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CHANGES IN AGRARIAN STRUCTURE IN POLAND IN 1921 AND 2002 BASED ON THE EXAMPLE OF SELECTED PROVINCES FROM THREE ANNEXED TERRITORIES

ZMIANY W STRUKTURZE AGRARNEJ W POLSCE W LATACH 1921 I 2002 NA PRZYKŁADZIE WYBRANYCH WOJEWÓDZTW Z TRZECH BYŁYCH ZABORÓW

Key words: agrarian structure, Gini coefficient, arable coefficient

Słowa kluczowe: struktura agrarna, współczynnik Giniego, wskaźnik urolnienia

Abstract. The objective of the paper is to analyse agrarian structure in Poland in 1921 and 2002 based on the examples of the following selected provinces from the former three annexed territories: the Greater Poland Province from the Prussian partition, the Lesser Poland Province from the Austrian partition and the Świętokrzyskie Province from the Russian partition. The subject of evaluation of changes in agrarian structure is based on comparisons of 1921 and 2002. The Gini coefficient and the arable coefficient were applied in the analysis of agrarian structure. As shown in the paper, changes in agrarian structure, despite the flow of many years and the transformations determining it, were much alike within the three annexed areas. This means that agrarian structure, within the three annexed areas, is strongly conditioned by history.

Introduction

The subject of the paper concerns the changes in agrarian structure in Poland. Agrarian structure is most frequently referred to as the participation of specific area groups in the total number (area) of farm households [Happe 2004, Happe et al. 2005].

Despite common agricultural and economic policies conducted in Poland in the time period 1921-2002, the state of the agrarian structure in the selected areas was primarily influenced by history. Numerous undertakings were carried out in order to change Poland's agrarian structure. In the inter-war period, land belonging to the Catholic Church and manors was partitioned. In the post-war period emphasis was put on creating State Agricultural Farms by encouraging or even making individual farmers sell land to the state. After the political transition of 1989, due to the sale of the above-mentioned State Agricultural Farms and preferential agricultural credits subsidized by the state, there was a dynamic growth of individual farms [Spaulding 2009, Grancelli 2011]. The accession of Poland to the European Union prompted further changes in Polish agriculture. Despite these changes, the differences in agrarian structure in the majority of Polish provinces have remained unchanged.

The objective of the paper is to present the changes in Poland's agrarian structure based on the examples of the following selected provinces: the Greater Poland Province, the Lesser Poland Province, and the Świętokrzyskie Province. The analysis of changes in agrarian structure is to indicate the historical impact on the present differentiation of Polish agriculture.

Data description and research methodology

The data used in the research concern the years 1921 and 2002 and are derived from the publication of the Central Statistical Office [1921] and from the Local Data Bank of the Central Statistical Office [2002][1]. The data compared included information on arable land in private farm

[1] The data from the the State Agricultural Census of 2010 are too aggregated to be compared with data originating from 1921.

households and the number of farm households. The analysis covered selected provinces from the former three annexed territories, which belonged to Poland in the time period under scrutiny. The selected provinces were the Greater Poland Province from the Prussian partition, the Lesser Poland Province from the Austrian partition, and the Świętokrzyskie Province from the Russian partition. In order to provide an objective character of analysis, the selected provinces compared had borderlines within Polish territory in 1921 and 2002. In the case of the Lesser Poland Province, the Miechowski County was excluded from analysis, since it belonged to Russia. In the Greater Poland Province, the Kolski, Koniński, Turecki and Kaliski Counties were not considered (Russian partition). In the case of the Świętokrzyskie Province, all of the counties were taken into account. Before the year 1918, they had belonged to the Russian partition.

This paper does not include any of provinces located within the area that Poland lost after 1945 (at present these areas belong to the Ukraine, Belarus or Lithuania) and are not part of the territory of the Republic of Poland. So-called 'Regained Territories' (in 1921 they belonged to the Weimar Republic) were also excluded from analysis, since comparing them over time was not possible.

In order to conduct the analysis of agrarian structure, the Gini coefficient was applied. This coefficient determines the degree of unevenness in the deployment of arable land. It measures the deployment of the variable, i.e., arable land in farm households. The Gini coefficient assumes values ranging from zero to one. Its value grows together with the increase in the concentration of arable land. The value of the Gini coefficient may be calculated with the following formula [Özdemir et al. 2011]:

$$G = 1 - \sum_{k=0}^{n-1} (\mathrm{X}_{k+1} - \mathrm{X}_{k})(Y_{k+1} + Y_{k}) \tag{1}$$

X_{k+1}, X_k – the cumulated participation of the number of farm households,
Y_{k+1}, Y_k – the cumulated participation of arable land area,
k – the number of categories applied for farm households.

In addition, the arable coefficient [Pietrzak, Walczak 2011] representing the participation of arable land area in the total space of farm households was calculated. Analysing the value of the arable coefficient allows changes in the use of land to be evaluated over time. Lowering the value of the coefficient indicates a bigger need for non-arable land and a shift of agriculture out of the economy. The arable coefficient is calculated as shown below:

$$U = \frac{Ur}{P} \tag{2}$$

Ur – space of arable land,
P – total space.

The agrarian structure in selected provinces in 1921 and 2002

Table 1 presents the values of the Gini coefficient, arable land area, the number of farm households, the average size of farm households and the arable coefficient in the years 1921 and 2002 for the selected three provinces. The values of the Gini index were reduced in all of the three provinces during the considered time period. The average size of farm households and the arable coefficient were also reduced. However, the initial differences in the comparison of provinces from the three annexed territories were preserved. For instance, in all provinces, the average area of a farm household decreased at a similar rate, ranging from 13% to 17%. The relation between the average areas of farm households in the three provinces did not change either. In 1921 and 2002, farm households of the Świętokrzyskie Province were 50% larger than those located in the Lower Poland Province. However, farm households in the Greater Poland Province were three times larger than farm households in the Świętokrzyskie Province. Therefore, when considering agrarian structure from a historical point of view, the differences between the provinces examined have remained unchanged.

Table 1. Basic characteristics of agrarian structure in selected provinces*
Tabela 1. Podstawowe charakterystyki struktury agrarnej dla wybranych województw

Values of measurements/ *Analizowane wielkości*	Years/ *Lata*	Provinces/*Województwo*		
		małopolskie	*świętokrzyskie*	*wielkopolskie*
Analyzed surface areas/*Powierzchnia analizowanych obszarów [km²]*	1921	13 883	12 086	21 084
	2002	14 514.0	11 710.5	20 109.0
The Gini coefficient**/*Indeks Giniego***	1921	0.34	0.40	0.66
	2002	0.27	0.36	0.61
The arable coefficient/ *Współczynnik urolnienia*	1921	0.495	0.572	0.762
	2002	0.441	0.526	0.624
The average size of a farm household/ *Średnia powierzchnia gospodarstwa rolnego [ha]*	1921	3.7	5.6	17.8
	2002	3.1	4.8	14.5
The area of arable land/ *Pow. użytków rolnych [ha]*	1921	687 025	690 965	1 606 645
	2002	640 170	616 150	1 254 504
The number of farm households/ *Liczba gospodarstw*	1921	184 891	123 984	90 075
	2002	209 020	127 749	86 472

* values were calculated for the following ranges (in hectares)/*wartości były obliczane dla następujących przedziałów (w hektarach)*: 1-5; 5-10; 10-20; 20-50; 50-, ** calculated for selected provinces for 2002 with the exclusion of aforementioned counties/*dla roku 2002 obliczone dla województw skorygowanych o określone powiaty*
Source: own study based on the results of the First Agricultural Census in the Republic of Poland dated 30th September 1921 and the Local Data Bank 2012
Źródło: opracowanie własne na podstawie Pierwszy Spis Rolny Rzeczypospolitej Polskiej z dnia 30 września 1921 r. oraz Bank Danych Lokalnych 2012

Summary

The paper analysed agrarian structure in Poland, based on the example of three provinces selected from three various annexed territories. As shown in the paper, the present state of agrarian structure, within the area of the three provinces, has been shaped by historical reasons. Despite implementing numerous undertakings realised aimed at changing agrarian structure, historical reasons were the main factor influencing change. The analysis of selected provinces has shown that the average area of farm households and the arable coefficient have decreased. A similar situation can be observed in the case of the Gini coefficient. In spite of a reduction in the values of characteristics surveyed, there were similar relations between provinces when comparing the year 2002 to 1921. This fact proves that agrarian structure has been preserved over years. It would also suggest that plans concerning agrarian structure policy should include a historical background. Formulating plans concerning expected changes in agrarian policy must incorporate difficulties occurring at the implementation phase and resulting from historical conditions of agrarian structure.

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Streszczenie

Celem badań byłaocena struktury agrarnej w Polsce na przykładzie wybranych województw z trzech byłych zaborów: województwa wielkopolskiego z zaboru pruskiego, województwa małopolskiego z zaboru austriackiego oraz województwa świętokrzyskiego z zaboru rosyjskiego. Ocenie zmian w strukturze agrarnej posłużyło jej porównanie dla lat 1921 oraz 2002. Do analizy struktury agrarnej wykorzystano współczynnik Giniego oraz współczynnik urolnienia. Wskazano, że struktura agrarna, pomimo upływu lat oraz przekształceń ją determinujących, uległa podobnym zmianom w obrębie trzech zaborów. Oznacza to, że w badanych województwach struktura agrarna ma silne uwarunkowania historyczne. Różnice w strukturze agrarnej pomiędzy obszarami trzech zaborów zostały zachowane do obecnych czasów, pomimo wspólnej polityki rolnej, gospodarczej i ekonomicznej prowadzonej na tym terytorium przez prawie 100 lat.

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