

## PROBLEMS OF THE AGING OF THE FARMERS' POPULATION IN SMALL FARMS IN POLAND

Lukasz SATOLA

Institute of Enterprises Economics and Management, University of Agriculture in Krakow, 21 Mickiewicza Street, 31-120 Krakow, Phone:012/6624371, Fax:012/6624371; E-mail: lukasz.satola@urk.edu.pl

**Corresponding author:** lukasz.satola@urk.edu.pl

### Abstract

*Population aging phenomena are noticed in many branches of the economy. The human factor plays a very important role in the manufacturing processes of enterprises. Its importance is also currently significant in many sectors of the national economy and in the economic development of local communities, regions and countries. Not only the population, but also age and the related ability to work are important. In the knowledge-based economy, formal and informal qualifications of employees, their level of education and professional experience are also very important. All these factors affect the competitiveness of the business entities in which they work and which they manage. The aging of the population with a large intensity also negatively affects the development of agriculture and rural areas. However, they can also become a reason for developing previously unknown forms of activity, e.g. care farms. The research carried out concerned the group of owners of small farms operating in south-eastern Poland. They were implemented as part of the SALSIA project "Small farms, small food and sustainable food and nutrition security". As indicated by the conducted research, most of the small farms were managed by people at a mature or older age. The share of people aged up to 40 years was at the level of 20.2%. This shows that young people are mostly not interested in running small farms. The level of education of farmers was also low, which was particularly evident in older age groups. Many older farmers also spoke negatively about the future of their farms, which was often associated with the lack of successors. The presented results prove the existence of many problems resulting from the aging of small farm owners and the need to undertake remedial actions.*

**Key words:** aging, economics, demography, farms

### INTRODUCTION

Currently, the human factor plays an increasingly significant role in the economic development of the societies of many countries [2, 17]. Relevant qualifications of populations cause them to display a more active attitude towards the environment and to have definitely better adaptation skills to changing economic conditions. These phenomena occur also in rural areas. In the conditions of increased competition in agriculture both at the national and at the global level, the role of the quality of labour resources becomes significant [8]. Unfortunately, population aging has been observed in the last decades in many developed economies of the world. On one hand, this is a consequence of an increasing average lifespan, which is the result of, among other things, progress in medicine and health care development, which should be viewed

positively. However, on the other hand, the process of population aging causes a restriction of workforce resources, and thus the manufacturing capacity of enterprises, and also has negative consequences for the social security system.

The processes of population aging occur also in rural areas and concern also agriculture. In user structure of farms, senior citizens prevail. In many countries of Europe, the share of small farms run by young farmers is relatively low. In recent years, a downward tendency has been observed for this indicator. Counteracting those negative tendencies is a big challenge for the economic policy, particularly the agricultural policy and the development policy for rural areas. In addition, migration phenomena are observed among young people with higher education from rural areas [20, 4].

The noted deficit of young farmers is part of the ongoing discussion in Europe about population aging [21]. However, the systems of earlier retirement are quite commonly considered ineffective in increasing the real intergenerational transfer [14, 5, 9] and are currently being withdrawn. Correlations are also noted among the farmers' age, farm management methods, proclivity to implement innovations and adopted attitudes in terms of the directions of farm development [11].

It will be definitely easier for young farmers to cope with new challenges of the rapidly changing world. This is because they have a better understanding of the current developmental challenges and mechanisms of change, and because they have greater adaptation skills in comparison with the older, mature generation [12, 10]. Highly dynamic changes taking place in agriculture and in rural areas can also be a factor attracting the younger generation to work there, because high variability reflects the current preferences of young people and the declared lifestyle.

The processes of succession occurring in farmers' families are significant for increasing the share of young people in taking over farms and managing them. Research has shown that successors are definitely more willing to take over profitable farms with a stable market standing and good development perspectives [6, 7]. The fact of running the farm by the successor before its formal takeover is also very significant [13]. Such experience provides an opportunity to familiarise oneself with the farm, which results in limiting the risk and a swifter takeover.

The model of life shaped in recent times, along with the high mobility of young people, are features that do not encourage young people to stay in rural areas [23, 3] and engage in farming, particularly in small, low-profit farms [19]. All these arguments justify the existence of support from public funds for young people engaging in running a farm for the first time, and also speak in favour of using a preferential payment system in

selected measures of agriculture and rural development support programmes co-financed from European Union structural funds allocated under the Common Agricultural Policy.

The aim of the article is to present the phenomenon of population aging with special consideration for rural areas. In this aspect, small farm owners were subjected to detailed analysis.

## **MATERIALS AND METHODS**

The conducted research concerned a community of small farm owners active in south-eastern Poland. Detailed survey studies were carried out on a community of 148 farms located in the so-called reference regions (of Nowy Sącz, Nowy Targ and Rzeszów). They were carried out as part of the project SALSA "Small farms, small food businesses and sustainable food and nutrition security". Surveys were conducted using a standardised survey questionnaire which contained questions on various spheres and aspects of farm functioning. The survey studies were conducted in 2017-2018.

Another source of data on demographics were publicly available statistics published by the Main Statistical Office (GUS). Both general data on the country's demographics and specialist data published in Statistical Yearbooks of Agriculture were used. The results of conducted analyses are shown in graphs and tables.

## **RESULTS AND DISCUSSIONS**

### ***Nationwide demographic phenomena***

Demographic aging means a systematic increase in the percentage of old people in the population [15]. In such a situation, the dynamics of growth of the number of elderly people is higher than the pace of growth of the total size of the population. The processes of demographic aging can lead to workforce deficiency and an increased demand for the services of the health and social care sector. An important economic effect of that process in the long-term will be, among other things,

providing for the not working majority by the professionally active minority [10].

Analysis of demographic data indicates that in Poland in 2005-2017 the number of people in two youngest age groups significantly decreased (a fall of about 940,000 among under 17s; a fall of 1.96m people among 18-30-year-olds).

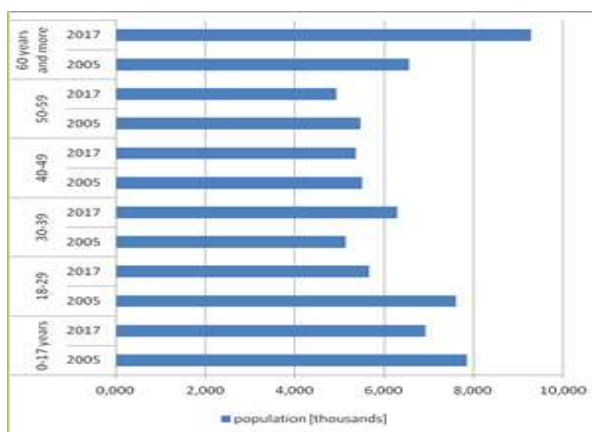


Fig. 1. Population by age groups in Poland in 2005-2017 (in thousands)

Source: own study based on the data of the Main Statistical Office.

The biggest rise in the number of people, by over 2.7m people, was noted during that time in the group of people over 60 years of age. Such changes prove that the Polish society is undergoing big demographic changes.

### General characteristics of agricultural holdings

Poland, besides Romania and Bulgaria, belongs to those EU countries where the fragmentation of farms is the highest [16, 18]. In the total number of approximately 1.41 million units, farms in the smallest size ranges prevail (Table 1). Farms with an area not exceeding 5 ha in Poland were less than 760 thousand. There are especially many farms with an area of 1-2 ha. A large group (around 310,000) was also represented by a group of farms with an area of 5-10 ha. It is worth noting, however, that farms with a larger area have the largest share in food production.

Table 1. The diversity of agricultural holdings in Poland, by area groups and voivodships in 2016

| Voivodships         | Total            | Area groups of agricultural land |                |                |                |                |                |               |               |               |               |                 |
|---------------------|------------------|----------------------------------|----------------|----------------|----------------|----------------|----------------|---------------|---------------|---------------|---------------|-----------------|
|                     |                  | up to 1 ha                       | 1.01-1.99      | 2.00-2.99      | 3.00-4.99      | 5.00-9.99      | 10.00-14.99    | 15.00-19.99   | 20.00-29.99   | 30.00-49.99   | 50.00-99.99   | 100.00 and more |
| Dolnośląskie        | 55,993           | 1,207                            | 11,952         | 6,571          | 7,903          | 12,240         | 5,529          | 2,454         | 2,488         | 2,362         | 1,891         | 1,396           |
| Kujawsko-pomorskie  | 63,830           | 995                              | 6,732          | 6,043          | 7,769          | 14,218         | 9,870          | 5,554         | 5,817         | 3,990         | 1,943         | 899             |
| Lubelskie           | 179,994          | 1,084                            | 27,031         | 29,578         | 42,327         | 45,580         | 15,725         | 7,095         | 5,747         | 3,553         | 1,701         | 573             |
| Lubuskie            | 20,236           | 503                              | 3,542          | 3,033          | 2,672          | 3,685          | 1,953          | 1,167         | 1,065         | 954           | 833           | 829             |
| Łódzkie             | 124,032          | 2,056                            | 19,838         | 13,959         | 27,462         | 34,543         | 13,042         | 5,576         | 4,262         | 2,265         | 768           | 261             |
| Małopolskie         | 139,923          | 2,074                            | 50,522         | 30,687         | 32,002         | 18,280         | 3,318          | 1,077         | 869           | 513           | 382           | 199             |
| Mazowieckie         | 212,917          | 1,027                            | 30,152         | 28,021         | 37,997         | 59,306         | 26,801         | 11,461        | 10,330        | 5,008         | 2,130         | 685             |
| Opolskie            | 26,919           | 659                              | 4,406          | 3,133          | 4,031          | 4,903          | 3,106          | 1,549         | 1,842         | 1,588         | 1,087         | 616             |
| Podkarpackie        | 132,851          | 3,203                            | 47,159         | 28,929         | 30,177         | 16,505         | 2,874          | 1,081         | 1,209         | 847           | 545           | 322             |
| Podlaskie           | 81,181           | 846                              | 5,372          | 6,468          | 10,061         | 21,777         | 14,161         | 8,235         | 7,581         | 4,504         | 1,672         | 504             |
| Pomorskie           | 39,049           | 918                              | 4,336          | 3,721          | 4,595          | 9,140          | 5,743          | 3,096         | 2,969         | 2,170         | 1,419         | 941             |
| Śląskie             | 54,503           | 2,525                            | 16,633         | 10,348         | 9,444          | 8,642          | 2,643          | 1,390         | 1,138         | 875           | 576           | 288             |
| Świętokrzyskie      | 85,308           | 1,968                            | 17,323         | 13,680         | 22,615         | 19,293         | 5,636          | 2,052         | 1,551         | 733           | 346           | 110             |
| Warmińsko-mazurskie | 43,165           | 876                              | 3,837          | 3,298          | 4,809          | 7,473          | 5,870          | 4,176         | 4,730         | 4,189         | 2,579         | 1,327           |
| Wielkopolskie       | 121,157          | 2,219                            | 18,564         | 11,352         | 16,713         | 28,593         | 17,754         | 8,620         | 7,962         | 5,166         | 2,741         | 1,472           |
| Zachodniopomorskie  | 29,646           | 608                              | 3,832          | 2,929          | 3,613          | 5,736          | 3,253          | 2,316         | 1,906         | 1,839         | 1,922         | 1,693           |
| <b>POLAND</b>       | <b>1,410,704</b> | <b>22,767</b>                    | <b>271,232</b> | <b>201,749</b> | <b>264,191</b> | <b>309,914</b> | <b>137,277</b> | <b>66,900</b> | <b>61,466</b> | <b>40,556</b> | <b>22,536</b> | <b>12,116</b>   |

Source: Statistical Yearbook of Agriculture in 2017. CSO.

The area structure of farms in Poland varies regionally. Larger production entities occur mainly in the northern and western part of the country [1]. Small farms dominate in south-eastern Poland. Their largest share is characteristic of the Malopolskie and Podkarpackie voivodships. The reasons for this state should be sought in historical conditions, and nowadays they are connected with the barriers to leaving agriculture which are justified in transaction costs [22].

**Aging process in rural areas in Poland**

The demographic changes occurring in rural areas also prove the existence of a gradual process of population aging. They can be differentiated, however, from changes occurring in cities by a slower rate of population increase in the most senior age groups. When analysing the demographic structure of rural areas, it is worth noting that it is slightly more favourable than the one discussed earlier for the entire country. This is because there is no such an explicit dominance of people representing the most senior age category (Fig. 2).

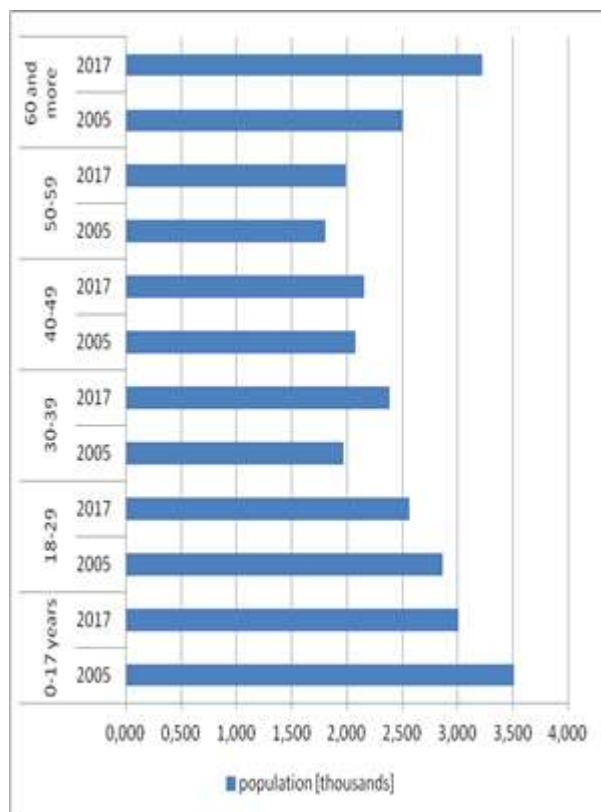


Fig. 2. Population of rural areas of Poland by age groups in 2005-2017 (in thousands)

Source: own study based on the data of the Main Statistical Office.

The analysed community of 148 farmers running small farms in south-eastern Poland was dominated by elderly people. Farm owners aged 50 or over made up 58% of respondents in total. There were only 17% of farmers under 40 years of age, and only 1% were under 30 (Fig. 3). These results indicate a relatively late takeover of small farms by young farmers. The group of owners of the smallest farms is dominated by elderly people. This translates into a weaker proclivity for investment and innovation in this group, which is particularly unfavourable considering the fact that these entities must increase their competitiveness.

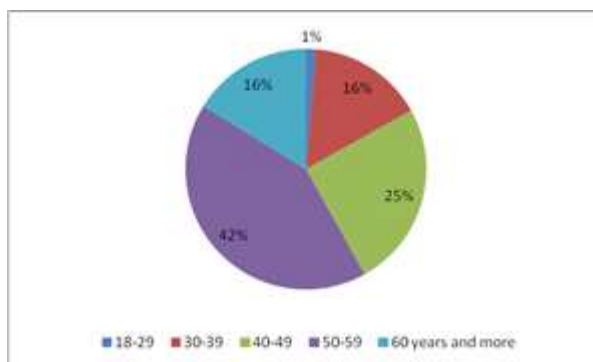


Fig. 3. Share of surveyed small farm owners by age groups

Source: own elaboration based on questionnaire research.

The big share of elderly farmers had negative consequences for their level of education. A big part of older age groups were people with vocational education (sometimes even primary education), while the percentage of people with higher education was minimal. Younger farmers were characterised by a higher level of education.

Research has shown that younger farmers were more involved in running their own farms, obtaining all or most of their income from them. This is proof that their farms are their main source of income and they are more inclined to invest in its development. Among older farmers the income from the farms did not form such a big part; some treated their farms as a hobby. They had income from other sources, including social

benefits, and treated their farms as a secondary source of earnings or as a way to obtain cheaper food for their families.

Young farmers significantly more often declared that their aim is to develop and modernise the farm. In this group there were also ideas to purchase land in order to increase one's farming area, and to invest in one's machine park. Responses about maintaining production or reducing it to the level covering only one's own food supply needs dominated among the eldest farmers. Old-age farmers were also less interested in cooperation as part of producers' groups and had a less positive view of their abilities to acquire funds for farm development [24]. Young farmers were definitely better prepared to use external funds and open to cooperation.

## CONCLUSIONS

Demographic changes occurring in many countries of the world have consequences affecting many areas of the economy. An increasing group of elderly people requires, among other things, greater involvement of public funds in the sphere of pensions, healthcare or social care. Population aging has also negative consequences for agriculture and rural areas. Elderly farmers are unable to adjust their farms to modern requirements to the extent required by the competitive environment. The younger generation is more prepared for changes; however, it is not very interested in running small farms.

In Poland population aging is slightly less severe in rural areas than in cities. However, people running small farms are mostly elderly people. For many of them, the income obtained from farms forms only part of their total income. In this case they do not invest in the development of their farms; they aim only to preserve production at the current level or reduce it only to meet the food supply needs of their families. As a consequence, they are not interested in cooperating with other farmers or in acquiring external funding. In order to stimulate young people's interest in running farms, one should provide relevant preferences for young people in the

implemented support programmes. Another factor which could spark a greater interest of the younger generation in undertaking work in agriculture would be a higher profitability of that sector of the economy. This is, however, a separate multi-strand aspect which goes beyond the size of this paper.

## ACKNOWLEDGEMENTS

The study was prepared as part of the project SALSA "Small farms, small food businesses and sustainable food and nutrition security" carried out with the financial support of the EU from the HORIZON 2020 programme of research and innovation under the grant agreement no. 677363.

## REFERENCES

- [1]ARiMR, 2018, Ogłoszenie Nr 1/2018 Prezesa ARiMR z dnia 19 września 2018 r. w sprawie wielkości średniej powierzchni gruntów rolnych w gospodarstwie rolnym w poszczególnych województwach oraz średniej powierzchni gruntów rolnych w gospodarstwie rolnym w kraju w 2018 roku (Announcement No. 1/2018 of the President of ARiMR of 19 September 2018 on the size of the average area of agricultural land on a farm in individual voivodships and the average area of agricultural land on a farm in the country in 2018).
- [2]Balan, M., 2019, Particularities of the youth labour market in Romanian rural areas. *Scientific Papers: Management, Economic Engineering in Agriculture & Rural Development*, 19(1): 63-70.
- [3]Becker, G. S., 1993, *Human Capital. A Theoretical and Empirical Analysis with Special Reference to Education*. University of Chicago Press.
- [4]Bednaříková, Z., Bavorová, M., Ponkina, E. V., 2016, Migration motivation of agriculturally educated rural youth: the case of Russian Siberia. *Journal of Rural Studies*, 45: 99-111.
- [5]Bika, Z., 2007, The territorial impact of the farmers' early retirement scheme. *Sociologia Ruralis* 47: 246-272.
- [6]Carbone, A., Subioli, G., 2008, The generational turnover in agriculture: the ageing dynamics and the EU support policies to young farmers. In: 109th EAAE Seminar "The CAP after the Fischler Reform: National Implementations, Impacts Assessment and the Agenda for Future reforms.", Viterbo, Italy, November 20-21st 2008.
- [7]Glauben, T., Petrick, M., Tietje, H., Weiss, C., 2009, Probability and timing of succession or closure in family firms: a switching regression analysis of farm householders in Germany. *Applied Economics*. 41: 45-54.

- [8]Górecki, J., 2004, Rola czynnika ludzkiego i kapitału społecznego w procesie rozwoju wsi i rolnictwa Polski po jej akcesji do UE (The role of human factor and social capital in the development of Poland's rural community and agriculture following accession to EU), *Więś i rolnictwo*, no. 2 (123): 187-198.
- [9]Ingram, J., Kirwan, J., 2011, Matching new entrants and retiring farmers through farm joint ventures: Insights from the fresh start initiative in Cornwall, UK. *Land Use Policy*. 28: 917-927.
- [10]Janigová, E., Kowalska, M., 2015, Aging population as a social problem of rural areas in Poland. *Inkluzja czy ekskluzja? Człowiek stary w społeczeństwie*, Wyd. WTN, Wrocław: 89-105.
- [11]Koutsou, S., Partalidou, M., 2012, Pursuing knowledge and innovation through collective actions. The case of young farmers in Greece. *The Journal of Agricultural Education and Extension*, 18(5), 445-460.
- [12]Koutsou, S., Partalidou, M., Ragkos A., 2014, Young farmers' social capital in Greece: Trust levels and collective actions. *Journal of Rural Studies*, 34: 204-211.
- [13]Lobley, M., Baker, J. R., 2012, Succession and retirement in family farm businesses. Keeping it in the family: International perspectives on succession and retirement on family farms: 1-20.
- [14] Mazorra, A. P., 2000, Analysis of the evolution of farmers' early retirement policy in Spain. The case of Castille and Leon. *Land Use Policy*, 17(2): 113-120.
- [15]Okólski M., 2005, *Demografia (Demography)*. Wydawnictwo Naukowe SCHOLAR: Warszawa.
- [16]Poczta, W., Sadowski, A., Baer-Nawrocka, A., 2013, *Gospodarstwa rolne w Polsce na tle gospodarstw Unii Europejskiej – wpływ WPR (Agricultural farms in Poland on the background of European Union farms - the impact of the CAP)*. GUS, Warszawa.
- [17]Popescu, A., 2013, Considerations on the Rural population as a resource of labor force in Romania. *Scientific Papers: Management, Economic Engineering in Agriculture & Rural Development*, 13(3): 229-236.
- [18]Popescu, A., Condei, R., 2015, Research on Romania's employment in agriculture and its position in the European Union. *Scientific Papers Series Management, Economic Engineering in Agriculture and Rural Development*, 15(2): 281-290.
- [19]Punch, S., 2002, Youth transitions and interdependent adult-child relations in rural Bolivia. *Journal of Rural Studies*, 18(2): 123-133.
- [20]Rérat, P., 2014, The selective migration of young graduates: Which of them return to their rural home region and which do not? *Journal of Rural Studies*, 35: 123-132.
- [21]Rovný, P., 2016, The analysis of farm population with respect to young farmers in the European Union. *Procedia-Social and Behavioral Sciences*, 220: 391-398.
- [22]Satola, L., Wojewodzic, T., Sroka, W., 2018, Barriers to exit encountered by small farms in light of the theory of new institutional economics. *Agricultural Economics*, 64(6): 277-290.
- [23]Schouten, M. A., Van der Heide, C. M., Heijman, W. J., Opdam, P. F., 2012, A resilience-based policy evaluation framework: Application to European rural development policies. *Ecological Economics*, 81: 165-175.
- [24]Žmija J., Czekał M., 2016, Functioning of small agriculture farms in farmers opinion. *Journal of Agribusiness and Rural Development*, 4(42): 703-711.