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Exploring Transformations in The Economic Structure of Family Farms in Poland from 2010–2020*

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Abstract

The aim of the study is to examine the dynamics of structural changes in Polish agriculture between 2010 and 2020, focusing on the process of land concentration in economically viable farms. The motivation stems from the growing convergence of family and industrial farming models and the implications for competitiveness and sustainability. The analysis is based on data from the Central Statistical Office, interpreted in the context of relevant literature. The findings indicate a significant decline in the number of farms, an increase in economic size, and a gradual improvement in competitiveness, although small farms still dominate the structure.

Keywords: farm structure, standard output, agrarian structure, Poland, 2010-2020

Introduction

The holistic structure of agriculture is described by a very diverse and complex group of indicators that refer to specific characteristics of the agricultural sector. However, it is most often identified with the agrarian structure (Bear-Nawrocka, Poczta, 2020). Although structural changes in the agricultural sector are increasingly linked to exogenous factors (Plewa, 2024), the principle of farmers' sovereignty in economic decision-making remains an irreplaceable norm, especially with regard to the size and structure of material factors of production, the size of employment, and the size and product range structure of production. The results of these decisions are reflected in changes in the agricultural structure, i.e. the condition of agricultural production entities (Pietrzak and Walczak, 2014). The agricultural structure, which refers directly to farms, plays a leading role in shaping the structure of agriculture. Agricultural transformations are an essential and fundamental component of quantitative and qualitative changes in the agricultural sector and determine progress in agriculture in subsequent periods (Baer-Nawrocka and Poczta, 2020). Thus, it plays a leading role in shaping the characteristics of agriculture. The experiences of various highly developed countries around the world indicate that the ongoing agrarian transformations have primarily contributed to improving agricultural productivity. In the long term, this trend allows for the transfer of resources (mainly labour) from agriculture to sectors of the economy with higher productivity. As a result, productivity increases across the entire economy. Poland has a significant area of agricultural land used for farming, which is beneficial for the development of agricultural production. Polish farms account for approximately 9% of the total utilised agricultural area in the EU-27. In terms of agricultural land area, Poland ranks fourth in the EU-27

The motive of this analysis is to show the dynamics of changes in the agricultural sector in Poland in 2010-2020 through the prism of the initiated significant and accelerating process of land concentration in economically viable

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farms. This is important because nowadays we are witnessing a confluence of family farming and industrial farming models, and despite the consensus on the need for both forms of farming, family farms are being challenged to seek out autonomy that finds expression in the creation and development of a self-governed resource base and associated forms of sustainable development (Davidova, Thomson, 2013). As Van der Ploeg (2012) points out condition of family farms is characterized by a struggle for autonomy that finds expression in the creation and development of a self-governed resource base and associated forms of sustainable development. The analysed decade is initiating changes that will fundamentally transform the individual farm sector, heralding another technological revolution and thus heralds a change from past decades (Chmieliński et al., 2025). In this context, it is interesting to analyse the subtle processes of transformation and describe the factors shaping them from the perspective of the physical and economic size of family farms.

In this article, we use data from the Central Statistical Office, which has been systematically analysed in the context of the literature and presented descriptively.

Findings

In Poland, as in many countries, there are regulations in place to protect land used for agriculture and to minimise alternative uses. As a result, despite the pressure of urbanisation and the growing use of land for infrastructure and economic projects, in contrast to the relatively dynamic process of decline in the number of farms and people employed in them, the conversion of agricultural land has slowed down over the last ten years.

In 2020, the total area of agricultural land was 19,177.8 thousand hectares. However, only part of the agricultural land is used for agricultural activities. In 2020, the area of agricultural land used for agricultural purposes, i.e. agricultural land (UR), amounted to over 14,952.9 thousand hectares, which was 93.2 thousand hectares, or 0.6%, more than in 2010 . As a result, in 2020, the share of agricultural land used for agricultural purposes (UR) in the total area of agricultural land was 78.0%, and in the total area of the country – 47.7%

A limitation, especially from the perspective of resource competitiveness, is both the high fragmentation of the area and the significant number of small farms. From the perspective of agricultural efficiency and competitiveness, it is not only the size of individual farm size groups that is important, but above all the relationships between individual farm groups. This is particularly true of the relationship between small and large farms, as these proportions determine the level of competitiveness of the agricultural sector. First and foremost, how large is the group of farms with low production potential, which are characterised by low production efficiency and are therefore considered non-developable.

Changes are evident in all agricultural characteristics, but this part of the study focuses on the analysis of changes in the basic indicators describing the agricultural structure, i.e. the area of utilised agricultural land and its ownership and type structure, the number of farms by area and economic size groups, together with the area of utilised agricultural land. The area and economic size structure of agricultural holdings, and mainly the structure of land use by entities from particular area groups and size classes, is a fundamental manifestation of potential competitiveness at the microeconomic level, as it determines the average economic conditions of farming in a given country (Poczta, 2012).

The results of the concentration of land and other means of agricultural production, the intensification and specialisation of production, and the introduction of production progress are personified by the economic structure (economic strength) of individual farms, which determines their ability to remain on the market. This is a factor that determines not only the current situation of a given entity, but also its development opportunities. Thus, economic potential determines the competitive ability (to compete) of a given farm, i.e. the ability of economic entities to gain, then maintain and increase their share in the market in which they operate.

The economic potential of an agricultural holding, especially a family-run one, is a very complex concept and difficult to determine (measure) precisely, as it is determined by a number of very diverse parameters (e.g. the size and structure of productive assets, market position, quality of labour, management skills, personality traits, family situation, etc.), some of which are difficult or impossible to measure. Thus, the assessment of the economic potential of individual farms is usually based on an evaluation of the overall situation of particular groups of farms.

Table 1. Changes in the number and structure of agricultural holdings by economic size class

Specification	Total	Economic size classes						
		up to 4	4-8	8-15	15-25	25-50	50-100	≥ 100
		thousand euros SO						
Number of farms (in thousands)								
- in 2010	1,509.1	777.6	274.8	195.2	112.8	94.6	35.7	18.4
- in 2013	1,429.0	686.4	262.1	183.6	113.0	108.3	50.6	25.0
- in 2016	1,410.7	661.0	252.9	184.7	110.3	109.2	58.9	33.7
- in 2020	1,317.4	625.6	225.1	158.9	101.0	102.4	62.4	42.0
Changes in the years 2010-2013:								
- number (in thousands)	-80.1	-91.2	-12.7	-11.6	+0.2	+13.7	+14.9	+6.6
- in %	-5.3	-11.7	-4.6	-5.9	+0.2	+14.5	+41.7	+35.7
2010-2016:								
- number (in thousands)	-98.4	-116.6	-21.9	-10.5	-2.5	+14.6	+23.2	+15.3
- in %	-6.5	-15.0	-8.0	-5.4	0.2	+15.6	+65.0	+83.2
2010-2020:								
- number (in thousands)	- 191.7	-152.0	-49.7	-36.3	-11.8	+ 7.8	+ 26.7	+ 23.6
- in %	-12.7	-19.5	-18.1	-18.6	-10.5	+8.2	+74.8	+ 128.3
Structure (%) of farms by economic size:								
-in 2010								
- in 2013	100.0	51.6	18.2	12.9	7.5	6.2	2.4	1.2
- in 2016	100.0	48.2	18.3	12.8	7.9	7.6	3.5	1.7
-in 2020	100.0	46.9	17.9	13.1	7.8	7.7	4.2	2.4
	100.0	47.4	17.1	12.1	7.7	7.8	4.7	3.2

Source: based on: General Agricultural Census Results Report (2021), Central Statistical Office, Warsaw, General Agricultural Census. Characteristics of agricultural holdings in 2016 (2017), Central Statistical Office, Warsaw .

The most comprehensive measure allowing for a relatively synthetic assessment of the economic potential of individual farms is their economic size, measured by standard production.

The economic structure of agricultural holdings in Poland is steadily improving. This was reflected in a decrease in the number of small and very small entities and an increase in the number of entities with a relatively large economic size, i.e. at least EUR 25,000, thus an economic size that enables competition and creates opportunities for obtaining satisfactory income from agricultural activity (Table 1). Between 2010 and 2020, the number of farms of this economic size increased by 39.7%. The number of very large economic entities (above EUR 100,000 SO) grew particularly dynamically, increasing by 128.3%.

Table 2. Changes in the area and structure of agricultural holdings by economic size class

Specification	Total	Economic size classes

		up to 4	4-8	8-15	15-25	25-50	50-100	≥ 100
		thousand euros SO						
Agricultural land area (thousand ha)								
- in 2013	14,609	1,915	1,591	1,788	1,585	2,381	2,024	3,325
- in 2016	14,543	1,828	1,473	1,692	1,454	2,243	2,113	3,740
- in 2020	14,953	1,899	1,440	1,553	1,425	2,176	2,239	4,221
Changes in the years 2013-2016								
- area (in thousands of hectares)	-66	-87	-118	-96	-131	-138	+89	415
- in %	- 0.5	-4.5	-7.4	-5.4	-8.3	-5.8	+4.4	+12.5
2013-2020:								
- area (in thousands of hectares)	+ 344	- 16	- 151	- 235	-160	- 205	+ 215	+ 896
- in %	+ 2.4	-0.8	- 9.5	- 13.1	- 10.1	- 8.6	+ 10.6	+ 26.9
Structure (%) of farms by economic size in:								
- 2013								
- 2016	100.0	13.1	12.9	12.2	10.8	16.3	13.9	22.8
- 2020	100.0	12.6	10.1	11.6	10.0	15.4	14.5	25.8
	100.0	12.7	9.6	10.4	9.5	14.6	15.0	28.2

Source: based on: Characteristics of agricultural holdings in 2013 (2014), Central Statistical Office, Warsaw, Characteristics of agricultural holdings in 2016 (2017), Central Statistical Office, Warsaw; General Agricultural Census 2020. Characteristics of agricultural holdings in 2020 (2022), Central Statistical Office, Warsaw.

Despite significant progress, in 2020, farms considered non-commercial, i.e. with an economic size of up to EUR 8,000, continued to dominate (64.5%) the total number of agricultural holdings. Entities with an economic size of EUR 25,000 and above constitute a relatively small group, accounting for 15.7% of all agricultural holdings, including 3.2% with an economic size of over EUR 100,000. From the perspective of food security and, above all, the competitiveness of the agricultural sector, this group should be larger. The development of this group will be based on the processes of concentration and modernisation of production assets and through the implementation of agricultural progress (especially biological), which will take place on farms with lower economic strength.

The consequence of economic concentration is an increase in the economic strength of the statistical farm. Between 2020 and 2020, the average economic size of agricultural holdings in Poland increased from 12.6 to 20.3 thousand euros SO, i.e. 61.1%. These changes were more intense in individual farming, as the average economic size of an individual farm increased by 18.6 thousand euros SO, i.e. by 62.3%.

The structure of farms by economic size class is reflected in the structure of agricultural land by identical classes (Table 2), which is due to the relatively strong correlation between the economic strength of a farm and the area of agricultural land used (Zegar, 2018). In 2013-2020, the increase in agricultural land area was most pronounced in farms with an economic size of over EUR 50,000, amounting to 20.8%, including farms with an economic size of EUR 50,000-100,000 and EUR 100,000 and above, where the corresponding increases were 10.6% and 22.9%, respectively. These trends, together with a decrease in the scale of cultivated land on farms with a smaller economic size, indicate an improvement in competitiveness. This does not change the fact that the economic structure of Polish agriculture still lags behind that of EU countries, especially the EU-15. At the same time, it is clearly more favourable than in the new EU countries, especially when compared to agriculture in Romania and Bulgaria.

Summary of findings

The decline in the number of family farms, recorded in 2010-2020 should be considered significant, as changes in land structure are usually evolutionary and progress very slowly. This is indicating progress in the rationalisation of agricultural structures and the professionalisation of farming activities. The economic structure

improved through a reduction in small entities and a dynamic increase in farms with higher economic strength, which enhances competitiveness and income potential. A clear trend toward land concentration and economic strengthening of farms and reflects a gradual shift from fragmented, low-efficiency holdings toward larger, economically viable units capable of adopting technological and organizational innovations. While these changes improve competitiveness and resource efficiency, they also redefine the role of family farms, requiring them to balance autonomy with integration into broader value chains and sustainability frameworks.

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