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WŁODZIMIERZ DZUN  
Institute of Rural and Agricultural Development  
Polish Academy of Science  
Warsaw

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## **THE POSSIBILITIES OF COMPARATIVE ANALYSIS OF CHANGES IN THE NUMBER AND STRUCTURE OF FARMS IN 1990-2013 IN THE LIGHT OF THE NEW STATISTICAL DEFINITION OF AN AGRICULTURAL HOLDING**

### **Abstract**

*Because of the new definition, the status of an agricultural holding was lost by holdings of natural and legal persons not running agricultural activity (both of 0-1 ha of UAA and 1 ha of UAA and more) and by private farms (of natural persons) up to 1 ha of UAA running agricultural activity, but executing agricultural production below the set production thresholds. This reduced the number of agricultural holdings and also caused changes, varied in degree, in the level of their provision with land, labour and capital resources. Hence, what changed were the indices illustrating the agriculture development level, including the very universal ones like average farm area, labour inputs per 100 ha, productivity of labour, land and capital, etc. Consequently, majority of data on farms presented in the publications of the Central Statistical Office of Poland until 2013 is not directly comparable with the data drawn up with the use of the new definition. The presented study attempted to analyse the changes in the number and structure of agricultural holdings in 1990-2013 and in their provision with land resources, considering the new definition of an agricultural holding and regional differentiation regarding these changes.*

**Keywords:** farm, utilised agricultural area, farm area and legal and organisational structure.

## Introduction

The last representative farm structure survey in Poland (held between June 1 and July 8, 2013) was carried out with the use of a new definition of an agricultural holding applied in statistics. The fundamental change consists in losing the status of an agricultural holding by holdings of natural and legal persons not running agricultural activity (both below 1 ha of UAA and of 1 ha of UAA and more)<sup>1</sup> as well as by individual farms (of natural persons) below 1 ha of UAA (including farms without UAA) running agricultural activity, but executing agricultural production below the set production thresholds<sup>2</sup>, excluding organic farms. The need for redefinition of the category of “an agricultural holding”, especially regarding the area group below 1 ha, resulted from the former changes in farm structure after 1990 and also the need for adjustment to the EU standards binding in classification of agricultural holdings<sup>3</sup> and to the definitions used in the administrative registers and national legislation (GUS, 2013a, pp. 43-46).

In 2014, based on the survey results, the Central Statistical Office of Poland (*Główny Urząd Statystyczny, GUS*) drew up and published *Charakterystyka gospodarstw rolnych w 2013 r.* (Farm Structure Survey in 2013). The subsequent Statistical Yearbooks of Agriculture, starting from 2013, also published data on agricultural holdings considering their new definition. The introduction of the new definition decreased the number of farms and, at the same time, their level of provision with land, labour and capital resources<sup>4</sup>. Therefore, what changed were the indices illustrating the agriculture development level, including the commonly used indices such as the average farm area, labour inputs per 100 ha,

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<sup>1</sup> UAA – utilised agricultural area. Although since 2002 the data on the geodesic status and directions of land use in Poland have included as UAA agricultural built-up areas, land under ponds and ditches, the agricultural statistics up to 2006 (as before 2002) included as UAA only arable land, orchards, meadows and pastures. As of 2007, UAA include also UAA in good agricultural condition (sown area, fallow land, permanent crops including orchards, kitchen gardens, permanent meadows and pastures) and other UAA (not in good agricultural condition and not used).

<sup>2</sup> These farms in order to obtain the status of an agricultural holding have to reach at least one of the following thresholds: 0.5 ha of plantation of: fruit trees or bushes, vegetables, strawberries, hops; 0.3 ha of orchard and ornamental nurseries; 0.1 ha of crops (vegetables, strawberries, flowers or ornamental plants) under covers or tobacco; 25 m<sup>2</sup> of edible mushrooms; 10 livestock (cattle) units in total; 5 cows; 50 pigs in total; 10 sows; 20 sheep units or goats in total; 100 units of poultry in total; 5 horses in total; 50 units of female rabbits (does); 5 units of females of other fur animals; 10 units of wild animals bred for meat production; 20 hives. These thresholds were adjusted to the requirements of farms from special sections. In the old definition, farms below 0.1 ha of UAA were required to achieve a set agricultural production threshold, which was definitely lower than today.

<sup>3</sup> No such adjustment resulted in differences between the data concerning farms given by GUS in the national publications and those published in Eurostat (see: Pocza, 2013)

<sup>4</sup> The 2013 yearbook and subsequent ones included data on the number and area structure of farms (grouped from 0-1 ha to 100 ha and more) calculated according to the new definition, data only for 2010, 2011 and 2012 at the country-wide scale and for 2010 and 2012 at the level of voivodeships.

productivity of labour, land and capital, etc. Consequently, most of farm data presented in GUS publications up to 2013 is not directly comparable with the data drawn up with the use of the new definition. This definitely complicates the analysis of change dynamics taking place in the farm structure on the basis of GUS data, specifically in regional terms.

The presented study tries to analyse the changes in farm number and structure in 1990-2013, and in their provision with UAA resources, taking into account the new definition of an agricultural holding and regional differentiation of these changes. This can facilitate more in-depth comparative analyses of changes regarding farms and agriculture, considering the new definition. The analysis was based on the results of the Agricultural Census of 1990, National Agricultural Censuses (*Powszechny Spis Rolny*, PSR) of 1996, 2002 and 2010, representative farm structure surveys performed in 2005, 2007 and 2013, and data from the Statistical Yearbooks of Agriculture of GUS. Additionally, the paper uses research results regarding the presented problems, in particular those implemented in the Institute of Agricultural and Food Economics – National Research Institute and the Polish Academy of Sciences, Institute of Rural and Agricultural Development.

The structure of the study was adjusted to the specificity of changes in the definition of an agricultural holding. Because the basic change in the definition consists in elimination of holdings not running agricultural activity, the first part of the study presents changes in the number and structure of farms running agricultural activity. Then, as the new definition of an agricultural holding eliminates from the group the agricultural holdings of natural persons below 1 ha of UAA, which run small-scale agricultural production, the study also separately analyses the changes in the group of farms of 0-1 ha and in the group above 1 ha. In order to illustrate the scale of changes caused by the new definition, data for holdings compliant with the new definition are given at the background of data compliant with the old definition (“farms in total”).

### **Farms running agricultural activity in 1990-2010 at the background of farms compliant with the new definition in 2010-2013**

From the beginning of system changes up to Poland's accession to the EU, there was a clear and strong downward trend in the total number of farms, but even stronger downward trend in the number of farms running agricultural activity. In 1990-1996, i.e. in the period of faster system changes, the number of farms in total dropped from ca. 3834 thousand to 3066.5 thousand (by ca. 20%), and the number of farms running agricultural activity to 2764 thousand<sup>5</sup> (by 28%<sup>6</sup>). The share of farms running agricultural activity in the structure of farms

<sup>5</sup> After correction made by GUS. Before the correction the number 2681 thousand was given (GUS, 1998).

<sup>6</sup> Assuming that at the verge of system changes the number of farms running agricultural activity was only slightly different than the number of farms in total.

in total decreased from ca. 100% to ca. 90%. In the period, the dynamics of decrease in the number of farms in total was slightly weakened by the emergence of new holdings based on agricultural properties from the Agricultural Property Stock of the State Treasury. At the same time, this factor lead to strengthening the growth trends in the share of farms not running agricultural activity, because a major part of these farms failed to take up the said activity due to varied reasons (more in: Dzun, 2015a; Dzun, 2008).

Table 1

*Farms in total and farms running agricultural activity in 1996-2010 at the background of farms compliant with the new definition in 2010 and 2013*

Farms	1996	2002	2005	2010	2010 <sup>a</sup>	2013
Number of farms						
total, thousand	3066.5	2933.2	2733.4	2277.6	1509.1	1429
dynamics y/y <sup>a</sup>	80.0b	95.7	93.2	83.3	66.3	94.7
running agricultural activity, thousand	2763.4	2177.6	2476.5	1891.1	1509.1	1429
dynamics	72.1b	78.8	113.7	76.4	79.8	79.8
% (farms in total = 100)	90.1	74.2	90.6	83.0	100.0	100.0
UAA per farm						
total, thousand ha	17 348.3	16 899.3	15 906.0	15 503.0	14 859.0	14 609.2
dynamics y/y	93.9 <sup>b</sup>	97.4	94.1	97.5	95.8	98.3
running agricultural activity, thousand ha	.	15 204.6	15 329.5	15 026.2	14 859.0	14 609.2
dynamics y/y	.	.	100.8	98.0	98.9	98.3
ha per farm in total	5.7	5.8	5.8	6.8	9.8	10.2
ha per farm running agricultural activity	.	7.0	6.2	7.9	9.8	10.2

<sup>a</sup> Year-on-year; <sup>b</sup> assuming as 100 the data for 1990; 2010a – as per the new definition.

Source: own compilation based on data from PSR 1996, 2002 and 2010 and representative GUS studies *Struktura gospodarstw rolnych* of 2005 and 2013.

In 1996-2002, farmers refrained from liquidating agricultural holdings because of the announcement on the entry into the EU and the expected improvement in farming conditions and also the expected growth in land prices. Yet, successively deteriorating profitability of agricultural production caused resignation from agricultural activity. Thus, the dynamics of reduction in the number of farms in total significantly weakened (a drop to 2933.2 thousand, i.e. by 4%), but for farms running agricultural activity – it was still high (a drop to 2177.6 thousand, i.e. by 21%). Consequently, the share of farms running agricultural activity in the structure of farms in total fell from ca. 90% in 1996 to ca. 74% in 2002. Moreover, some users of liquidated agricultural holdings, above all smaller area farms, failed to transfer factors of production (especially land) to

farms running agricultural production, but executed family sections or sold the land for non-agricultural purposes. As a result, the liquidated small farms were very often converted into typical allotments and building plots. This caused outflow of agricultural land to the heading “agricultural land not forming farms” and limited the possibility to improve the area structure of farms running agricultural activity. In 1996-2002, the average farm area increased from 5.7 to 5.76 ha of UAA and that of a farm running agricultural activity in 2002 was at 7 ha of UAA<sup>7</sup> (Józwiak, 2003; Józwiak and Dzun, 2008; Dzun and Józwiak, 2009).

The above-presented changes varied strongly in the regions. The number of farms not running agricultural activity grew the fastest in voivodeships with the greatest share of small farms and in voivodeships where households, linked to a farm, had extensive possibilities of earning off-farm incomes, and also in voivodeships which had major problems with efficient distribution of property left after liquidation of state-owned farms (*państwowe gospodarstwo rolne*, PGR). Accordingly, in 2002 the lowest share of farms running agricultural activity was in Śląskie (52.8%), and only then in previously collectivised voivodeships (Zachodniopomorskie – 64.3%, and Lubuskie – 66.3%). Whereas the highest share belonged to voivodeships showing very good agricultural conditions, relatively favourable area structure of individual farms and demonstrating minor possibilities of earning off-farm incomes, respectively, Wielkopolskie – 85.8%, Kujawsko-Pomorskie – 85.3%, Lubelskie – 86.2%, Podlaskie – 80.0% (Table 2).

After 2002, given the expected accession to the EU, the existing change trends in the farm number and structure were hampered. Poland's accession to the EU and coverage of Polish agriculture with the CAP, and in particular upon introduction of area payments for agricultural holdings and improvement in agricultural production and growth in agricultural land prices, clearly distorted the former trends in the discussed changes (Dzun, 2012; Józwiak and Ziętara 2013; Poczta, 2013). In 2002-2005, although the number of farms in total dropped (above all, as a result of strong decrease in the number of very small-area farms), the number of farms running agricultural activity considerably increased (from 2177.6 to 2476.5 thousand, i.e. by ca. 99.6 thousand on average per annum), and the average farm area fell from 7.0 ha to 6.2 ha (Table 1). Albeit, in the next years – when agricultural production profitability failed to improve and competitiveness of small farms largely deteriorated – the downward trend in the number of farms, especially running agricultural activity, rapidly intensified. The average annual decrease in the number of farms running agricultural activity in 2005-2007 amounted to ca. 43 thousand and in 2007-2010 to nearly 167 thousand, i.e. it was higher than in the pre-accession period (in 1996-2002 it amounted to less than 98 thousand of holdings per year). In the entire inter-census period

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<sup>7</sup> For 1966, based on data published by GUS, it is not possible to establish the average due to lack of data on UAA of these farms.



(2002-2010), the number of farms running agricultural activity dropped slower than the number of farms in total (respectively, by 13% and 23%), because of which their share in the structure of farms in total increased from 74% to 83% (Tables 1 and 2). But then, the UAA of these holdings decreased by only 1.2%. Accordingly, the average area of a farm running agricultural activity grew from 7.0 to 7.95 ha of UAA (including 7.72 UAA in good condition). In this respect, the regional differentiation of changes was very clear. To begin with, it needs to be indicated that in some voivodeships the relations between the decreasing number of farms running agricultural activity and UAA of these farms were rather unfavourable, which caused a moderately insignificant growth in the average farm area (Podkarpackie by 0.1 ha; Świętokrzyskie and Podlaskie by 0.2 ha, Małopolskie by 0.3 ha). In other voivodeships these relations were very favourable, for instance, in Zachodniopomorskie, Lubuskie and Warmińsko-Mazurskie. At considerable drop in the number of farms, there was even a growth in the UAA of agricultural holdings, and in Opolskie at very large decrease in the number of farms, UAA decreased only slightly. The highest growth in the average holding area was in Zachodniopomorskie (by 6.2 ha) and Opolskie (by 4.5 ha), and a relatively large one in Kujawsko-Pomorskie (by 3.2 ha), Lubuskie (by 2.7 ha) and Warmińsko-Mazurskie (by 2.6 ha) (Tables 2 and 3). This was largely the effect of starting agricultural activity by usually larger former state-owned farms, after the introduction of direct payments (more in: Dzun, 2016).

Using the new definition of an agricultural holding to calculate the number of farms in 2010, their number drops to 1509.1 thousand, i.e. by 20.2% against the number of farms running agricultural activity as per the former definition (Tables 2 and 3). Because the new definition excluded from the group of agricultural holdings, farms of natural persons up to 1 ha running agricultural activity which failed to achieve a set agricultural production threshold (i.e., in general, the smallest farms even in this area group), UAA of these farms would decrease by only 1.1% and the average area would grow to 9.8 ha. For farms thus selected, the number of farms would decrease the most in the voivodeships where the share of farms up to 1 ha was the highest and where these farms are the least oriented at agricultural production (Podkarpackie by 37.1%, Śląskie by 37.0%, Małopolskie by 30.5%), and it would decrease the least in voivodeships predominated by small-scale individual farms, but with a rather small share of farms up to 1 ha (Mazowieckie by 7.7%, Podlaskie by 8.5%, Łódzkie by 9.0%).

Despite the fact that the new definition excluded farms not running agricultural activity and individual farms up to 1 ha failing to achieve a set minimum production threshold (except for organic farms), the number of farms continues to visibly drop (in 2010-2013 by 5.3%). It plummeted the most in Śląskie (by 8.9%) and Małopolskie (by 7.1%), and the least in Łódzkie (by 1.7%) and Wielkopolskie (by 2.3%). Because this trend pertains specifically to smaller area farms, UAA of agricultural holdings in this period fell by only 1.7% and

the average farm area grew from 9.8 to 10.2 ha. The area decreased the most in Małopolskie (by 10.9%) and Podkarpackie (by 9.7%). There was even a small increase in UAA of holdings in some voivodeships (Warmińsko-Mazurskie by 1.7%, and Opolskie and Podlaskie by 1.3%) which improved the efficiency of management of the previously collectivised land or which increased the flow of land from liquidated farms to operating farms (Tables 2 and 3).

Table 2

*Regional differentiation of changes in the number of farms running agricultural activity and their provision with UAA in 2002 and 2010 at the background of farms compliant with the new definition in 2010 and 2013*

	2002		2010		2010	2010a		2013	2013/	2013/
	number	% <sup>a</sup>	number	% <sup>a</sup>	2002	number	% <sup>a</sup>	number	2010	2010a
Dolnośląskie	99 747	70.6	83 997	78.3	84.2	61 834	57.6	59 544	70.9	96.3
Kujawsko-Pomorskie	98 902	85.3	77 905	87.9	78.8	68 148	76.9	65 115	83.6	95.5
Lubelskie	263 813	86.2	233 559	90.8	88.5	188 266	73.2	178 135	76.3	94.6
Lubuskie	36 615	66.3	30 853	71.8	84.3	22 147	51.5	21 256	68.9	96.0
Łódzkie	166 126	79.2	143 521	85.4	86.4	130 565	77.7	128 309	89.4	98.3
Małopolskie	260 020	69.6	221 377	78.1	85.1	153 771	54.2	142 874	64.5	92.9
Mazowieckie	271 606	73.5	247 963	89.3	91.3	228 821	82.4	212 159	85.6	92.7
Opolskie	55 960	75.5	36 820	82.1	65.8	28 437	63.4	26 753	72.7	94.1
Podkarpackie	236 029	75.7	223 295	85.4	94.6	140 465	53.7	132 823	59.5	94.6
Podlaskie	96 102	80.0	92 291	88.7	96.0	84 136	80.9	79 083	85.7	94.0
Pomorskie	52 665	68.6	47 149	77.4	89.5	41 136	67.5	39 956	84.7	97.1
Śląskie	133 661	52.8	102 694	62.9	76.8	64 745	39.7	58 981	57.4	91.1
Świętokrzyskie	128 643	74.7	114 863	80.9	89.3	96 672	68.1	90 241	78.6	93.3
Warmińsko-Mazurskie	58 623	72.8	52 245	80.2	89.1	43 788	67.2	41 928	80.3	95.8
Wielkopolskie	173 386	85.8	144 201	88.6	83.2	125 692	77.3	122 788	85.2	97.7
Zachodnio-pomorskie	45 693	64.3	38 333	79.8	83.9	30 525	63.5	29 062	75.8	95.2
Poland	2 177 591	74.2	1 891 066	83.0	86.8	1 509 148	66.3	1 429 007	75.6	94.7

<sup>a</sup> a share of farms running agricultural activity in the group of farms in total.

Note: 2002 and 2010 – number of farms running agricultural activity as per the old definition; 2010a and 2013 – number of farms as per the new definition.

Source: own compilation based on data from PSR 2002 and 2010 and representative GUS studies *Struktura gospodarstw rolnych* of 2013.



Table 3

*Changes in provision with UAA of farms running agricultural activity in 2002 and 2010, and farms as per the new definition in 2013*

	2002		2010		2013	2013 2002	2013 2010	ha per farm		
	thousand ha	%	thousand ha	%	thousand ha			2002	2010	2013
Dolnośląskie	932.2	89.7	928.7	96.0	922.9	99.0	99.4	9.3	11.1	15.5
Kujawsko-Pomorskie	1062.2	96.1	1082.8	99.6	1052.3	99.1	97.2	10.7	13.9	16.2
Lubelskie	1464.0	93.1	1401.5	98.9	1375.7	94.0	98.2	5.5	6.0	7.7
Lubuskie	423.6	88.2	441.2	97.8	407.9	96.3	92.5	11.6	14.3	19.2
Łódzkie	1064.0	92.8	985.7	98.1	982.5	92.3	99.7	6.4	6.9	7.7
Małopolskie	667.0	85.1	626.8	94.5	558.4	83.7	89.1	2.6	2.8	3.9
Mazowieckie	2008.5	89.3	1953.4	96.9	1901.9	94.7	97.4	7.4	7.9	9.0
Opolskie	532.7	95.1	516.3	99.5	523.1	98.2	101.3	9.5	14.0	19.6
Podkarpackie	667.0	82.6	647.2	93.4	584.1	87.6	90.3	2.8	2.9	4.4
Podlaskie	1083.9	94.3	1060.5	99.1	1074.1	99.1	101.3	11.3	11.5	13.6
Pomorskie	777.3	89.4	752.6	93.2	738.3	95.0	98.1	14.8	16.0	18.5
Śląskie	424.3	78.0	406.9	89.5	382.6	90.2	94.0	3.2	4.0	6.5
Świętokrzyskie	561.5	89.2	524.9	95.3	499.4	88.9	95.1	4.4	4.6	5.5
Warmińsko-Mazurskie	976.2	86.5	1004.1	95.1	1021.1	104.6	101.7	16.7	19.2	24.4
Wielkopolskie	1757.5	96.6	1780.8	99.5	1748.2	99.5	98.2	10.1	12.3	14.2
Zachodnio-pomorskie	802.9	79.2	912.9	95.6	836.8	104.2	91.7	17.6	23.8	28.8
Poland	15 204.6	90.0	15 026.2	96.9	14 609.2	96.1	97.2	7.0	7.9	10.2

Source: as in Table 2.

### **Changes in the farm area group up to 1 ha inclusive<sup>8</sup>**

In this area group the above-outlined trends were especially strong. In 1990-2002, the number of farms in total decreased from 1691.0 thousand to 977.1 thousand, i.e. by 42.2%, and the number of farms running agricultural production to 556.4 thousand, by as much as over 67%<sup>9</sup> (Table 4).

<sup>8</sup> In general, GUS applies left-closed intervals (e.g. 2-5 ha, i.e. from 2.00 to 4.99), except for the 1-2 ha interval, which covers farms from 1.01 ha to 1.99 ha. Therefore, the analysed interval includes also farms with the area above 0.99 ha to 1.01 ha. Hence, some part of farms in this group (farms of 1 ha of UAA) was not covered by production programmes.

<sup>9</sup> Assuming that in 1990, nearly 100% of farms in this area group run agricultural production.

Poland's accession to the EU and growth in the prices of agricultural products, especially of animal origin, resulted in a short reversal of the downward trend regarding farms running agricultural production. In 2005, the number of discussed farms grew up to 768 thousand, but a fast growth in the prices of factors of agricultural production resulted in a return to the downward trend, and already in 2007 there was by 123 thousand less of such farms. In total, in 2002-2010 the number of the discussed farms, both in total and running agricultural activity, fell by nearly 27% for each case (respectively, to 715.0 thousand and 406.8 thousand). In the analysed area group, the share of holdings of legal persons was minimal: in 2002 their number in total was at only 235, and those running agricultural production at 111, and in 2010, respectively, at 137 and 132.

Table 4

*Changes in the number of farms running agricultural activity of less than 1 ha and their provision with UAA (ha)*

	2002		2010		2010a	2013		2013/2010		2013/2010a
	number	UAA	number	UAA	number	number	UAA	number	UAA	
In total	556 353	229 713	406 793	185 042	24 900	34 375	29 174	8.5	15.8	138.1
% <sup>a</sup>	56.9	57.9	56.9	72.2	3.5	x	x	x	x	x
IF	556 242	229 685	406 661	185 020	24 768	34 324	29 171	8.4	15.8	138.6
% <sup>a</sup>	56.9	57.9	56.9	72.2	3.5	x	x	x	x	x
FoLP	235	28	132	22	132	51	3	38.6	13.6	38.6
% <sup>a</sup>	47.2	63.6	96.4	81.5	96.4	x	x	x	x	x

<sup>a</sup> % against the number and UAA referring to farms in total below 1 ha (running or not agricultural activity).

IF – individual farms; FoLP – farms of legal persons; 2002 – as per the old definition; 2010a – as per the new definition. GUS did not give data on UAA; 2013 – as per the new definition.

Source: as in Table 2.

In 2013, GUS based on the aforementioned Farm Structure Survey held in line with the new definition, determined that – at the time of the survey – there were 34.4 thousand of discussed farms in Poland (including 457 farms with no land, 2861 with no UAA, and 446 farms with no UAA in good agricultural condition). Thus, the number of analysed holdings against 2010 dropped to the level of 4.8% of the number of farms in total and 8.5% of the number of farms running agricultural activity. UAA of these farms decreased, respectively, to 11.4% and 15.8%.

The reduction in the number of farms from the area group below 1 ha of UAA in 2013 against 2010 was, above all, influenced by the determination that these have to be farms (both of natural and legal persons) running agricultural production and determination for individual farms (of natural persons) of thresholds in respective types of production (see footnote 1) and exemption for these thresholds for farms of legal persons and individual organic farms of physical persons.

It should be, however, kept in mind that – in line with the methodology used by GUS – a large number of farms<sup>10</sup> (see footnote 6) that did not have to meet this requirement also fell to the analysed group. In 2013, individual farms of 1 ha of UAA amounted to as much as 25.4 thousand (3/4 of the total number of farms in the group). Farms of less than 1 ha, which kept the status of a farm, amounted to only 9 thousand.

Table 5

*Farms below 1 ha of UAA in 2002-2013 by voivodeships*

	2002			2010					2013	2013 2010b	2013 2010c
	a	b	%	a	b	%	c	%	c		
Dolnośląskie	57.99	36.00	62.1	43.88	23.55	53.7	1.39	3.2	1.12	4.8	80.9
Kujawsko-Pomorskie	36.46	26.43	72.5	20.69	10.85	52.4	1.09	5.3	1.18	10.8	108.0
Lubelskie	82.55	60.14	72.9	67.38	47.74	70.8	2.44	3.6	4.77	10.0	195.1
Lubuskie	23.23	13.55	58.3	19.46	9.26	47.6	0.56	2.9	0.62	6.7	111.7
Łódzkie	44.67	25.12	56.2	33.65	14.37	42.7	1.41	4.2	2.50	17.4	177.6
Małopolskie	156.84	80.46	51.3	121.24	70.72	58.3	3.12	2.6	6.04	8.5	193.9
Mazowieckie	77.74	38.46	49.5	39.87	22.01	55.2	2.87	7.2	3.65	16.6	127.3
Opolskie	32.23	20.57	63.8	16.35	8.82	53.9	0.44	2.7	0.52	5.9	118.3
Podkarpackie	113.24	68.80	60.8	116.26	85.30	73.4	2.47	2.1	2.97	3.5	120.1
Podlaskie	20.22	10.87	53.8	18.01	8.66	48.1	0.50	2.8	1.47	16.9	291.3
Pomorskie	22.82	12.70	55.7	18.09	6.77	37.4	0.76	4.2	0.73	10.7	96.3
Śląskie	142.17	59.23	41.7	85.66	40.05	46.8	2.10	2.5	2.13	5.3	101.4
Świętokrzyskie	46.53	24.06	51.7	38.79	19.64	50.6	1.45	3.7	1.82	9.3	125.7
Warmińsko-Mazurskie	28.50	17.48	61.3	20.75	9.15	44.1	0.70	3.4	0.70	7.6	100.3
Wielkopolskie	62.46	45.34	72.6	38.78	21.52	55.5	3.01	7.8	3.75	17.4	124.4
Zachodnio-pomorskie	29.45	17.15	58.2	16.16	8.39	51.9	0.58	3.6	0.42	5.0	72.2
Poland	977.09	556.35	56.9	715.02	406.79	56.9	24.88	3.5	34.37	8.4	138.2

Note: 2002a and 2010a – farms in total; 2002b and 2010b – farms running agricultural activity; 2010c and 2013c – farms as per the new definition.

Source: as in Table 2.

The greatest drop in the number of the discussed farms was in the Śląskie and Podkarpackie Voivodeships, which are characterised by definite prevalence of typical small-scale individual farms, and the Dolnośląskie and Zachodnio-pomorskie Voivodeships, i.e. previously collectivised voivodeships where the

<sup>10</sup> This follows from the fact that the lower limit of individual farms which were covered by the system of KRUS are farms of 1 ha of UAA.

distribution of the Agricultural Property Stock of the State Treasury, additionally, contributed to a major growth in the number of small-scale farms not having the character of agricultural holdings. The number of farms and especially UAA reduced the least in the voivodeships characterised by smaller fragmentation of individual farms, and also better agricultural conditions and production specialisation, i.e. Wielkopolskie, Podlaskie, Mazowieckie and Łódzkie.

Table 6

*Number and structure of farms below 1 ha as per forms of ownership and legal and organisational forms*

Farms	2002 <sup>a</sup>		2010 <sup>a</sup>		2013 <sup>b</sup>		2010	2013
	number	%	number	%	number	%	2002	2010
Total	553 792	100	406 793	100	34 375	100	73.5	8.5
Private	553 774	99.997	406 776	99.996	34 372	99.991	73.5	8.5
of natural persons	553 687	99.981	406 661	99.968	34 324	99.852	73.4	8.4
of legal persons	87	0.016	115	0.028	48	0.140	132.2	41.7
- cooperatives of agricultural production	2	0.000	10	0.002	1	0.003	500.0	10.0
- national companies	50	0.009	75	0.018	36	0.105	150.0	48.0
- other national	26	0.005	14	0.003	3	0.009	53.8	21.4
- foreign and mixed	9	0.002	16	0.004	8	0.023	177.8	50.0
Public	18	0.003	16	0.004	3	0.009	88.9	18.8

<sup>a</sup> – in 2002 and 2010 farms running agricultural activity; <sup>b</sup> – farms as per the new definition.

Source: Dzun W. (2015) and representative GUS surveys *Struktura gospodarstw rolnych* of 2013.

The above-presented changes were highly varied depending on the form of ownership, and legal and organisational form. In 2002-2010, the number of farms (both individual and public) below 1 ha was dropping. Whereas in the group of private farms of legal persons there was a clear growth in the group of cooperative farms and national and foreign companies, and a fall in the group of other national farms. This was chiefly the effect of establishing poultry farms, horticultural farms and different nurseries of ornamental and fruit plants. In 2010-2013, taking as basis the number of farms running agricultural activity in 2010, absolutely the highest drop was noted for farms of natural persons (up to 8.4%) and the lowest for private farms of legal persons organised as commercial law companies (national and foreign), respectively, up to 48% and 50%. A relatively major drop in the number was noted in the group of cooperative farms, except for agricultural cooperatives (*rolnicza spółdzielnia produkcyjna*, RSP) (up to 10%) and public farms (to ca. 19%) (Table 2). As a result, the share of private and public farms of legal persons grew in the entire analysed group. However, the share of individual farms in the group is still overwhelming (99.97% in 2010 and 99.85% in 2013).

GUS – on the basis of PSR data – estimated that in 2010, in the group of individual farms of 1 ha and less (amounting to 715 thousand, including 407 thousand farms running agricultural activity), only ca. 24.8 thousand, i.e. 3.5% of all farms, would keep the status of an agricultural holding compliant with the new definition. Hence, 308 thousand farms would lose the status because of failure to run agricultural activity, and 382 thousand of them – because of failure to achieve a set production threshold. In the group of farms of legal persons amounting to 137 farms, the status of an agricultural holding would be lost by only 5 farms because of failure to run agricultural activity. In total, there would be nearly 24.9 thousand of farms up to 1 ha inclusive, meeting the new definition of an agricultural holding in 2010 (Tables 4 and 6). In 2010-2013, there was a major growth in the number of analysed farms. Yet, analysis of this farm group, as regards their economic size, points to the fact that it was the sole result of an increase in the number of farms in the group of natural persons, mostly the smallest and the largest in economic terms. In the farm group of legal persons the trends were utterly different. Liquidation referred mostly to the economically smallest farms (Table 7). A major growth (from 13.1 to 25.4 thousand) in the number of economically smallest farms of natural farms concerned primarily farms of 1 ha of UAA not covered by the production thresholds, including also because of the possibility to use the Agricultural Social Insurance Fund (*Kasa Rolniczego Ubezpieczenia Społecznego, KRUS*).

Table 7

*Changes at farms in the area group of 0-1 ha of UAA by economic size*

SO	2010				2013				2013/2010	
	IF	%	FoLP	%	IF	%	FoLP	%	IF	FoLP
Total	406 661	100	132	100	34 324	100	51	100	8.5	51.0
0-2	383 087	94.2	29	22.0	22 150	64.4%	1	2.0	5.8	3.4
2-4	14 847	3.7	4	3.0	6287	18.3%	2	3.9	42.3	50.0
4 - 8	3160	0.8	5	3.8	1432	4.2%	2	3.9	45.3	40.0
8-15	1658	0.4	3	2.3	1070	3.1%	2	3.9	64.5	66.7
15-25	1051	0.3	3	2.3	747	2.2%	0	0.0	71.1	0.0
25-50	1073	0.3	5	3.8	949	2.8%	3	5.9	88.4	60.0
50-100	732	0.2	10	7.6	576	1.7%	0	0.0	78.7	0.0
100-500	889	0.2	31	23.5	934	2.7%	15	29.4	105.1	48.4
500-1000	104	0.0	17	12.9	122	0.4%	14	27.5	117.3	82.4
>1000	60	0.0	25	18.9	456	1.3%	12	23.5	760.0	48.0
>2 SO	23 574	5.8	103	78.0	12573	36.6	50	98.0	53.3	48.5
>100 SO	1053	0.3	73		1512	4.4	49	80.4	143.6	56.2

Source: own compilation based on *Charakterystyka gospodarstw rolnych PSR 2010* and *Charakterystyka gospodarstw rolnych w 2013 r.*

The direction of changes in this group can be also traced by comparing the size of respective groups of types of farming. At this point it can be noted that the fall in the number of analysed farms in 2013, against the number of farms running agricultural production in 2010, to the level of 8.4% (see Table 4) was the lowest in the group of farms specialising in horticultural crops (to 26.2%) and in the group of mixed farms – different animals (to 20.8%), and it was the highest in the group of farms specialising in rearing livestock fed with concentrates (to 4.2%)<sup>11</sup> and mixed farms – different crops (6.1%).

The above data indicate that the group of farms up to 1 ha inclusive, selected on the basis of the new definition, clearly increases and that, simultaneously, it undergoes very dynamic polarisation processes. The share of farms up to 2 SO is still high, though. The share of very large farms in economic terms (above 100 SO) grows as well, which shows a clear progress in the process of specialisation and concentration of agricultural production in this area group. These processes are the strongest for farms specialising in horticultural crops and rearing animals fed with concentrates. Although farms up to 1 ha inclusive use only 0.2% of the total of UAA being at the disposal of the total number of farms, their share in the area of crops under covers amounts to 4.5% and in the poultry population to 35.5%, including in the population of laying hens – 40.4%.

### **Changes in the group of farms above 1 ha**

#### **1. Changes in the number of farms and UAA used by them**

Changes in the area group above 1 ha, resulting from the use of the new definition, boil down to the fact that the status of farms was lost by farms, both of natural and legal persons, not running agricultural activity<sup>12</sup>. By 1990, basically all farms above 1 ha run agricultural production. After 1990, especially in the period of faster system changes, two fundamental change trends were marked. On the one hand, there was a clear downward trend in the number of farms caused by deteriorated profitability of agricultural production (in particular those smaller in area and economically weaker) and by liquidation of state-owned farms and, on the other, establishment of new farms on the basis of private trade in agricultural land and distribution of the agricultural property from the Agricultural Property Stock of the State Treasury (more in: Dzun, 2015a). Indeed, there was a clear downward trend in the number of discussed farms (from 21 430 thousand in

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<sup>11</sup> In 2010, for farms of less than 1 ha, pigs were kept by 10.2 thousand of farms, but only less than 1.2 thousand kept 10 or more units (including only 61 keeping more than 100 units and more) with the threshold at 50 units, and also 111.6 thousand kept poultry, but only ca. 5 thousand kept 50 units and more (with the threshold at 100 units and more).

<sup>12</sup> When comparing the above, it needs to be remembered that as of 2007 agricultural activity apart from agricultural production includes also keeping UAA in good agricultural condition. However, in the period when there were no subsidies, farms resigning from running agricultural production usually also did not incur inputs for keeping UAA in good agricultural condition.



1990 to 2046.5 thousand in 1996, and 1956.1 thousand in 2002). When most of the small farms under liquidation failed to transfer used land to operating farms, UAA used by the discussed farms dropped. Still, bearing in mind that mainly smaller area farms were liquidated, the dynamics of lowering UAA of farms was much lower than the dynamics of reducing the number of farms (in 1900-1996 drop by 4.7% to 17 001.3 ha, in 1996-2002 by 2.9% to 16 502.8 thousand ha).

At the same time, in the group of farms above 1 ha in total, the share of farms resigning from running agricultural activity grew fast. In 1996, it already amounted to ca. 10% (ca. 206 thousand of farms), and in 2002 – 17.1% (334.8 thousand). This was primarily the effect of very strong growth in the share in the smallest area groups (1-2 ha to 32.1%, and 2-5 ha to 19.2%). In the larger area groups, the growth in the number and share of farms not running agricultural production was much lower (at 50-100 ha and above 100 ha it was largely caused by difficulties in efficient distribution of agricultural property after the liquidated state-owned farms)<sup>13</sup>. Consequently, in 1990-2002 the number of farms above 1 ha in total dropped by 8.2% (from 2143 thousand to 1956 thousand) and the number of farms running agricultural production fell by ca. 24% (to 1621.3 thousand)<sup>14</sup>. In relation to the presented relations between changes in respective area groups, the drop in UAA used by farms decreased by ca. 19% (to 14 975 thousand ha).

The dynamics of these changes was strongly differentiated in the regions (Table 8). As a result, before Poland's entry into the EU the greatest share of farms not running agricultural activity was in voivodeships characterised by a large share of small farms, whose major part was not the basic source of livelihood for their users (a classical example is Śląskie – in 2002 nearly 33%), and in voivodeships experiencing significant difficulties with distribution of the agricultural properties from the Agricultural Property Stock of the State Treasury (Zachodniopomorskie – over 32%, Lubuskie – 28%). Whereas the lowest number of such farms was in voivodeships characterised by very good agricultural condition, relatively good agrarian structure, where most of the Agricultural Property Stock of the State Treasury was leased to companies – mostly employee-owned (Wielkopolskie – ca. 8%, Kujawsko-Pomorskie – 9%) and in Lubelskie voivodeship where it was difficult to find off-farm incomes (9%).

Poland's accession to the EU and better farming conditions related thereto, and most of all introduction of direct area payments, did not stop the decrease in the number of farms above 1 ha, but caused a transient growth in the number of farms running agricultural activity (from 1621.2 thousand in 2002 to

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<sup>13</sup> In 1996, after completion of the primary distribution of the Agricultural Property Stock of the State Treasury, in the sector of farms of natural persons the share of farms not running agricultural production amounted in the group of 100-200 ha – 8.4%, 200-500 ha – 17.6%, 500-1000 – 28.2% and 1000 ha and more – 38.6%, and in the group of farms of legal persons – 30% (public – 32%).

<sup>14</sup> Assuming that in 1990 only few farms failed to run agricultural activity.

1745.3 thousand in 2007, i.e. by 7.6%) and their share in the group in total (from 82.9% to 96.5%). Nevertheless, the downward trend returned very quickly with even greater strength because of deteriorated profitability of agricultural production and rather slight benefits from area payments in the conditions of small area of holdings. In 2007-2010, the number of farms in total of 1 ha of UAA and more fell from 1808.1 thousand to 1563 thousand (by 14%), and of farms running agricultural activity from 1745.3 thousand to 1484.3 thousand (by 15%). Accordingly, the share of farms running agricultural activity in the group of farms in total fell slightly from 96.5% to 95.0%. In the next years (2010-2013), dynamics of the drop much weakened. All in all, in 2002-2013, the number of farms running agricultural activity decreased by 14%. The largest drop was noted in voivodeships characterised by a large share of small individual farms targeted at self-subsistence (Opolskie by 26%, Małopolskie and Śląskie by 24%, Podkarpackie by 22%). Most of them was characterised also by a high share of farms not running agricultural activity (Śląskie 19.3%, followed by Świętokrzyskie and Małopolskie, respectively, 7.3% and 7.2%). Whereas the previously collectivised voivodeships continued the process of restructuring of farms staying in the Agricultural Property Stock of the State Treasury and farms created on the basis of this Property Stock, which affected a major growth in the number of these farms, but in 2010 a significant share of them did not run agricultural activity (Lubuskie 8.2% and Zachodniopomorskie 6.1%). The number of farms not running agricultural activity was definitely the lowest in areas of very good agricultural conditions, relatively good area structure of individual farms and possibilities of efficient management of the Agricultural Property Stock of the State Treasury (Wielkopolskie 1%, Kujawsko-Pomorskie 1.3%, Opolskie 1.7%).

In the post-accession period, smaller area farms, usually weaker in economic terms, resigned from agricultural activity, and larger or newly-created farms (in general, based on property from the Agricultural Property Stock of the State Treasury) commenced agricultural activity. Therefore, UAA used by farms running agricultural activity dropped only slightly (in 2002-2013 by 2.6%). Involvement of the Polish agriculture in the CAP and especially introduction of area payments for farms above 1 ha, bearing in mind the already existing subsidies for such farms, clearly hindered outflow of UAA from this area group (more in: Dzun, 2014b; Dzun, 2016).

The presented changes lead, in turn, to changes in the area structure of the analysed group of farms. In general, it may be argued that the share of smaller area farms decreased gradually and the share of farms above 20 ha increased, principally those above 50 ha (doubling the share) and to a lesser extent in the group above 100 ha. This was also reflected in the structure of UAA used by this group of farms. However, it needs to be noted that the dynamics of decreasing UAA of farms in area groups up to 10-20 ha inclusive, was stronger than the decrease in the number of farms in these area groups and vice versa – the dynamics

of growth in UAA in area groups above 20 ha, especially, above 100 ha (growth by only 1.2 pp to 21.2%) was definitely weaker than the growth in the number of farms in these groups (Table 9).

Table 8

*Regional differentiation of changes at farms above 1 ha as per the new definition  
(running agricultural activity) in 2002-2013*

	2002	%	2010	%	2013	2013 2002	2013 2010	ha per farm	
								2010	2013
Dolnośląskie	63 751	76.5	60 445	95.2	58 420	91.6	96.6	15.2	15.8
Kujawsko-Pomorskie	72 475	91.1	67 059	98.7	63 939	88.2	95.3	16.1	16.4
Lubelskie	203 673	91.2	185 824	97.9	173 370	85.1	93.3	7.4	7.9
Lubuskie	23 067	72.0	21 590	91.8	20 633	89.4	95.6	20.3	19.7
Łódzkie	141 004	85.5	129 156	96.1	125 807	89.2	97.4	7.6	7.8
Małopolskie	179 564	82.8	150 655	92.8	136 832	76.2	90.8	3.9	4.0
Mazowieckie	233 142	79.9	225 952	95.1	208 508	89.4	92.3	8.6	9.1
Opolskie	35 391	84.5	28 000	98.3	26 235	74.1	93.7	18.3	19.9
Podkarpackie	167 226	84.2	137 995	95.1	129 858	77.7	94.1	4.4	4.5
Podlaskie	85 232	85.4	83 633	97.2	77 618	91.1	92.8	12.6	13.8
Pomorskie	39 963	74.1	40 381	94.3	39 229	98.2	97.1	18.6	18.8
Śląskie	74 434	67.1	62 641	80.7	56 848	76.4	90.8	6.2	6.7
Świętokrzyskie	104 582	83.2	95 222	92.3	88 419	84.5	92.9	5.4	5.6
Warmińsko-Mazurskie	41 141	79.0	43 092	97.1	41 230	100.2	95.7	23.2	24.8
Wielkopolskie	128 046	91.7	122 681	99.0	119 042	93.0	97.0	14.4	14.7
Zachodnio-pomorskie	28 547	68.7	29 946	93.9	28 644	100.3	95.7	30.4	29.2
Poland	1 621 238	82.9	1 484 272	95.0	1 394 632	86.0	94.0	10.0	10.5

Source: as in Table 2.

Changes in the number of farms above 100 ha and their area structure, and also ownership, and legal and organisational structure took place, primarily under the influence of national agricultural policy. Statutory acceleration of ownership changes by liquidation of the state-owned farms, establishment of the Agricultural Property Stock of the State Treasury and its targeted distribution was to extend and strengthen the sector of individual family farms. Because of difficulties in distribution of the Agricultural Property Stock of the State Treasury after its primary distribution, a large number of state farms was left (especially farms staying in the Property Stock) leading to establishment of many large-area farms of natural persons (having little in common with family farms but the owner-

ship) and private legal persons. A major part of these farms did not run agricultural activity, but in the next years – often after deeper restructuring, including also reduction (division) of a farm – they contributed to the group of farms running agricultural activity. After 1996 this group, with very slight changes in UAA (by 2002 minor growth and then a slight fall), the number of farms of 100-200 ha and 200-300 ha increased considerably throughout the period. But still, the number of farms above 300 ha, and especially above 1000 ha, after a major growth in 1996-2002 started to plummet (Table 10). This, above all, resulted from the Act of 2003, which was targeted at counteracting excessive concentration of agricultural land and determining that family farms can be farms of natural persons with the area of no more than 300 ha (more in: Dzun, 2015a; Dzun, 2016).

Table 9

*Changes in the number of farms above 1 ha and in their UAA  
by area groups in 2002-2013*

Groups of ha of UAA	2002			2010			2013		2013 2002B	2013 2010B
	A	B	%	A	B	%	B	%		
Number of farms in thousand										
Total	1956.1	1621.2	100.0	1562.6	1484.3	100.0	1394.6	100.0	86.0	94.0
1-2	517	350.8	21.6	342.3	300.6	20.3	277.60	19.9	79.1	92.3
2-5	629.9	509.2	31.4	519.5	489.8	33.0	455.30	32.6	89.4	93.0
5-10	426.9	392.9	24.2	351.7	346.3	23.3	315.20	22.6	80.2	91.0
10-20	266.6	256.4	15.8	224.6	223.5	15.1	211.50	15.2	82.5	94.6
20-50	95.9	92.9	5.7	97.28	97.03	6.5	103.20	7.4	111.1	106.4
50-100	12.4	11.7	0.7	17.2	17.1	1.2	20.7	1.5	177.6	121.1
> 100	7.422	6.789	0.4	9.942	9.888	0.7	11.1	0.8	164.6	112.3
Utilised agricultural area in thousand ha										
Total	16 502.8	14 974.9	100.0	15246.6	14841.2	100.0	14580	100.0	97.4	98.2
1-2	725.3	495.8	3.3	500.4	441.4	3.0	404.0	2.8	81.5	91.5
2-5	2039.2	1673.2	11.2	1688.5	1600.1	10.8	1477.4	10.1	88.3	92.3
5-10	3031.6	2801.8	18.7	2503.1	2467.4	16.6	2228.3	15.3	79.5	90.3
10-20	3656.3	3523.9	23.6	3094.1	3079.4	20.7	2916.8	20.0	82.8	94.7
20-50	2722.6	2643.4	17.7	2836.3	2829.1	19.1	3052.9	20.9	115.5	107.9
50-100	829.9	783.5	5.2	1170	1165.2	7.9	1404.1	9.6	179.2	120.5
> 100	3497.8	3053.3	20.2	3454.3	3258.7	22.0	3096.4	21.2	101.4	95.0

A – farms above 1 ha in total; B – farms above 1 ha as per the new definition (running agricultural activity).

Source: as in Table 2.

Table 10

*Dynamics of changes in the group of farms above 100 ha*

Area group of ha	1996			2002			2013 B	<u>2013B</u> <u>2002B</u>	<u>2013B</u> <u>1996B</u>
	A	B	% <sup>a</sup>	A	B	% <sup>a</sup>			
100-200	1584	1451	91.6	3357	3042	90.6	6699	220.2	461.7
200-300	537			111	1007	90.7	1907	189.4	
300-500	606	924	80.8	1291	1191	92.3	133	111.7	350.3
500-1000	503	361	71.8	1087	1018	93.7	831	81.6	230.2
>1000	134	081	60.4	577	521	90.3	311	59.7	384.0

A – farms in total; B, D, E – farms running agricultural activity.

<sup>a</sup> share of farms running agricultural activity in a given group.

Source: own compilation based on published and unpublished data from PSR 1996 and PSR 2002, and representative GUS surveys *Struktura gospodarstw rolnych w 2013 r.*

## 2. Farms above 1 ha running agricultural activity by ownership, and legal and organisational forms

Changes in the number of farms running agricultural activity and in their provision with UAA are clearly differentiated depending on their ownership, and legal and organisational forms. In the pre-accession period and especially in the process of statutorily accelerated ownership changes, what was evident was a quick drop in the number of state and cooperative farms and, all together, faster differentiation of the sector of individual farms and establishment of new groups of private farms of legal persons, especially all farms organised as commercial law companies of national, foreign or mixed ownership. This also caused intensified transfers between the aforementioned groups of farms of basic factors of production, including in particular UAA. This caused serious economic and organisational problems in the operation of farms which, together with very low profitability of agricultural production, resulted in cessation of agricultural activity by many existing farms and long delays in taking up activity by a great share of newly-created farms. In the next years, some part of farms was liquidated, some restarted production, and new farms were also being established. In the pre-accession period the greatest contraction concerned state and cooperative farms. In 1996-2002<sup>15</sup>, the group of state farms experienced not only a major drop in the number of farms in total (by 52%), but also an even greater decrease in the number of farms running agricultural activity (by over 59%) and their share in the structure of farms in total (from 68% to 60%). But then in the group of cooperative farms, there was also a major fall in the number of farms in

<sup>15</sup> For 1996, data for farms of legal persons cover also farms up to 1 ha, but their share is minor ca. 2% for public farms and ca. 3% for private farms of legal persons.

total (by 50%), but with a considerably lower drop in farms running agricultural activity (by 40%) and growth in their share (from 66% to 81%). At the same time, there was an increase in the group of self-government farms (growth in the number of farms in total from 63 to 331, and farms running agricultural activity from 38 to 280), farms of foreign and mixed ownership (respectively, from 136 to 212 and from 115 to 189), and other private farms of legal persons (except for cooperatives of agricultural production and companies), respectively, from 629 to 810 and from 358 to 558. The group of national companies, especially employee-owned companies, experienced at this time some contraction caused, above all, by financial difficulties. Despite establishment of new companies (including also by division of the existing ones) the number of farms in this form of farming decreased slightly (from 1155 to 1124) and the number of farms running agricultural activity decreased even more (from 1064 to 960).

Table 11

*Farms above 1 ha running agricultural activity according to basic ownership and legal and organisational forms in 2002-2013*

Farms	2002 <sup>a</sup>		2010		2013		2013/2002	
	number	UAA	number	UAA	number	UAA	number	UAA
Total	1 623 799	14 931.6	1 484 272	14 841.2	1 394 632	14 580.0	85.9	97.6
Private	1 622 980	14 366.7	1 483 461	14 467.9	1 393 995	14 348.5	85.9	99.9
of natural persons	1 620 328	13 289.1	1 480 227	13 194.0	1 391 063	13 265.8	85.9	99.8
of legal persons	2652	1077.6	3234	1273.9	2932	1081.8	110.6	100.4
- cooperatives of agricultural production	1000	318	816	248.5	692	214.9	69.2	67.6
- national companies	910	609.6	1639	781.1	1544	698.4	169.7	114.6
- other national	562	15.9	522	61.0	468	23.3	83.3	146.5
- foreign and mixed	180	134.1	257	183.3	228	145.2	126.7	108.3
Public	819	565.0	812	373.3	637	260.6	77.8	46.1
- state	557	550.2	595	359.2	473	160.1	84.9	29.1

<sup>a</sup> Number and UAA referring to farms currently running agricultural activity. Data differ slightly than the data in Table 6, because they concern farms running production in the last year.

Source: own calculation and compilation based on published and unpublished data from PSR 2002 and PSR 2010, and study *Struktura gospodarstw rolnych* of 2013.

In 2002-2010, the downward trend in the number of farms in total in the public sector continued, both in the group of state and self-government farms (ca. 27% each). Then, the number of farms running agricultural activity in the



group of state farms even slightly grew and in the group of self-government farms it dropped a little (Table 10). This was the result of a very strong increase in the share of farms running agricultural activity in the structure of state farms (from 59.6% to 87.6%) and much lower in self-government farms (from 84.6% to 96.7%). In the group of private farms of legal persons, there was a small growth in the number of farms in total (by ca. 1%) and a major growth in the number of farms running agricultural activity (by nearly 20%), and consequently a growth in their share from 80.9% to 98.2%. The evident growth in the entire group was the effect of establishment of a large number of national and foreign companies, and a decrease in the number of cooperative and other national farms. In the group, the share of farms running agricultural activity exceeded 98% (in cooperatives of agricultural production 98.8%), while in public farms – 90% and in farms of natural persons – 95% (Table 11).

### **2.1. Changes in the number and structure of farms of natural persons above 1 ha**

Changes in the sector of individual farms (of natural persons) require a separate coverage because of their significance and a certain specificity. In the period of faster system changes, namely in 1990-1996, the structure of individual farms clearly varied. The number of farms in total dropped slightly (by 4.5%), while the number of the smallest area farms clearly increased (in the group of 1-2 ha from 388.3 thousand to 462.2 thousand, i.e. nearly by 22%). This was influenced by a major sales of UAA from the Agricultural Property Stock of the State Treasury of small plots and family sections. The group of farms of 2-10 ha decreased (from 1387.1 thousand to 1188.4 thousand, i.e. by 14.3%), the group of 10-30 ha remained almost the same (it continued at the level of 362.9 thousand) and the group of above 30 ha increased considerably (from 10.7 thousand to 25.4 thousand). The growth in the number of farms was the highest in the group of over 100 ha (from ca. 0.1 thousand to 3.4 thousand). These were mostly farms created from scratch based on property from the Agricultural Property Stock of the State Treasury. As a result of unfavourable conditions, difficulties in launching agricultural production at farms created on property from the Agricultural Property Stock of the State Treasury, purchase of agricultural property for other purposes than agricultural production (leisure, land for building, capital investment, etc.) the number of farms running agricultural production decreased much faster. In 1996, the share of farms not running agricultural activity was the highest for the smallest area farms (1-2 ha – 8.9% and 2-3 ha – 5.1%) and the largest area farms (over 100 ha – 16.3%, including above 300 ha as much as 23.3%). Whereas the share in the group of farms of 10-50 ha was definitely the lowest (only ca. 1%). In the pre-accession period, the downward trend in the number of farms in total slightly weakened (in 1996-2002 a drop by 4.4%), while the downward trend for the number and share of farms running agricultural activity intensified (drop by 18.2%). This was linked to a very high fall in the number of these farms and their share in very numerous

groups of small area farms (up to 20 ha), especially in the groups of 3-5 ha and 5-10 ha, because in the area group above 20 ha there was a growth in their number and above 100 ha also in their share (Table 12).

Table 12

*Changes in the number of farms of natural persons by area groups*

Groups in ha	1996			2002			2013			2002B 1996B	2013 2002B	2013 1996B
	A	B	% <sup>a</sup>	A	B	% <sup>a</sup>	B					
>1 ha	2041.4	1962.5	96.1	1951.7	1617.8	82.9	1391.1	82.4	86.0	70.9		
1-2	462.2	421.0	91.1	516.8	350.7	67.9	277.5	83.3	79.1	65.9		
2-3	281.5	267.2	94.9	281	214.8	76.4	198.9	80.4	92.6	74.4		
3-5	385.2	374.8	97.3	348.5	294.2	84.4	256.1	78.5	87.0	68.3		
5-10	520.8	513.2	98.5	426.0	392.6	92.2	315.0	76.5	80.2	61.4		
10-20	306.6	303.7	99.1	266.3	256.4	96.3	211.3	84.4	82.4	69.6		
20-50	75.2	74.4	98.9	95.5	92.9	97.3	102.9	124.9	110.8	138.3		
50-100	5.54	5.37	96.9	12.0	11.4	95.0	20.3	212.3	178.1	378.0		
100-200	1.584	1.451	91.6	2.907	2.696	92.7	6.238	185.8	231.4	429.9		
200-300	0.537	0.451	84.0	0.779	0.719	92.3	1.586	159.4	220.6	351.7		
300-500	0.606	0.473	78.0	0.746	0.701	94.0	0.791	148.2	112.8	167.2		
500-1000	0.503	0.361	71.8	0.515	0.486	94.4	0.293	134.6	60.3	81.2		
>1000	0.134	0.081	60.4	0.177	0.167	94.4	0.048	206.2	28.7	59.3		

A – farms in total; B – farms as per the new definition (farms running agricultural activity).

<sup>a</sup> Share of farms running agricultural activity in the group of farms in total.

Source: own compilation based on data from PSR 1996 and PSR 2002, and study *Struktura gospodarstw rolnych 2013*.

In the post-accession period, the number of farms running agricultural activity continued to drop, but the average annual dynamics of the trend was much weaker. This was chiefly the effect of weakening these dynamics in the groups of smaller area farms (the area group of 10-20 ha inclusive) mostly because of introduction of the area payments. Simultaneously, the dynamics of growth in the number of these farms in the area group from 20 ha to 200 ha dropped slightly, and it slightly increased in the group of 200-300 ha and it fell considerably in the group of 300-500 ha. In the groups above 500 ha, after former dynamic growth there was a strong drop. In the smaller area groups this was caused by lower level of turnover in UAA in private trade and under the Agricultural Property Stock of the State Treasury, while in the largest area groups the Act on counteracting excessive land concentration at agricultural holdings and determining the upper area limit for individual family farms at 300 ha.

## **Conclusions**

The new definition of an agricultural holding caused a major decrease in the group of farms and significant changes in their structure. The drop in the number of farms was especially substantial in the area group from 0 to 1 ha of UAA inclusive), since in this group apart from prerequisite to run agricultural activity, farms of natural persons below 1 ha of UAA (except for organic farms) were given the set production thresholds. As a result, the comparative analysis of changes at farms of natural persons in this area group between 1990 and 2010, considering the new definition, can be conducted on the basis of secondary analysis of results of GUS surveys or estimates based on data from GUS publications. In 2010-2013, the number of farms in this area group increased from 24.9 thousand to 34.4 thousand. This was the effect of a growth in the number of farms of 1 ha of UAA (from 13.1 thousand to 25.4 thousand) which are not covered by production thresholds.

It is – basically and without any major objections – possible to conduct a comparative analysis of changes in the number and structure of farms compliant with the new definition in the sector of farms of legal persons and in the entire group of farms, including in the sector of farms of natural persons in the area group above 1 ha. In these groups of farms, the farms compliant with the new definition, in general, overlap with farms running agricultural activity. In the pre-accession period, the share of farms not running agricultural activity increased rapidly (in 2002 it was at 335 thousand – 17% of the total farmers using 1.5 million ha of UAA) and after Poland's accession to the EU it rapidly decreased (in 2010 it was at 78.3 – 5% of farmers using 0.4 million ha of UAA). The fundamental problem in the implementation of such comparative analyses is, however, the fact that only as of 2002 GUS publications on surveys held under PSR and representative research started, initially only on a minor scale, to consider the category of farms running agricultural activity when characterising farms. Previously, the characteristic of farms was made for the category of farms in total covering both farms running and not agricultural activity.

At the margin of performed analyses there comes a conclusion to make a correction in the characteristics of farms by area structure. Bearing in mind its adjustment to the definitions used in the administrative registers and national legislation, it seems expedient to include farms of 1 ha to the area group of 1-2 ha, and given the definition of the individual farm – to extend the published area structure with the groups of 100-200 ha; 200-300 ha and 300 ha and more.

**Literature:**

- Baer-Nowacka, A., Pocztka, W. (2016). Polskie rolnictwo na tle rolnictwa w Unii Europejskiej. In: J. Wilkin, I. Nurzyńska (ed.), *Polska wieś 2016. Raport o stanie wsi* (s. 81-106). Warszawa: Wyd. SCHOLAR.
- Dzun, W. (2005). *Państwowe gospodarstwa rolne w procesie przemian systemowych*. Warszawa: IRWiR PAN.
- Dzun, W. (2012). Gospodarstwa rolne po wejściu Polski do UE. Analiza zmian strukturalnych na tle lat poprzednich. In: M. Drygas, K. Zawalińska (ed.), *Uwarunkowania ekonomiczne polityki rozwoju polskiej wsi i rolnictwa*. Warszawa: IRWiR PAN.
- Dzun, W., Dzun, P. (2013). Gospodarstwa osób prawnych. In: W. Józwiak, W. Ziętara (ed.), *Zmiany zachodzące w gospodarstwach rolnych w latach 2002-2010* (pp. 145-181). Warszawa: Wyd. GUS.
- Dzun, W. (2014a). Procesy transformacji gospodarstw osób prawnych w latach 1990-1996. *Zagadnienia Ekonomiki Rolnej*, no. 2(339), pp. 4-39.
- Dzun, W. (2014b). Zmiany strukturalne w sektorze gospodarstw osób prawnych w okresie przed i po akcesyjnym (lata 1996-2010). *Zagadnienia Ekonomiki Rolnej*, no. 3(340), pp. 3-25.
- Dzun, W. (2015a). Wpływ utworzenia i rozdysponowania Zasobu Własności Rolnej Skarbu Państwa na strukturę gospodarstw rolnych. *Zagadnienia Ekonomiki Rolnej*, no. 3(344), pp. 48-73.
- Dzun, W. (2015b). *Gospodarstwa osób prawnych w procesie przemian systemowych i integracji z UE*. Warszawa: IRWiR PAN.
- Dzun, W. (2016) Wpływ rozdysponowania Zasobu Własności Rolnej Skarbu Państwa na strukturę gospodarstw rolnych w latach 1996-2010. *Zagadnienia ekonomiki rolnej*, no. 2(345), pp. 26-50.
- Głębocki, B. (2014). Zmiany w strukturze agrarnej polskiego rolnictwa w latach 2002-2012. In: B. Głębocki (ed.), *Zróżnicowanie przestrzenne rolnictwa* (pp. 14-71). Warszawa: Wyd. GUŚ.
- GUS (1992). *Rolnictwo i gospodarka żywnościowa 1986-1990*. Warszawa.
- GUS. (1997). *Wybrane elementy sytuacji ekonomicznej gospodarstw rolnych i ich zamierzenia na przyszłość*. Warszawa.
- GUS (1997a). *Przemiany agrarne. PSR 1996*. Warszawa.
- GUS (1998). *Systematyka i charakterystyka gospodarstw rolnych. PSR 1996*. Warszawa.
- GUS (1999). *Rocznik statystyczny rolnictwa 1998*. Warszawa.
- GUS (2003). *Systematyka i charakterystyka gospodarstw rolnych. PSR 1996*. Warszawa.
- GUS (2003a). *Przemiany agrarne. PSR 2002*. Olsztyn.
- GUS (2013). *Charakterystyka gospodarstw rolnych. Powszechny Spis Rolny 2010*. Warszawa.
- GUS (2013a). *Rocznik statystyczny rolnictwa 2014*. Warszawa.
- GUS (2014). *Charakterystyka gospodarstw rolnych*. Warszawa.
- GUS (2014a). *Rocznik statystyczny rolnictwa 2014*. Warszawa.
- Józwiak, W. (ed.), (2003). *Ewolucja gospodarstw rolnych w latach 1996-2002*. Warszawa: Wyd. GUS.
- Józwiak, W., Ziętara, W. (ed.), (2013). *Zmiany zachodzące w gospodarstwach rolnych w latach 2002-2010*. Warszawa: Wyd. GUS.
- Pocztka, W. (ed.), (2013). *Gospodarstwa rolne w Polsce na tle gospodarstw Unii Europejskiej – wpływ WPR*. Warszawa: Wyd. GUS.

WŁODZIMIERZ DZUN

Instytut Rozwoju Wsi i Rolnictwa PAN

Warszawa

## MOŻLIWOŚCI ANALIZY PORÓWNAWCZEJ ZMIAN W LICZBIE I STRUKTURZE GOSPODARSTW ROLNYCH W LATACH 1990-2013 W ŚWIETLE NOWEJ DEFINICJI STATYSTYCZNEJ GOSPODARSTWA ROLNEGO

### Summary

*Wprowadzenie nowej definicji gospodarstwa rolnego spowodowało, że status gospodarstwa rolnego utraciły gospodarstwa osób fizycznych i osób prawnych nieprowadzące działalności rolniczej (zarówno o obszarze 0-1 ha UR jak i o obszarze 1 ha UR i więcej), a także gospodarstwa indywidualne (osób fizycznych) do 1 ha UR prowadzące działalność rolniczą, ale realizujące produkcję rolniczą poniżej określonych progów tej produkcji. Spowodowało to zmniejszenie liczby gospodarstw rolnych, a także, przy tym w różnym stopniu, zmiany w poziomie wyposażenia ich w zasoby ziemi, pracy i kapitału. Zmianie uległy więc wskaźniki obrazujące poziom rozwoju rolnictwa, w tym tak powszechnie używane jak średnia powierzchnia gospodarstwa rolnego, nakłady pracy na 100 ha, produktywność pracy, ziemi i kapitału itd. W rezultacie zdecydowana większość danych o gospodarstwach rolnych prezentowanych w publikacjach GUS do 2013 r. nie jest bezpośrednio porównywalna z danymi opracowanymi z wykorzystaniem nowej definicji. W prezentowanym opracowaniu podjęta została próba analizy zmian w liczbie i strukturze gospodarstw rolnych w latach 1990-2013 oraz w wyposażeniu ich w zasoby ziemi rolnej z uwzględnieniem nowej definicji gospodarstwa rolnego i regionalnego zróżnicowania tych zmian.*

**Słowa kluczowe:** gospodarstwo rolne, użytki rolne, prawno-organizacyjna struktura gospodarstw rolnych obszarowa.