Selected Determinants of Human Capital of Rural Population in Poland

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Определящи фактори за човешкия капитал на селското население в Полша

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От втората половина на миналия век множество социални фактори са повлияни от новата икономика. Това понятие е тясно свързано с въздействието на човешкия фактор върху икономическия растеж. Следователно нарастващото значение на инвестициите в хора, за да се достигнат следващите нива на икономическия прогрес, е типично за развитието на държавите в света. Разходите за обучение и здраве се разглеждат в литературата като инвестиции в качеството на човешкия капитал, чийто потенциал се увеличава чрез инвестиране в самите хора. Качеството на човешкия капитал се увеличава най-вече чрез: обучение, по-нататъшно обучение и квалификация на човешките ресурси, научни изследвания и събиране на информация (включително превръщането ѝ в достъпна) или чрез дейности за опазване на здравето, които имат за резултат удължаване на живота и жизнеността.

След присъединяването на Полша към ЕС, наред с другото, могат да се отбележат редица позитивни страни в развитието на селските райони по отношение на нивото на обучение или образователната активност на селското население. В същото време се отбелязва модернизация и увеличаване на средната площ на стопанствата. Освен това, появилата се „деаграризация" на селата допринася индиректно за постепенното заличаване на различията в начина на живот между селските и градски жители. През последните 10 години селското население се възползва от възможността да използва Европейските фондове, включително инструментите на ОСП, и да има достъп до единния пазар на работна сила в ЕС.

Технологичните нововъведения в селското стопанство, промените в естеството на полските стопанства и увеличената диверсификация на икономическата дейност на селското население допринасят за значително намаляване на заетостта в селското стопанство. През периода 1995–2011 г. броят на хората, заети в полското земеделие, е спаднал с почти 40%. Въпреки продължаващото развитие във връзка с локализирането на икономическата активност на селското население, Полша е все още страна с относително висока селскостопанска заетост. В съответствие с данни от Евростат, 12,6% от всички работещи поляци са заети в полското селско стопанство през 2011 г. Измежду страните – членки на ЕС само румънската икономика се характеризира с по-висока селскостопанска заетост, т.е. 28,6% от работещото население е в сектора на земеделието.

Най-общо, поради относително високото ниво на заетост в полското селско стопанство, не може да се отбележи значително подобрение по отношение на земята и капитала на земеделските стопанства, оттам следва и намаляване растежа на трудовата производителност и спечеления доход от хората, заети в селското стопанство. В същото време свръхзаетостта в земеделието води до много неизползвани трудови ресурси, което се отразява на скритата безработица. Следователно действителното ниво на безработица в селските райони е по-високо от регистрираното.

Намаляването броя на хората, заети в полското земеделие, е един от главните фактори, определящи темпа на трансформациите по посока повишаване ефективността в сектора. Ускоряването на структурните трансформации в земеделието изисква промяна от селскостопанската заетост към неселскостопански дейности. Нуждата от намаляване на заетостта в селското стопанство и прехвърля-

нето на работна сила от земеделски към неземеделски сектори е основна предпоставка за подобряване аграрната структура, ефективността на фермерската дейност и финансовата ситуация не само на фермерите, а също и на останалата част от селското население. В резултат повишената диверсификация на икономическата дейност води не само до въвеждане на многофункционално развитие на земеделието и селските райони, но и допринася за модернизация на цялостната икономика.

Изследователският материал включва резултати от анкета на Института по икономика на селското стопанство и продоволствието от 2011 г. (анкета, базирана на извадка от 8,5 хиляди селски фамилии, от които 3 310 притежават земеделски стопанства с над 1 ха земя). Семействата са анкетирани в 76 села, разположени в различни региони на страната (фиг. 1). Извадката е целенасочена и взема под внимание социално-икономическите характеристики и аграрната структура на фермите, разположени в избраните райони. Всички семейства, живеещи в избраните райони са анкетирани. Диапазонът на събраната информация е екстензивен и засяга много аспекти на живота на селското население и функционирането на земеделските стопанства.

Резултатите от анкетите, проведени основно през 2000 и 2005 г. с подобна извадка, се използват като отправна точка за определяне динамиката на развитието. Резултатите от теренните изследвания са базирани на информация от публичната база данни на Статистическата служба.

Ключови думи: селски райони, Полша, човешки капитал, обучение, ЕС

I. Rural areas 10 years after the EU accession

1.1. Demographic conditions

Rural areas in Poland cover 291.2 thousand km^2, which is about 90.3% of the total area of the country. In accordance with CSO data, there were nearly 53 thousand villages in Poland in 2011, each with 287 residents on average[1]. The villages surveyed were slightly larger, since each of them was inhabited in 2011 by 371 people on average. In 2005-2011, the population of the villages concerned dropped by about 6%. This was mainly due to a clear decline in the agricultural family population.

In rural communities, the share of non-farming families has been increasing for many years. Furthermore, the IAFE-NRI research reveals that the last decades have brought a significant rise in the share of non-farming families among the general population of the villages surveyed. In the research sample of the population surveyed in 2011, the number of non-farming rural families, i.e. possessing no land or owning plots below 1 ha of agricultural land, represented over 60% of all respondents and was 3 percentage points (pp) higher than six years ago. Thus, in relation to the period before the political transformation, the share of non-farming families in the surveyed population of rural families increased by nearly 20 pp. This process was primarily determined by an outflow of rural population from agricultural activities and their economic activation in other sectors or the end of productive activity due to reaching retirement age.

The research reveals changes in the characteristics of the villages surveyed. The share of the smallest villages, i.e. up to 200 inhabitants, increased and the number of villages with a population of over 1 000 grew slightly. In 2011, villages with less than 200 inhabitants accounted for 21.1% of all villages, which was about 4 pp more than in 2005, and their inhabitants constituted 8.0% of the total rural population. In 2005, these values were different and stood at 17.1% and 5.5%, respectively. In 2011, villages with a population of 200 to 499 accounted for 57.9% (decrease of less than 2 pp compared to 2005), and 500 to 999 – 18.4% (decrease of nearly 3 pp). In accordance with the last survey, large villages, i.e. those with a population of at least 1 000, accounted for 2.6% (in 2005, 1.3% of the sample) of all the villages surveyed. The described polarization in the development of the surveyed villages is indicative of both demographic developments in the rural population and the growing de-

[1] CSO: Statistical Yearbook of Agriculture, Warszawa, 2012.

pendence of transformations on locations in relation to communication routes facilitating access to absorptive labour markets.

In accordance with CSO data, about 39.4% of the Polish population, i.e. 15.5 million, lived in rural areas in 2012, which is almost 613 thousand more (i.e. about 4.2%) than in 2000. What is more, a significant increase in the rural population was observed mainly after Poland's accession to the EU. Despite an increase in the absolute rural population in 2004–2012, its share in the total population increased very slightly (Table 1).

Over the last decade, the population in the areas concerned has increased by almost half a million, the share of the pre-working-age population has decreased, while the share of the working-age population has grown. The ageing of society has become a clearly visible process.

A steady increase in average life expectancy is a positive sign of demographic transformations in Poland. In 2012, female and male life expectancy in urban and rural areas increased by nearly 2 years compared to 2004. These rates are even higher compared to previous years. For example, compared to 2000, female life expectancy in rural areas increased by 2.5 years and male life expectancy – by 2.2 years. No significant differences in the life expectancy of the urban and rural population were observed. The life expectancy of women and men born in rural areas in 2012 is 80.9 years and 71.6 years, respectively.

While life expectancy in rural areas increased, the number of children up to 14 years of age dropped. In 2005–2012, their number fell by 208.7 thousand. As a consequence, 2 575.9 thousand children (up to 14 years of age) and 1 954.7 thousand people aged 65+ lived in rural areas in 2012. Although the number of people aged 65+ per 1 000 children (up to 14 years) increased by 39 people in 2005–2012, the increase was much slower than in 2000-2005.

From the point of view of the impact of demographic conditions on the domestic economy, both a breakdown of the total population by age and changes in the ratio between different groups of working- and non-working age people are important. In 2012, the pre-working-age population in rural areas accounted for 3.2 million, representing 44.8% of the Polish population in this age group. The share of pre-working-age people in the entire rural population was 21.1%, which is a decrease in this age group by 3.4 pp since 2004 and by 6.5 pp since 2000. Despite the significant decrease in the share of children and youth, the share of this population group in Polish rural areas was still higher than in urban areas[2].

A decrease in the share of people under 18 years in the total population in both rural and urban areas observed in recent years was also due to entering the working-age population by people born in the early 1980s, i.e. during the baby boom. In 2012, almost 9.6 million working-age people lived in rural areas. This is 755 thousand more (8.6%) than in 2004 and 1 307 thousand more (15.8%) than in 2000. Such a growth

[2] Share of the pre-working-age population in urban areas in 2012 was lower by as much as 3.19 pp than in rural areas, although in absolute terms the number of children and youth in urban areas was higher by almost 749 thousand than in rural areas.

Table 1. Rural population in Poland in 2000–2012

Item	2000	2005	2012
Population (‘000)	14 584	14 733	15 197
Share of the total population (%)	38.1	38.6	39.4
Median age	33.5	34.8	36.6
People aged 65+ per 1 000 children aged 0–14	604	720	759
Non-working-age population per 100 working-age people	76	65	58
Share of:			
Pre-working-age population	27.6	23.8	20.7
Working-age population	56.8	60.8	63.4
Post-working-age population	15.6	15.4	15.9

Source: Based on CSO data of 2005–2013.

in the number of people aged 18-59/64 increased their share in the total rural population (by 6.4 and 3.2 pp in 2000–2012 and 2004–2012, respectively). Although only 38.7% of the Polish working-age population lived in rural areas, its recent growth has been mainly due to the rural population[3].

In 2012, the post-working-age population in rural areas amounted to almost 2.4 million, which accounted for about 36% of the Polish population in this age group. The share of people aged 60/65+ in the rural population was close to 15.6%, which did not differ significantly from their share in the urban population (nearly 18.3%) and was similar to the share recorded in rural areas in 2004 (15.5%) and 2000 (15.6%).

When assessing the impact of the demographic characteristics of the population on economic conditions, the dependency rate indicating the total number of younger, i.e. under 18 years of age, and elderly people, i.e. aged 60/65+, per 100 working-age people is usually applied. In rural areas, this rate was 58 in 2012, which is a drop by 9 points since 2004. The burden of non-working-age people decreased due to a higher number and share of working-age people observed in recent years. Dependency rates calculated for the rural population were higher than in urban areas (58 compared to 54 in 2012), which means that the burden of non-productive people remains lower in urban than rural areas throughout the analyzed period. These rural-urban differences in dependency rates resulted from the different shares of working-age people. In 2012, the share of people aged 18–59/64 in urban areas reached 64.8% and was higher by 1.6 pp than in rural areas.

In accordance with CSO data, there were 101 women per 100 men in 2012 (as in 2004). Thus, a gender balance was observed in rural rather than urban areas, with 111 women per 100 men. The gender balance related to the total rural population; however, there were differences between specific age groups.

[3] In 2004–2012, the working-age population in rural and urban areas increased by 755 and 256 thousand, respectively.

Similarly to the urban population, the predominance of men over women could be observed in younger age groups. In the case of the rural population, the predominance of women started in the 55–59 age group, whereas in the case of the urban population, this phenomenon was noticed as early as in the 35–39 age group. As a result of the longer life expectancy of women than men on average, feminization rates were significantly higher in older age groups. In 2012, there were 139 women per 100 men in the 70–74 age group in rural areas, while among people aged 80+, the corresponding rate was as high as 236.

1.2. Mobility of the population from rural families

In 2005–2011, 438 of farming families were no longer subject to the survey (due to a social status change or migration). They accounted for less than 12% of all farming families[4] surveyed in 2005 and consisted of 1 250 people, i.e. about 10% of the rural population aged 15+, surveyed in 2005.

The research shows that migrations among families with a user of an agricultural holding were common, since they were observed in most of the villages surveyed[5] and affected families owning farm of different sizes, in particular – just like before – families with relatively small farm[6] (up to 5 ha of agricultural land), especially the smallest ones (1–2 ha of agricultural land). In the period at issue, this group of farms decreased by 17%, while as regards the group of relatively large-area holdings, i.e. over 30 ha of agricultural land, it was less than 7%. These differences should be considered positive in terms of agrarian developments in domestic agriculture.

In accordance with data on the loss of farming families by macroregions, farming families in South-Western and Northern macroregions

[4] The term socio-occupational mobility means a change of family status from farming into non-farming, which is always linked with ceasing of farming (i.e. running an agricultural holding). In some cases such situations concern also the change of place of residence.

[5] Survey data reveal that no migration or social status change among farming families registered in 2005 was observed in only 6.6% of the villages surveyed in 2005–2011.

[6] Cf. A. Sikorska: *Przemiany w strukturze agrarnej gospodarstw chłopskich*, IAFE-NRI, Warszawa, 2006, p. 16.

were relatively most mobile in spatial and socio-occupational terms in the period at issue. This phenomenon affected about 18–19% of families with agricultural holdings in 2005. Farming families in the South-Eastern macroregion were the least mobile, since the process affected less than 8% of farming families in the area in 2005.

Information on the mobility of ***farming families*** by social and spatial mobility clearly indicates that the intensity of these processes differed greatly. The prevailing tendency was to move away from agriculture without leaving a place of residence. A characteristic feature of migration processes was their selective nature, because migrants were relatively young and well-educated compared to the total rural population. At the same time, social migrants were relatively older and less educated than those who left the villages surveyed.

In spatial terms, migrants from rural families of the Northern macroregion were, relatively, the youngest ones, and the highest level of education was characteristic of migrants from Southern Poland, especially from the South-Western macroregion. A different situation was noted in the group of migrants from villages located in typically agricultural macroregions: Central-Western and Central-Eastern. Migrants from these areas were, relatively, poorly educated and older. This situation was observed particularly in the first of these macro-regions.

The most important factors determining the mobility of rural families include the advancement of multifunctional rural development, the situation in local labour markets, distance from major cities, the level of agricultural development (particularly, the agrarian structure of farms). The socio-demographic characteristics of migrants are also of great importance, i.e. the level of education, age and sex.

In 2005–2011, the spatial mobility of the agricultural population in the villages surveyed was relatively small, because less than 3% of agricultural families surveyed in 2005 left the villages. The intensity of this process showed relatively little territorial diversification. Nevertheless, there were more migrations among farming families in the North macroregion than in other parts of the country, where the intensity of emigration fluctuated around the national average.

Contrary to the spatial mobility of families with a user of an agricultural holding, their socio-occupational mobility was significantly higher. About 9% of farming families surveyed in 2005 joined the group of non-farming households during the last research. They constituted about 39% of all new non-farming families[7]. Based on the results of field studies conducted earlier and in 2011, it should be stated that the intensity of social status changes among families with a user of an agricultural holding rose. In 1996–2000, the group of agricultural families decreased by 1.2% per year on average as a result of social mobility. During the next analysed period, i.e. in 2000–2005, the pace of transformation of agricultural families into non-farming households decreased to almost 1.1% to increase to 1.5% in 2005–2011.

The aforementioned phenomenon of social mobility of farming families was observed throughout the country, only its intensity significantly varied in specific macroregions. It should be attributed to territorial differences in the level of overall economic development and regional differences in agricultural and rural structures. Family status changes due to the liquidation of an agricultural holding were the most intensive in South-Western and Northern regions, where 14–15% of farming families in 2005, transferred their land and joined the group of non-farming families. This situation should be associated with transformations in the economic situation of individual farming in these areas. Both in Northern and South-Western macroregions, development processes in the agricultural sector were taking place mainly due to creation of large and specialized farms[8]. Owners of economically sidelined units were, more often than in other areas, likely to transfer their land (sale or mainly lease) and change their status into non-farming

[7] A new family was a household established in the period between subsequent surveys.

[8] Cf. B. Karwat-Woźniak: Gospodarstwa wysokotowarowe w rolnictwie chłopskim. Synteza wyników badań 2005–2009, Report No. 151, the Multi-Annual Programme 2005–2009, IAFE-NRI, Warszawa, 2009, p. 23.

(or leave their village). Simultaneously, economically strong agricultural holdings were taken over by their successors, while their previous users – having ceased to work and retired – joined the group of non-farming families. This factor was particularly noticeable in the Northern macroregion, where almost half of new non-farming families used to be agricultural households. In particular, they were established by farmers who had ceased their economic activity in agriculture.

In 2005–2011, the social mobility of the farming population was the least intensive in the South-Eastern macroregion, where previous transformations in agricultural and rural structures contributed to the consolidation of agrarian fragmentation[9] and resulted in the limitation of capacity of agricultural holdings to self-supply in agricultural products or family settlements.

Based on the results of research conducted in 2005 and 2011, it should be concluded that the main reasons for migration from agricultural holdings did not change, although certain differences in the number of persons with specific motivation were reported. Both in 2005–2011 and earlier, the liquidation of an agricultural holding was one of the most often reported reasons for abandoning the farming population (Table 2).

Such a reason of migration was reported by 62% migrants from farming families in 2005–2011 (compared to 51% in 2000–2005). This does not mean that it solely involved changing social status from farming to non-farming and remaining in a given village. It should be noted that the liquidation of an agricultural holding can also imply a change in a place of residence. This is proven by the fact that 17% of persons, who reported the liquidation of a farm as the main reason for their migration, left their villages to settle mostly in urban areas.

In terms of age, the liquidation of a farm was most often declared by persons aged 60+ (39%). This group was mostly composed of men (54%) with vocational education (33%). Among the main reasons for migration from farming families, also family matters were often mentioned. This motivation was reported by 26% of migrants in 2005–2011 (compared to 39% in 2000–2005). Women more often reported this reason than men (56% against 44%). They were mostly persons aged under 34 (66%) with at least secondary education (40%) and non-agricultural school qualifications (55%).

Significant reasons for migration from farming families that have an impact on mobile conditions of the farming population include housing and work-related motivation. Housing was the main reason for almost 5% of persons, which was slightly higher (by nearly 2 pp) than in earlier surveys. This reason was equally declared by men and women. This group included persons

[9] Cf. A. Sikorska: Przemiany w strukturze agrarnej... op. cit. p. 10, 14.

Table 2. Migrants from farming families by the main reason of migration in successive survey periods

Macroregions*		Main reason for migration (persons in %)						
		family	liquidation of a farm	work	housing	education	taking over a farm	other**
Total	**2000–2005**	**39.3**	**50.8**	**4.8**	**2.9**	**0.2**	**0.5**	**1.2**
	2005–2011	**26.0**	**61.7**	**4.3**	**4.7**	**1.0**	**0.5**	**1.8**
Central-Western		25.8	64.5	6.5	-	-	2.4	0.8
Central-Eastern		23.3	63.5	4.2	6.4	0.5	-	2.1
South-Eastern		29.6	60.8	3.4	3.1	1.7	-	1.4
South-Western		25.0	60.5	5.8	7.5	1.1	-	-
Northern		29.5	55.0	1.5	4.0	2.0	-	8.0

** Marks and voivodeships corresponding to specific macroregions as in Map 1.*
*** Related to specific random events (stay in an educational establishment, a penal institution, a healthcare institution) or reasons are unknown.*
Source: Based on data from IAFE-NRI field studies of 2005 and 2011.

aged 35–44 with at least non-agricultural vocational education.

In 2005–2011, 4% of migrants reported job opportunities as the main reason for migration, similarly to the level reported in 2000–2005. In terms of the demographic structure, this group remained composed mainly of men (69%) aged under 44 (75%) with non-agricultural school qualifications (68%), at least at the basic level (62%). It should also be pointed out that a change in a place of residence could be associated with career plans. This can be proven by the fact that although 35% of migrants had worked before they left their agricultural holdings, the share of the employed grew to 66% after relocation.

Only 1% of the analyzed population declared education as the main reason for their migration. This reason was definitely more often declared by young women (60%) than men. In this group, all persons were aged under 34.

Both in 2005–2011 and earlier, taking over another farm was incidentally reported as a reason for migration. This was reported by 0.5% of the analyzed group of migrants. The figures for populations analyzed in 2000–2005 and in 2005–2011 were also similar in terms of this criterion. In both analyzed periods, taking over agricultural holdings was definitely more often declared by men aged 34 with agricultural secondary education (over 60%). Those holdings were usually located in a neighbouring village.

Similar patterns regarding the reasons for migration from farming families were also reported in territorial distribution, although certain dissimilarities can be observed due to, *inter alia*, differences in the level of agricultural development, the situation in local labour markets and the advancement of multifunctional rural development. For instance, in the Central-Western macroregion, liquidation of (65%) or taking over farms (over 2%) were most often reported, with practically no indication of reasons related to housing or education. Among the reasons declared by migrants from agricultural holdings situated in South-Eastern and Northern macroregions, a relatively large share of family (30%) and learning (2%) motivation was reported. Furthermore, the decision on migration in the first of the aforesaid macroregions was more often related to housing (8%) than in any other macroregion.

The analysis of mobility of farming families should also take into account the destination of migration, i.e. the current place of stay of migrants. This is particularly important with regard to transformations in the rural settlement network.

Data on the current place of residence of migrants from farming families reveal that the majority of respondents (71%) did not change their place of residence, which was due to the domination of socio-occupational mobility in migration from farming families (Table 3). However, compared to the previous analysis, spatial mobility in this group increased, which is proven by a drop (by almost 6 pp) in the share of migrants who stayed in the same village. This resulted from increased migration to urban areas (from 10 to 14%) and surrounding villages (from 7 to 10%). Migration to another country, which was rela-

Table 3. Migrants from farming families by their current place of stay

Macroregions*		Destination of migration (% of migrants)				
		The same Village	Another Village	Urban Areas	Another Country	n/d
In total	**2000–2005**	**76.8**	**7.1**	**9.8**	**5.1**	**1.2**
	2005–2011	**71.0**	**10.0**	**13.7**	**4.3**	**0.4**
Central-Western		76.6	12.9	8.1	2.4	-
Central-Eastern		68.7	11.5	15.3	3.8	0.7
South-Eastern		72.5	12.4	13.7	1.0	0.3
South-Western		75.0	1.3	9.9	13.8	-
Northern		63.0	13.0	20.0	4.0	-

** Marks and voivodeships corresponding to specific macroregions as in Map 1.*
Source: Based on data from IAFE-NRI field studies of 2005 and 2011.

tively rare, further decreased and was reported in 2011 by 0.4% of migrants (compared to 5.1% in the previous survey).

However, when analyzing the mobility of people from ***non-agricultural families***, the number of families with no agricultural holding in 2005 decreased in 2005–2011 by 306 families (just over 6%) due to a status change or migration. The families comprised 691 people in total, representing almost 6% of the non-agricultural population covered by the previous survey. At the same time, the scale was almost twice smaller than that of the agricultural population, where, as mentioned earlier, the corresponding rate was about 12%. However, just as in the case of farming families, spatial and social migrations of non-farming families were common and occurred in most of the villages surveyed[10].

When analyzing data on a decrease in the number of non-farming families by macroregions, it can be concluded that the relatively highest spatial and socio-occupational mobility in the analyzed period was characteristic of non-farming families in South-Western and Central-Eastern macroregions. This phenomenon affected almost 8% of non-farming families surveyed in 2005. The mobility of non-farming families was the lowest in the South-Eastern macroregion, as the process involved less than 4% of non-farming families living in the area in 2005. It should also be noted that in 2005–2011, the farming families of the South-Eastern macroregion were also characterized by the lowest mobility.

The reasons for the relatively lowest mobility of farming families of the South-Eastern macroregion should be in the specificity of these areas. This specificity involves primarily a high level of development of infrastructure and a relatively absorptive non-agricultural labour market, as well as agricultural properties and environmental values (sub-mountainous areas).

The survey data of 2005 show that already at that time, villages located in the South-Eastern macroregion were characterized by above-average development of technical infrastructure. This level is due to availability of water supply (over 87% of villages were connected to the water supply system, all of them had street hydrants), sanitary facilities (over 33% of villages benefited from sewage treatment plants and 69% – from landfills) and the road network (94% of villages had asphalt access roads)[11].

In accordance with the same survey, the South-Eastern macroregion is characterized by a relatively high prevalence of earning among the rural population. In 2005, over 39% of the working age population in the area was employed in non-agricultural sectors (over 34% from farming families and nearly 48% from non-farming families) with the national average of about 35% (nearly 29% from farming families and 43% from non-farming families)[12].

The data collected show that, in contrast to farming families, the non-farming population was characterized by relatively high spatial mobility. In 2005–2011, over 5% of all non-farming families surveyed in 2005 left the villages surveyed (in the group of farming families, the corresponding rate was less than 3%). They accounted for almost 60% of all rural families that left the villages surveyed.

Furthermore, the intensity of the process was relatively significantly diversified in macroregions. As with all processes of migration of rural families with no agricultural holdings, the spatial mobility of this population was relatively the highest in the Central-Eastern and Northern macroregions. In 2005–2011, around 7% of non-farming families living there in 2005 left these areas. This situation should be mainly related to difficulties in the local market. The chance of finding relatively long-term employment was associated with migration in the vicinity of a workplace. These conditions were established by the absorptive labour market in large urban areas. This factor was the strongest stimulus in the Central-Eastern macroregion.

[10] The survey shows that only 3.9% of the villages surveyed in 2005-2011 comprised non-farming families registered in 2005 that had not migrated or changed their social status.

[11] Cf. A. Wasilewski: Stan oraz zmiany w infrastrukturze technicznej, [in:] Przeobrażenia w strukturze społeczno-ekonomicznej wsi objętych badaniem IERiGŻ w latach 2000–2005, A. Sikorskiej (ed.):, IAFE-NRI, Warszawa 2006, p. 21-38.

[12] Cf. D. Kołodziejczyk: Rynek pracy na wsi, IAFE-NRI, Warszawa, 2007, p. 16.

In this area, nearly 60% of non-farming families that had left the villages surveyed settled in relatively large cities. With regard to the Northern macroregion, also the opportunity to work abroad played a substantial role in shaping a relatively high propensity to leave the current place of residence. This is evidenced by numerous international migrations of whole families in this area. The survey data show that, among all families that left the surveyed villages of the Northern macroregion in 2005–2011, about one-third emigrated from the country.

Most of them were families without agricultural holdings. The lowest spatial mobility, similarly to the rural population, was characteristic of the non-farming inhabitants of the South-Eastern macroregion. In this area, only less than 2% of non-farming families, which had been surveyed in 2005, left the villages surveyed by 2011. The reasons for this situation should be seen in the already discussed specifics of these areas.

The research reveals that, in contrast to the spatial mobility of the non-agricultural population, their social mobility was incidental. Only 1% of non-farming families surveyed in 2005 were classified in a recent survey in the group of families with a user of an individual agricultural holding. These households accounted for about one-quarter of relatively few new farming families[13].

[13] The research shows that 5.8% of all farming families covered by the last survey were established in 2005–2011.

The phenomenon of social mobility of non-farming families described above, although having low intensity throughout the country, varied across specific macroregions. It should be linked with territorial differences in economic conditions and their impact on the characteristics of agricultural structures. The spatial mobility of the non-farming population was relatively the highest in the South-Eastern macroregion. In 2005–2011, 2% of non-farming households in this area changed their social status, i.e. such occurrences were twice more likely than in the entire surveyed group on average. Moreover, over 53% of all new farming families in this part of the country originated from non-farming families. Such a situation was even more frequent in the Northern macroregion, where about 60% of newly established families with a user of an agricultural holding originated from non-farming families. It should be noted that the increased social mobility of non-farming families in the Northern macroregion was the lowest across the macroregions selected to be surveyed.

Based on the results of surveys conducted in 2005 and 2011, it should be noted that there was no substantial *change in reasons for migration of non-farming families*, although there was some variation in the number of people driven by specific reasons. In 2005–2011, housing issues were the most frequent motivation to leave rural communities of non-farming families (Table 4).

Table 4. Migrants from non-farming families by the main reason of migration in successive survey periods

Macroregions*		Main reason for migration (persons in %)					
		family	work	housing	education	taking over a farm	other**
In total	**2000–2005**	**39.8**	**7.7**	**23.8**	**0.5**	**24.7**	**3.5**
	2005–2011	**30.7**	**17.2**	**33.6**	**0.5**	**12.3**	**5.7**
Central-Western		35.9	9.3	32.6	-	12.8	9.5
Central-Eastern		33.0	6.7	40.7	1.0	11.5	7.2
South-Eastern		29.9	2.1	27.8	-	34.0	6.2
South-Western		33.7	22.1	32.6	0.6	7.6	3.5
Northern		20.5	44.9	28.3	-	3.1	3.1

** Marks and voivodeships corresponding to specific macroregions as in Map 1.*

*** Related to specific random events (stay in an educational establishment, a penal institution, a healthcare institution) or reasons are unknown.*

Source: Based on data from IAFE-NRI field studies of 2005 and 2011.

This reason for migration was reported by 34% of migrants from non-farming families in 2005–2011, which was 10 pp above the corresponding rate in 2000–2005 (24%). It should also be noted that a change in a place of residence could be associated with career plans. This is proven by the fact that although 44% of migrants from non-farming families had been employed before leaving the villages surveyed, their share increased to 51% after relocation.

Taking into account socio-demographic characteristics, migrants from non-farming families motivated by housing reasons, as in the case of migrants from farming families, were relatively young people. At the same time, the largest group comprised people aged 35–44 (39%) with secondary education (33%). Moreover, this reason more often determined the mobility of men (51%) than women (49%).

People also quite frequently mentioned family matters among the main reasons for migration from the group of non-farming families. This reason was reported by 31% of migrants in 2005-2011 (in 2000–2005, by 40%). At the same time, family matters a little more often determined the mobility of women (56%) than men (44%). These were mainly people up to 34 years (35%), having at least secondary education (29%) and non-farming school qualifications (59%).

This means that during the analyzed period, the desire for better housing conditions was the main reason for migration among the non-farming population, while in 2000–2005 – it was family matters.

One should mention economic motives among the reasons, which gained importance when deciding on migration. Taking up employment was a reason for over 17% of migrants in 2005-2011, which was more than twice the corresponding share recorded in 2000–2005. In contrast to migrants from farming families, among migrants from non-farming families who were guided by these reasons, women constituted a somewhat larger group (51%) than men (49%). As in the case of housing-related reasons, these were people aged 35–44 (44%) with secondary education (34%) and school vocational qualifications (62%).

The research reveals that socio-occupational mobility is decreasing in importance among the determinants of mobility of non-farming families. Taking over an agricultural holding was the main reason for 12% of those who left non-farming families in 2005–2011, which is two times lower than the share recorded in the previous survey. In 2000–2005, this reason motivated about 25% of migrants from the discussed population of rural families. However, the socio-demographic characteristics of people starting to run a farm did not change. In 2005–2011, like previously, taking over an agricultural holding was a reason driving more often men (60%), aged 35–44 (34%), with basic vocational education (41%), in non-agricultural fields (58%). This population, compared to people from farming families taking over holdings, was relatively older and characterized by a lower level of education. It should also be noted that acquired holdings were generally located in the villages surveyed. Almost 96% of people who had taken over agricultural holdings did not change their place of residence, thus joining the group of farming families.

Both in 2005–2011 and earlier, further education was an incidentally reported reason for migration. In the described population, only 0.5% of people declared education as the main reason for migration. This reason motivated more often (60%) young women than men. Almost all the people in this group were aged under 34.

Similar patterns regarding the reasons for migration from farming families were also reported in territorial distribution, although certain dissimilarities can be observed. This is associated, *inter alia*, with differences in the situation in local labour markets and the advancement of multifunctional rural development. For instance, in the Central-Western macroregion, the reasons for migration involved particularly family-related motives (36%) and lack of causes related to education. Education-related motives did not condition the mobility of the discussed population in South-Eastern and Northern macroregions. Among reasons which motivated migrants from non-farming families in the first of these areas, relatively large scale of launched agricultural activities (34%) and a particularly low (2%) share of economic motives

draw attention. The situation was radically different in the Northern macroregion, where the decision to migrate was least often (3%) motivated by taking over an agricultural holding and most often (45%) – by economic motives. With regard to reasons which motivated migrants from non-farming families in the Central-Eastern macroregion, a relatively high share of housing-related reasons (41%) attracts attention.

Regarding the issues related to the mobility of non-farming families, both in taking account of changes from the spatial perspective (migration) and from the point of view of socio-economic transformations (social mobility), it seems that the present place of stay of migrants is important; especially from the point of view of transformations in the rural settlement network, particularly the advancement of their multifunctional development.

Data on the current place of residence of migrants from non-farming families show that the largest (over 34%) group of surveyed people left for nearby villages in 2005–2011 (Table 5). However, in comparison to the previous survey, there was an increase in the popularity of this direction of mobility, as evidenced by an increase of 12 pp in the share of migrants who currently reside in another village. There was also a dynamic growth in a number of departures to other countries. In the compared surveys, the share of migrants from non-farming families who currently reside abroad increased almost fourfold (from almost 3% to over 11%).

Different trends were observed regarding departures to urban areas. In 2005–2011, almost 28% of migrants from rural non-farming families settled in urban areas, which is over 4 pp below than the corresponding rate recorded in 2000–2005 (more than 32%).

There was a decrease in the population which did not change its place of residence, but only became the farming population. In 2005–2011, 23% of the described population remained in the same village, while in 2000–2005, the corresponding rate was over 41%. It must therefore be concluded that the spatial mobility of non-farming families significantly increased. These trends were also observed in the group of families with a user of an agricultural holding. At the same time, their intensification was relatively small, because the share of migrants who did not change their place residence decreased in the comparable periods (2000–2005 and 2005–2011) only from 77 to 71%.

In accordance with data derived from the macroregions concerned, in 2005–2011, just as before, the relatively highest spatial mobility was characteristic of migrants from non-farming families in the Northern macroregion. The intensification of this phenomenon in 2005–2011, compared to 2000-2005, strengthened, as evidenced by a three-fold decrease (from 21 to 7%) in the share of people who did not change their place of residence. This macroregion was still characterized by the relatively highest share of migration to urban areas, although in comparison with the previous survey, there was a further decline[14].

[14] Cf. Ł. Zwoliński: Mobilność przestrzenna i społeczno-zawodowa ludności wiejskiej w latach 2000–2005, IAFE-NRI, Warszawa, p. 44.

Table 5. Migrants from non-farming families by their current place of stay

Macroregions*		Destination of migration (% of migrants)				
		The same Village	Another Village	Urban Areas	Another country	n/d
In total	**2000–2005**	**41.3**	**21.6**	**32.1**	**2.9**	**2.1**
	2005–2011	**22.6**	**34.2**	**27.9**	**11.4**	**3.9**
Central-Western		29.1	50.0	14.0	1.2	5.8
Central-Eastern		18.7	41.1	34.4	3.3	2.4
South-Eastern		61.9	30.9	5.2	2.1	-
South-Western		13.4	31.4	32.6	19.2	3.5
Northern		7.1	18.1	37.8	28.3	8.7

** Marks and voivodeships corresponding to specific macroregions as in Map 1.*
Source: Based on data from IAFE-NRI field studies of 2005 and 2011.

In 2005-2011, the non-farming population of the Northern macroregion migrated mainly abroad. Migration abroad was chosen by over 28% of migrants during this period, meaning an almost thirteen-fold increase, compared to the previous survey. Migrants from non-farming families in the South-Eastern macroregion left their villages least often. Such a situation concerned as much as 62% of people from the analyzed population. Moreover, another 31% settled in surrounding villages. These trends also confirmed the attractiveness of these areas as a place of residence.

II. Selected determinants of human capital of rural population

2.1. Level of formal education

The level of education of the population, including the rural population, should be addressed on many levels. Due to the nature of activities carried out in agricultural holdings, the farmers' scope of work can be seen in many aspects, which may be of natural, social, economic or technical nature. Running them requires also the knowledge of social and political relations, legislation and the mode of operation of both the government and entities involved in supply and purchase. This knowledge is essential for farmers not only as a basis for participating in public life, but also as a condition for determining the development opportunities of their holdings. Political, administrative and social knowledge during periods, such as systemic changes, is crucial in adapting own business to changing conditions.

For many years, substantial educational disparities have existed between the rural and urban population. Nevertheless, educational aspirations increase in both rural and urban areas. In 2012, as in previous years, the share of the rural population with at least secondary education was lower and that with higher education – more than twice lower, compared to urban areas (Table 6).

However, it should be noted that these disparities reduced in 2004–2012, compared to previous years. In accordance with the research, slightly more than one-third of the population aged 13+ (35.4% of the population) had secondary, post-secondary or higher education (almost every tenth person had higher education) in rural areas in 2012. Compared to 2004, the share of people with the abovementioned level of education increased by 5.5 pp (those with higher education – by 4.5 pp). At the same time, the share of the population with primary education in the educational structure of the rural population significantly decreased. It must be assumed that this phenomenon was strongly associated with changes in the demographic structure, as this level of education was typical of interwar students. All these positive changes are even more evident in comparison with 2002. They were observed in relation to both rural women and men (Table 7).

The IAFE-NRI surveys reveal that an increase in the level of education was observed in relation to both rural communities at issue, i.e. farming family members – running an agricultural holding with an area over 1 ha of agricultural land, and non-farming family members, who either had no agricultural holding or its size was below

Table 6. Level of education of the rural and urban population aged 13+ in 2002–2012 (%)

Year	Primary	Lower secondary	Basic vocational	Secondary and post-secondary	Higher
Rural areas					
2002	38.3	x	29.2	22.4	4.3
2004	31.9	5.8	29.4	24.5	5.4
2012	25.6	6.0	26.5	25.5	9.9
Urban areas					
2002	22.2	x	21.1	38.5	13.7
2004	16.8	4.4	21.3	38.0	17.5
2012	13.7	4.3	18.5	35.3	21.4

Source: Based on CSO data of 2005–2013.

Table 7. Level of education of the rural population aged 13+ in 2002–2012 by sex

Year	Primary	Lower secondary	Basic vocational	Secondary and post-secondary	Higher
Men					
2002	36.2	x	37.1	18.9	3.6
2004	29.4	5.9	37.2	21.7	4.7
2012	23.5	6.5	33.6	23.1	7.7
Women					
2002	41.7	x	20.7	24.8	4.9
2004	34.4	5.7	21.6	27.2	6.1
2012	27.8	5.5	19.6	27.9	12.1

Source: Based on CSO data of 2005–2013.

Table 8. Level of education of the population in farming and non-farming families in 2000–2011 (%)

Year	Lower secondary and primary	Vocational	Secondary and post-secondary	Higher
Farming population				
2000	41.7	39.2	17.0	2.1
2005	34.4	37.4	23.2	5.0
2011	24.9	30.7	32.1	12.3
Non-farming population				
2000	39.5	38.8	18.1	3.6
2005	36.1	36.1	22.5	5.3
2011	26.8	33.1	29.1	11.1

Source: Based on the IAFE-NRI Survey 2000, 2005, 2011.

1 ha of agricultural land (Table 8). It should be noted that positive changes in farming families were relatively greater.

Although recent years have brought positive changes, including doubling of the share of the rural population with higher education, the gap to the urban population has remained significant. In accordance with the surveys, career plans associated with activity in the non-agricultural sectors of the economy in rural areas and nearby urban areas or abroad were the main factors boosting the educational aspirations of rural youth.

It should also be noted that non-public educational institutions are crucial in raising the level of education of the rural population. Many schools were located in the centre of rural areas, resulting in easy access for rural youth.

2.2. Improving the knowledge and civilization competences

Socio-economic changes, decreasing needs for labour, wider use of machinery make the rural population turn away from agriculture and search for alternative activities in order to achieve economic goals. This situation necessitates raising the level of vocational and general education. Therefore, understanding a need for further education and training, including in non-agricultural aspects, by the rural population is of enormous importance, as multifunctional rural development makes it necessary to incorporate a growing number of non-agricultural functions into rural areas. This provides opportunities for alternative sources of income. Usually, the less educated rural population is characterized by low economic and cultural activity, as well as scarce entrepreneurial activity, which also hinder the possibilities of multifunctional rural development. However, the development of non-agricultural fields of economic activity requires the ability to search for information, contacts with clients, customers, markets, etc.

The role of knowledge, also with regard to Polish farmers, is all the more significant, be-

cause competition with other EU Member States is fierce and modern agriculture, more and more intense and precise, is becoming a knowledge-intensive industry. In this situation, farmers with no proper education and possibility for further education can hardly meet modern economic requirements in order to find themselves in a changing world. Farmers lacking skills or being late with the implementation of technological advancements cannot exist in the market. Producers wishing to develop their businesses will have to retain their clients and prevent them from being attracted by other farmers. Therefore, they will need market research skills, knowledge how to establish contacts with customers and create their own brand. Changing economic conditions and the progress of civilization necessitate such actions. From the point of view of the economic theory, commitment to improving qualifications is one of the most important types of investments in human capital, which has a direct bearing on both the level of income and relatively lower employment insecurity. It is especially important for middle-aged and elder people, who have been economically active for many years. This is why it is so important for adults to engage in educational activity. It should be noted that, nowadays, people should acquire and develop knowledge throughout their professional lives. However, the educational activity of adults in rural areas, defined as the participation of the 18+ population in various forms of education, is much lower than in urban areas (Table 9).

In fact, the growth rate of the share of the urban population aged 20–24 and engaged in further education was even higher and the stabilization of the share of the rural population in the same age group further widens gaps in the structure of education of the population, which are already unfavourable for rural areas.

All kinds of courses are a traditional form of out-of-school education in rural areas. In 2005–2011, they were held in every fifth surveyed village. Our surveys revealed that especially the farming population is highly interested in this form of education. One-quarter of participants of non-agricultural courses were farming family members and their share in organized specialist courses and general agricultural courses was 75.0% and 92.4%, respectively (Figure 1).

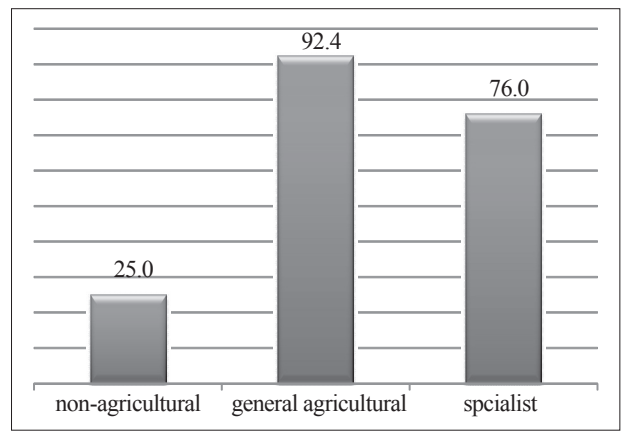

Fig. 1. Share of farming families members among participants of different types of courses in the villages surveyed in 2011
Source: Based on the IAFE-NRI survey 2011.

Table 9. Educational activity of adults in 2000–2013 by place of residence

Year	Share of people benefiting from in-school and out-of-school education			
	aged 20–24	aged 25–29	aged 30–39	aged 30+
Rural areas				
2000	26.0	7.1	0.3	0.3
2005	50.8	8.9	1.8	0.9
2013	48.0	8.5	2.7	0.8
Urban areas*				
2000	61–46	17–9	5–2	0.5–1.3
2005	70–54	25–18	11–6	3.2–0.8
2013	79–53	20–17	9–5	2.1–1.5

**extreme scores used for: cities and towns with population of over 500 thousand and less than 20 thousand, respectively*
Source: Based on the Social Diagnosis.

Furthermore, over half of the villages offered courses or trainings for the unemployed. This share increased significantly by 16.6 pp, compared to the previous survey period. IT courses were the most common (held in over one-third of the villages). Every tenth village offered English courses, courses related to launching own business and active job-seeking. In general, almost every fourth unemployed participated in such activities (Figure 2).

Despite these trainings and courses organized for both the unemployed and the remaining rural population, respondents reported a need for further educational activities (Figure 3). Almost every third village reported a need for EU fundraising courses, every fourth agritourism farm – for general economic consulting and agricultural production courses.

Access and an ability to use new technologies are one of the main determinants of adaptation

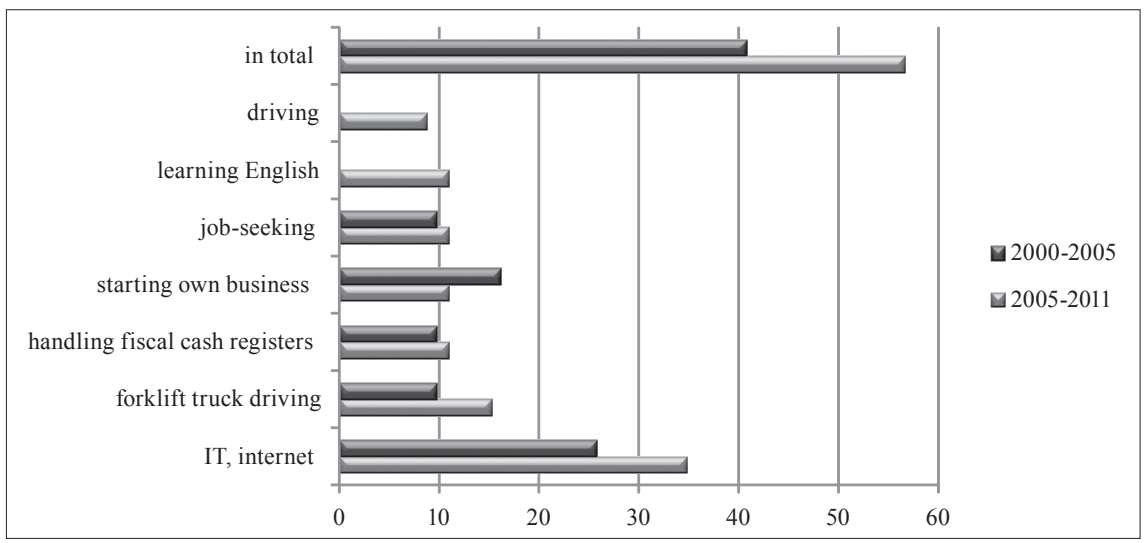

Fig. 2. Share of the villages surveyed offering courses for the unemployed
Source: Based on the IAFE-NRI surveys 2000, 2005, 2011.

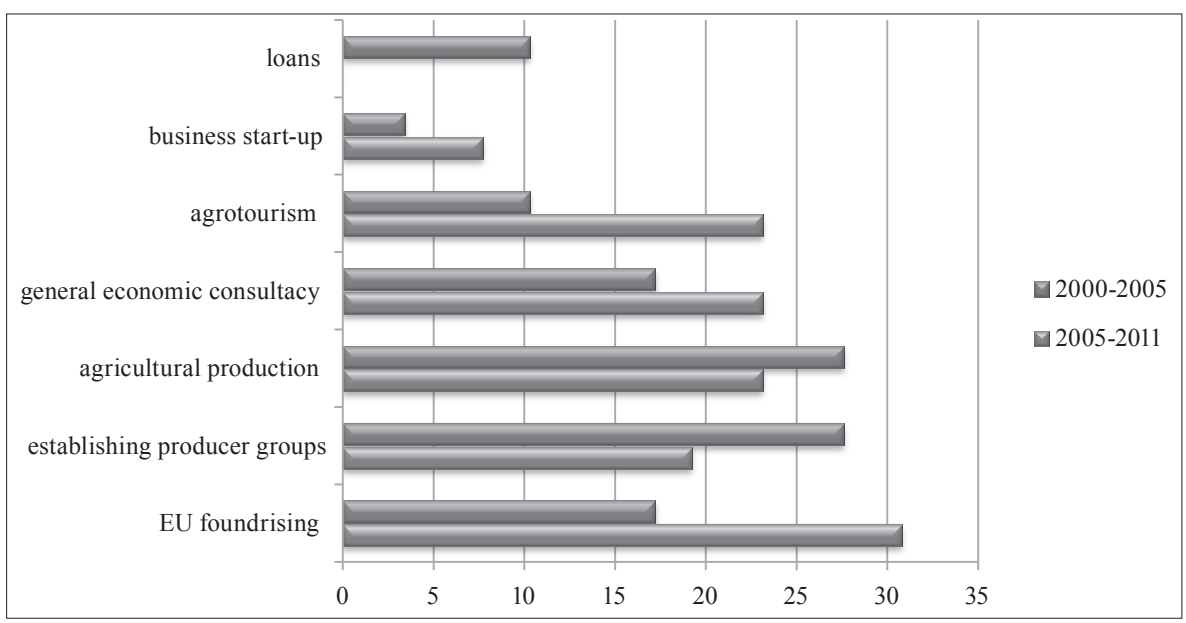

Fig. 3. Share of the villages surveyed reporting a need for specific consulting services
Source: Based on the IAFE-NRI surveys 2000, 2005, 2011.

to function in contemporary society. The share of households with computers and internet access significantly improved in the analyzed period (Figure 4).

In 2013, almost two-thirds of rural households had computers. Almost all of them had internet access. In the last decade, the share of both the rural population and farmers who use the internet has significantly increased.

Having analyzed the purposes of using the internet (Figure 5) by the rural population, it can be concluded that there is a clear increase in the share of people using e-mail, on-line banking, instant messaging services or searching for relevant information, e.g. on healthcare.

Foreign languages are another determinant of adaptation to a changing reality. In recent years, the share of the English and German-speaking rural population has increased. The surveys of 2011 showed that 11.3% of the total rural population can speak one foreign language (Table 10).

English was the most common language (7.9% of the population). However, the next one was German (only 2% of the rural population could communicate in this language). Slightly more than 2% of the rural population could speak two for-

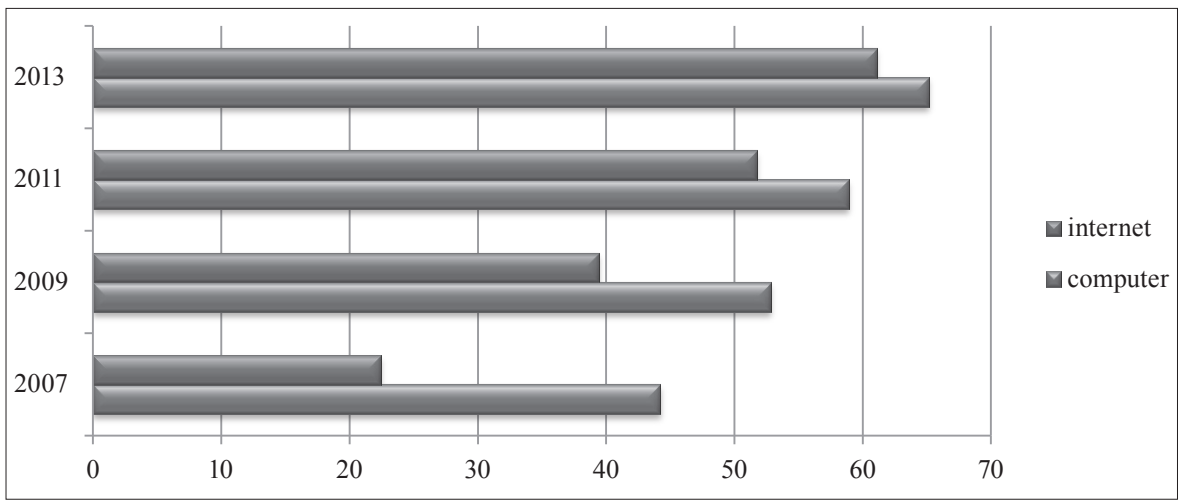

Fig. 4. Share of rural households with computers and internet access in 2007–2013
Source: Based on CSO data.

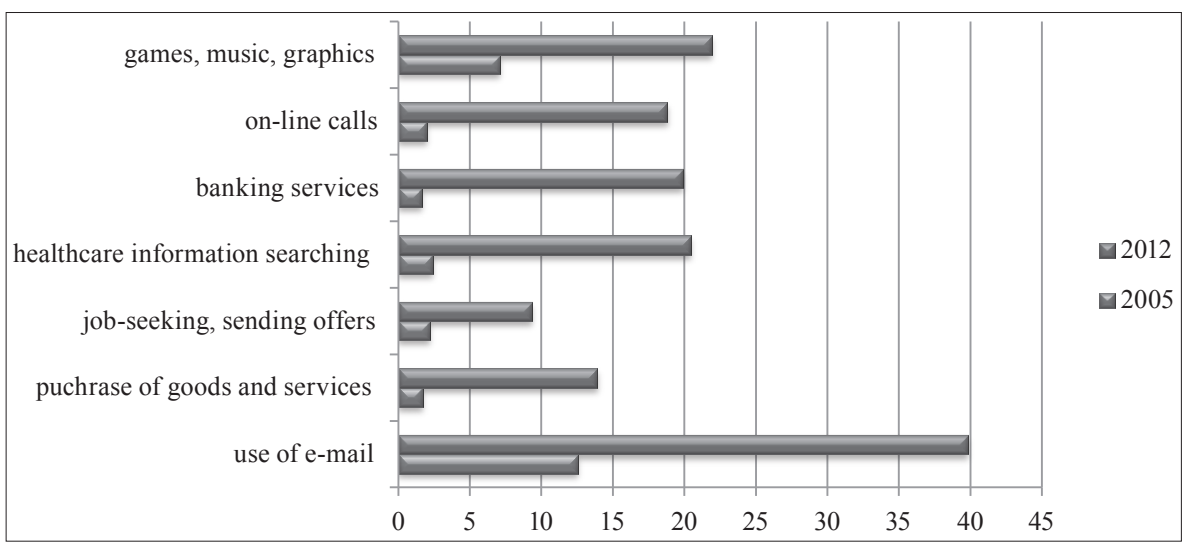

Fig. 5. Share of the rural population aged 16–74 using the internet in 2005 and 2012 by purpose
Source: Own elaboration based on CSO data of 2013.

Table 10. Share of respondents speaking foreign languages in 2011

Foreign language	Farming families	Non-farming families	In total
One language	11.0	11.5	11.3
English	7.8	7.9	7.9
German	1.8	2.1	2.0
Russian	1.0	1.1	1.0
Other	0.4	0.4	0.4
Two languages	2.0	2.7	2.4

Source: Based on the IAFE-NRI survey 2011.

eign languages. Foreign languages skills both in farming and non-farming families were comparable. Foreign-language farmers can easier establish trade relations. In particular, Russian[15], which is relatively common among farmers, facilitates their trade relations with Eastern neighbours.

Conclusions

Rural areas in Poland are inhabited by a significant share of the domestic population (over 39%). However, the share of non-farming families has been increasing since many years. The IAFE-NRI research reveals that the last decades have brought a significant rise in the share of non-farming families among the general population of the villages surveyed. In the re-search sample of the population surveyed in 2011, the number of non-farming rural families, i.e. possessing no land or owning plots below 1 ha of agricultural land, represented over 60% of all respondents and was 3 pp higher than six years ago. Thus, in relation to the period before the political transformation, the share of non-farming families in the surveyed population of rural families increased by nearly 20 pp. This process was primarily determined by a shift of the rural population from agricultural activities and its professional activation in other sectors of the economy or the end of productive activity due to reaching retirement age.

An increase in the level of education, especially higher and primary education, has been one of the most significant positive changes in the level of human capital in rural areas over the past ten years. Almost ten years after Poland's accession to the EU, nearly every tenth rural resident had higher education. However, there was still a gap towards urban residents. It should be emphasized that the dispersion of rural areas necessitates a higher number of schools than in urban areas. Most educational institutions are placed under the direct supervision of local authorities, mainly the government at the local and county level. Thus, their location depends not only on the spatial and demographic structure, but also on the financial situation of the local government, which directly affects the development of educational policy in a specific area. IAFE-NRI surveys reveal that an increase in the level of education was observed in both mentioned rural communities, i.e. members of farming families owning an agricultural holding with over 1 ha of agricultural land and those from non-farming families.

Modern societies must put emphasis mainly on education and training, but also create favourable conditions for studying and adult education. Continuing education involves lifelong knowledge and skill development. It should be emphasized that the period concerned was characterized by unwillingness of people aged 39+ to use educational services.

The health condition of the rural population was another indicator of the level of human capital under analysis. In addition to factors negatively affecting the health condition of the whole population, there are many others related to the specific nature of agricultural work and rural life. The health condition of rural residents can be improved by taking measures related in particular to improving access to healthcare facilities. The entire healthcare infrastructure must

[15] In accordance with Social Diagnosis data of 2005 and 2007, 33.8% and 41.8% of farmers, respectively, declared active and passive knowledge of Russian.

be linked with communication (i.e. provide good and smooth access to such a facility for patients and to patients for a specialized unit, as well as quick contact both by telephone and e-mail). Pro-health education is essential in rural areas, since farmers' behaviour in case of emergency often depends only on themselves, as they are usually completely isolated during their open-air work at the so-called one-man workplace, thus being outside the control of others.

It must be emphasized; however, that better social situation (mainly the level of education and educational activity at large) of the rural population not only involves a civilizational dimension, but also takes in economic aspects, since it directly affects: the intensity of production, openness to innovation and economic effectiveness. When considering the assessment of the level of education and qualifications of the rural population, it can be concluded that its preparation for functioning in contemporary society and the modern labour market, especially as regards the mobile-age population, is insufficient. Therefore, increasing their chances of finding a job requires special measures aimed at enhancing their employability.

Selected Determinants of Human Capital of Rural Population in Poland

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(Summary)

Since the second half of the last century, numerous social considerations have been influenced by the new economy. This concept is closely related to the impact of the human factor on economic growth. Therefore, the growing importance of investments in people to attain the next stages of economic progress is typical of development of countries in the world. Education and healthcare expenditures are regarded in the literature as investments in the quality of human capital[16], whose potential increases by investing in people themselves. The quality of human capital increases primarily through: education, further education and training of human resources, scientific research and gathering information (including making it accessible) or through healthcare actions, which in turn affect the length of human life and vitality.

Since Poland's accession to the European Union, inter alia, a number of positive developments have been observed in rural areas in terms of the level of education or educational activity of the rural population. At the same time, modernization and an increase in the average size of agricultural holdings[17] have been noted. Furthermore, emerging village deagrarisation has indirectly contributed to the gradual blurring of differences in the standards of living of the rural and urban population. At the same time, the last ten years have enabled the rural population to benefit from EU funds, including CAP instruments, and also enter the single EU labour market.

Technological advancements in agriculture, a change in the nature of Polish holdings and the increased diversification of economic activity of the agricultural population contributed to a significant decline in agricultural employment. In 1995–-2011, the number of people employed in Polish agriculture fell by almost 40%[18]. Despite the ongoing developments in relation to the location of economic activity of the agricultural population, Poland is still a country with relatively high agricultural employment. In accordance with Eurostat data, 12.6% of all working Poles were employed in Polish agriculture in 2011. Among the EU Member States, only the Romanian economy is characterised by higher agricultural employment, i.e. 28.6% of the working population employed in the agricultural sector.

In general, due to the relatively high level of employment in Polish agriculture, no significant improvement can be observed in terms of land and capital of agricultural holdings, thus curtailing growth in both labour productivity and income earned by people employed in agriculture[19]. At the same time, excessive agricultural employment results in high scale of unused labour resources, which is reflected in scale of hidden unemployment. Therefore, the ac-

[16] It should be emphasised that human capital is a complex concept; therefore, it is difficult to define it clearly. Usually, its determinants are identified in the literature as follows: formal qualifications (level of education), skills, health, vital energy and human civilisational competences.

[17] In the text, instead of the expression agricultural holding, the names farm, family farm, unit and entity are also used interchangeably.

[18] A. Kamińska, K. Pogorzelski: Rzecz o rolnictwie. Teraźniejszość i przyszłość rolnictwa na Mazowszu, I. Magda (ed.), IV raport kwartalny, Instytut Badań Strukturalnych, Warszawa, 2012.

[19] A. Baer-Nawrocka, W. Poczta: Przemiany w rolnictwie [in:] Polska wieś 2014. Raport o stanie wsi, I. Nurzyńska i W. Poczta (eds.), Wyd. Naukowe SCHOLAR, Warszawa, 2014.

tual level of unemployment in rural areas is higher than recorded.

A decrease in the number of people employed in Polish agriculture is one of the fundamental factors in determining the pace of efficiency-oriented transformations in this sector. The acceleration of the desired structural transformations in agriculture[20] requires a shift from agricultural employment to non-agricultural activities[21]. The need to reduce agricultural employment and the shift of labour force from agriculture to non-agricultural sectors is an essential prerequisite for the improvement of the agrarian structure, the effectiveness of farming and the financial situation of not only farmers but also the rest of the rural population. As a result, the increased diversification of economic activity not only leads to the implementation of multifunctional agricultural and rural development, but also contributes to the modernisation of the entire economy[22].

Research material includes IAFE-NRI survey results of 2011[23] (surveys based on a sample of 8,5 thousand rural families, of which 3 310 families owned agricultural holdings with over 1 ha of agricultural land[24]). The families were surveyed in 76 villages[25] located in different regions of the country (Figure 1). The sampling was purposeful and took account of socio-economic features and the agrarian structure of agricultural holdings situated within the selected regions. All families residing in selected villages were surveyed. The scope of the information collected was extensive and concerned numerous aspects of life of the rural population and the functioning of agricultural holdings.

The results of surveys carried out mainly in 2000 and 2005 on a similar sample were used as a reference point to determine the dynamics of developments. Research results from field studies were supplemented with the CSO public statistics.

Key words: rural areas, Poland, human capital, education, EU

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Kołodziejczyk, Cf. D. 2007. Rynek pracy na wsi. IAFE-NRI, Warszawa, p. 16.

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[23] The survey of 2011 was the last edition of IAFE-NRI research carried out periodically in the same villages.

[24] Each time, surveyed entities accounted for about one five-hundredth of the actual number of individual agricultural holdings; in accordance with the recent survey (2011), there were 3.3 thousand individual agricultural holdings and practically all of them (99.7%) carried out agricultural activity.

[25] The sampling of the villages was targeted to make the size of the surveyed holdings proportional to the actual area structure of the total number of individual agricultural holdings.