkcji żywności wysokiej jakości [Socially Supported Agriculture: Research on the Development Opportunities of Small Farms in Lower Silesia in the Aspect of High-quality Food Production]. Wrocław: Wrocław University of Environmental and Life Sciences.
Kutkowska, B., Berbeka, T., Kapała, A., Kurtyka-Marcak, I., Minta, S., Raftowicz-Filipkiewicz, M., Struś M. (eds.), Raftowicz-Filipkiewicz M. (2016). Procesy koncentracji ziemi i kapitału a zrównoważony rozwój obszarów wiejskich na Dolnym Śląsku [Processes of Land and Capital Concentration vs. Sustainable Development of Rural Areas in Lower Silesia]. Wrocław: Uniwersytet Przyrodniczy we Wrocławiu, Instytut Nauk Ekonomicznych i Społecznych.
Latouche, S. (2010). Le pari de la décroissance. Paris: Pluriel.
Le Vay, C. (1983). Agricultural co-operative theory. The Review Journal of Agricultural Economics 34(1): 1–44. https://doi.org/10.1111/j.1477-9552.1983.tb00973.x
Małysz, J. (2002). Rozwój agrobiznesu a procesy integracyjne (cz. II) [The development of agribusiness and integration processes (part II)]. Wieś i Rolnictwo 1(114): 25–49.
Matysiak, A., Struś, M. (2015). Paradygmat rozwoju zrównoważonego [The paradigm of sustainable development]. Studia Ekonomiczne. Zeszyty Naukowe Uniwersytetu Ekonomicznego w Katowicach 213: 11–21.
Ministry of Agriculture and Rural Development (2019). Rolnictwo i gospodarka żywnościowa w Polsce [Agriculture and Food Economy in Poland]. https://www.gov.pl/web/rolnictwo/rolnictwo-i-gospodarka-zywnosciowa-w-polsce
North, D.C. (1990). Institutions, Institutional Change and Economic Performance. Cambridge: Cambridge University Press.
Nowak, L. (1987). A model of socialist society. Studies in Soviet Thought 34(1/2): 1–55. https://doi.org/10.1007/BF01043852
Raftowicz, M. (2021). The climate crisis as a product of globalization. SHS Web of Conferences 92: 06029. https://doi.org/10.1051/shsconf/20219206029
Raftowicz, M., Struś, M., Nadolny, M., Kalisiak-Mędelska, M. (2020). The importance of price in Poland's carp market. Sustainability 12(24): 10416. https://doi.org/10.3390/su122410416
Rockström, J. et al. (2009). Planetary boundaries: exploring the safe operating space for humanity. Ecology and Society 14(2): 32. http://www.ecologyandsociety.org/vol14/iss2/art32/http://www.ecologyandsociety.org/vol14/iss2/art32/
Rynio, D. (2013). Kształtowanie nowej polityki regionalnej Polski w warunkach globalizacji i integracji [Developing New Regional Policy of Poland in the Conditions of Globalization and Integration]. Wrocław: Wrocław University of Economics Press.
Sandel, M. (2012). What Money Can't Buy: The Moral Limits of Markets. New York: Farrar.
Solarz, K., Raftowicz, M., Kachniarz, M., Dradrach, A. (2023). Back to locality? Demand potential analysis for short food supply chains. International Journal of Environmental Research and Public Health 20(4): 3641. https://doi.org/10.3390/ijerph20043641
Struś, M. (2018). Rolnictwo wspierane przez społeczność – przykład innowacji konstruktywnych na obszarach wiejskich [Community supported agriculture – an example of constructive in-

novation in rural areas]. Problemy Drobnych Gospodarstw Rolnych 1: 63–71. http://dx.doi.org/10.15576/PDGR/2018.1.63

Struś, M., Kalisiak-Mędelska, M., Nadolny, M., Kachniarz, M., Raftowicz, M. (2020). Community-supported agriculture as a perspective model for the development of small agricultural holding in the region. Sustainability 12(7): 2656. https://doi.org/10.3390/su12072656

Szymańska, E.J. (2021). Zmiany struktury agrarnej na polskiej wsi w latach 1918–2018 [Changes in the agrarian structure of the Polish countryside in the years 1918–2018]. Zeszyty Wiejskie 27: 31–58. https://doi.org/10.18778/1506-6541.27.02

Zegar, J.S. (2009). Kwestia koncentracji ziemi w polskim rolnictwie indywidualnym [The issue of land concentration in Polish individual farming]. Roczniki Nauk Rolniczych. Series G 96(4): 256–266.