



**AgEcon** SEARCH  
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

*The World's Largest Open Access Agricultural & Applied Economics Digital Library*

**This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.**

**Help ensure our sustainability.**

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

[aesearch@umn.edu](mailto:aesearch@umn.edu)

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

**MARIA PARLIŃSKA, PIOTR POMICHOWSKI**

Warsaw University of Life Sciences – SGGW, Poland

## **ANALYSIS OF INCOME DISPARITY OF FARMER HOUSEHOLDS**

Key words: income disparity, inequality, disposable income, households, agriculture income

**ABSTRACT.** The purpose of the analysis is an attempt to assess the income disparity of farmers compared to other socio-professional groups in light of the latest available data and an assessment on how administrative division impacts income disparity size. The analysis was performed using data gathered by the Household Budget Survey from 2017, availing for that purpose the statistics of disposable income per household and converting it to a per capita figure. Among socio-professional groups, the following households were distinguished: farmers, entrepreneurs, employees, pensioners and other earners earning income from other sources. The results of the analysis have given evidence of existing income disparity of farmer households with respect to other households. By comparing households of farmers and entrepreneurs, the greatest disparities can be observed in average disposable income to the detriment of farmers and employee incomes are located between these types of households. The highest income levels of farmers in comparison with entrepreneurs, employees or households in general, for that matter, are recorded in the Podlaskie, Lubelskie and Lubuskie voivodships. This observation suggests the significant development of the agricultural sector or slow overall economic development, which generates low revenue for individuals making their living as employees or entrepreneurs. Higher disposable income level households of entrepreneurs and employees tend to be characteristic of territories with significant urban areas, i.e. the Mazowieckie voivodship or Małopolska region. In these areas, income levels earned from work or entrepreneurship are substantially higher than those acquired from farming.

### **INTRODUCTION**

Over the years, it has been observed that income inequalities constitute an inherent element of market economy with varying intensity at every stage of socio-economic development [Leszczyńska 2006] and that they may lead to unfavorable social or economic phenomena. They contribute to the halting of globalization processes and also restrict possibilities of adaptation of post-communist countries to requirements posed by the modern economy and integration with other EU countries, because low income levels of residents, frequently restrain decision making process (often characterized by risk taking), which may result in income growth. For this reason, with the passing of time, the poor become even poorer, when compared to the rest of the society. Income inequalities may generate two distinct and contradictory socio-economic side effects: motivation for assuming action

which results (quite frequently) in economic efficiency and social conflicts taking place between professional groups influencing economic development.

As regards the issue of income disparity of households of farmers with respect to other groups, yet another issue discussed is that of food security. Low revenue of farm households may lead to the outflow of factors (labor and land) to other, more profitable sectors of the economy. As a consequence, the liquidation of small farm households, subduing farm households to corporations and a change in land use in favor of more profitable sectors may take place [Czyżewski, Stępień 2013].

A study carried out on income inequalities constitutes a significant element in assigning tasks for economic, social, income and taxation policies, and also facilitates defining a given range of measures of regional or structural nature. The fundamental rule accompanying income policy is striving towards the levelling of income levels and the standard of living of society.

### INCOME DISPARITY IN SCIENTIFIC RESEARCH

The concept of household income disparity used in economics means income inequality between two social groups, which can cause a sense of injustice and lead to social conflicts. A quite common occurrence of disparity is observed in countries characterized by a free market economy and enjoying economic growth, which means that it is equated with economic development. A certain characteristic of this phenomenon can be ascribed to countries which underwent systemic transformation (economic transformation), whereby the market mechanism is still not functioning efficiently or effectively enough to level it off [Dobrska 1990]. From the outset of economic science development, the aspect of income inequality was the subject of study and analyses conducted by many investigators, such as David Ricardo or Vilfredo Pareto. The 70s of the XX century saw growing interest in the issue of income inequality, as for instance, the influence of average income levels or costs on economic efficiency began to be perceived [Sen 1973]. Sen stated that the level of income of the lowest earners has an impact on social well-being, because incomes stimulate economic efficiency improvement and people from lower social spheres gain more on economic growth than as a result of income redistribution [Wade 2005]. On the other hand, in the 1990s, interest increased mainly due to a slowdown in economic growth (unemployment and wage differences), and, at the beginning of the 21st century, the function of stabilizing the business cycle [Kowalik 2002] and redistribution of income [Szopa 2005] was assigned to the state. A study conducted by A. Sen makes us stop treating economic growth as a unique way of resolving the problem of income inequality [Sen 2002].

By observing Polish reality, it was considered that the market is not neutral and that it can provoke income inequality growth [Woś 2000]. From an economic perspective, this phenomenon may be useful, because it serves to activate the shift of labour force from certain sectors of the economy to other sectors, i.e. those sectors, which enjoy dynamic growth. In Poland, in the post-war period, the inclination of people to compare themselves with other social groups and perceive disproportions as a token of social injustice began to be observed. The problem of defining an objective criterium to determine when income

disparity may be recognized as excessive or requiring state intervention appeared. Augustyn Woś advocated the undertaking of specific measures in order to mend inequalities only when the latter evoke social conflict and tension [Woś 1998]. The author, Agnieszka Baer-Nawrocka, states that even though the majority of economists are in support of equal opportunities on the labor market and remuneration [Idczak 2001], they are not in a position to unanimously determine the category and manner of measuring income parity [Baer-Nawrocka 2012]. The significant differentiation of the material and economic situation of the agricultural and non-agricultural population and the existence of a special category of expenditure in farm households, due to the existence of the dual function of the household (living place and work place) may constitute a problem in estimating income level [Zegar, Gruda 2000]. By analyzing the issues (2005-2012 data) of efficiency and remuneration of the labor force factor in agriculture in comparison with other sectors, Włodzimierz Rembisz proved that this factor in agriculture is overestimated in the context of its efficiency, whereas in other sectors it is underestimated [Rembisz 2016]. The existence of a source of financing not linked to efficiency is reason for higher remuneration levels which are inadequate to the efficiency of the labor force factor. Maria Grzelak, in her analysis of disposable income, made an attempt at explaining the issue of income and the interventionist narration [Grzelak 2016]. Conducted analysis has proven that, in the years 2003-2005, and in 2015, farmer households were characterized by the lowest real disposable income. In the years 2000-2003, agricultural disposable income constituted 20-26.5% of the income level of individuals working in non-agricultural sectors, whereas in 2011 this ratio was recorded at 60% [Baer-Nawrocka 2013]. By converting agricultural income to AWU (Annual Work Unit; unit of labour equivalent to the working time of an individual employed on a full-time basis) A. Baer-Nawrocka proved the existence, in most EU countries, of lower income levels of agricultural producers with respect to other sectors. On the other hand, by conducting research with the use of FADN data, Arkadiusz Sadowski [2010] proved that medium and big households tend to generate income levels comparable to the revenue of employees working in offices, and that big and very big ones generate more income than managers of small enterprises. The problem of income disparity existing between farms and households making their living from contract work was discussed in the paper written by Joanna Kisielińska. The intention of the paper was to verify the existence of income parity in agriculture by comparing average income earned by a farm engaged in the production of goods per fully-employed person with income from contract work in EU countries in 2008 and 2015. Households not engaged in goods production were skipped as they were recognized as minor [Sadowski et al. 2015] and fulfilling the role of social entities [Kołoszko-Chomentowska, Sieczko 2014]. In 2015, the highest ratio of average income obtained by farms to average income earned by households of employees was an attribute of countries, such as: Hungary, the Czech Republic and Slovakia, and these statistics were 3.43, 1.83, and 1.81, respectively. In 9 more countries, income from agriculture exceeded income from contract work, whereas in the remaining 14 countries, the discussed ratio was below one (income disparity): inter alia Denmark, Germany and Poland, where the ratio was 0.43, 0.86 and 0.60, respectively. Poland ranked 20th on the list of countries with best living standards of farmers.

### RESEARCH METHODS

From reviewing professional literature on the subject, it can be concluded that the occurrence of income disparity among households of farmers is a phenomenon, which is present in the economy, and quite common, too. In order to diagnose this issue for the case of Poland, an analysis of income differentiation of households shall be performed according to the main source of income and magnitude of disposable income. The purpose of the analysis is an attempt to assess the income disparity of farmers compared to other socio-occupational groups in light of the latest available data, and assess how the administrative division impacts income disparity size. For conducting the analysis, the Household Budget Survey (BBGD) data from 2017 shall be used, which contains information on the standard of living of the population in a given year. The households of farmers were picked on the basis of main income source category. The data disregards households classified as households making their living from unemployment benefits. To demonstrate income disparity, disposable income either per household or per person (i.e. per capita) was used. Economists also suggest the application of such categories as equivalent income (taking into consideration demographic differences in family constitution) or expressing income per worker [Leszczyńska 2005].

### THE FINDINGS

From the data, it results that the vast majority of households of farmers commands a disposable income of up to PLN 2 thousand (Figure 1). In this range, the biggest ratio of households making their living from other sources of income, i.e. rental, property-derived income, contributions and alimony (further on referred to as other) was also observed.

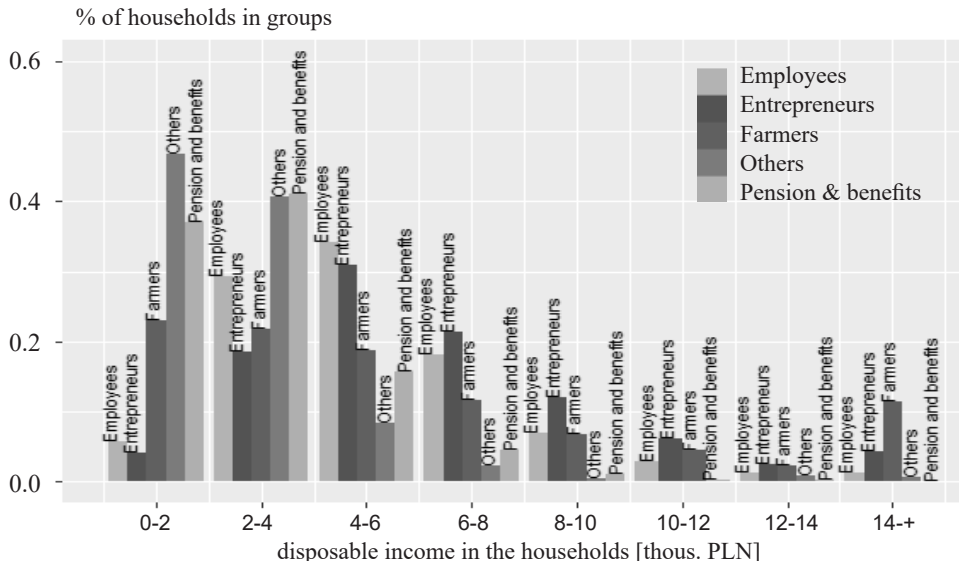


Figure 1. Share of specific types of households in a given range of disposable income (overall)  
 Source: own elaboration based on BBGD data

The greatest number of households making their living from entrepreneurship (entrepreneurs) or contract work (employees) is placed in the interval of disposable income of PLN 4-6 thousand. Whereas, the majority of those making their living from pension and retirement benefits (pensioners and retired) are located in the PLN 2-4 thousand bracket. It should be observed that, in the highest income interval, the greatest percentage share of households of a given type is constituted by farmers. This means that farmer households with an income of over PLN 14 thousand constitute, in terms of percentage share, a greater proportion in their own group than households of employees or entrepreneurs with this level of income. As regards disposable income per capita in a household, the greatest number of farmers commands a disposable income per capita of PLN 0.5-1 thousand (Figure 2). On the other hand, the biggest number of households making their living from contract work and entrepreneurship is situated in the PLN 1-1.5 thousand interval. In this interval what is also found is that the majority of households obtain an income predominantly from retirement & pension benefits. The greatest share in the income bracket of over PLN 5 thousand, due to the type of income obtained, constituted farmers. This means inequality in the distribution of income takes place – farmers were overrepresented with respect to other groups in the brackets characterised by lowest and highest income levels – a polarity effect.

Analyzing income disparity as a ratio of average disposable income of households making their living from agriculture to average income levels of households from other sources, the administrative factor was also taken into account. Considering disposable income per farm household (overall), it can be observed that, in all voivodships, it exceeds the disposable income of other household types by 7% to 156% (Figure 3). The highest percentage share of the average income of farmers with respect to other households is re-

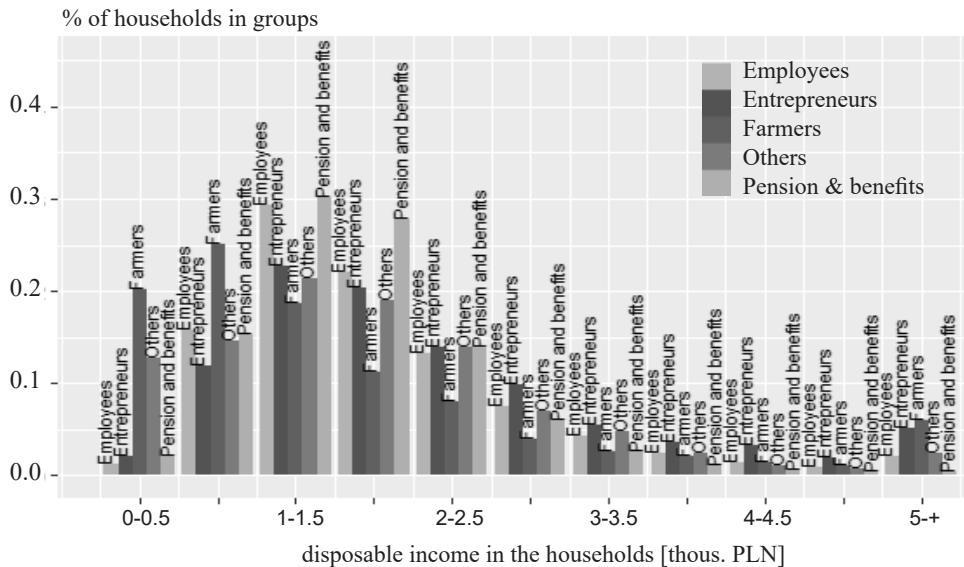


Figure 2. Share of specific types of households in a given range of disposable income (per person)  
 Source: own elaboration based on BBGD data

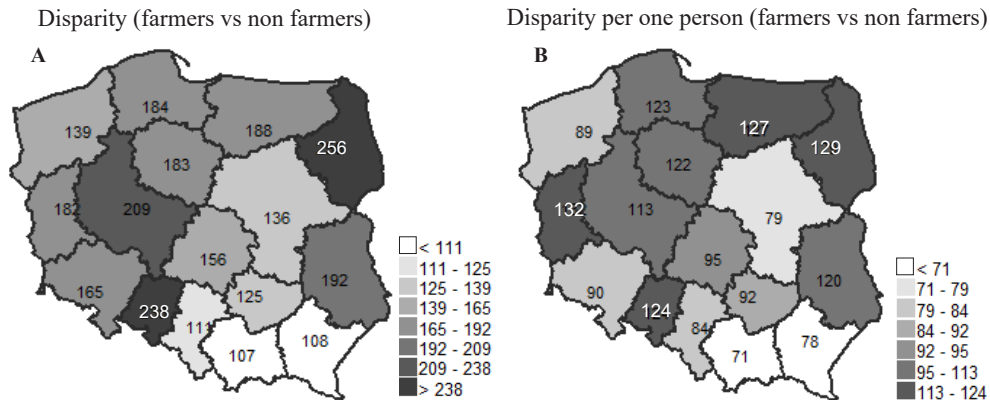


Figure 3. Income disparity of households of farmers with respect to other household types due to disposable income (overall) (A) expressed per person in household terms (B)

Source: own elaboration based on BBGD data

corded in the Podlaskie (256%), Opolskie (238%), and Wielkopolskie voivodship (209%). The lowest percentage share was recorded for the Małopolskie (107%), Podkarpackie (108%) and Śląskie (111%) voivodship.

Taking into account disposable income per person, the income disparity of households of farmers becomes explicit. Half of the voivodships are characterized by a higher average income of households of farmers than the average income of households making their living from other income sources. Higher average income levels (per one person) of farmers with respect to the average income of other household groups is observed in the following voivodships: Lubuskie (132%), Podlaskie (129%) and Warmińsko-Mazurskie

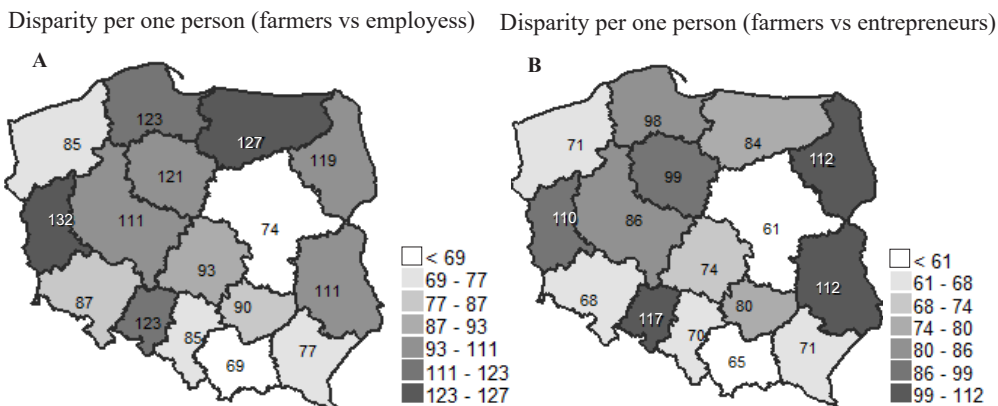


Figure 4. Income disparity of households of farmers with respect to contract workers (A) and entrepreneurs (B) regarding disposable income per person in a household

Source: own elaboration based on BBGD data



(127%). A lower average income of farmers in comparison to the average income of other groups was observed in the Małopolskie (71%), Podkarpackie (78%) and Mazowieckie (79%) voivodships. Analysis of disposable income (per person) of farmer households and entrepreneurs indicates a higher income inequality of these groups.

Average income levels (per one person) of farmers in almost all voivodships are much lower with respect to average income levels of entrepreneurs (Figure 4). Higher income levels of farmers are recorded in the Opolskie (117%), Lubelskie (112%) and Podlaskie voivodship (112%), whereas the lowest are in the Mazowieckie (61%), Małopolskie (65%) as well as Podkarpackie and Zachodniopomorskie voivodship (71% each). Average income levels from contract work are lower in comparison to income levels of entrepreneurs, which means that the ratio of income levels of farmers to the income levels of households of employees is more favorable.

## SUMMARY

The analysis of income levels of households of farmers affirms the existence of income disparity. The largest differences in average disposable income are observed between households of farmers and entrepreneurs to the detriment of farmers and much less compared to households of employees. This suggests that employees command a much lower disposable income than entrepreneurs. In addition, there was an income polarization effect manifested by a significant share of farm households among the groups with the lowest and highest disposable income. It is worth noting that the disparity depends largely on a given voivodship. In voivodships such as: Podlaskie or Lubelskie, due to the agricultural character of the area, farmers command a higher average disposable income than entrepreneurs, employees, and in fact, all groups covered by the survey (the retired, employees, entrepreneurs and others). The cause of such a state of affairs may be the low economic development level of these terrains, and, in effect, low income levels of employees or entrepreneurs, as well as the quite well-developed farming sector enabling the attainment of high-income levels. The lowest, per one person, agricultural income levels in comparison to analyzed types of households are observed in big urban areas, i.e. Mazowieckie or Małopolskie. The performed analysis should encourage the performance of further analyses in the context of coming up with an unbiased indicator of income disparity for various social and professional groups.

## BIBLIOGRAPHY

- Baer-Nawrocka Agnieszka. 2012. Zmiany w wolumenie produkcji rolnej w krajach Europy Środkowej i Wschodniej po wstąpieniu do Unii Europejskiej (Changes in the agricultural production volume in the countries of Central and Eastern Europe after accession to the European Union). *Roczniki SERiA* XIV (3): 9-13.
- Baer-Nawrocka Agnieszka. 2013. *Kwestia parytetu dochodów rolniczych a polityka rolna Unii Europejskiej* (The issue of agricultural income parity and the agricultural policy of the European Union). Poznań: Uniwersytet Przyrodniczy.



- Czyżewski Andrzej, Sebastian Stępień. 2013. *Ekonomiczno-społeczne uwarunkowania zmian paradygmatu rozwoju rolnictwa drobnotowarowego w świetle ewolucji Wspólnej Polityki Rolnej* (Economic and social conditions of changes in the paradigm of small-scale production agriculture development in the light of the evolution of the Common Agricultural Policy). Kraków: Uniwersytet Rolniczy.
- Dobrska Zofia. 1990. *Rozwarstwienie dochodów a rozwój gospodarczy w krajach Trzeciego Świata* (Stratification of income and economic development in the countries of the Third World). Warszawa: PWN.
- Grzelak Maria Magdalena. 2016. Dochody rozporządzalne gospodarstw rolnych na tle dochodów innych grup społeczno-ekonomicznych w Polsce w latach 2003-2014 (The disposable incomes of agricultural households against the background of income of other socio-economic groups in Poland in the years 2003-2014). *Annales Universitatis Mariae Curie-Skłodowska sectio H* 50 (4): 138-149.
- Idczak Joanna. 2001. *Dochody rolnicze a polityka regionalnego rozwoju Unii Europejskiej* (Agricultural income and regional development policy of the European Union), Poznań: Wyższa Szkoła Bankowa.
- Kisielnińska Joanna. 2018. Dochody z gospodarstwa rolnego a wynagrodzenia z pracy najemnej w krajach UE (Income of agricultural household and remuneration from contract work in the EU countries). *Zeszyty Naukowe SGGW w Warszawie. Problemy Rolnictwa Światowego XXXIII* (2): 130-139.
- Koloszko-Chomentowska Zofia, Leszek Sieczko. 2014. Gospodarstwa rolne jako podmiot w gospodarce narodowej (Agricultural households as entity of the national economy). *Economics and Management* 1: 97-111.
- Kowalik Tadeusz. 2002. Nowe tendencje w świecie. [W] *Nierówni i równiejsi* (New trends in the world. [In] Unequal and more equal), ed. T. Kowalik, 10-55. Warszawa: Fundacja Innowacja.
- Leszczyńska Małgorzata. 2005. Dochody rolniczych gospodarstw domowych w Polsce (Income of households of farmers in Poland). *Polityka Społeczna* 8: 9-14.
- Leszczyńska Małgorzata. 2006. Podział dochodów i jego nierówności – implikacje teorii społeczno-ekonomicznych dla polityki społecznej (The distribution of income and arising income inequalities – implications of the socio-economic theories for the social policy). *Problemy Polityki Społecznej* 9: 81-95.
- Rembisz Włodzimierz. 2016. Relacje wynagrodzenia i wydajności czynnika pracy w rolnictwie a tle gospodarki narodowej i jej sektorów w Polsce w okresie 2005-2012 (The ratios of remuneration and efficiency of the labour factor in agriculture against the background of the national economy and its particular sectors in Poland during in the years 2005-2012). *Wież i Rolnictwo* 2 (171): 41-58.
- Sadowski Arkadiusz. 2010. Ocena możliwości opłaty pracy własnej w różnych typach gospodarstw rolnych w Polsce (The evaluation of the feasibility of own work pay in various types of agricultural households in Poland). *Wież i Rolnictwo* 2 (147): 142-157.
- Sadowski Arkadiusz, Walenty Poczta, Ewelina Szuba-Barańska, Patrycja Beba. 2015. Modele gospodarstw rolnych w państwach Unii Europejskiej (The models of agricultural households in the countries of the European Union). *Wież i Rolnictwo* 3 (168): 43-61.
- Sen Amartya. 1973. *On Economic Inequality*. Nowy Jork: Norton.
- Sen Amartya. 2002. *Nierówności: Dalsze rozważania* (Inequalities: Further considerations). Kraków: Fundacja im. S. Batorego.
- Szopa Bogumiła. 2005. *Zmiany dochodów ludności w Polsce na tle uwarunkowań systemowych* (Changes in the income levels of the population of Poland against the background of system's underpinnings). Kraków: Akademia Ekonomiczna.
- Wade Robert Hunter. 2005. Does Inequality Matter? *Challenge* 48 (5): 12-38.

- Woś Augustyn. 1998. *Wzrost gospodarczy i strategie rozwoju polskiego rolnictwa* (Economic growth and the strategies for Polish agricultural sector development). Warszawa: IERiGŻ.
- Woś Augustyn. 2000. *Tworzenie i podział dochodów rolniczych. Dochody transferowe* (Creation and distribution of agricultural income/Income transfers). Warszawa: IERiGŻ.
- Zegar Józef, Stanisław, Mieczysław Gruda. 2000. *Relacje dochodów ludności chłopskiej i pozarolniczej. Wskaźnik parytetu dochodów* (The ratios of farmland population and non-agricultural population. Indicator of income parity). Warszawa: IERiGŻ.

\*\*\*

## ANALIZA DYSPTYTETU DOCHODOWEGO GOSPODARSTW DOMOWYCH ROLNIKÓW

Słowa kluczowe: dysptytet dochodowy, nierówności, dochód rozporządzalny,  
gospodarstwa domowe, dochody rolnicze

### ABSTRAKT

Celem badań była próba oceny dysptytetu dochodowego gospodarstw rolnych w Polsce na tle pozostałych grup społeczno-zawodowych. Analizę przeprowadzono na podstawie danych z Badania Budżetu Gospodarstw Domowych z 2017 roku, wykorzystując dochód rozporządzalny przypadający na gospodarstwo oraz przeliczając go na jedną osobę w gospodarstwie domowym. Wśród grup społeczno-zawodowych wyróżniono gospodarstwa domowe: rolników, przedsiębiorców, pracowników, emerytów i rencistów oraz pozostałych osiągających dochody z innych źródeł. Wyniki analizy potwierdziły występowanie dysptytetu dochodowego rolników w porównaniu do innych gospodarstw domowych. Porównując gospodarstwa domowe rolników i przedsiębiorców obserwuje się największe różnice w średnim dochodzie rozporządzalnym na niekorzyść rolników a dochody pracowników lokują się między wymienionymi typami gospodarstw domowych. Najwyższe dochody rolników w porównaniu do przedsiębiorców, pracowników i ogółu gospodarstw obserwuje się w województwach podlaskim, lubelskim oraz lubuskim. Obserwacja ta wskazuje na występowanie znacznego rozwoju rolnictwa lub niskiego ogólnego rozwoju gospodarczego, który generuje niskie dochody osób utrzymujących się z pracy czy z prowadzenia firmy. Wyższe dochody rozporządzalne gospodarstw domowych przedsiębiorców oraz pracowników występują na terenach, w których znajdują się duże obszary miejskie tj.: mazowieckie lub małopolska. Na tych obszarach dochody uzyskiwane z pracy czy z przedsiębiorstwa są znacznie wyższe niż te uzyskiwane z rolnictwa.

### AUTHORS

MARIA PARLIŃSKA, DR HAB. PROF. WULS  
ORCID: 0000-0003-3323-7779

Warsaw University of Life Sciences – SGGW  
Department of Agricultural Economics and International Economic Relations  
166 Nowoursynowska St., 02-787 Warszawa, Poland

PIOTR POMICHOWSKI, MSC  
ORCID: 0000-0001-6466-332X

Warsaw University of Life Sciences – SGGW  
Department of Agricultural Economics and International Economic Relations  
166 Nowoursynowska St., 02-787 Warszawa, Poland