

NON-AGRICULTURAL BUSINESS ACTIVITY AS A SOURCE OF INCOME OF FARMERS' HOUSEHOLDS IN POLAND

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Purpose: The main objective of the study is to evaluate the importance of the non-agricultural business activity of farmers in shaping the income of farmers' households in Poland in 2002-2022.

Design/methodology/approach: The scale of farmers' non-agricultural business activity, its share in the income structure of farmers' households, and its links to agricultural production were assessed. Qualitative analysis and descriptive statistics were used.

Findings: In sectoral representation, non-agricultural business activities play a minor role in shaping farmers' households income, although after 2002 there was a relative increase in interest in this form of business activity among farmers. There is also substitutability between sources of income from agricultural and non-agricultural business activities.

Research limitations/implications: The limitation in the availability of full time series data and the differences in the methodologies for collecting data on agricultural businesses raise specific challenges at the stage of data compilation, analysis, and formulation of conclusions.

Practical implications: There is a polarisation in farmers' attitudes towards non-agricultural business activities: either they are the main source of the farm family's livelihood, or they are of marginal importance in shaping farmers' household income.

Social implications: Additional business activity is an important element in the financial security of those farms where agricultural activities are more often orientated toward self-supply.

Originality/value: The additional business activity of farmers is a topic little studied in the literature. Exploring its mechanisms is important for the design of effective policy tools aimed at reducing the instability of farmers' incomes.

Keywords: households, income, farmers, non-agricultural business activity, Poland.

Category of the paper: research paper.

1. Introduction

Farmers' non-agricultural business activity may be linked directly to the agricultural holding (using the resources of the agricultural holding, such as agrotourism farm), or it may be a business activity completely independent of agricultural production (the so-called non-agricultural other activity according to the Statistics Poland).

Farmers who start non-agricultural business activities are mainly driven by the motivation to obtain additional income or diversify their sources of income, due to the necessity to face the seasonality of agricultural production or the impact of climatic, weather, and biological factors (Antón et al., 2013; Soliwoda et al., 2016; Ellis, 2000). The level and stability of income of households are the basis of their financial security, i.e., their ability to satisfy their basic needs and cope with financial problems of a medium- and long-term nature (Kata et al., 2021).

From a sector-wide perspective, an increase in the share of non-agricultural income mitigates net income fluctuations of farmer households (Zegar 2014; Kata, Wosiek, 2024). From a within-sector perspective, there is a stronger tendency to seek income outside agriculture in small family farm holdings, where this type of activity is more likely to be forced by low agricultural income (Brünjes, Revilla Diez, 2012). Large farm holdings also engage in non-agricultural business activities, but more often due to the search for new opportunities to utilise farm holding resources, which fits in with the characteristics of opportunity entrepreneurship (Fairlie, Fossen, 2020).

Furthermore, the issue of non-agricultural business activities, either farm-related or carried out independently from it, fits into the concept of the European Farming Model (EFM) based on rural and agricultural multifunctionality. The essence of EFM is to preserve the multifunctional character of agricultural production, the agricultural system, and rural areas, while considering the market orientation of agriculture and the necessity to meet consumer needs (Poczta, 2010). The implementation of EFM can be supported by the transformation of the agricultural sector leading from specialisation to diversification of the sources of income of farming families. In this aspect, those forms of additional business activity of farmers that are linked to the farm holding (e.g., agrotourism farm, renewable energy production) and create multifunctional agriculture can play an important role. Similarly, business activity of farmers and farm holding members completely unrelated to agriculture can create jobs in the countryside (Adamowicz, 2005). Each of these forms of business activity directly contributes to increasing the dynamics of the development of the economy in rural areas, and for farming families creates the possibility of additional income.

In the literature, the problem of income in agriculture is examined within three main issues:

- income disparities, i.e. the relatively lower income level of farmer households compared to households in other socio-economic groups (Mishra et al., 2002; Sulewski, 2011; Czyżewski, Kryszak, 2015; Zegar, 2019; Kisielińska, 2018; Czyżewski et al., 2020);

- the much higher income diversification in the farmer household sector compared to the income diversification of households in other socio-economic groups (Kata, Wosiek, 2020; Skarżyńska, Grochowska, 2020; Czyżewski et al., 2022);
- the causes and ways of reducing the relatively high instability of farmer household incomes (Meuwissen et al., 2008; Soliwoda et al., 2016; Severini et al., 2019; Kata, Wosiek, 2024).

Studies of agricultural income generally consider the general division in agricultural and non-agricultural activities, and attention is less often directed to the structure of farmers' non-agricultural income. With regard to non-agricultural sources of farmers' household income, issues concerning budget transfers to agriculture (Czyżewski et al., 2020; Harkness et al., 2021) or taking up remunerated jobs (Kisielińska, 2018) are relatively more frequently addressed, while mechanisms related to farmers' additional business activity are less well understood.

This context raises the question: to what extent can non-agricultural business activity contribute to mitigating the income problems of farmers' households and the sector as a whole? In order for non-agricultural business activity to fulfil these functions, or expectations, it should be of the appropriate scale, both at the microeconomic and sectoral levels. It should also be differentiated in relation to the economic sectors and industries of business activity.

Hence, the main objective of the study is to assess the relevance of farmers' non-agricultural business activity in shaping the income of farmers' households in Poland in 2002-2022. Statistics Poland data from the cyclical survey *Household Budgets* and the results of the General Agricultural Census (2002, 2010 and 2020) have been used. Due to the scope and nature of the data, qualitative analysis and descriptive statistics indicators were used in the evaluation.

The study of the level and nature of farmers' non-agricultural business activity, particularly in dynamic representation, i.e. the observation of the strength and direction of changes in this area, appears to be necessary, even only to provide the information necessary for the shaping of policy towards agriculture and rural areas. Support for farmers' non-agricultural business activities should be a permanent and important objective of agricultural policy instruments aimed at the sustainable and multifunctional development of agriculture.

2. Study methodology and data sources

The main question of the study is: What role does income from non-agricultural business activities play in shaping the income of farmers' households in Poland? In search of an answer, the following hypotheses have been proposed:

H1: Between 2002 and 2022, income from non-agricultural businesses played a minor role in shaping the income level of farmers' households in Poland.

H2: After 2002 there was an increase in interest in undertaking non-agricultural business activities by farmers' households in Poland.

H3: Farmers' households in Poland are characterised by substitutability of income sources from agricultural and non-agricultural business activities.

The source of data on net income of households was the Statistics Poland cyclical survey entitled *Household Budgets*. The main source of data on non-agricultural business activities were the results of the 2002, 2010 and 2020 General Agricultural Census. These two surveys are characterised by different methodologies for collecting data on agricultural businesses, also within successive editions of the same survey (Bład, 2013), which raises specific challenges and limitations at the stage of data compilation, analysis, and formulation of conclusions.

In the *Household Budgets* survey, the economic classification of households is based on the criterion of the main source of family income. In the case of farmer households, this main source is income from the use of an individual farm holding¹. Such entities do not represent the full set of farm holdings, they account for about 30% of them.

In the present study, in the analysis of *Household Budget* data, farmer household income is referred to interchangeably as farmer income or farm household income. The income of agricultural households includes income from *strictly* agricultural business activities, i.e., from the farm holding, but also income from non-agricultural sources, both accompanying agricultural business activities (e.g., feed trade or plant protection products) and completely unrelated (e.g., remunerated jobs, budget transfers). Among these sources, in this study attention is focused on income from non-agricultural business activities, which in statistical researches on household budgets is referred to as income from self-employment.

The agricultural censuses are conducted periodically, more or less every 10 years. Their scope covers the general population of households that own a farm holding (including a farm user). The census, although not explicitly, makes distinction between two types of farm holdings conducting non-agricultural business activities. Most attention is paid to households with non-agricultural business activities directly related to agricultural production (using farm resources). The second group consists of households carrying out non-agricultural activities unrelated to the farm holding. Together, these two groups represent farmer households with income from non-agricultural business activities.

The scale of non-agricultural business was assessed in terms of the number of farmer households (also referred to as households with the holder of an agricultural holding) and their share in the total population of farm holdings in Poland. The research also included determining the relevance of income from non-agricultural business activities in the structure of total (net) income of farmers' households. The analyses were conducted from the sector perspective.

Due to data availability, the analyses cover the years 2002-2020 when it comes to data from the censuses and the years 2003-2022 in the case of data on the net income of farmer households. Due to the limitations in the availability of full time series data, their non-uniform

aggregation and presentation in the different editions of the census, the research is based mainly on qualitative analysis. In the analysis of quantitative data, descriptive statistics, structure indicators, and dynamics indicators were used.

3. Results

Between 2003 and 2022, the share of non-agricultural income in the net income of a farming family (living mainly from the use of an individual farm holding) averaged 32% (Figure 1). By 2016, and especially after 2007, the above mentioned indicator showed an upward trend, as it increased from 29.3% to 37.9%. This trend reversed in 2017. At the end of the reviewed period, in 2022, non-agricultural income accounted for 30.6% of net income in farmers' households. This was about 5 pp. less than in 2003.

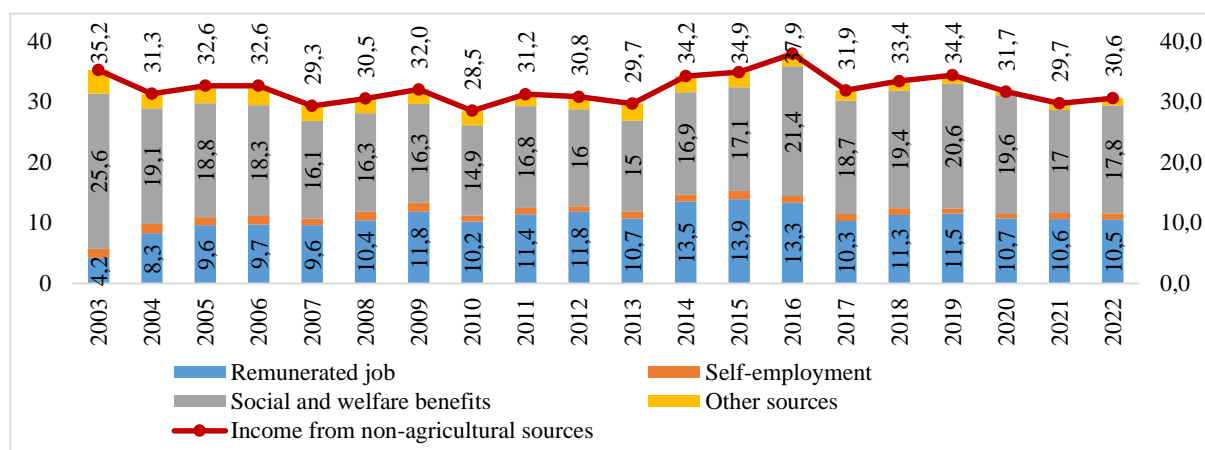


Figure 1. Structure of non-agricultural average monthly net income per 1 person in farmers' households in 2003-2022 (%).

Source: own calculations based on Statistics Poland data from cyclical publications: *Household budget survey 2006-2022*; *Situation of households in 2003, 2004 and 2005 in the light of the results of household budget surveys*, <https://stat.gov.pl/obszary-tematyczne/warunki-zycia/dochody-wydatki-i-warunki-zycia-ludnosci/budzety-gospodarstw-domowych-w-2022-roku,9,21.html> (2024.04.11).

The highest complementation of the budgets of farmers' households was income from social and welfare benefits. In the years 2003-2022, they constituted on average 18.1% of monthly *per capita* net income. Traditional Polish farm holdings are multi-generational, hence in 2020 almost 30% of households were receiving financial funds from pensions (Table 1). However, the percentage of farmer households receiving income from this source has decreased over the past two decades (from 57.5% in 2002 to 29.0% in 2020).

On average, income from remunerated jobs accounted for 10.7% of *per capita* net income. The results of successive censuses indicate that this was the source that most often (almost every second farm holding) fed the farmers' household. Moreover, the percentage of farmers' households receiving income from this source increased between 2002 and 2020. In 2020, it was 44.5% of households.

Table 1.

Number and percentage of farmer households engaged in agricultural business* by source of income (census data)

Year	Number of agricultural holdings (in thousands)		Percentage of agricultural holdings with income from:				
	total	with non-agricultural business activity	agricultural business activity	remunerated job	non-agricultural business activity	retirement and disability pensions	other non-profit sources
2002	2174.0	363.4	100.0	42.1	11.8	57.5	8.2
2010	1886.9	373.2	100.0	46.5	19.7	29.6	6.7
2020	1309.9	190.7	100.0	44.5	14.6	29.0	15.8

* in the census, these are the so-called households with a holder of an agricultural holding.

Source: own calculations based on: *Systematics and characteristics of agricultural holdings* (2003). Warsaw: Statistics Poland; *Non-agricultural activities of agricultural holdings* (2004). Warsaw: Statistics Poland; *The Characteristics of Agricultural Holdings. Agricultural Census 2010*. (2012). Warsaw: Statistics Poland; *The Agricultural Census 2020. Characteristics of agricultural holdings in 2020*. (2022). Warsaw: Statistics Poland.

Non-agricultural business activity was to a small extent complementary to farmers' household budgets (living mainly from the use of an individual farm) – Figures 1, 2. Income from the above accounted on average for 1.2% of net income *per capita* in farmers' households. The importance of this source in the income structure was subject to fluctuations in the reviewed period, against which a downward trend in the indicator in question is marked (from 1.5% in 2002 to 1.06% in 2022) – Figure 2.

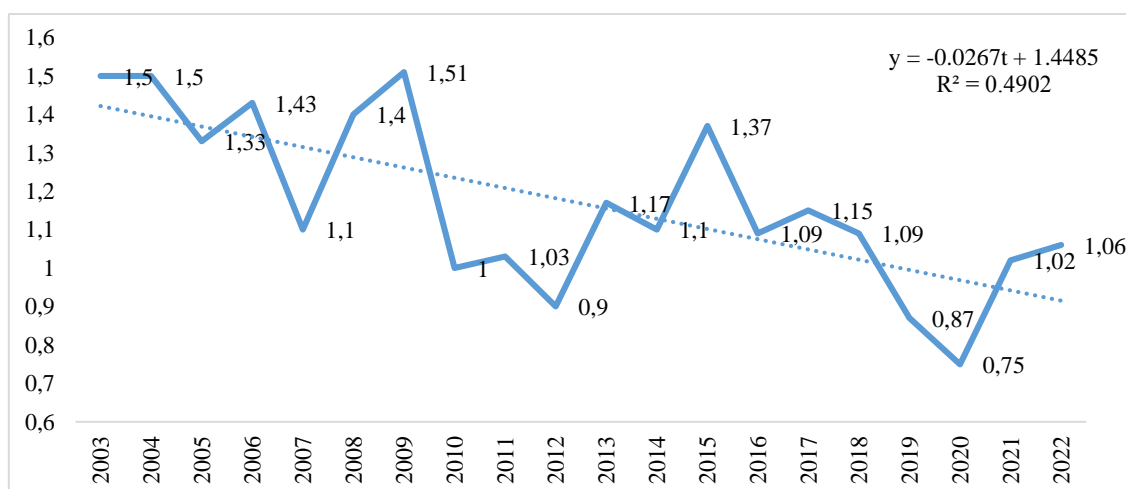


Figure 2. Share of income from non-agricultural business activity in the average monthly net income per capita in farmers' households in Poland in 2003-2022.

Source: as Figure 1.

However, it is worth emphasising that the data presented in Figures 1 and 2, come from the cyclical household budget surveys of Statistics Poland. Therefore, they refer to the household incomes of farmers, for whom the main or only source of livelihood is income from an individual farm holding. This set is therefore not identical to the general set of households that own a farm holding (with a holder of an agricultural holding).

To assess the relevance of non-agricultural business activities for farmers' household incomes, the results of the general agricultural censuses are more meaningful. These results indicate that the relevance of non-agricultural business activities grew particularly rapidly after Poland's accession to the EU (Figure 3). In 2010, almost one in five farms received income from this source. In 2020, income from non-agricultural business activities complemented the income of nearly 15% of households with a holder of an agricultural holding, in other words around 191,000 (Table 1, Figure 3). This was less than in 2002 and 2010, but the number of agricultural holdings in Poland also decreased during this period. The population of farms covered by the census of 2020 comprised just under 1,310 thousand farm holdings, which was approximately 44.7% of the set covered by the census of 2002 and 57.6% of the number of farm holdings covered by the census of 2010. In relative representation, the share of non-agricultural business activities in the number of total farm holdings in 2020 was 5.1 pp. lower compared to the census of 2010, but 2.8 pp. higher compared to the census of 2002.

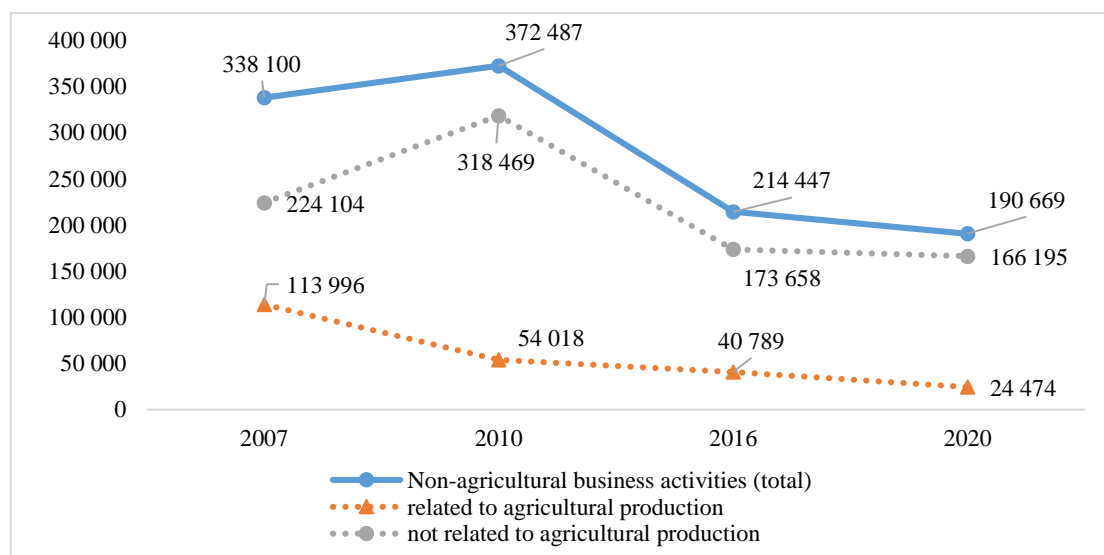


Figure 3. Number of households with income from non-agricultural business activities – by type of activity.

Source: own calculations based on: *The Agricultural Census 2002; 2010; 2020; The characteristics of agricultural holdings in 2016*. (2016). Warsaw: Statistics Poland.

It is characteristic that until 2010, despite the decrease in the number of total farm holdings in Poland, the number of entities in which additional business activity was not related to agricultural production was increasing. As a result, in 2010, this type of entities accounted for approximately 85.5% of farms obtaining income from non-agricultural business activities, and in 2020 it was 87.2%.

In 2020, one in seven farm holdings (14.6%) received income from non-agricultural business activities, and for 8.1%, this income was the main source of income (Table 2). In comparison, of the total farm holdings covered by the 2002 Agricultural Census, 11.8% received income from non-agricultural businesses, while 5.8% lived mainly on this income². Thus, between 2002 and 2020, a relative increase in interest in non-agricultural business activities can be seen among farm holdings.

Table 2.*Structure of farmer households by main source of income – Agricultural Census data*

Agricultural Census of:	Percentage of farm holdings by main source of income from:					
	agricultural business activity	remunerated jobs	non-agricultural business activity	retirement and disability pensions	other non-profit sources	Other households *
2002	27.9	24.9	5.8	28.9	3.0	9.5
2010	33.8	28.8	9.4	15.3	2.7	10.0
2020	30.3	33.1	8.1	15.5	2.0	11.0
Average	30.7	28.9	7.8	19.9	2.6	10.2

* The group of "other households" includes entities in which none of the sources of income exceeded 50% of the total income of the household. This is dominated by "bi-professional" units, which receive income from agricultural business and remunerated job. The percentage of households where the combined income from agricultural business and remunerated job exceeded 50% of income accounted for 4.7%-6% of total households.

Source: own calculations based on data as Table 1.

The group of households receiving income from non-agricultural business is not homogeneous. For 45.4% of them (2020), it was the only or main source of income for the farming family. At the same time, there was also a numerous group of households (28.2%) for which income from non-agricultural business was of marginal importance (constituted less than 10% of total household income³). Households making their living mainly from non-agricultural business were characterised by a lower importance of agricultural production as a source of market income. This is evidenced by the 2-3 times higher percentage of households producing mainly for self-supply (Figure 4).

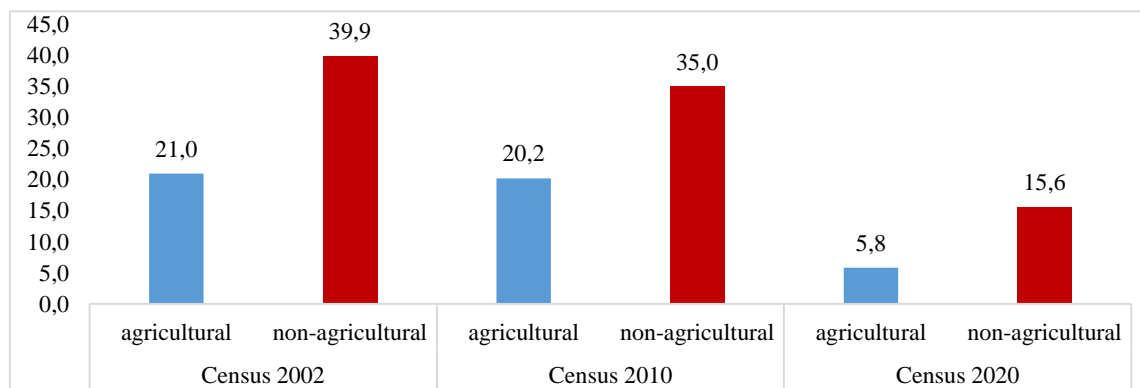


Figure 4. Percentage of households producing mainly for self-supply in households of farmers making their living mainly from agricultural/non-agricultural business activities in Poland.

Source: own calculations based on data as Table 1.

Differences are also noticeable in terms of groups distinguished by the type of non-agricultural business (related vs. unrelated to agricultural production). In the group of farm holdings with additional businesses related to agricultural production, the relevance of income from non-agricultural activities would decrease over time. In 2010, they were the main source of income for 44.5% of such entities, and in 2020, only for 27.5%. In turn, income from agricultural businesses was the main source of income for household budgets for 19% of such entities in 2010, and in 2020 for 30%.

4. Discussion

In the whole set of farm holdings (with a holder of an agricultural holding), income from non-agricultural businesses complemented the household budget for about 15% of them, and in the group of those (about 30%) living mainly from agriculture, it constituted on average about 1.2% of the total income obtained. This indicates the validity of the first research hypothesis that this source of income played a minor role in shaping the income level of farmers' households in Poland in the period 2002-2022.

Income obtained from non-agricultural businesses, in addition to income from remunerated job and income from social security benefits (pensions), contributes to the stabilisation of farmers' household income (Zegar, 2014). A study by Kata and Wosiek (2024) shows that in Poland, between 1996 and 2021, the variability of *per capita* net income in farmer households increased as the share of farm income in farm family net income increased. In this context, additional non-agricultural business can be treated as a complementary measure in efforts to reduce the instability of farmers' incomes, in addition to the primary instrument of subsidies under the Common Agricultural Policy (Severini et al., 2016; Castañeda-Vera, Garrido, 2017; Enjolras et al., 2014). In contrast to subsidies, which have the nature of budget transfers, the popularisation of non-agricultural business activity is an action for broader use of market instruments in the agricultural income stabilisation policy.

After 2002 an increase in the relative interest in undertaking non-agricultural business activities, especially those not related to agricultural production, by farmer households in Poland is observed. With a decrease in the total number of farm holdings in Poland between 2002 and 2020 by almost 33%, there was an increase in the percentage (by 2-3 pp.) of those obtaining income from non-agricultural business and those for whom this type of income was the main source of livelihood. This is a premise that confirms the validity of the second research hypothesis. These transformations are a component of the processes observed in the Polish countryside after accession to the EU, consisting in the growing importance of non-agricultural employment (Polska Wieś 2024..., 2024, p. 71). Nevertheless, the dissemination of farmers' non-agricultural business may lead to a gradual departure of farm holdings from agricultural production, as the majority of entities with such activity (in 2020, about 87%) did not associate it with farm resources. This was particularly true for smaller area farm holdings of up to 5 ha. At the same time, the number of such farm holdings decreased the most in Poland between 2002 and 2020 (Polska Wieś 2024..., 2024, p. 71). Thus, undertaking non-agricultural business may be an intermediate stage of change in the activity profile of small farm holdings, which in the long run translates into structural transformations of the Polish countryside.

Although the census data indicate that non-agricultural business activity is the domain of small and very small farm holdings, a relatively high percentage (10%) of entities with such activity also occurred among households with an area of 100 ha and more (census of 2020).

This is reflected in the polarised approach to non-agricultural business activity. Either it is a business that is the main source of livelihood for a farming family, or it is only complementary or even marginal (it is a source of income obtained as if by the side of agricultural business, e.g., occasional and seasonal income from services delivered with agricultural equipment). At the same time, there are indications that income from non-agricultural business is substitutive to income from agricultural business (as assumed by the third research hypothesis). This is related to the type of non-agricultural business conducted. When the non-agricultural business was related to the farm, the income from agriculture was more important. Moreover, in this group of households the importance of income from agricultural business increased over time, while the importance of income from non-agricultural business decreased. The opposite trends occurred among households undertaking business activity not related to their farm holding.

5. Conclusions

1. Non-agricultural business activity plays a relatively minor role in shaping the level of income of households of farmers living mainly from agriculture. For such entities, income from non-agricultural business accounted for only between 0.75% and 1.51% in the structure of average monthly net income per 1 person in the period 2004-2022. However, such households account for about 30% of households with an individual farm user. Considering the entire set of farm holdings in Poland, the results of the general agricultural censuses indicate that income from non-agricultural business complemented the total income of a farm family for less than 12% of farm holdings in 2012, after nearly 20% of holdings in 2010, and in 2020 it complemented the income of nearly 15% of farmer households. After 2002, there was a relative increase in interest in this form of business activity among farmers, especially that not related to agricultural production.
2. Income derived from non-agricultural business activities improves the material status of many farming families. In addition, they reduce the instability of farmers' income generated by significant fluctuations in income from agricultural production. The instability of farmers' income in general is very high and constitutes a fundamental problem today, more relevant even than the issue of farmers' income disparity, which has been clearly reduced over the last two decades. In this context, non-agricultural business can be a complementary tool in the policy of stabilising farmers' incomes. Its value is of market nature rather than the transfer nature.

3. The results of the research indicate a kind of substitutability of income sources from agricultural and non-agricultural businesses. On those farms where income from agricultural business was high, there non-agricultural business was of additional and complementary importance to the farmer's total household income. It was also more often linked to agricultural production and based on farm resources. In contrast, where agricultural income was low, non-agricultural business activities were more important as a source of livelihood for the farming family. It was also more often an activity completely unrelated to the farm holding and agricultural production.

The conducted analyses allow us to identify the basic mechanisms involved in undertaking non-agricultural business activity, but are not sufficient for statistical verification of cause-and-effect relationships (due to limited data availability). This indicates the need to complement the presented sector based approach with research of a microeconomic nature, conducted directly among farm holdings. This would allow for a more in-depth conclusions on the motivations, determinants, and effects of conducting non-agricultural business activity by farm holdings with different characteristics of owners, production profiles, or spatial location.

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References

1. Adamowicz, M. (2005). Przesłanki rozwoju wielofunkcyjności rolnictwa i zmian we Wspólnej Polityce Rolnej. *Zagadnienia Ekonomiki Rolnej, No. 1(302)*, pp. 17-32.
2. Antón, J., Cattaneo, A., Kimura, S., Lankoski, J. (2013). Agricultural risk management policies under climate uncertainty. *Global Environmental Change, Vol. 23(6)*, pp. 1726-1736, doi: 10.1016/j.gloenvcha.2013.08.007
3. Bład, M. (2013). Wielozawodowość w rodzinach rolniczych w Polsce. Stan i tendencje zmian w latach 2005-2010. *Zagadnienia Ekonomiki Rolnej, No. 2*, pp. 71-84.
4. Brünjes, J., Diez, J.R. (2012). Opportunity entrepreneurs – potential drivers of non-farm growth in rural Vietnam? *Working Papers on Innovation and Space*. Marburg: Philipps University Marburg. Retrieved from: <https://www.econstor.eu/handle/10419/111877>, 15.05.2024.

5. Ellis, F. (2000). *Rural livelihoods and diversity in developing countries*. New York: Oxford University Press.
6. Castañeda-Vera, A., Garrido, A. (2017). Evaluation of risk management tools for stabilising farm income under CAP 2014-2020. *Economia Agraria y Recursos Naturales*, Vol. 17(1), pp. 3-23, doi: 10.7201/earn.2017.01.01
7. Czyżewski, A., Kata, R., Matuszczak, A. (2020). Wpływ wydatków budżetowych na zmiany strukturalne i dochody w rolnictwie w warunkach funkcjonowania w Polsce instrumentów WPR. *Ekonomista*, no. 6, pp. 781-811, doi: 10.52335/dvqp.te199
8. Czyżewski, A., Kata, R., Matuszczak, A. (2022). Dochody gospodarstw domowych rolników – problem dynamiki, parytetu i nierówności. In: S. Owsiak, J. Wilkin, M. Zalewska (Eds.), *Sfera realna i regulacyjna gospodarki* (pp. 57-86). Warszawa: PWE.
9. Czyżewski, A., Kryszak, Ł. (2015). Sytuacja dochodowa gospodarstw rolniczych w krajach UE-15 i w Polsce w latach 2007-2013 w świetle statystyki FADN. *Problemy Rolnictwa Światowego*, Vol. 15(1), pp. 21-32.
10. Enjolras, G., Capitanio, F., Aubert, M., Adinolfi, F. (2014). Direct payments, crop insurance and the volatility of farm income. Some evidence in France and in Italy. *New Medit*, 13, 31-40.
11. Fairlie, R.W., Fossen, F.M. (2020). Defining opportunity versus necessity entrepreneurship: two components of business creation. In: S.W. Polachek, K. Tatsiramos (Eds.), *Change at home, in the labor market, and on the job* (pp. 253-289). Bingley: Emerald Publishing. doi: 10.1108/S0147-9121202000 00048008
12. Harkness, C., Areal, F.J., Semenov, M.A., Senapati, N., Shield, I.F., Bishop, J. (2021). Stability of farm income: The role of agricultural diversity and agri-environment scheme payments. *Agricultural Systems*, 187, 103009, doi: 10.1016/j.agsy.2020.103009
13. *Household budget survey 2006-2022*. Warsaw: Statistics Poland.
14. Kata, R., Nowak, K., Leszczyńska, M., Kowal, A., Sebastiana, B. (2021). *Bezpieczeństwo finansowe gospodarstw domowych – wybrane zagadnienia*. Rzeszów: Wyd. Uniwersytetu Rzeszowskiego.
15. Kata, R., Wosiek, M. (2020). Inequality of Income in Agricultural Holdings in Poland in the Context of Sustainable Agricultural Development. *Sustainability*, Vol. 12(12), pp. 49-63, doi:10.3390/su12124963.
16. Kata, R., Wosiek, M. (2024). Income Variability of Agricultural Households in Poland: A Descriptive Study. *Agriculture*, Vol. 14, 357, doi: 10.3390/agriculture14030357
17. Kisielińska, J. (2018). Dochody z gospodarstwa rolnego a wynagrodzenia z pracy najemnej w krajach UE. *Problemy Rolnictwa Światowego*, Vol. 18(2), pp. 130-139; doi: 10.22630/PRS.2018.18.2.40
18. Meuwissen, M.P.M., van Asseldonk, M.A.P.M., Huirne, R.B.M. (Eds.) (2008). *Income Stabilisation in European Agriculture: Design and Economic Impact of Risk Management Tools*. Wageningen: Wageningen Academic Publishers.

19. Mishra, A.K., El-Osta, H.S., Morehart, M.J., Johnson, J.D., Hopkins, J.W. (2002). Income, wealth, and the economic well-being of farm households. *Agricultural Economic Report, No. 812*, United States Department of Agriculture, Economic Research Service.
20. Poczta, W. (2010). Gospodarstwa osób prawnych w rolnictwie Unii Europejskiej w świetle realizacji idei rozwoju rolnictwa zrównoważonego i Europejskiego Modelu Rolnictwa. *Zeszyty Naukowe Uniwersytetu Ekonomicznego w Poznaniu, No. 150*, pp. 363-384.
21. *Polska Wieś 2024. Raport o stanie wsi. 20 lat w Unii Europejskiej (2024)*. In: A. Poczta, Hałasiewicz (eds.). Warszawa: Scholar.
22. *Pozarolnicza działalność gospodarstw rolnych (Non-agricultural activities of agricultural holdings) (2004)*. Warsaw: Statistics Poland.
23. Severini, S., Tantari, A., Di Tommaso, G. (2016). Do CAP direct payments stabilise farm income? Empirical evidences from a constant sample of Italian farms. *Agriculture and Food Economics, 4*, 6. doi: 10.1186/s40100-016-0050-0
24. Severini, S., Tommaso, G., Finger, R. (2019). Effects of the Income Stabilization Tool on farm income level, variability and concentration in Italian agriculture. *Agricultural and Food Economics, No. 7*, pp. 1-23, doi: 10.1186/s40100-019-0141-9
25. Skarżyńska, A. Grochowska, R. (2020). Zróżnicowanie dochodów parytetowych gospodarstw rolnych na podstawie polskich doświadczeń. *Journal of Central European Agriculture, Vol. 21(4)*, pp. 905-914. doi: 10.5513/JCEA01/21.4.289
26. Soliwoda, M., Kulawik, J., Góral, J. (2016). Stabilizacja dochodów rolniczych. Perspektywa międzynarodowa, Unii Europejskiej i Polski. *Wieś i Rolnictwo, Vol. 3(172)*, pp. 41-68.
27. Sulewski, P. (2011). Gospodarstwa niskotowarowe a parytet dochodowy i efektywność funkcjonowania. *Zagadnienia Ekonomiki Rolnej (Problems of Agricultural Economics), Vol. 327(2)*, pp. 41-58.
28. *Systematyka i charakterystyka gospodarstw rolnych (Systematics and characteristics of agricultural holdings) (2003)*. Warsaw: Statistics Poland.
29. *Sytuacja gospodarstw domowych w 2003, 2004 i 2005 r. w świetle wyników badań budżetów gospodarstw domowych (Situation of households in 2003, 2004 and 2005 in the light of the results of household budget surveys)*. Retrieved from: <https://stat.gov.pl/obszary-tematyczne/warunki-zycia/dochody-wydatki-i-warunki-zycia-ludnosci/budzety-gospodarstw-domowych-w-2022-roku,9,21.html>, 11.04.2024.
30. *The Agricultural Census 2020. Characteristics of agricultural holdings in 2020 (2022)*. Warsaw: Statistics Poland.
31. *The characteristics of agricultural holdings. Agricultural Census 2010 (2012)*. Warsaw: Statistics Poland.
32. *The Characteristics of Agricultural Holdings in 2016 (2016)*. Warsaw: Statistics Poland.

33. Zegar, J.S. (2014). *Rolnictwo III Rzeczypospolitej (Agriculture in the Third Polish Republic)*. Warsaw: Mazowieckie Biuro Planowania Regionalnego.
34. Zegar, J.S. (2019). Perspektywy gospodarstw rodzinnych w Polsce. *Zagadnienia Ekonomiki Rolnej*, Vol. 30(360), pp. 31-53, doi: 10.30858/zer/111997

Footnotes

1. This income is calculated as the difference between the value of sales of agricultural production and subsidies associated with the use of the farm holding and the current inputs incurred in agricultural production and taxes associated with running the farm holding (*Household Budget Survey in 2022, 2023*, p. 121).
2. In 2010 the income from non-agricultural business was earned by 19.7% of all census farm holdings. This activity was the main source of income for 9.5% of farm holdings and 9.3% of households with more than 1 ha.
3. The total income of a household is considered to be the total income (from agricultural and non-agricultural business, as well as from: remunerated job, receipt of pensions, social assistance allowance, child care allowance, child support, scholarships, possession of capital deposits, receipt of foreign aid, winnings from draw-based games and lotteries, etc.) of all persons living together with the farm user and making their living jointly (*The Agricultural Census 2020, 2022*).