



INSTITUTE OF AGRICULTURAL  
AND FOOD ECONOMICS  
NATIONAL RESEARCH INSTITUTE

***Assessment  
of the changes  
in the socio-economic  
structure of rural  
areas in 2000-2005***

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THE ECONOMIC AND SOCIAL CONDITIONS  
OF THE DEVELOPMENT OF THE POLISH FOOD  
ECONOMY FOLLOWING POLAND'S ACCESSION  
TO THE EUROPEAN UNION



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The authors are researchers of The Institute of Agricultural and Food Economics – National Research Institute (IERiGŻ-PIB)

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The purpose of the study was to analyse selected socio-demographic characteristics of rural population in 2000-2005 and to assess their living standards, by measuring the equipment of households with selected durable goods and technical and sanitary installations, and by description of the rural population health state as well.

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## Table of Contents

	<b>page</b>
<b>Introduction</b>	<b>7</b>
<b>1. Assessment of the selected socio-demographic characteristics of the rural population in 2000-2005.....</b>	<b>9</b>
1.1. Demographic characteristics.....	9
1.2. Educational activity of the rural population.....	10
1.3. Spatial mobility of population.....	15
1.4. The assessment of changes in labour participation and the income-level of rural population .....	17
<b>2. Changes in the socio-demographic characteristics of the farm managers ....</b>	<b>18</b>
2.1. Key features of the group.....	18
2.2. Changes regarding the oldest group of farm managers .....	21
2.3. Changes occurring in the group of young farm managers in 2000-2005 .....	24
<b>3. Assessment of living conditions and health conditions of the rural population .....</b>	<b>27</b>
3.1. Assessment of standards of dwellings .....	27
3.2. Equipment with durable goods .....	27
3.3. Access to the educational and healthcare institutions.....	28
3.4. Selected determinants of the health state of rural residents.....	30
<b>Summary and conclusions.....</b>	<b>34</b>
<b>Bibliography.....</b>	<b>39</b>



## Introduction

Economic changes occurring in recent years in Poland, i.e. the shift from the centrally-managed economy to market economy, along with the accession to the European Union had an enormous impact on both economic and social change in rural areas. After a period, when the prevailing problem was the deteriorating economic situation of many households, which had to face the increasing challenges of market economy and all potential problems both in the household itself and in respective members thereof, Poland's accession to the European union brought new development opportunities and potential for numerous actions. New circumstances and conditions lead to an increasing importance of human capital, its knowledge and skill in every part of the economy.

Along with the launching of the rules of Common Agricultural Policy, Polish farmers faced a new situation. A situation of increased competition, need to implement new production methods and technologies, maintaining sustainable development, while receiving support in the form of direct payments and possibility of obtaining aid under programmes launched under Common Agricultural Policy. Poland's accession to the EU influenced the socio-economic situation of the population of rural areas, which had to adjust to many new conditions of life and employment. In the changing socio-economic reality of Poland, a new light is put on characteristics resulting from special conditions of rural areas, which have a direct impact on the situation of rural population. A farming family remains a consumption community and a production team, where family and production roles intertwine. Not only educational activities remain important, but also decision-related and organisational choices relating to the whole holding. Implementation of both functions brings about new tasks – qualifications relating to planning and budgeting become vital, along with the skills relating to health protection, rational and economic nutrition and well prepared house equipment. The way money, time or energy is managed has a vital impact on the success of the whole household.

Changes in the socio-economic situation of the rural areas are multi-directional and occur on numerous levels. Social and demographic changes occurred in particular groups of farming families yet noticeable changes appeared also in the fields of educational and labour activity, and transformation of surrounding environment. Despite a relatively short Poland's membership in the European Union, positive changes occurring in rural areas are very clear and visible. Another example and a reflection of these positive changes is the fact that ca. one-third of farmers is “very pleased or pleased” with their work, and over one-third evaluates their lives as “great or satisfactory”, while every sev-

enth farmer is “very pleased or pleased” with the new perspectives<sup>1</sup>. The need for the evaluation of changes seems thus justified, especially of those which occurred in the socio-economic structure of the population.

The assessment of changes in the socio-economic structure of rural population in 2000-2005 was conducted mainly basing on the questionnaire-based survey of the Institute of Agricultural and Food Economics-National Research Institute (IAFE-NRI) in 2005<sup>2</sup> among 8604 families, where 3705 families owned agricultural holdings of the area exceeding 1 ha of agricultural land. Families covered by the survey lived in 76 villages located in various regions of the country. The selection of villages covered by the survey was purposeful and representative due to socio-economic characteristics and agrarian structure of agricultural holdings located within the boundaries of selected regions. All families living on the territory of selected villages were covered by the interview survey. When establishing the dynamics of changes, the results of comparable group survey conducted in 2000 served as a benchmark.

The assessment covered mainly changes occurring in 2000-2005, according to the selected socio-demographic characteristics of rural population from farming and non-farming families. Regional differences in this field were also examined. An analysis and assessment were also conducted for changes in socio-economic characteristics of groups of: persons migrating from rural areas, farm managers and among the total rural population. The evaluation of the living standard of farming population covered material conditions relating to their income, equipment with durable goods and technical and sanitary infrastructure, as well as conditions relating to the health and medical services in rural areas.

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<sup>1</sup> Cf. „Diagnoza społeczna 2007. Warunki i jakość życia Polaków”, report edited by. J. Czapiński, Panek T., Rada Monitoringu Społecznego, Warsaw, 10 September 2007.

<sup>2</sup> Only to present some macroeconomic phenomena, some papers and statistical data of the CSO were used.

## **1. Assessment of the selected socio-demographic characteristics of the rural population in 2000-2005**

### **1.1. Demographic characteristics**

According to Central Statistical Office, in 2005, rural areas were populated by 14.7 million people constituting approximately 38.6% of the total population of Poland. Compared with the year 2000, rural population increased by 149.6 thousand (approximately 1.0%). The total population of Poland decreased at the same time by 0.3%, i.e. by 96.9 thousand people.

Analysis of the data obtained from questionnaire-based survey conducted by IAFE-NRI indicate that people living in rural areas in 2005 were on average younger than those living in towns. It was reflected both in the age structure and age median, which was over three years lower, among the rural population.

The results of the questionnaire-based survey conducted by IAFE-NRI in 2005 indicated no major differences with respect to age structure between farming and non-farming families. Age median among farming and non-farming population amounts to 36 years, although among farming population the percentage of people in their working age (constituting 19% among farming families) was lower by 4 percentage points.

In 2005 demographically youngest population at regional level<sup>3</sup> was the one inhabiting Central-Western and Northern macroregions, as opposed to Central-Eastern macroregion inhabited by demographically oldest population.

In recent years major changes were observed in the group of working age and pre-working age people due to decrease in the number of births and baby-boomers of the 1980s entering working age. As opposed to town population, no major changes were observed concerning the percentage of the working age persons among the rural population during the last 10 years.

As a result of an increasing number of young people entering working age demographic dependency ratio in 2005 both among farming and non-farming families was lower than in 2000. The highest demographic dependency ratio was observed in Central-Eastern macroregion while the lowest being observed in Northern macroregion.

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<sup>3</sup> The survey differentiated five macroregions including the following voivodships: I. Central-Western macroregion – kujawsko-pomorskie, wielkopolskie; II. Central-Eastern macroregion – łódzkie, mazowieckie, lubelskie, podlaskie; III. South-eastern macroregion – świętokrzyskie, małopolskie podkarpackie, śląskie; IV. South-western macroregion – opolskie, lubuskie, dolnośląskie; V. Northern macroregion – zachodniopomorskie, pomorskie, warmińsko-mazurskie.

According to the research conducted by IAFE-NRI since the beginning of the 1990s rural population was characterised by appropriate gender balance with the farming families being dominated by males. The assessment demonstrated that in regions where agricultural employment prevails (Central-Western and Northern macroregion) the number of women per 100 men is lower than in regions with non-agricultural employment traditions.

Detailed analysis of the population constituting particular gender age groups demonstrated the existence of two significant regularities. Firstly, among farming families there is significantly less women aged between 25-54 than in the remaining age groups. This is a result of young women's aversion towards working in agriculture and thus searching non-agricultural employment. Secondly, among non-farming families, in older age groups a significant surplus of the number of women over the number of men can be observed. This situation is the consequence of older women selling, transferring or leasing agricultural enterprise to another person, thus entering the non-farming group. Additionally, woman's life is on average longer than it is in the case of man, which also adds to women's numerical superiority over man concerning the oldest age groups.

Number of unmarried people, aged between 18-34, living in the rural areas is increasing, which is demographically negative situation<sup>4</sup>. It can be assumed that breakdown of traditional family ties in the future will negatively affect the number of births, that is due to the fact that in Poland majority of births are still marriage births. In sampled population higher number of unmarried people characterises farming families as opposite to non-farming families, however among the farming families population the unmarried ratio during the last five years rose at over two times slower pace than among non-farming families.

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<sup>4</sup> According to CSO rate of married couples living in the rural areas between the 2000 and 2004 decreased by 11.8% (in urbanised areas the same ratio decreased by 8.0%). At the same time the number of live births per 1000 people decreased by 12.0% in the rural areas, and by 1.1% in urbanised areas. Although in 2005 both married couples ratio and number of live births increased in the rural areas compared to previous years, this phenomenon is not a sign of positive changes concerning this figures, but it is simply a result of baby boomers born in 1980s entering older age.

## 1.2. Educational activity<sup>6</sup> of the rural population

For years there have been significant disproportions in education between rural and urban population, although educational aspirations of people living in the rural areas as well as those living in urbanised areas are rising. In 2005 the percentage of people with at least high school education was almost two times lesser in the rural areas compared with urbanised ones, while the percentage of people with higher education being over three times lesser. Research demonstrated that, in 2005, in general 28.0% of the rural population held either secondary school education, post-secondary school education or higher education with higher education graduates constituting 5.1% of the total number. Compared with the year 2000 percentage of people with above mentioned levels of education raised by 10.4 percentage points, including 2.7 percentage points rise in the number of higher education holders, that being two times greater in 2005. Questionnaire-based survey conducted in IAFE-NRI indicated no major differences in the level of education between farming and non-farming families. The highest percentage of secondary school, post-secondary school and higher education graduates was observed among southern regions of the state, while the lowest

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<sup>6</sup> The assessment of educational activity is conducted on the basis of the number of educational services users participating both in in-school education (including stationary, non-stationary education, post-graduate studies) and out-of school education. It is measured as the percentage of educational service users in particular age group. This measure for in-school educational services is defined as schooling rate and is calculated for people who are up to 24 years old. In the case of the youngest age group, namely children up to 6 years old, the rate describes access to institutional care. As a result schooling rate can be used to assess the scope of institutional care, and in the case of people aged 18 and older it can serve to assess their educational activity. In the case of adult persons (i.e. people above 18 years old) the assessment can also include forms of their educational activity and their position in labour market. (cf. Kotowska I., Grabowska I., Węzak D.: „Education”, [in:] „Social diagnosis 2007. Conditions and quality of living of Poles”, edited by Czapiński J., Panek T., Social Monitoring Council, Warsaw 10.09. 2007).

being observed in western regions of Poland. Results of this research prove that education is consistently perceived as means of improving a position in the labour market (popular in southern region). Education is still less frequently perceived as a means of conducting rational agricultural activity. Meanwhile the need for farmer to possess diverse knowledge concerning the fields of biology, chemistry, production technology, economy as well as social science, intensifies. He should understand basic soil, plant and animal processes as well as all cause-and-effect relations taking place in agricultural enterprise. The farmer should also analyse processes and relations taking place between people as well as in the goods and services market. The role of knowledge, especially with reference to Polish farmers, is the more significant because of the competition with other EU member states, and modern agriculture, more and more intensified and precise, is becoming also knowledge-absorbing. In this situation the requirements of modern farming are difficult to meet for farmers with no suitable education. Lack of skills or delay in implementing technological development eliminates the farmer from the market. Producers willing to expand their enterprises will have to keep customers who are lured by other producers i.e. farmers. Skills connected with market recognition, establishing contact with customer, as well as developing an own brand will be essential for a successful producer. Professional literature dealing with the subject of production technology frequently emphasises that Polish farmers make numerous mistakes in this field, which often arise from the lack of knowledge<sup>7</sup>.

Education, natural abilities as well as drilled skills constitute the basis for both individual and collective labour force<sup>8</sup>.

The above mentioned basis in combination with certain physical features, health status, certain values etc. constitutes a human capital of a given region. It should be emphasised, that rural areas compared with urbanised areas are characterised by lower level of human capital. Rural areas are populated not only by people of lower education but also of lower activity and as a consequence of lesser ability to adjust to changes.

Socio-economic changes, decreasing demand for labour force and increased usage of machinery enforce migration of the rural population from agriculture towards searching alternative job opportunities and economical satisfaction. As a result, rural population faces the need to rise its level of vocational

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<sup>7</sup> Klepacki B.: „*Education as a factor differentiating organisation and economic results of agricultural holdings*”, [in:] Scientific Yearbooks. Agricultural and Agribusiness Economists Association. Volume VII, Booklet 1. Warsaw – Poznań 2005.

<sup>8</sup> Spsychalski G.: „*Meso-economic aspects of modelling rural development*”, Institute of Rural and Agricultural Development, Polish Academy of Sciences, Warsaw 2005.

and general education. Understanding the significance of rising the level of education and improving qualifications, including non-agricultural fields, is crucial for the farming population because multifunctional development of the rural areas enforces the need for an increasing number of non-agricultural functions. Furthermore it creates an opportunity for an alternative source of income<sup>9</sup>. Less educated rural population is often characterised by lower professional and cultural activity as well as less frequent entrepreneurial attitudes, that being the factors hampering multifunctional development opportunities for the rural areas. Development of non-agricultural economic activity requires the ability to search for information, establish contacts with customers, search for markets ready to absorb particular goods or services etc.

While assessing educational activity of the rural population in 2000-2005 it should be noted that in the year 2005, compared with the year 2000, there were no changes concerning the access of children, aged between 0-6, to institutional care including kindergartens and day care centres. The accessibility to institutional care remains at a low level compared with urbanised areas. Deficiency in institutional care accessible to rural population children can be the factor behind lower professional activity of rural population women, in particular non-agricultural activity. The changes in employment structure of the rural population, caused by transfer of labour force to non-agricultural sector, lead to a need for rural population to have greater accessibility to institutional care. Furthermore, it should be taken into consideration that care services of good quality, accessible to parents in affordable price, are effective means of reducing educational and economic inequalities<sup>10</sup>.

Although in recent years the percentage of people with higher education among the rural population raised two times, disproportions were still significant. Percentage of people aged 20-24 and continuing education is characterised by even greater rate of progress in urbanised areas. Consequences of that figure not rising as dynamically in the case of the rural population are rising educational disproportions between people living in rural and urbanised areas. Analysis of the data obtained from questionnaire-based survey conducted by IAFE-NRI demonstrated that main factors prompting increase in educational aspirations of the young people living in the rural areas were plans to conduct

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<sup>9</sup>Stawicka E.: „*Education level of the rural population and multifunctional rural development*” W. Kamińska: „*Multifunctional economy in rural areas*”, Kielce 2002.

<sup>10</sup> cf. Kotowska I., Grabowska I., Węzak D.: „Education”, [in:] „*Social diagnosis 2007. Conditions and quality of living of Poles*”, edited by Czapiński J., Panek T., Social Monitoring Council, Warsaw, 10.09.2007.

professional activity in non-agricultural sectors of the economy in rural areas, nearby urbanized areas or abroad.

The fact that non-governmental educational institutions play significant part in improving the level of education of the rural population should also be noticed. Numerous educational institutions have been located in rural areas, thus being easily accessible to young members of the rural population. Still, it is difficult to unambiguously assess this phenomenon and estimate the total number of rural population graduates. The level of knowledge served by these institutions can be controversial, especially compared to prestigious educational institutions with many years of tradition. However, better special accessibility of the non-governmental educational institutions positively influenced educational aspirations of the young people living in the rural areas<sup>11</sup>.

Modern societies must put more emphasis on education and learning as well as creating favourable conditions for education and learning of the adult persons. Lifelong learning is connected with absorbing knowledge and building skills throughout lifetime. Definition states that lifelong learning is learning undertaken in every form, in every age, with the aim of enriching knowledge, raising competence as well as professional, civil or social qualifications<sup>12</sup>. Adult education can be provided in various forms of organised educational activities, formal or non-formal, with the aim of – regardless of content, level and methods – continuing or complementing education at schools, universities and training colleges, thanks to which an adult member of society can develop skills, enrich knowledge, improve technical or professional qualifications or acquire new professions, changing attitudes towards comprehensive development of personality and participating in well-balanced and independent social, economical and cultural development.

Growing rate of people aged 25-29 (i.e. considered adults) continuing or starting education is due to the positive changes in educational activity of the people living in urbanised areas, especially big cities, causing growing disproportions to rural and small towns population disadvantage. Low educational activity

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<sup>11</sup> cf. Wrzochalska A.: „*Education as a factor conditioning the improvement of the rural population's standing in job market*”, [in:] „*Socio-economic issues of the sustainable development*”, volume II, scientifically edited by G. Karminowkiej, University of Agriculture in Szczecin, Szczecin 2007, and Fedyszak-Radziejowska B.: „*Inner and outer factors of changes concerning Polish rural areas*”, [in:] A. Rosner: „*Conditioning and direction of socio-economic changes in rural areas*”, Institute of Rural and Agricultural Development, Polish Academy of Sciences, Warsaw 2005.

<sup>12</sup> cf. Stawicka E.: „*Educational status and opportunities of continuing education and improving professional skills of the rural population. Knowledge as a factor determining development of agricultural holding*”, coverage for the purposes of task number 4015, typescripts, Warsaw 2007.

of persons aged 30-39 has not changed in the years 2000-2005. Even lower educational activity can be observed among people aged above 39 years. As a result the process of improving qualifications of adult persons is still selective and is characterised by marginal scope. It should be pointed out that adult education, not only with respect to rural areas, but also countrywide is still marginal. Comparison with Western European countries indicates that Poland has the lowest ratio of employed people aged 55-64, which among other things can be considered a result of educational passivity. The need arises for improving qualifications of persons aged 30 and older, especially in rural areas, which is due to the fact that these persons have relatively long period of professional activity ahead of them combined with limited educational activity opportunities<sup>13</sup>.

Taking into consideration the level of education and qualifications of the rural population it can be concluded that preparation to function in modern society and modern labour market of the persons in mobile age is insufficient. Improving their chances at the labour market requires special actions aimed at rising their ability to get a job.

### **1.3. Spatial mobility of population**

The analysis of changes in spatial mobility of rural population, based on questionnaire-based surveys conducted in 2005, showed that the migrants from rural areas were mainly young persons. The age median for members of farming families who left rural areas, aged 15 plus, was 28, while for the whole population connected with agricultural holdings – 42. Similar relations occurred among the population from landless families. The low age median of emigrants from rural areas clearly indicates that the overwhelming group of migrants is constituted by people starting their labour participation. Nine out of ten persons leaving rural areas in 2005 was in the mobility working age. The migrating population from families connected with farming through the fact of using land was characterised by a slightly lower percentage (by 3.5 percentage points) of persons in the mobility working age than the population from landless families (89.4% to 92.9% respectively).

On a regional basis no significant differences in the age of persons leaving rural areas were noted.

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<sup>13</sup> Slight decrease in the role of public schooling in educating adult persons is due to the development of the educational services market. Some positive actions are already noticeable, because during the recent two years the implementation of European Social Fund, which provides resources for significant part of the educational services for adult persons, offered mainly by non-governmental educational institutions.

While assessing the influence of migration from rural areas on the transformations of the rural socio-demographic structure, the population's level of education should be considered. One of the features characterising the migrants, as it was in the past, is their level of education, higher than that of the population staying in the rural areas. Lower age and higher level of education among the persons leaving rural areas, as compared to persons staying in the countryside, causes a diminution in the potential and quality of rural community.

According to IAFE-NRI research, in 2005 an average of 63.8% of persons from farming families leaving rural areas had at least secondary education. The most highly-educated emigrants came from the Central-Eastern macroregion, where almost 7 out of 10 persons leaving rural areas had secondary, post-secondary or higher education. Slightly lower, yet still high percentage of persons (65.6%) having at least secondary education was observed among the migrants to cities and foreign countries from the South-Eastern macroregion. Among the factors encouraging the migration of population with high education level from the South-Eastern macroregion were countryside overpopulation as well as the prevalence of agricultural holdings producing mainly or exclusively for own use. The research shows that this part of the country is characterised by the highest average number of families per village, as well as the highest (with the Central-Western macroregion) average number of persons per farming family, with the lowest average size of agricultural area per agricultural holding.

It should be added that the Central-Eastern macroregion, as opposed to the South-Eastern macroregion, in 2005 was characterised by a small number of persons with secondary or higher education among the total population of farming families, which, alongside the migration of educated persons, will negatively influence the competitiveness of this area to an even greater extent.

The lowest percentage of persons with at least secondary education leaving rural areas was noted in the Central-Western macroregion (48.0%). Such a low percentage resulted mainly from relatively low educational aspirations among the farming population of the area. In this macroregion in 2005 almost 45% of persons had basic vocational education and the percentage of persons with secondary, post-secondary or higher education was the lowest in the country. All these factors resulted in a situation in which also among the migrants from rural areas the dominating group were persons with basic vocational education, nevertheless these persons did not constitute as significant group as among the total population of farming families. It should be taken into consideration that the factor limiting the mobility of most highly educated persons could have been the possibility of finding a satisfactory work in the place of residence. Such suppositions are supported by a relatively high average income

per farming family and per capita, which in this macroregion were the highest in the country. Due to lower disproportion between the income of urban and rural populations of Central-Western macroregion, the economical motivation of migrations was lower there.

In the analysis of data concerning the level of education among the members of farming families leaving rural areas, it was striking that among the migrants from countryside there were mostly women (56.7% of migration to a city and to a foreign country) and they contribute to the relatively high education level of persons leaving rural areas. In 2005 among the persons migrating from agricultural holdings 71.2% of women had secondary or higher education, while among men the percentage was 54.1%.

On a spatial basis, the highest percentage of women among the migrants in farming families was observed in the Central-Eastern macroregion (58.6%) and the lowest (53.3%) in the Northern macroregion. It may indicate rural women's reluctance to work in agricultural sector, which requires significant physical effort and, at the same time, is characterised by a low social appraisal due to perceiving this function in the context of housekeeping. In the Central-Eastern macroregion the traditional model of agricultural holding is still relatively dominant; in this model a woman (a housewife) is engaged in agricultural production activities. In the Northern macroregion in turn, where large, mechanized holdings exist, women – farmers' wives – are not engaged in the production activities, but they are occupied only with housekeeping.

#### **1.4. The assessment of changes in labour participation and the income level of rural population**

In 2005, among the population of farming families, the labour participation rate was higher by two-thirds and the unemployment rate was four times lower than among the population of landless families. Nevertheless, these relations did not result from the regional demographic and economic structures in Polish agriculture, but rather from the organisation of production in individual holdings, basing on family members' labour, and often causing the concealed unemployment<sup>14</sup>.

It should also be taken into consideration, that in some holdings, due to poor machinery equipment and technological facilities, the relatively high use of labour inputs is involved. Basing on the IAFE-NRI survey data, only 34.5% of persons aged 15 plus who declare working in an agricultural holding, are permanent, full-time workers. From the remaining group of workers in agricultural

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<sup>14</sup> Por. Karwat-Woźniak B., Chmieliński P.: „Praca w indywidualnych gospodarstwach rolnych”, Raport No 28, Program Wieloletni, IAFE-NRI, Warsaw 2006.

holdings, i.e. permanent part-time, seasonal or transient workers, the surveyed themselves indicated that 16.3% persons did not work on full-time basis, because there was no such need<sup>15</sup>. Persons redundant in an agricultural holding, but not working elsewhere and not registered as unemployed, create the so-called concealed unemployment.

The division between the economically active and passive was also determined by gender. In all the groups, regardless the categorisation criterion (by work in a holding, outside of a holding or seeking employment), men were much more active in every division. On the other hand women were more often economically passive.

Another feature of the Polish agriculture is the diversification of employment of the farming population. It manifests itself in a relatively high number of people from farming families who work both in a holding and outside of it (24.1%), while 9.6% of the population work only outside of an agricultural holding. The assessment of changes in the rural labour market indicated that mainly young people worked outside their agricultural holdings. This was particularly clear in the holdings with agricultural land from 5 to 10 ha, where in 2005 over 40% of work force were persons aged 20-29. The situation in holdings of 10 to 50 ha was similar; in this group persons aged 20-29 working outside their own agricultural holding constituted more than half of the work force.

The analysis of data concerning persons running a business indicated the relationship between the level of education and the activity on labour market, the result of which is the scale of self-employment, as well as employment of workers. In 2005 the high level of education was mainly among the entrepreneurs (i.e. managers employing workers) from farming families, among which almost seven out of ten had secondary, post-secondary or higher education. Lower (just over 50% of interviewees) percentage of persons with such level of education was among those conducting one-man or family firm; yet this value was two times higher than among the total rural population.

The research indicated that persons from farming families were in a more favourable income situation than the population from landless families. The average income per farming family was higher by three-fourth than that per landless family. The difference in income per capita between the members of farming and landless families amounted to almost one-third to the advantage of farming families.

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<sup>15</sup> In this group there are persons declaring that they do not work permanently, on the full-time basis in an agricultural holding, because there is no such need, or declaring readiness to leave an agricultural holding and to be employed in urban areas.

The disproportion between the population of farming and landless families' income results from the differences in the structure of sources of income in both groups. Among the landless families, 38.5% of income comes from non-earned sources (retirement pay, pension, benefits and other), while among the population of farming families the income from these sources amount to 20.7%. Moreover, owning an agricultural holding, even if it is not market-oriented, brings particular profits (own food products).

In 2005 among the farming families the highest income per family was noted in the Central-Western macroregion and the lowest in the South-Eastern macroregion. Among the landless families the inhabitants of the South-Eastern macroregion had the highest income, and the inhabitants of the Central-Eastern macroregion – the lowest.

## **2. Changes in the socio-demographic characteristics of the farm managers**

### **2.1. Key features of the group**

Persons who manage farms constitute a particularly important group among rural communities, as they have a direct influence on the agricultural production and thus decide about the future of agriculture.

Median of the age of farm managers amounted to 47 in 2005. In the case of the total population of farming families aged 15 plus – the median of age amounted to 42. Differences in the median altitude among farm managers are caused by the fact that farm managers rarely are under age of 18.

Alternations in the median altitude indicate that, comparing to 2000, the average age of the farm managers increased by two years, whereas the average age of the population of farming families aged 15 plus increased by one year.

Lower median of age, calculated for the total population of farming families (aged 15 plus) in the comparison to the farm managers, was determined by significantly higher percentage of people in the pre-working age (6.5%). Higher, than among the farm managers, was the percentage of people in the mobility working age (4.4 pp) as well as in the post-working age (8.6 pp). In the case of the whole farming population, the share of non-mobility working age people was 27.2%, and was lower by 19.4 pp than among the farm managers. The abovementioned data indicates that the total population living on the farms was more diversified than the group of farm managers. Such phenomenon is fully understandable because the undertaking of the position of the farm manager must be associated with starting professional activity. The assessment of the

demographic characteristics of the group of farm managers proved that the group is characterized by fairly favourable age structure.

According to interview surveys conducted by IAFE-NRI in 2000-2005 the percentage of people in the mobility working age decreased by 2.7 pp from 46.5%. In the same time the percentage of people in the non-mobility working age increased by 3.4 pp (from 43.2%). The percentage of people in post-working age decreased by 0.7 pp (from 10.3% to 9.6%).

In 2005 the youngest group of farm managers was found in the Central-Eastern macroregion (the median of age amounted to 45 there). In the above-mentioned macroregion the highest percentage of people in the mobility working age and the lowest in the post-working age was noted. Due to a high number of young people favourable demographic structure of farmers was noted also in the Northern macroregion (median of age amounted to 46). The percentage of people in the mobility working age was higher there and the percentage of people in the post-working age lower than the national average. Relatively the oldest farm managers resided in the South-Western macroregion, in which the median of age amounted to 48. In that macroregion the lowest percentage of people in the mobility working age and the highest percentage of people in the post-working age was noted.

Commonly among the farm managers men dominate. They manage around 80% of the farms in Poland. The percentage of women managers differs strongly depending on a region, which is connected with the type of agriculture prevailing in a given area. In the Central-Western macroregion, women tends to be less engaged in the agricultural production due to specific features of the agriculture in those areas, i.e. high productivity. This type of agriculture entails significant involvement of the farmer in farm work, continuous availability, various skills, as well as physical strength, despite advanced mechanisation. However the high level of mechanization and the increasing importance of individual farming must be emphasized here.

While assessing the role of the quality of the human factor in the agricultural sector, the education of people managing individual farms becomes a significant factor. The percentage of farmers with at least secondary education amounted to 26.5% in 2005 and it was slightly lower (by 1.7 pp) than the percentage noted among the total population of farming families. The highest percentage of farm managers with secondary education, post-secondary or higher education was noted in the South-Western macroregion (29.2%) whereas the lowest percentage was noted in the Central-Western macroregion (24.4%). Similar spatial differences were noted among the total population of farming families. The highest percentage

of people with secondary education was in the South-Western macroregion whereas the lowest occurred in the Central-Western macroregion.

In the surveyed sample of 3,705 farm managers 16.1% either worked only occasionally for some days per year or did not work at all on the farm.

The analysis of the relationship between the incomes<sup>16</sup> obtained from the agricultural activity and the level of the education of farmers who work permanently full-time or part-time proved that there is a positive correlation between them. The incomes from the agricultural activity obtained by the farm managers with higher education were more than two times higher than the incomes of the farmers with elementary education.

The relationship exists also between the level of education of farm managers and the average area of agricultural land owned by them.

The higher level of education of the farm managers was accompanied by an increase in the area of agricultural land per farm. Farm managers with higher education owned on average, by 69.8% more agricultural land than those with elementary education.

Additional criterion of classification of the farm managers according to the level of education was a vocational education: agricultural or non-agricultural. The research by IAFE-NRI indicated that in 2005 in the above-mentioned group farmers with agricultural vocational education (school<sup>17</sup>) had more agricultural land and obtained higher income from agricultural activity than the farmers with non-agricultural vocational education or those with no vocational education.

In general the analysis conducted proved that the farm managers from macroregions associated with the most advanced agriculture, are characterized by a more favourable socio-demographic structure than farmers in other rural areas. For instance the Northern macroregion is characterized by the highest percentage of farm managers with higher education.

## **2.2 Changes regarding the oldest group of farm managers**

In every population group, the age structure is a significant factor, which characterizes them, determines economical situation and development capability as well<sup>18</sup>. In the rural areas people in the post-working age constitute 15% of the

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<sup>16</sup> These incomes do not include incomes obtained by earned sources and non-earned sources of income.

<sup>17</sup> IAFE-NRI interview survey collected data regarding the agricultural vocational education as well as non-agricultural education obtained in school or on professional courses.

<sup>18</sup> There are three main age categories: pre-working age (under 17), working age (men 18-64, women 18-59). Within these categories there are sub-categories: mobility working-

total population. In 2005 the inhabitants of villages in the post-working age accounted for 2268,7 thousand. It is worth mentioning that a slight decrease of the number of people in that age group was noted (compared with 2000 the number increased by 12,5 thousand of people that being 0.2%). This phenomenon occurs contrary to the situation in the cities where the percentage of people in the post-working age increased at the same time by 1.2% (240,6 thousand)<sup>19</sup>.

Many farmers despite their advanced age still practice their profession. This phenomenon has occurred in the rural areas in Poland for many years. Although it is conducive to the fragmentation of farm structure it also fulfils many positive social functions. Until recently nearly one out of ten persons employed in agriculture exceeded the age of professional activity, whereas in other fields of economy only one out of hundred people<sup>20</sup>. Despite favourable macro-economic situation (high economic growth, significant drop of unemployment) increasing public expenditures on agriculture and the favourable situation of the land market for the sellers old people often do not resign from their agricultural activity.

In such a situation it is important to define the influence of advanced age of a farm manager on the position of his/her farm on the market as well as socio-economic conditions of the people living on the farm. It is interesting to note to what extent farms managed by people in the retirement age<sup>21</sup> function out of the general pro-effective tendencies of economic changes and if their presence in Polish agriculture exercises significant influence on its structure and pace of development.

Nearly as much as one out of ten of individual farms in Poland were managed by a person in the retirement age. Generally, it may be estimated that nationwide the number of such type of farms amounted to 171 thousand and the number of people living on those farms numbered near to 522 thousand. IAFE-NRI research show that in 2000-2005 territorial diversity of the density of farms managed by people in the retirement age did not change. The highest percentage was in the South-Eastern macroregion (13.7%) and the lowest in the Central-Western macroregion (4.2%).

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age (18-44), non-mobility working age (women 45-59, men 45-64); post-working age (women over 59 and men over 64).

<sup>19</sup> Basing on data collected by CSO *Charakterystyka obszarów wiejskich w 2005 r.*, Olsztyn 2006.

<sup>20</sup> A. Sikorska, *Struktura społeczno-demograficzna i wykształcenie ludności wiejskiej*, Studia i monografie No 87, IAFE-NRI, Warsaw 1999, p. 33.

<sup>21</sup> This definition applies to a farm managed by a person in the post-working age (retirement age) that being a person in the age of 60 or older (in the case of women) and a person in the age of 65 or older (in the case of men).

The analysis of the farms managed by people in the retirement age conducted in the report shows that the units play mainly social functions. They are a place of residence and a source of supplies of agricultural products for their holders or members of their families. Majority of the units managed by people in the retirement age can be classified as so-called 'social farms'<sup>22</sup>, which means that the fact that a family owns a farm is to small extent connected with conducting agricultural production. Therefore such farms made a minor contribution to agricultural market in Poland. Their share in the total output of agricultural production in 2005 amounted to mere 3.4% (in 2000 it was 3.8%). Fairly often these farms did not produce agricultural output (31% of them) and were on average two times smaller than the average in Poland (in 2005 – 4,6 ha of agricultural land in comparison with 9,8 ha of agricultural land). The farms managed by people in the post-working age were relatively poorly equipped with machines and animal power, their owners rarely conducted any investment (e.g. investments connected with reproducing the production assets were conducted only in 17% of units) which resulted in their unfavourable position on the market. Units managed by people in the post-working age had a weaker relationship with the market than the remainder of the farms. Goods produced by these units were sold mostly at market places and to neighbours (67%).

One of the factors conditioning the pace of the modernization of farms is the socio-economical situation of their holders. According to data collected by IAFE-NRI in 2005, families living on the farms managed by people in the retirement age were not as numerous as families living on the remainder of the farms (the former consisted of 3 persons on average, the latter – 4,1). In that group lower number of persons per family was related to the common occurrence of farm families consisted of two persons. As a results the significant differences in demographic characteristics and the level of education of people from both groups were observed. Farm holders in the retirement age were considerably older and less educated than the rest of agricultural population.

The analysis of the income sources indicates that the farms managed by people in the retirement age first of all fulfil a social function. People living on these farms obtained income mostly from non-agricultural sources. Most frequently their main source of income were the retirement and disability benefits

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<sup>22</sup> The definition of 'social farm' applies to a unit in which no agricultural activity with the purpose of trading is conducted or such activity is of minor significance, [in:] A. Sikorska, *op. cit.*, p. 6. In this report that the value of the agricultural production of this type amounted to PLN 5 thousand in 2000 and PLN 7 thousand in 2005 (20% of the average value of the agricultural production in 2000-2005).

(64%). Only for 13% of this group agricultural incomes constituted the basic part of their home budgets.

The issue of the future situation of farm managers in the retirement age remains vital. During the last several years the population of the group has been slightly yet systematically decreasing (from 14.5% in 1988 to 9.6% in 2005). The results of the latest research indicated that the tendency for old people to resign from managing the farms will remain. Nearly 24% of them planned a liquidation of the farm in the nearest future (by 2009). In that group 13% of farmers planned to divide the farm and 8% planned to pass the farm to family members. 30% of interviewed farmers declared that by 2015 they intend to pass the farm to younger successors. On the basis of the abovementioned data it may be assumed that the number of farms managed by people in the retirement age will be slowly decreasing in the nearest time. Maintaining positive tendencies in this field will depend on the extent of influence of structural policy on the agriculture (early retirement)<sup>23</sup>, as well as the readiness of the farm managers in the post-working age to sell their land. However the analysis of the farm production assets indicated that their reducing will stimulate the process of concentration in the agriculture only to a limited extent since farms have comparatively small area of agricultural land.

### **2.3. Changes occurring in the group of young farm managers in 2000-2005**

Changes in the structure of Polish agriculture also regard the second group featured in the research, that being a group of farms managed by young farmers.

The group may be analysed in the view of the pursuit of a rapid generational change in agriculture as well as promoting the profession of a farmer for the young generation by granting them financial support in the initial stage of their independent activity. Compared with the farmers from other Member States Polish farmers are relatively young<sup>24</sup>. Nevertheless, changing the age structure of farm managers is one of the crucial aims of the rural development

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<sup>23</sup> It is estimated that due to the early retirement programme more than 53 thousand of farmers in the pre-retirement age passed their farms to young farmers. As a result more than 400 thousand ha were passed to new owners, (M. Wigier, *Rola środków publicznych*, [in:] *Gospodarowanie ziemią rolniczą*, IAFE-NRI and APA, Warsaw 2007).

<sup>24</sup> It is estimated that in EU-27 over 50% of the total number of farm managers were older than 55, [in:] *Agriculture. Main Statistics 2005-2006*, Eurostat Pocketbooks 2007, p. 23. In 2005 in Poland farm managers in the age of 55 constituted around 23% of the total (data collected by IAFE-NRI).

policy. It is emphasized by the indications contained in the strategy documents or the by launching programmes aimed at the abovementioned group<sup>25</sup>.

While designing such programmes it is taken into account that the future of rural areas in the next decades will depend on who will undertake the agricultural activity. Young farm managers, although relatively do not constitute a considerable population, may significantly influence the situation of Polish individual farming. It is often emphasized that young people are more active and dynamic, ready to take a risk and they easily adapt for changes. Encouraging young farmers to taking over farms may be the chance for the development, the improvement of the living standards of their families as well as the functioning of the whole agricultural sector. The above-mentioned reasons are the basis of certain aspects of the rural development policy. Personal characteristics as well as individual motivations of the successors are crucial. Fairly often people who undertake the farming activity have no proper education, they are not interested in expanding the farm or, for variety of reasons, they have no capacity to change their profession. Often it is the family situation or the situation on the labour market that force them to stay at the farm despite different professional plans.

It seems that, it is the young generation raised in the conditions of the free-market economy, who may facilitate and improve the activities aiming at modernization of the agricultural holdings, since apart from being more flexible usually they are properly qualified. In the agriculture as well as in the whole economy the role of the human factor in stimulating further development gradually increases<sup>26</sup>. Presently, it is not only theoretical professional knowledge that matters but a thorough practical preparation for managing of the farm and the knowledge of modern technologies as well. People with good education are able to adapt easily to a changing market conditions as they know how to access new information and use them in practice.

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<sup>25</sup> In 1994-2001 Agency for Restructuring and Modernization of Agriculture granted subsidies to the loan interest rate for the farmers under 40, to encourage founding and organising farms. In the pre-accession period Agricultural Social Insurance Fund began to pay out the early retirement pensions. The aim of the Measure 1.2 Setting up of young farmers, of the Sectoral Operational Programme "Restructuring and modernization of food sector and rural development 2004-2006" was to facilitate founding or taking over farms by farmers over 40 and assistance in modernization of such units. It was assumed that taking over the farms by a people in that age may determine pro-investment actions and improve the economic condition of the farms. Measure 1. "Early Retirement" which was conducted as a part of the Rural Development Plan 2004-2006 encouraged farmers in the pre-retirement age to terminate their agricultural activity and pass their farms to a younger successors. The action was designed to fasten the generational change in the agricultural sector.

<sup>26</sup> Górecki J.: „Rola czynnika ludzkiego i kapitału społecznego w procesie rozwoju wsi i rolnictwa Polski po jej akcesji do UE”, [in:] *Wieś i rolnictwo*, no 2 (123) 2004, p. 189.

According to data collected by IAFE-NRI in 2005 nearly as many as one of five individual farms in Poland were managed by a person who did not exceed the age of 35. Thus it may be estimated on the basis of data provided by CSO that nationwide such units numbered 348 thousand and the number of their inhabitants amounted to 1 470 thousand.

The research confirmed that the share of the group in the total number of farms in the country inconsiderably decreased (from 20.2% to 19.5%). Only in the Northern macroregion considerable changes were noted. During the last five years the percentage of the farms managed by the young farmers decreased by 3.7 pp (from 20.5% to 16.8%).

In comparison to other professions young farmers began managing the farms relatively late. On average, both in 2000 and 2005, they were 30 years old. Mostly they took over farming properties from family members (either as a donation or inheritance). In comparison with the previous research the procedure of buying farms increased inconsiderably. In 2005 4.9% of units (compared to 2.6% in 2000) were obtained in such a way.

Among young people it was mostly men who chose the profession of a farmer and managing the farm. Young women, similar to the total population of women managing farms in Poland, were the managers of the 20% of the agricultural holdings. Most often such situation occurred if their spouse had an earning work or due to special family circumstances.

In the described period the popularity of agricultural education among young farmers decreased while the level of general education increased which might have been determined by the demands of the labour market. However the fact had no influence on the choice of profession. Majority of people belonging to the discussed category worked mainly on farms. Only one out of four young farmers worked full-time outside of the farm. It was most common in the more urbanized regions where the farms were of less size.

In 2005, just as five years earlier, less than 20% of the farming rural population surveyed by IAFE-NRI was lived in the farms managed by the young farmers. The population belonging to the described sample had more favourable demographic potential than people from the remainder of units, however in both groups the process of aging of their inhabitants was noted. A favourable phenomenon of a dynamic educational progress was observed, which may be a factor stimulating development of the rural areas.

Data concerning professional orientations of young farmers and the characteristics of their farms reflect the character of the agricultural activity and its scope. The examined group differed in the respect of the attitudes towards managing the farms. Young farmers, with substantial educational background,

working full-time on farms, for whom farming as the main source of income, were prone to expand for their farms and maintain their position on the market. Young farmers with non-agricultural education most often had an earning work thus their farming activity was additional to their professional activity and additional source of income for their family budgets.

Nevertheless young people were prone to take over economically strong farms and of considerable size rather than neglected farms with poor production assets. On the basis of the analysed data it may be concluded that young farmers acted were active on the market. Majority of them aimed at expanding their farms by investments, taking bank loans, in cooperation with advisers and seeking strong stable relationships with the market. The group rarely limited the activities of the farms mainly to non-productive functions.

For young farmers farming activity was the main source of their income, slightly more important than earnings. In comparison with the rest group of farming families, the families of young farmers obtained greater income from agricultural activity. That affects on their relatively higher living standards.

One of the methods of increasing the number of farms managed by young farmers in the structures of Polish agriculture may be actions encouraging old farmers to pass their farms to young successors.

Promoting profession of a farmer among young people and maintaining favourable age structure among farm managers in Polish agriculture will obviously depend on variety of conditions; macro-economic prosperity, situation of the labour market and the condition of the agricultural sector. The tendencies which occurred in the rural development policy after Poland's accession to EU may be also important in the matter. However while the improvement in the agriculture condition and launching numerous structural programmes are facts, there is no agreement on the shape of the Common Agricultural Policy in the future.

### **3. Assessment of living conditions and health conditions of the rural population**

#### **3.1. Assessment of standards of dwellings**

One of the significant factors determining conditions of living of farming families is the standard of furnishings of the dwellings. Interview surveys conducted by IAFE-NRI in 2005 indicated that in general 80% of rural households were connected to a water supply system (while one out of five households had the water supplied by the water pump). 20% of the rural households were connected to water supply system and sewage system. In comparison to 2000 the

group increased by 7.5. During the period analysed the percentage of the rural residents having their houses connected to water supply system and sewage system as well as equipped with central heating increased (by 6.3 pp) also. In 2005 a significant percentage of the households surveyed (84.8% total) were equipped with bathroom and toilet, few households were equipped with their own wastewater treatment.

### **3.2. Equipment with durable goods**

The assessment of the durable goods in rural households indicated that numerous positive changes occurred in that field in 2000-2005. In 2005 91.4% (in comparison to 2000 the percentage increased by 16 pp) of farming families owned basic articles (that being refrigerator, TV, gas or electric cooker). One third of farming families (in the period analysed increase from 21% to 33.6% was noted) owned articles formerly regarded as luxurious (such as VCR, automatic washing machine, wired telephone). However there were farming families which owned goods rarely encountered in the rural areas (goods defined as luxurious). For instance farming households which owned together satellite dish, personal computer, mobile phone and video camera in 2000 constituted 0.6% and five years later 2.9% of the interviewees. The analysis conducted indicated that farming households were better equipped with durable goods than non-farming families. The amount of the equipment has been increasing proportionally to the size of the farm.

It must be emphasized that the importance of the abovementioned articles for the functioning of rural households has increased considerably in recent years. In particular it applies to the usage of a personal computer and the access to the Internet. The percentage of families owing personal computer increased from 9.7% in 2000 to 22.8% in 2005 (7.8% of rural families owing personal computer had the access to the Internet). Access to such devices is extremely important as it enables the exchange of information, better contact with the labour market, e.g. by applying new methods of working, and provides the user with numerous possibilities for education.

Taking in account the changes in the equipment of durable goods it may be assumed that their aspirations prove that striving for the rural families with high standards of living and goods of high value become widespread. It is difficult to assess whether the process of integration with EU or the civilizational progress account for positive changes in the rural areas. Certainly the changes revealed the increasing affluence of the rural families.

### 3.3. Access to the educational and healthcare institutions

One of the significant factors conditioning the standards of living in the rural areas is the availability of the educational and healthcare institutions. Interview surveys indicated that in 2005 elementary schools were located only in 44% of the villages surveyed while in 2000 the percentage increased to 49.4%. First of all this is the result of the educational policy<sup>27</sup> which rationalised distribution of the educational institutions accordingly to a local demands. Due to changes in the structure of educational system as well as demographic processes occurring in the particular parts of the country lower secondary schools were located only in 20% of villages. In case of 55% of the villages analysed the lower secondary school was located 5 km away from the villages. Furthermore due to the changes of the educational infrastructure (opening new units and liquidation of the old ones) the percentage of such villages increased by 8% compared with 2000. Invariably, the situation of students from lower secondary schools in the South-Eastern macroregion was definitely better. In 2005 just as five years earlier in the macroregion only in case of 33.3% of villages lower secondary schools were located more than 5 km away from the village. It should be taken into account that in the comparison with other regions this is the area with comparatively densely populated rural areas. The situation did not change in the South-West and Northern regions, however, there in 60% of villages the distance between a village and educational institution exceeded 5 km.

While assessing the standards of living conditions the importance of the availability of healthcare institutions is crucial. The improvement in the state of health of the population may be achieved only if the healthcare system is properly organised and offers treatment and as well as encourages preventing diseases. According to the data provided by CSO, in 2005 25.9% of medical care institutions were located in the rural areas and 22.2 % of total medical advices were given to the residents of rural areas. 17.3% of the total number of pharmacies in Poland were located in the rural areas.

In 2000-2005 the continuous increase of the number of pharmacies was noted therefore the number of persons per pharmacy decreased (the number decreased from 4.5 thousand in 2000 to 3.5 thousand in 2005). However in the period analysed the number of persons per pharmacy in the rural areas was

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<sup>27</sup> The aim of the action was to organise collective schools with quality equipment and highly qualified teachers. It is connected with the necessity of transporting children to schools from scattered small villages. Compare, Sikorska A.: „Przeobrażenia w strukturze społeczno-ekonomicznej wsi a proces włączania się Polski do Wspólnej Polityki Rolnej Unii Europejskiej. Synteza”, Research project No 1 H02C 035 28, IAFE-NRI, Warsaw 2007.

higher than in cities (in 2005 in cities there was 2.8 thousand persons per pharmacy while in the rural areas 5.6 thousands).

The improvement in the accessibility of pharmacies for the rural population was confirmed by IAFE-NRI<sup>28</sup> research, as in 2005 there were pharmacies located in 16.3% of villages surveyed while in 2000 only in 5.3%. The increase in the number of pharmacies and their more favourable location has already occurred in former years and it was caused by the privatization of the units.

The most significant problem for the residents of the rural areas is the accessibility of specialist medical care institutions. Difficulties are not caused by an inadequate number of such units but by their distant location. The data concerning the distribution of the medical care institutions in the surveyed villages indicated that the accessibility of such units decreased in 2000-2005. This situation occurred due to the concentration of the medical care institutions in the villages of considerable size. As a consequence the percentage of villages in which medical care units were located decreased (from 14.7% in 2000 to 13.1% in 2005) while the percentage of villages in which the distance between the village and the nearest medical care unit exceeded 5 km increased (from 45.3% to 47.4%)<sup>29</sup>. The concentration of medical care units in the villages of considerable size clearly worsened their accessibility particularly in villages from South-Western and Northern macroregions, however it also had a positive aspects as it determined improvement of the quality of the medical service.

### **3.4. Selected determinants of the health state of rural population**

Mass statistics data indicates that although the average life expectancy for Poles increases, it is still lower than that for the inhabitants of developed European countries. In the period analysed, the population's life expectancy increased. As regards women in the rural areas, in 2005 the life expectancy was 79.6 years – higher than in 2000 by 1.2 year. Women inhabiting rural areas lived 0.2 year longer than the average. Live expectancy for men in the rural areas during the same period increased by 0.9 year, nevertheless in 2005 men lived shorter than women by 9.3 years. The average life expectancy for men in the rural areas was also shorter than the national average. Equally disturbing are the

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<sup>28</sup> Compare, „Przeobrażenia w strukturze społeczno-ekonomicznej wsi objętych badaniem IERiGŻ-PIB w latach 2000-2005”, Research project No H02C03528, scientific supervision: A. Sikorska, IAFE-NRI, Warsaw 2006.

<sup>29</sup> Compare Sikorska A.: „Przeobrażenia w strukturze społeczno-ekonomicznej wsi a proces włączania się Polski do Wspólnej Polityki Rolnej Unii Europejskiej. Synteza”, Research project No 1 H02C 035 28, IAFE-NRI, Warsaw 2007.

results indicating high mortality rates among men aged 45-59. It shows the necessity for intensified prophylaxis, mainly among men aged 30-74.

It should be stated that premature fatalities in the population of Poland are most often caused by cardiovascular diseases and malignant tumours. Undoubtedly, nationwide health education, prophylaxis and health promotion are crucial measures which may, at least to some extent, contribute to disease prevention, early detection and successful treatment. Nevertheless, it should be stated that the population in the rural areas, apart from the factors having adverse impact on the state of health common to the whole population, in their everyday life and work additionally face numerous specific determinants<sup>30</sup>.

One of the features characteristic to a farmer's work is being, as only few other professions, exposed to the impact of meteorological and climatic conditions. Constant changes of temperature, insolation, air humidity as well as winds, have an influence on the functioning of human body. They cause changes in cardiovascular system, in contraction of blood vessels, heat loss etc. As regards women, they additionally have a variety of daily activities, which involves changes in the working conditions. For the majority of farming activities, such as field work and livestock rearing, working time is 10–12 hours. Moreover, it is irregular. This results in different meal times for persons engaged in farming, which leads to a negative energetic balance, an increasing state of tiredness and an overall immunosuppression. These phenomena are inevitably accompanied by a diminution in productivity and increasing accident rate.

Civilisational progress, apart from the incontestable positive effects on functioning of the social groups featured, entails numerous side-effects. In the rural conditions, technological progress led to many new threats to health and life of rural inhabitants: chemical plant protection, machinery and equipment for agricultural production, as well as other mechanical devices for everyday use. The influence of many of these modern threats is not immediately visible, but rather realised and assessed only through remote health effects. Cancers, as well as allergies (mainly to pollen or plant protection chemicals), neuroses, depressions, psychosomatic diseases and other diseases of civilisation increasingly occur among the inhabitants of rural areas.

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<sup>30</sup> Two extreme attitudes towards the issues of health and natural environment exist in Poland. One of these claims that all the negative phenomena in the health state of population result from the impact of the state of natural environment and the factors contaminating food, potable water and atmospheric air. In the other attitude, the responsibility for the worsening state of health is burdened on the behaviour and lifestyle of society. Nevertheless, it may be assumed that both these issues have vital impact on the health state of rural population, as it is in the whole society.

According to the National Institute for Occupational Safety and Health (NIOSH), in the US farmer is among the top ten most stress-inducing occupations<sup>31</sup>. Although the stress resulting from the economical situation of farmers is researched most often, other factors, which may lead to stress in this occupational group, are also indicated. Those are for example: unpredictable weather, time pressure, unpredictable events, government decision or even geographical isolation of farmers. The group of farmers highly vulnerable to stress are managers of agricultural holdings, because of their responsibility for the welfare of a holding. Particularly difficult is the situation of managers from two groups: the eldest, i.e. in a post-working age and the youngest. The first group mentioned is often characterised by both: lower physical fitness due to age, health state and other features, which causes some helplessness in the face of changes in the surroundings. In the second group of managers, on the other hand, the feeling of excess burden with responsibility for the future of a holding and with rather difficult chores connected with managing prevails. All the more when it is accompanied by the so-called “pressure of environment”, i.e. assessment and comparison of actions of young managers who took over their holdings as a result of unfortunate chance event, such as a father’s death. The abovementioned factors, causing persistence of stress for longer periods of time, may lead to behaviour visibly decreasing the level of work safety<sup>32</sup> as well as induce other health problems or even, in extreme cases, cause alcohol abuse<sup>33</sup>.

Civilisation changes happening in our country, including rural areas, enforce new tasks and measures, which must be faced by developing societies. Among them is the attitude of parents (not only a mother, but a father as well) towards children. Undoubtedly, family is the first internal school of work for every person<sup>34</sup>. This statement is even more accurate for the rural families engaged in farming. This aspect is partially connected with the educational impact of work, but it mainly entails the preparation for working as a farmer. Children, participating in agricultural activities, go through a specific vocational training.

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<sup>31</sup> After: Cież J.: „*Stres jako przyczyna wypadków przy pracy w rolnictwie w świetle literatury zagranicznej*”, materials from the XIV International Seminar of Ergonomics, Safety and Occupational Hygiene, Institute of Agricultural Medicine, Lublin 2007.

<sup>32</sup> According to the mass statistics of Central Statistical Office, in 2005 psychological and physical burdens were the cause of 9.8% of the registered work accidents in agricultural holdings. (Statistical Yearbook, CSO 2006, Chapter VI. Labour Market).

<sup>33</sup> See Wrzochalska A.: „*Ocena sytuacji materialnej i pomoc społeczna na wsi*”, [in:] „*Przeobrażenia w strukturze społeczno-ekonomicznej wsi objętych badaniem IERiGŻ-PIB w latach 2000-2005*”, Research Project no 1 H02C 03528, ed. by A. Sikorska, IAFE-NRI, Warszawa 2006.

<sup>34</sup> John Paul II: Encyclical „*Laborem exercens*”, Poznań 1981, after Lachowski St.: „*Uregulowania prawne dotyczące możliwości angażowania dzieci do pracy w rodzinnym gospodarstwie rolnym*”, Institute of Agricultural Medicine, Lublin 1999.

Engaging in activities, from the easiest to the most complicated ones, they learn how to perform them, whereas repeating the same or similar activities every year, they upgrade their skills. Through their own work and through the observation of parents, children gain also the theoretical knowledge. They become acquainted with the cycles, processes and technologies of agricultural production. Children's gaining knowledge and skills connected with farming happens naturally, through taking up new tasks, appropriate to age and capacities related to the development of a child. Nevertheless, despite these positive, educational aspects of children's work, other aspects are indicated. To enhance a child's development, not only appropriate studying conditions are provided, but also, as far as possible, recreation is organised, often contrary to local customs and opinions. These changes also result in diminishing participation of children in activities of agricultural holding<sup>35</sup>. Although generally in Poland the participation of children in activities of this type decreases, it is still locally signalled. According to research conducted by the Institute of Agricultural Medicine (IMW), a practice common in farming families is excessive engaging children in household and agricultural activities<sup>36</sup>. Apart from tasks appropriate for a child's capacities at particular age, relatively large part of the group surveyed was performing tasks which were dangerous or harmful to health. Performing such tasks, or even passive participation in them poses, above all, the health hazard<sup>37</sup>. The research by IMW demonstrated also a connection between the negative consequences of participation of children in agricultural activities and the state of their knowledge about the hazards of performing the tasks. The safety level may be influenced also by children's emotions accompanying the performance of tasks, including mainly the feeling of threat to health and even life. The analysis of children's feelings connected with performing agricultural tasks indicated that for a large part of the group of children surveyed<sup>38</sup> some tasks in a holding may pose a threat to their intellectual development. The research showed that about two-thirds of interviewees had the dilemma of whether to work or study. It is

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<sup>35</sup> See Wrzochalska A.: „Edukacja jako czynnik warunkujący poprawę sytuacji ludności wiejskiej na rynku pracy”, [in:] „Ekonomiczno-społeczne problemy rozwoju zrównoważonego”, v. II, edited by G. Karminowska, Akademia Rolnicza w Szczecinie, Szczecin 2007.

<sup>36</sup> Lachowski St.: „Poczucie zagrożenia u dzieci w związku z wykonywaniem prac w rodzinnych gospodarstwie rolnym”, materials from XIV International Seminar of Ergonomics, Safety and Occupational Hygiene, Institute of Agricultural Medicine, Lublin 2007.

<sup>37</sup> According to estimations about 2% of accidents during work in agricultural holdings concerns children aged 15 and less. (Basing on CSO data – the total number of accidents during work in agricultural holdings in 2005 and the statistics of KRUS Agricultural Social Insurance Fund – each year there is about 1,400 notifications of accidents with children aged 15 and less).

<sup>38</sup> Children from farming families in Lubelskie voivodeship were surveyed (998 students from 5<sup>th</sup> and 6<sup>th</sup> grade in 21 schools in rural areas).

difficult to generalise the abovementioned opinions and clearly assess to what extent they are objective. Nevertheless, it may be assumed that still, locally, excessive participation of children in agricultural holding's tasks is considered by them as a threat, not only to their education but also to their health.

Nutrition has among other factors a significant impact on the health of society. The dynamics of changes in the rural population's consumption in the analysed period indicates a number of changes in the food products consumption. Among changes in the structure of food consumption in the period analysed those positive for health were: an increase in consumption of vegetable fat, poultry and fruit and decrease in consumption of animal fat and sugar. Negative changes include decrease in consumption of vegetables, milk and dairy products, as well as the maintaining low level of fish consumption<sup>39</sup>.

An important health problem of rural population comprises also their negative sanitary habits; it applies not only to the personal hygiene but also to the state of the surroundings. Rural areas still constitute a major source of groundwater and surface water pollution, due to leaking cesspools and pouring wastewater over fields or directing it into rivers and ditches, as well as degrading landscape with solid waste<sup>40</sup>. Pouring wastewater over fields or into different kinds of ditches is often widely accepted in rural areas; frequently this is the only way of removing it. What may also be frequently observed in the rural areas is disposing of refuse in forests and on roadsides or storing it on illegal landfills. Not as severe, but also a vital problem of rural areas is water. The provision of villages with water mains and sewage network increased in the analysed period, both nationwide and in particular macroregions. These positive changes were mainly conditioned by aligning Polish legislation with EU requirements, which was conducive to further amelioration of water and wastewater management in the rural areas. The process of building sewage network and wastewater treatment plants was relatively advanced, mainly due to the implementation of the SAPARD programme, from which the majority of resources was allocated in the development of these elements of rural infrastructure. Despite the overall increase in potable water supply for rural population, a seasonal deficit of water occurred more often in many villages from the group surveyed and the residents were forced to bring it from elsewhere.

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<sup>39</sup> See Gulbicka B., Kwasek M.: „Wpływ globalizacji na spożycie żywności w Polsce” [in:] „*Ekonomiczne i społeczne uwarunkowania rozwoju polskiej gospodarki żywnościowej po wstąpieniu Polski do UE*”, conference materials, IAFE-NRI, Warsaw 2007.

<sup>40</sup> See Wasilewski A.: „*Stan i zmiany w infrastrukturze technicznej*” [in:] „*Przeobrażenia w strukturze społeczno-ekonomicznej wsi objętych badaniem IERiGŻ-PIB w latach 2000-2005*”, Research Project no 1 H02C 03528, ed. by A. Sikorska, IAFE-NRI, Warsaw 2006.

All the aspects of rural population's health are very complex, as they comprise not only hygiene, health care, prophylaxis and nutrition, but mainly they are concerned with the culture, living and working conditions of the rural environment. Other factors, such as individual immunity and genetic predispositions, can not be ruled out. Nevertheless, the matter of health education of rural society, enveloping all the issues signalled, appears to be most important. Health state and predispositions of society support other processes determining progress and socio-economical development of the country, e.g. educational achievements.

### **Summary and conclusions**

- The conducted analysis of the socio-demographic structures constitutes a valuable source of information about economic transformation of the rural areas. The characteristics of the socio-economic structures for the most part result from the specificity of the economic transformations as well as the course of economic developments.
- The gender structure of farming families is conditioned by socio-economic characteristics of particular regions. In the areas where gainful employment was common, women constituted a slightly larger part of the group analysed relatively than in a typically farming areas in which women were less engaged in farming activities.
- The assessment of changes of the socio-economic structure of rural areas proves that socio-economic features, in particular age and level of education, considerably impact the development of rural areas as well as the improvement of living conditions of rural population.
- On the basis of the analysis conducted it may be assumed that further increase of the percentage of young people postponing marriage or remaining single will negatively affect the number of marriages and the birth rate.
- The analysis of the level of education of farming population indicated that the percentage of people with higher education is the highest in the regions where economic activity of population is not only associated with traditional farming but mostly with paid employment. The situation occurred mainly in South-Eastern macroregion and South-Western macroregion. The possibility of finding an employment in non-agricultural sectors in rural areas as well as the aim of migration contribute to improvement of the level of education of young people.

- Cities offer more jobs, especially for people with higher education while in the rural areas payments as well as standards of living are lower. For that reasons people migrate from rural areas to cities as well as abroad.
- Demographic analysis of the emigrants from the rural areas indicated that they were mainly young well-educated people. Nine out of ten people leaving rural areas in 2005 were in mobility working-age, six out of ten had at least secondary education. More frequently the migrants were female both of farming and non-farming families. They were better educated than men which resulted in relatively high level of education of emigrants. It must be emphasised that the phenomenon of migration from rural areas to cities is not a novelty in Polish society, as it occurred during the time of the partitions, during both world wars and also in the second half of 20<sup>th</sup> century. Presently the phenomenon of migration, in particular migration to foreign countries, is a complex issue as it must be analysed in the context of macro-economic and macro-social situation as well as from the point of view of the community left by the emigrant and the emigrant himself.
- Analysis indicated that the most significant factors which hampered mobility of rural population were: high prices of apartments, expensive costs of living in cities as well as a fear of unknown, in particular a fear of leaving abroad.
- High level of education positively influences economic activity of members of both farming and non-farming families. Better educated farmers use more effectively the production assets while in general well-educated people taking off-farm jobs are more flexible and easily adjust their skills to the demands of the labour market which results in achieving relatively higher incomes. IAFE-NRI research concerning socio-demographic characteristics of farm managers and people who conduct non-farming economic activity confirms the abovementioned thesis.
- Analysis of the level of education of farm managers and the incomes obtained from agricultural activity indicated that the average income per one farm in case of farm managers with higher education was over two times higher than the income of farm managers with elementary education. Research also indicated that there is a relationship between the level of education and the size of a farm (farm managers with higher education on average had farms nearly by 70% larger on average than farm managers with only elementary education).
- The know-how must be passed to farmers as quickly as possible. By drawing a rational conclusion from the information provided farmers

may enhance their competitiveness on the global market. Investments in education and in activities enhancing qualifications are necessary. Such investments may facilitate development of industry branches which base on human factor. This will eventually lead to increase of living conditions and payments.

- Undertaking further school education, extramural education and informal training is, to a great extent, dependant on the level of education already obtained. Well-educated persons more often decide to develop their qualifications. Therefore it may be stated that there was a growth in awareness of the necessity of developing qualifications and obtaining further education. Education has its impact on personality, improves the ability of acquiring and interpreting the information and provides motivation for further progress. Continuous and systematic studying is the important factor in the increase of labour productivity and positively affects other aspects of life such as health and life expectancy. It also a determinant of human welfare.
- Disproportion in the incomes of the population of farming families and non-farming families results from the fact that the latter group comprises mainly of pensioners. For 35.5% of non-farming rural families surveyed the retirement and disability benefits are the main source of income whereas in the case of farming families this share is 20.7%.
- Farm managers constitute a particularly important group among rural communities, as they have a direct influence on the agricultural production and thus decide about the future the agriculture. Commonly in this group men dominate. They manage around 80% of the farms in Poland.
- The assessment of the socio-demographic features of farm managers proved that the group is characterized by fairly favourable age structure i. e. mainly small share of people of post-working age. The highest percentage of young farm managers was noted in the Central-Western macroregion whereas the highest percentage of the oldest farm managers was noted in the Central-Eastern macroregion. The education of farm managers in 2005 was slightly lower than the education of the total population of farming families (lower by 1.7 pp the percentage of people with secondary, post-secondary and higher education).
- In general the analysis conducted proved that the farm managers from macroregions, which are associated with the most advanced agriculture are characterized by a more favourable socio-demographic structure than farmers in other rural areas.
- Nearly as many as one out of ten of individual farms in Poland were managed by a person in the retirement age. IAFE-NRI research shows that in

2000-2005 territorial diversity of the share of farms managed by people in the retirement age in macroregions did not change. They constituted the highest percentage in the South-Eastern macroregion (13.7%) and the lowest in the Central-Western macroregion (4.2%).

- The analysis of the source of income of the rural families indicated that farms managed by people in the retirement age play mainly social functions. People living in these farms obtained income mostly from non-agricultural sources (mainly the retirement and disability benefits).
- According to data collected by IAFE-NRI nearly as many as one of five individual farms in Poland was managed by a person who did not exceed the age of 35. While interpreting the phenomenon it should be taken into account that the pace of generational changes in Polish agriculture is strongly influenced by historically conditioned and spatially diversified socio-economic structures. In that case more important changes might have been caused in short time by noticeable factors such as re-organisation of the pension system, the shape of agricultural policy or generally the economic condition of the country.
- Young farm managers, although relatively do not constitute a numerous group may significantly influence the situation of Polish individual farming. It is often emphasized that young people are more active and dynamic, ready to take a risk and they easily adapt for changes. Encouraging young farmers to take over farms may be the chance for the development, the improvement of the living standards of their families as well as the functioning of the whole agricultural sector. It seems that, it is the young generation raised in the conditions of the market economy, which may facilitate and improve the activities aiming at modernization of the agricultural holdings, since apart from being more flexible usually they are properly qualified.
- In 2000-2005 the positive changes concerning the equipment with certain elements of technical infrastructure and durable goods in the rural areas were noted. However, the disproportion between particular groups of rural and urban families remains.
- Taking into account the standard of durable goods used by rural families it may be assumed that their aspirations prove that striving for the high standards of living and goods of high value become widespread. It is difficult to assess whether the positive changes were result of the process of integration with EU or the result of the civilisational progress occurring the rural areas. Certainly they were an evidence of the growing affluence of the rural families.

- Assessment of rural population's health is a complex matter, since not only hygiene, health care, prophylaxis and nutrition must be taken into account, but also factors such as culture as well as living and working conditions of the rural environment. Other factors influencing rural population's health, such as individual immunity and genetic predispositions, cannot be ruled out. Nevertheless, the matter of health education of rural society appears to be crucial. It arises from the fact that health state and predispositions of society are conditioned by the adequate appliance of prophylaxis.
- Properly organised healthcare system offering successful treatment and encouraging disease prevention may contribute to the improvement in the state of health and the elongation of life span of rural population.
- Changes in the socio-economic situation of the rural areas are multi-directional. In 2000-2005 the social and demographic changes were noted in particular groups of farming families yet noticeable changes appeared in the fields of educational and labour activity, and transformation of surrounding environment.

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