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**AGRICULTURE AS A SECTOR OF PROFESSIONAL  
ACTIVITY OF RURAL INHABITANTS  
IN THE MAZOWIECKIE REGION**

Key words: employment structure, agriculture, manufacturing, services,  
three-sector model

**ABSTRACT.** The study aims to identify the importance of agriculture as a sector of professional activity of the inhabitants of rural areas in the Mazowieckie Region. The statistical section uses data from Eurostat and data available from the Local Data Bank, including the Labour Force Survey. The empirical research used the CAWI method, with a questionnaire on the webankieta platform directed to rural inhabitants of the region during the second quarter of 2022. It can be concluded that in comparison to other areas in Poland, the Mazowieckie Region is characterised by the most favourable employment structure – with the highest percentage of employees in services (66%) and relatively average values for the rate of employees in the other two sectors (agriculture 9%, industry and services 24%). Results of empirical research among rural inhabitants of the region can lead to at least two significant conclusions – farm work is still important for the investigated group. However, most respondents were employed or self-employed. It can also be noticed that the public sector (e.g. administration, education) plays a significant role for the local labour markets.

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## INTRODUCTION

Allan George Barnard Fisher formulated a modern version of the three-sector theory of the economy for the first time in the 1930s. He was the first to use the term tertiary production to refer to the service industries offering non-material production (trade, transport, gastronomy, personal services, science, art, health, insurance and education) as opposed to material production: food and raw materials (primary production) and other goods (secondary production). Colin Clark included business services, i.e. financial and banking services, in the tertiary sector. Based on the three-sector structure of the economy, Jean Fourastié proposed to distinguish three basic phases of economic development, pointing to the employment structure as their essential determinant [Kwiatkowski 1980].

Rural restructuring is the next concept which can be applied as the theoretical basis for research on the employment transformation of rural residents. It can be defined as a combination of the broader forces of globalisation, technological progress and social change, and their local socio-economic effects in rural areas, such as urbanisation or the decline in the importance of the agricultural sector [Hedlund, Lundholm 2015]. These processes also reflect the structural changes in the farming sector itself (increased concentration, automation and specialisation of agricultural production), adapting to the situation in the business environment, and especially to the situation in the other elements of the agri-food chain [Dudek, Wojewodzic 2021]. Labour flows between different economic sectors can also be interpreted from the perspective of demand-pull and distress-push factors determining non-farm diversification [Buchenrieder, Mollers 2006]. This approach is related to the classic work by Everett S. Lee [1966], who introduced this classification to explain migration's reasons. He identified "positive" factors encouraging migration, which can affect both the place of residence and the destination, as well as "negative" factors also likely to affect both the place of residence and the destination of migrants. An analogous interpretation can thus apply to labour flows from agricultural employment to work in other sectors. Pull factors characterise the situation when people employed in agriculture find a better job outside this sector. At the same time, push factors to describe the situation when too low income or other unfavourable conditions induce individuals or entire households to seek employment outside agriculture.

State-of-the-art also stresses the importance of commuting, which results from the separation between the place of residence and the place of work caused by the search for employment opportunities outside the place of residence [Rouwendaal, Nijkamp 2004]. Most often, opportunities for attractive employment are created in cities. Hence this subject is mainly undertaken in research on urban space or investigating the city as a labour market centre [Drejerska, Chrzanowska 2014].

In a number of rural regions, primary agriculture might not be able to provide a decent or satisfactory standard of living for future generations, which implies the need for change in rural services. The ability of the rural system to transform in that direction is an explicit criterion for rural resilience [Heijman et al. 2019]. The resilience of the workforce has been tested through the COVID-19 global pandemic crisis, which made seasonal, temporary workers unavailable for some agricultural activities. It influences the sector's productivity, as for some regions or branches, migrants' inflow is a vital labour supply channel. The COVID situation highlighted the labour force quantity available in rural areas, but it is necessary to stress the required labour force quality. That is why it is essential to look at the economic perspective of entire rural livelihoods (e.g. income and employment diversification) [Franc-Dąbrowska, Drejerska 2022].

Current topics addressed within research on rural areas can also offer some concepts possible to be referred to while studying the employment structure of rural inhabitants. The one which recently connected the interest of policymakers and scientists is smart villages, assuming traditional and new networks and services enhanced by instruments of digital, telecommunication technologies, innovations and the better use of knowledge for the benefit of inhabitants and businesses [EC 2017]. "Smart villages" are primarily focused on rural inhabitants taking the initiative to find practical solutions for local disadvantages, but also opportunities, including, for example, preventing the exodus of young people to urban because of better employment opportunities [Górecka et al. 2021]. To counteract this tendency, it is necessary to create conditions for the development of enterprises, including providing jobs, which will be able to stop further migration [Satola, Milewska 2022].

## RESEARCH MATERIAL AND METHODS

The dynamic situation of labour markets (including the issues mentioned above as digitalisation, COVID, etc.) can lead to the formulation of the research question if the trend of decreasing agricultural employment (as described in the cited theoretical concepts) is still present. Therefore, the study aims to identify the importance of agriculture as a sector of professional activity of the inhabitants of rural areas in the Mazowieckie Region. The paper refers to research material generated within the project "Implementation of the Smart Villages concept in the Mazowieckie Voivodeship", financed by Mazowieckie Region. The initiative aimed to support the community and development of rural areas of Mazowieckie, as well as to strengthen traditional and create new networks between stakeholders using modern means of communication, and to raise social awareness related to the development of rural areas.

The statistical section uses data from Eurostat and data available from the Local Data Bank, including the Labour Force Survey. The empirical research used the CAWI method.

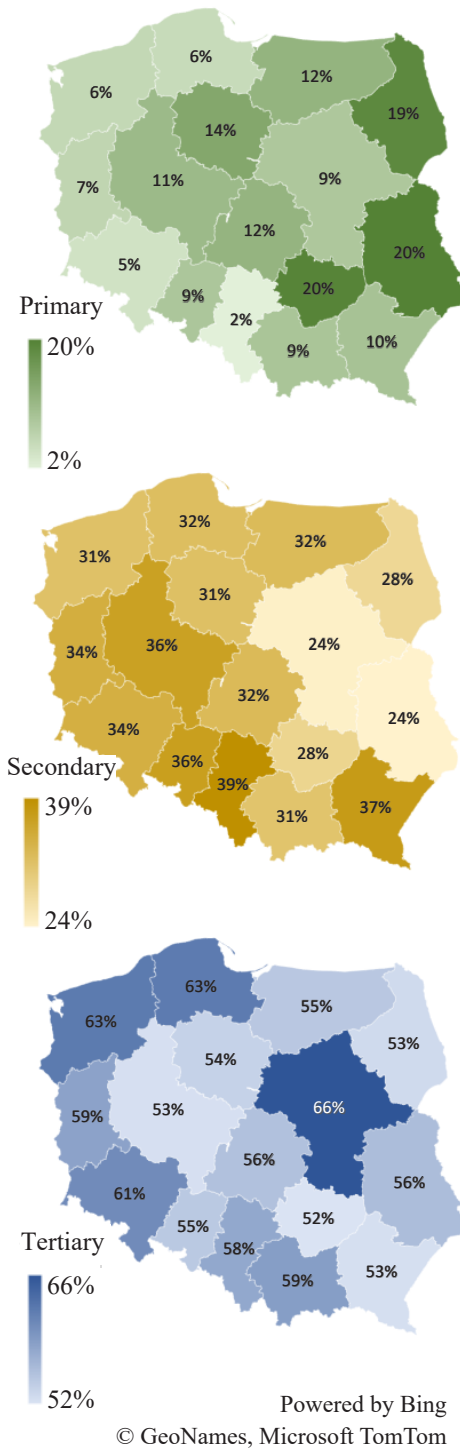
The questionnaire was prepared on the webankieta platform. The pilot study was conducted in February 2022 to verify the designed questionnaire's correctness. The survey was carried out between 29 March and 1 August 2022. The current study presents initial data describing the role played by the primary sectors in the employment of rural inhabitants in the region investigated. Respondents were addressed through the snowball method [Jabłońska, Sobieraj 2013] with non-random selection [Frankfort-Nachmias, Nachmias 2001]. It is a study limit regarding the representativeness of the sample. Still, the results of the empirical research intend to understand specific mechanisms and dynamics while not computing statistical inferences in relation to the broader population.

## RESEARCH RESULTS AND DISCUSSION

The Mazowieckie Region (NUTS2, without the statistical capital region) was the third among 227 regions described by the Eurostat data regarding the number of employed in agriculture, forestry and fishing in 2021 [Eurostat 2022]. One of the most important sources of data on employment is the Labour Force Survey (LFS), which data for describing the situation in 2020 (Figure 1) allows us to formulate a conclusion that although the scale of employment in the primary sector is significant, referring to the model of the tri-sectoral structure of the economy, one may state that the region investigated is the most advanced in the complementary phase – with the highest percentage of employed in services and relatively average values in terms of the share of employed in the two other sectors.

Structural changes in the economy, including changes in the sectoral structure of employment, are long-term processes. This is reflected for the Mazowieckie Region by data for the period 2004-2020, i.e. 17 years (Figure 2), documenting a slight but continuous decrease in the share of employment in agriculture in favour of increasing involvement of labour resources in industry and services.

These stable dynamics of changes in the sectoral structure of employment in the Mazowieckie Region were also identified by Katarzyna Wawrzyniak and Barbara Batóg [2019], who concluded a steady decrease in the share of those employed in agriculture and a slight increase in the percentage of services related to financial and insurance activities and real estate services across Polish regions. In the case of specifically rural inhabitants, Agata Balińska [2019] indicates the potential for direct outflow of the labour force from agricultural to rural tourism, so the service sector. However, it should be pointed out that Mazowieckie is a very diverse region regarding tourism function development. Warsaw is primarily a destination for business and cultural tourism. The remaining part of the region is utilised for tourism mainly by residents of the capital city (weekend, countryside, nature or cultural tourism) [Balińska 2018].



Results of empirical research among rural inhabitants of the region (425 adults defined as the respondents and their partners/spouses within a household) can lead to at least two crucial statements – farm work is still important for the investigated group. However, most respondents were employed or self-employed (Figure 3A). A closer examination of the character of economic activity of entities engaging our respondents (Figure 3B) can bring a kind of conclusion on the significant role of the public sector (e.g. administration, education) for the local labour markets. It can be interpreted in two ways – one is ensuring public services to local communities necessary for rural well-being. The economic perspective locates these activities as not allowing to go beyond local demand, so not very promising regarding future growth. This second perspective can be, of course, violated in a situation of significant population growth. It is necessary to mention here that it still concerns the limited range of rural areas, usually close to big urban centres. However, it is necessary to mention that the effects of public sector employment on the economy are an extensive field of economic studies with many different aspects [Caponi 2017], not possible to be addressed within this paper.

Figure 1. Sectoral structure of employment in Polish regions in 2020  
 Source: own based on Labour Force Survey [GUS, LDB 2022]

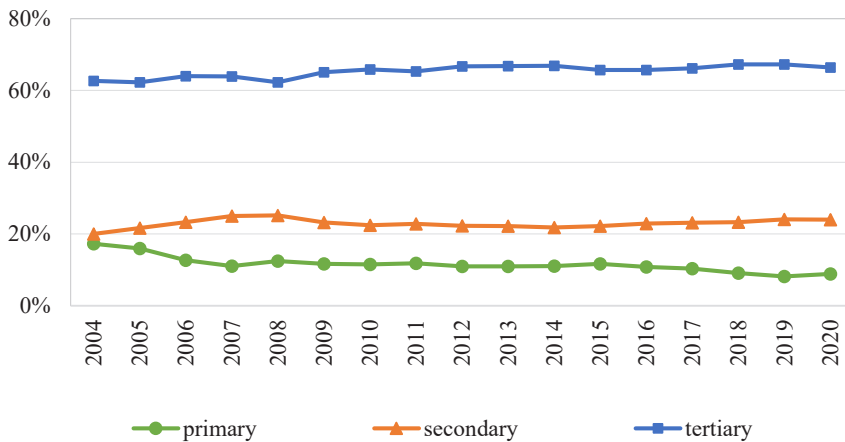


Figure 2. Sectoral structure of employment in the Mazowieckie Region in the period 2004-2020  
Source: own based on Labour Force Survey [GUS, LDB 2022]

Our respondents were asked about their attitude towards changing their jobs. Unfortunately, only ten farmers provided some reasons for the change, described in the statements cited below:

- “Lack of rural prospects and low farm income.
- Because things are tragic on the farm. No decent income. Hard to support a family of five. The unprofitability of production with dizzying prices of fertilisers, oil, and agricultural equipment.
- Difficult agricultural situation.
- Fixed monthly income (as an employee).
- Increasing prices of production factors, the precarious situation in agriculture, year-by-year lower income, and unfavourable weather phenomena that determine yields.
- I want to change my job to one in which I can grow and which I am passionate about.
- Problem with the selling of agricultural products.
- Wanting to earn more, wanting to leave the village.
- Better earnings.
- Deteriorating health for physical work with cows”.

A low number of answers is an explicit limitation for more advanced analysis methods or even quantitative conclusions. However, some negative factors pushing out from the agricultural sector as well as positive features of employment in other sectors can be identified across these answers. The last statement cited can be interpreted from the perspective of social change indicated within the rural restructuring concept related also to the ageing of the labour force. It should be noticed that changes in the sectoral structure

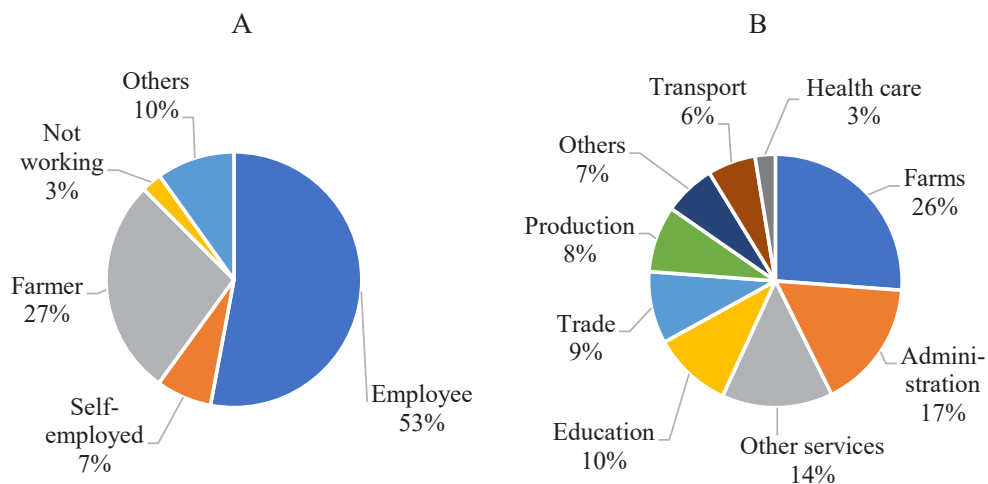


Figure 3. Status on the labour market (A) and sectors of economic activity (B) among respondents

Source: own research

of employment of rural inhabitants are also associated with demographic trends. Poland's population will continue to decline over the next few years, but somewhat more slowly in the countryside than in the city [Kołodziejczak 2016]. Agnieszka Jakubowska [2016] pointed out the increasing share of older people in the potential resources of rural labour markets in Poland as consistent with the trends observed in the EU but stressed an issue of specific determinants of economic activity of the growing group of people 50+ in the labour market, as health condition being an unfavourable factor distinguishing older labour resources in rural areas.

Furthermore, the statements cited refer to income issues in the agricultural sector, which agricultural economists widely study. Undoubtedly, agricultural income is perceived as lower compared to earnings in other sectors. An analysis of farm incomes in the EU since its biggest enlargement, i.e. from 2004 to 2017, shows that, despite a deeply rooted system of agricultural income support through the Common Agriculture Policy, it has failed to achieve parity with non-agricultural incomes [Matuszczak 2020]. However, it should be taken into account that the economic assessment concludes that the remuneration of labour forces in agriculture is higher than the productivity of this factor compared to the national economy as a whole, so the labour factor in agriculture is overestimated in relation to its productivity even if an increase in the remuneration of a labour factor in agriculture is essentially financed by an increase in its productivity like in the rest of the national economy [Rembisz 2016].

It is worth relating the obtained results to countries more advanced in the context of employment structure transformation, as the regularities indicated there might soon also apply to the situation in Poland. For example, France entered the phase dominated by service employment much earlier than Poland. Current employment issues in French agriculture include the ageing of the labour force, newcomers (already linked to agriculture by family or outsiders), increasing female participation and flows between sectors (agriculture is no longer a lifelong occupation) [Fourcroy, Drejerska 2019].

## CONCLUSIONS

Studies on sectoral employment change are an important part of economic research on structural change and have traditionally been pointed to when describing economic growth. At the same time, agricultural employment is studied as an essential characteristic of rural areas. Structural changes in the economy, including changes in the sectoral structure of employment, are long-term processes. Research results indicate that the share of jobs in agriculture is constantly decreasing in favour of increasing involvement of labour resources in industry and services. It can also be concluded that in comparison to other regions in Poland, the Mazowieckie Region is characterised by the most favourable employment structure – with the highest percentage of employees in services (66%) and relatively average values for the rate of employees in the other two sectors (agriculture 9%, industry and services 24%). Results of empirical research allow identifying a few factors which may contribute to mechanisms of these changes (for example, positive factors encouraging looking for non-agricultural employment or digital development, which can facilitate remote work). The reasons for potential outflow from agriculture are interesting and an important field of study. However, they need empirical investigations, which are difficult to be representative – this limitation concern the results presented within this paper.

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ROLNICTWO JAKO SEKTOR AKTYWNOŚCI ZAWODOWEJ  
MIESZKAŃCÓW OBSZARÓW WIEJSKICH  
WOJEWÓDZTWA MAZOWIECKIEGO

Słowa kluczowe: struktura zatrudnienia, rolnictwo, przemysł, usługi,  
model trzech sektorów

**ABSTRAKT.** Celem opracowania jest określenie znaczenia rolnictwa jako sektora aktywności zawodowej mieszkańców obszarów wiejskich województwa mazowieckiego. W części statystycznej wykorzystano dane z Eurostatu oraz Banku Danych Lokalnych, w tym z „Badania aktywności ekonomicznej ludności”. W badaniu empirycznym wykorzystano metodę CAWI, z kwestionariuszem na platformie webankieta, skierowanym w II kwartale 2022 roku do mieszkańców obszarów wiejskich regionu. Na tle innych regionów w Polsce województwo mazowieckie charakteryzuje się najkorzystniejszą strukturą zatrudnienia – z najwyższym odsetkiem zatrudnionych w usługach (66%) i relatywnie przeciętnymi wartościami odsetka zatrudnionych w pozostałych dwóch sektorach (rolnictwo 9%, przemysł i usługi 24%). Z wyników badań empirycznych przeprowadzonych wśród mieszkańców obszarów wiejskich regionu można wyciągnąć co najmniej dwa ważne wnioski – praca w gospodarstwie rolnym jest nadal ważna dla badanej grupy, choć większość respondentów to osoby zatrudnione lub pracujące na własny rachunek. Można również zauważyć, że sektor publiczny (np. administracja, edukacja) odgrywa istotną rolę dla lokalnych rynków pracy.

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