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THE DYNAMICS OF HORTICULTURAL FARM NUMBERS IN DIFFERENT ECONOMIC SIZE CLASSES AND CHANGES IN THEIR INCOME IN 2007-2017

Key words: horticultural farms, fruit and vegetable production, concentration, agricultural income, CAP subsidies

ABSTRACT. The aim of this study is to determine changes in the structure of horticultural farms in EU countries in the years 2007-2017 and their incomes and determine the share of subsidies of the Common Agricultural Policy in the income of horticultural farms in studied groups. Horticultural farms from the European Union Farm Accountancy Data Network (EUFADN) of all EU countries were surveyed. A dynamic analysis of the structure of farm numbers in particular groups of economic size (ES6) was carried out, and then the average change in income and the share of subsidies in income within these groups in 2007 and 2017 were presented. As a result of the conducted research, changes in the number of horticultural farms in various groups of economic size were taken into account and the assumptions concerning the decreasing scale of fragmentation of horticultural farms were confirmed by a decrease in the number of the economically weakest groups and an increase in the number of medium and large farms. It was noted that, in the studied groups, the strongest income growths concerned farms with medium or high economic strength, which may mean that income had a significant impact on the process. Moreover, it results from the conducted research that existing institutional solutions additionally supported the tendency to reduce the scale of fragmentation of horticultural farms in the EU-12 due to the fact that the shares of subsidies were higher in groups with higher economic strength.

INTRODUCTION

European countries account for more than 19% of the value of fruit and vegetables produced worldwide. Asia and Pacific countries are in the lead (around 64%). Production from the Americas accounts for more than 13%, the remaining value comes from production in Africa and the Middle East. In the horticultural sector, vegetables account for the vast majority (over 75%) of the world production value, while, in Europe, their share in production value is just over 54% [MarketLine Industry Profile 2015]. It seems natural that the growing population and the fashion for following healthy lifestyles and adhering to vegetarian and vegan diets should create an increased demand for fruit and vegetables,

and thus should motivate agricultural producers to increase supply. Unfortunately, this correlation is weak in Europe (+0.21). Decisions to change the profile of agricultural production are often dictated by the possibility of obtaining a satisfactory income, also in institutional terms, by obtaining subsidies.

In the context of industrialization and agricultural sustainability, it is worth looking more closely at the issue of concentration and specialization of agricultural production. It is here, as well as in technical progress adequate to the nature of natural conditions that some researchers see the sources of a farm's competitive ability [Michna et al. 2005]. However, there are still a number of countries with a fragmented agrarian structure, where this phenomenon determines a lower efficiency of labour and land use [Poczta 2012, Kołodziejczak 2008]. Lower efficiency means lower income and, in a longer perspective, a limited accumulation capacity of entities. Additionally, agricultural production is largely dependent on biological and natural-climatic processes, the course of which is beyond the control of the agricultural producer [Rembisz et al. 2011], which makes its income even more uncertain, adding an additional risk element to agricultural activity. Parallel to these phenomena, in the environment of agriculture, especially on the markets of agricultural inputs and the food industry, concentration processes are intensifying on an annual basis [Czyżewski 2013]. In conditions of production concentration, the expectations of suppliers and purchasers concerning the speed and reliability of the assessment of purchased products are growing, thus affecting an increase in quality requirements. The pricing policy of wholesalers strongly depends on product quality. The necessity to meet the expectations of customers/trade partners may encourage producers to integrate, especially in Central and Eastern Europe, where small producers form the basis of agriculture. Unfortunately, the degree of market organization is still insufficient there, as mental barriers (sense of loss of ownership and freedom) resulting from the historical past are still important. In order to increase competitiveness on the market, it is important to promote the idea of merging small producers, especially in the situation of an influx of imported products. In order to be successful, producers should offer higher, certified quality, produce local varieties using traditional methods or use their own branding [Guth et al. 2019]. However, economies of scale are not without significance in agricultural production, which enable larger entities to rationalize costs and have a stronger bargaining position, thus enabling the possibility of obtaining a larger, less risky income.

Agricultural income is a frequent subject of research by agricultural economists, as it determines both farm development and the quality of life of a farmer's family. An adequately high level of income should enable the effective use of production potential and continuity of production in the short term and ensure an increase in the competitiveness of farms, creating opportunities for the development and improvement of production quality in the future [Średzińska 2017]. Agricultural income remains a key area of agricultural economic research due to its fundamental role in shaping the standard of living of agricultural families and the development of rural areas and the agricultural sector as a whole [Kryszak 2017]. Włodzimierz Rembisz [2006] divides factors shaping the income of agricultural producers into those of exo- and endogenous nature. The former include e.g. conditions related to location (including natural conditions), the market environment (first of all, the formation of prices of means of production and the

sale prices of agricultural products) or agricultural policy. Although these factors are not influenced by farmers, it can be assumed that, depending on their changes, they do try to shape those elements which they can influence. These may include, *inter alia*, resource size, the efficiency of their use, intensity of production, scale of production or degree of connection with the market. Frederik Noack and Ashley Larsen [2019] state that as the size of the farm increases, the risk of income volatility decreases. However, it should be remembered that owners of larger farms have the opportunity to reduce risk through crop diversification, and this has a positive impact on their income. Unfortunately, the pursuit of many agendas to reduce income disparities by allowing access to technology that increases productivity was often ineffective, as their availability to the smallest farms was limited. They observed a process of labour force relocation from agriculture to other industries and services, which contributed to the consolidation of farms and increased wealth in rural areas in the most developed countries. According to Aleksander Grzelak [2017], the income obtained determines the possibilities of a farm's further development, especially in terms of investments and related accumulation and reproduction processes. In a long-term perspective, according to Henryk Runowski [2018], an increase in income will largely depend on the activity and activities undertaken by agricultural producers themselves, aimed at improving the efficiency and quality of production, as well as seeking additional income from non-agricultural activities, which should foster the multifunctional development of agriculture and rural areas. In connection with the above, the aim of the study is to determine the links between the processes of concentration of fruit and vegetable production in countries of the European Union in the years 2007-2017 and the income of horticultural farms, as well as assess the impact of subsidies from the common agricultural policy on existing processes.

MATERIAL AND METHODS

A comparative study of the number of horticultural farms (TF8 – Horticulture typology) in 2007 and 2017 was carried out – 2017 was the latest available accounting data, 2007 was chosen because of the newly implemented financial perspective, which significantly influenced the processes of concentration on the fruit and vegetable market. The subjective structure of the surveyed producers was analyzed by changes in the number of farms of particular economic size groups in 2007 and 2017. Then the same procedure was repeated for the agricultural income in these groups and the share of subsidies in farm income in order to assess the impact of the Common Agricultural Policy on the processes. In the research, the FADN base was used in the subject section according to production types – TF8 grouping for European Union countries (Farm Accountancy Data Network). The data was collected from the farms belonging to the sample, which is not representative for all farms, but only for those with an appropriate economic size – here it should be noted that in the case of small fruit and vegetable producers, horizontal concentration takes place by creating producer groups, which inhibits processes of production concentration in the market dimension, so the study focused on FADN farms. An important advantage of the FADN database, as Łukasz Kryszak [2017] notes, is the presentation of data at different levels of detail, i.e. in regional terms and according to the dominant type of production

and economic size. The data in the FADN are of microeconomic scope and are therefore useful for analyses of such nature. In addition, data from publicly available databases such as Eurostat and Faostat was used to illustrate the fruit and vegetable market.

RESULTS

In Europe, farmers in almost every country produce fruit and vegetables. However, the largest share in fruit and vegetable production is obtained by farmers from Italy (almost 29%), Spain (about 13%), Poland (less than 12%) and France (slightly over 10%). During the analyzed period a change in the number and size of horticultural farms was noticed.

On the basis of FADN data, Table 1 presents the size of the increase in the number of farms in 2017 in comparison with 2007. Croatia, Slovakia and Slovenia were omitted from the presented graph, due to the farm number in this country being insignificant in comparison with the farm number in other countries, and the increase in farm number (from 20 to 80) would disturb the average. In the examined period, the total number of horticultural farms decreased on average by 12%.

The change in the number of operating farms may result from the decreasing scale of agrarian fragmentation in horticultural farms. This is confirmed by the results presented in Table 2, showing the structure of horticultural farms in terms of their size in individual years. The greatest changes in the classes of largest farms and with the lowest economic strength were observed. The increase in the share of the group of smallest farms results from the specificity of agriculture in countries of Central and Eastern Europe, especially Bulgaria, Romania, Croatia, Estonia, Hungary, Latvia and Malta, where the greatest fragmentation of farms is recorded. Therefore, it is not surprising that in Romania or Lithuania, small farms increased their share over the analyzed period. However, in Bulgaria, after ten years, a significant decrease in their share (from over 75% to around 44%) was noted. Transformations in the group of farms with the highest economic strength are worth emphasizing. Here, changes have taken place in many countries (Poland, Bulgaria, Finland, Belgium, the Czech Republic and Italy). A decrease in the number of producers and increase in the share of larger farms prove that the scale of agrarian

Table 1. Change in the number of horticultural farms in EU countries (excluding Croatia and Slovakia) in 2017 compared to 2007

Country	2017/2007
Austria	1.02
Belgium	0.56
Bulgaria	0.33
Cyprus	1.00
Czech Republic	0.44
Denmark	0.51
Estonia	0.96
Finland	0.77
France	1.43
Germany	0.61
Greece	0.63
Hungary	1.19
Italy	0.60
Latvia	1.65
Lithuania	1.17
Malta	1.23
Netherlands	0.97
Poland	0.79
Portugal	1.44
Romania	0.92
Slovenia	0.43
Spain	0.69
Sweden	1.37
United Kingdom	0.67

Source: own calculations based on EU FADN database

Table 2. Structure and change in the number of horticultural holdings by size class in EU countries in 2007 and 2017

Country	Horticultural holdings by size class											
	2007						2017					
	1*	2	3	4	5	6	1*	2	3	4	5	6
Austria	0.00	0.00	0.00	78.26	0.00	21.74	0.00	0.00	0.00	0.00	76.09	23.91
Belgium	0.00	0.00	7.63	21.05	58.68	12.63	0.00	0.00	4.21	8.41	54.21	33.18
Bulgaria	75.38	17.19	2.48	2.78	1.65	0.53	44.14	40.32	9.23	2.70	2.93	0.90
Croatia	0.00	0.00	0.00	0.00	0.00	0.00	37.79	38.95	14.53	7.56	1.16	0.58
Cyprus	0.00	35.16	7.69	37.36	19.78	0.00	16.48	31.87	21.98	15.38	14.29	0.00
Czech Rep.	0.00	37.84	27.03	16.22	16.22	2.70	0.00	12.50	9.38	43.75	28.13	6.25
Denmark	0.00	6.38	13.83	11.70	38.30	29.79	0.00	0.00	2.13	19.15	38.30	40.43
Estonia	24.14	48.28	17.24	10.34	0.00	0.00	25.93	44.44	7.41	14.81	7.41	0.00
Finland	0.00	11.22	4.08	32.65	47.45	4.59	0.00	0.00	5.40	30.87	51.68	12.08
France	0.00	0.00	13.14	26.40	51.46	9.00	0.00	1.53	23.47	30.87	34.18	9.95
Germany	0.00	0.00	9.23	23.42	49.66	17.69	0.00	0.00	4.01	15.54	57.05	23.40
Greece	3.35	37.23	38.05	15.23	5.94	0.20	0.00	35.54	28.06	27.30	8.99	0.11
Hungary	38.88	34.93	14.33	6.10	4.61	1.15	34.67	39.09	12.29	8.43	4.70	0.83
Italy	4.44	32.12	21.69	21.69	18.29	1.78	0.00	21.02	26.11	23.83	26.06	2.92
Latvia	20.00	53.33	16.67	6.67	3.33	0.00	0.00	76.47	11.76	5.88	0.00	0.00
Lithuania	36.36	47.27	9.09	3.64	3.64	0.00	73.02	14.29	6.35	1.59	3.17	0.00
Malta	15.53	67.96	12.62	2.91	0.97	0.00	18.75	54.69	17.97	7.03	2.34	0.00
Netherlands	0.00	0.00	1.48	16.38	43.00	39.14	0.00	0.00	2.83	18.01	38.21	40.92
Poland	14.89	36.09	22.47	16.07	10.16	0.31	5.53	29.60	26.92	21.70	15.22	1.07
Portugal	11.81	53.33	15.43	11.43	8.00	0.00	8.34	53.11	14.30	13.11	10.20	0.79
Romania	49.52	38.61	7.50	3.34	0.83	0.19	60.74	31.87	5.09	1.60	0.63	0.00
Slovakia	0.00	34.09	11.36	13.64	36.36	4.55	0.00	0.00	0.00	37.50	37.50	25.00
Slovenia	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	30.00	40.00	5.00
Spain	2.46	21.02	28.68	21.94	22.10	3.80	0.00	16.14	23.63	28.41	26.45	5.37
Sweden	0.00	0.00	20.69	13.79	48.28	17.24	0.00	0.00	0.00	19.51	56.10	24.39
Un. Kingdom	0.00	0.00	12.09	21.61	49.45	16.85	0.00	0.00	13.59	23.91	41.85	20.65

* Economic size class: (1) 2,000 – < 8,000 EUR, (2) 8,000 – < 25,000 EUR, (3) 25,000 – < 50,000 EUR, (4) 50,000 – < 100,000 EUR,

(5) 100,000 – < 500,000 EUR, (6) ≥ 500,000 EUR

Source: own calculations based on the EU FADN database

Table 3. Structure and change in the number of horticultural holdings by income in EU countries in 2007 and 2017

Country	Horticultural holdings by income									
	2007					2017				
	1*	2	3	4	5	6	1*	2	3	4
Austria	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Belgium	0.00	0.00	0.00	17.52	21.11	61.37	0.00	0.00	0.00	0.00
Bulgaria	7.52	16.99	27.84	47.36	0.29	0.00	13.13	22.91	38.39	0.00
Croatia	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cyprus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Czech Rep.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Denmark	0.00	0.00	5.80	15.18	21.24	57.78	0.00	0.00	0.00	0.00
Estonia	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00
Finland	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	41.82
France	0.00	0.00	19.49	17.28	24.75	38.48	0.00	0.00	7.70	9.74
Germany	0.00	0.00	7.45	18.38	22.21	51.97	0.00	0.00	0.00	11.21
Greece	0.00	15.13	29.52	55.35	0.00	0.00	0.00	7.37	11.34	13.33
Hungary	0.00	5.30	40.61	0.00	54.08	0.00	2.91	5.72	13.57	29.11
Italy	1.39	5.05	4.33	8.68	10.95	69.59	0.00	3.57	6.63	10.09
Latvia	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lithuania	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Malta	0.00	12.60	24.04	63.37	0.00	0.00	0.93	4.40	9.11	29.19
Netherlands	0.00	0.00	0.00	25.76	25.14	49.10	0.00	0.00	0.00	13.94
Poland	0.00	6.91	11.34	18.83	62.92	0.00	0.00	11.00	18.22	23.88
Portugal	0.00	27.70	27.23	45.07	0.00	0.00	0.00	13.19	13.37	28.16
Romania	0.00	0.00	0.00	0.00	0.00	0.00	0.34	5.20	15.32	52.92
Slovakia	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Slovenia	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Spain	0.00	5.17	6.83	11.19	16.16	60.66	0.00	1.87	3.36	4.87
Sweden	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Un. Kingdom	0.00	0.00	0.00	0.00	55.39	44.61	0.00	0.00	0.00	14.90

* Economic size class: (1) 2,000 – < 8,000 EUR, (2) 8,000 – < 25,000 EUR, (3) 25,000 – < 50,000 EUR, (4) 50,000 – < 100,000 EUR,

(5) 100,000 – < 500,000 EUR, (6) ≥ 500,000 EUR

Source: own calculations based on the EU FADN database

fragmentation of horticultural farms is decreasing. The question arises whether this activity is dictated by the possibility of obtaining greater income due to economies of scale in agriculture, expressed in the more efficient use of machines, or greater bargaining power in the case of looking for sales channels. When looking for answers, the income structure by farm class should be observed (Table 2 and 3).

The changes that occurred in 2017, compared to 2007, indicate that the largest farms (class 5 and 6) recorded the highest increases. However, in other, smaller farms this share decreased. Moreover, an increase in the share of income in the largest groups (except Bulgaria) is recorded in countries representing the EU-12.

The division into countries of the “old” and “new” EU is also noticeable in the case of the average annual rate of income changes in 2007-2017 (Table 4). The average annual increase in income of the listed ranking was noted in groups with extreme economic strength (in class 1 and 6). Interestingly, in “old” EU countries, an average annual increase in income was recorded in the study only from the strongest group of farms. In the remaining years, the economically weaker the group of farms, the greater the average annual decrease in growth. In the “new” EU, the average annual income increases in farm classes with the weakest economic strength (class 1 and 2) were found to be at a similar level, the greatest increase being in class 4, at a level of 19,48%.

The shaping of the amount of revenue, and thus indirectly income, depends on the price of products sold. Prices are an essential tool for the functioning of the market, as they are an expression of the supply-demand relationship and, at the same time, they shape the level of demand and supply. They are one of the main parameters taken into account by producers in the decision-making process; they shape their income and indirectly affect the development of a given sector [Jabłońska et al. 2016]. Unfortunately, in the examined period, a continuing downward trend in the prices of vegetables and fruit are noted. Lower prices of horticultural products, with a relatively constant value of demand, are associated with the relatively high price sensitivity of the fruit and vegetable supply, and this obviously translates into the King's Effect [Krawczak, Rembisz 2018]. In order to obtain income at a relatively similar level, the lower prices of horticultural farms compensate by increasing (intensifying) production. On the other hand, the desire to maintain income at a similar level forces producers to reduce production costs. One of the strategies of cost reduction may be the desire to achieve economies of scale achieved by means of concentration

Table 4. The average annual rate of changes in income on horticultural farms by size class in EU countries in 2007-2017

Country	Economic size class (6 classes) [EUR]				
	(1) 2,000 – < 8,000	(2) 8,000 – < 25,000	(3) 25,000 – < 50,000	(4) 50,000 – < 100,000	(5) 100,000 – < 500,000
UE	1.0669	0.6885	0.8743	0.9680	1.0099
UE-12	-	0.9207	0.9297	0.9878	1.0099
UE-15	1.0670	1.0674	1.0551	1.1948	-

Source: own calculations based on the EU FADN database

Figure 1. Dynamics of average producer prices (USD/t) of fruit and vegetables in the years 2007-2017

Source: own calculations based on FAOSTAT

However, it should be remembered, as noted by Joanna Średzińska [2017a], that the obtained income results are not only positively influenced by an increase in production scale, production efficiency or the degree of connection with the market, but also by obtained subsidies. This time we are dealing with a situation where the income of horticultural farms is not determined by changes in the prices of its products, since paradoxically the relationship between the change in the prices of horticultural products and the change in income is weak, negative (-0.24). To answer the question whether and to what extent the subsidies (SE605 and SE409) shaped the income of horticultural farms (SE420), their share and results were calculated by country, the so-called «old» and «new» EU are presented in Table 5.

This division proved to be justified as there are significant differences in the dependence of horticulturists' income on subsidies received depending on the group of countries (EU-12 or EU-15(16)) and economic size of the holding. In «new» EU countries, which are most affected by the problem of agrarian fragmentation compared to the rest of the EU, the subsidies in economically weaker farms account for a larger share of income. This is

Table 5. Share of subsidies in income in 2007 and 2017 in horticultural holdings by size class in EU countries

Economic size class (6 classes) [EUR]	Share of subsidies in income [%]					
	2007			2017		
	EU	EU-12	EU-15	EU	EU-12	EU-16
(1) 2,000 – < 8,000	0.46	0.46	-	46.52	-	46.52
(2) 8,000 – < 25,000	10.89	3.28	18.51	15.97	10.4	20.42
(3) 25,000 – < 50,000	9.38	7.35	14.15	11.2	8.69	14.35
(4) 50,000 – < 100,000	7.11	5.39	14.83	9.44	9.09	10
(5) 100,000 – < 500,000	17.34	18.32	12.97	11.34	13.28	8.1
(6) ≥ 500,000	17.48	17.48	-	25.23	25.23	-

Source: own calculations based on the EU FADN database

particularly visible in the smallest farms, where, in 2017, subsidies accounted for almost half of the income obtained. The larger the farms, the greater the decrease in the share of subsidies in income was. On the other hand, in the EU-12, the opposite trend was noticed – the share of subsidies in income, in the period under study, increased (except for class 5 farms). Despite a significant amount of time passing since the accession of new countries to the EU and CAP programmes aimed at equalizing management conditions, the results of this study indicate differences in the possibilities of subsidy absorption (especially on account of direct subsidies SE605). Thanks to these subsidies, producers with concentrated, larger farms are able to obtain income at a relatively higher level despite a decreasing price level. As Bazyli Czyżewski and Adam Majchrzak [2015] point out, the occurring King's Effect results from market failure and the consumer price dictate, including the food industry. One of the ways of reducing asymmetry between fragmented suppliers and customers in the fruit and vegetable market is to promote concentration and support integration processes. As Marzena Trajer and Krystyna Krzyżanowska [2014] point out, through the cooperation of producers, it is possible to reduce the role of intermediaries and contribute to an increase in the income of gardeners and building a more stable market position.

CONCLUSIONS

As a result of the research, it can unequivocally be established that producer groups and vegetables are independent of horizontal concentration on the market. Changes in the number of individual producer groups with different economic strength is taking place. More and more economically stronger farms are noted, fewer being from lower economic classes. An important observation is the fact that this state of affairs is not influenced by price conditions, which in the study had a negative impact on the income conditions of a farm. Income obtained by a horticultural farm in individual groups determines concentration processes due to the fact that the highest increases in the analyzed period concern groups with higher economic strength. It can, therefore, be concluded that income significantly influenced production on the concentration of fruit and vegetables in European Union countries in 2007-2017. Moreover, it should be assumed that, on the basis of the conducted analysis of the share of subsidies in the income of horticultural farms with different economic strength, institutional solutions additionally supported concentration trends in the EU-12, due to a higher level of subsidiaries in groups with higher economic strength, while no such trends were observed in the EU-16.

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DYNAMIKA LICZEBNOŚCI GOSPODARSTW OGRODNICZYCH W RÓŻNYCH KLASACH WIELKOŚCI EKONOMICZNEJ A ZMIANY ICH DOCHODU W LATACH 2007-2017

Słowa kluczowe: gospodarstwa ogrodnicze, produkcja owoców i warzyw, koncentracja, dochód rolniczy, dopłaty w ramach WPR

ABSTRAKT

Celem opracowania jest określenie związków zmiany struktury gospodarstw ogrodniczych w krajach Unii Europejskiej w latach 2007-2017 z ich dochodami oraz określenie wpływu subsydiów wspólnej polityki rolnej na poziom dochodu gospodarstw ogrodniczych. Badaniu poddano gospodarstwa ogrodnicze z bazy European Union Farm Accountancy Data Network (EUFADN) wszystkich krajów UE. Przeprowadzono dynamiczną analizę struktury liczebności gospodarstw w poszczególnych grupach wielkości ekonomicznej (ES6), a następnie zaprezentowano średnią zmianę dochodów oraz udział subsydiów w dochodach w ramach tych grup, w latach 2007 i 2017. W wyniku przeprowadzonych badań, uwzględniając zmiany w liczebności gospodarstw ogrodniczych w różnych grupach wielkości ekonomicznej, potwierdzono przypuszczenia dotyczące zmniejszającej się skali rozdrobnienia gospodarstw ogrodniczych, a także pozytywnie zweryfikowano hipotezę dotyczącą wpływu dochodów na zachodzący proces. Ponadto z przeprowadzonych badań wynika, że istniejące rozwiązania instytucjonalne dodatkowo wspierały tendencje do zmniejszania się skali rozdrobnienia gospodarstw ogrodniczych w krajach UE-12, ze względu na fakt wyższych udziałów subsydiów w grupach o wyższej sile ekonomicznej.

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