



INSTITUTE OF AGRICULTURAL  
AND FOOD ECONOMICS  
NATIONAL RESEARCH INSTITUTE

***Regional differentiation  
of agricultural development  
and its impact upon  
economic and social  
problems of rural areas***

***(Synthesis)***

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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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(Synthesis)***

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The authors and the researcher  
of the Institute of Agricultural and Rural Economics  
– National Research Institute (IERiGŻ-PIB)

This report is a part of the research topic

**Regional differentiation of agricultural development and its impact upon economic and social problems of rural areas**

in the following tasks:

*Factors behind marginalisation and competitiveness in the social and economic structure of Polish rural areas after the EU accession*

*Scope and consequences of differentiation of farm functions in regional perspective*

*Role of non-farming activities in shaping new structures in rural areas*

*Institutional factors of social and economic development of rural areas*

*Highly commercial farms in family farming*

*Analysis “The agricultural land market”*

The main objective of the present paper has been to describe structural changes in agriculture and in rural areas that are taking place in Poland after its accession to the European Union, and the determinants of those changes.

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## 1. Preliminary remarks

When embarking in 2005 on implementation of the Multi-Annual Programme entitled “Economic and Social Factors Conditioning Polish Food Economy Development after Poland’s EU Accession”, the Institute of Agricultural and Food Economics (IAFE) approached the issues of regional differences in structure of Polish agriculture and rural development as separate research topics. These fields were studied taking into account the social and demographic factors as well as the discrepancies in economic features of Polish agriculture.

The analyses were conducted at the level of macro-regions, poviats, gminas and rural housing developments, taking into consideration the features of individual agricultural holdings, as well as the economic activity of agricultural population, including the activity of persons not involved in agriculture. The research also covered the infrastructural environment, including especially the institutions working towards local socio-economic development.

In line with the research topics explored, the main objective of the majority of studies was to grasp the changes taking place within rural social and economic structures, and to determine the principal factors shaping the transformation processes observed. In this context, special interest was given to the impact of integration of Poland into the European Union, and to the influence of specific rural and agricultural support programmes implemented under the Common Agricultural Policy. Bearing in mind the historically conditioned differences between regions in their problems in rural development, in macro-regions distinguished within the country the main focus was placed on assessing structural transformations, taking place in specific territories, paying special attention to the improvement in competitiveness of Polish individual holdings, advancement in the processes of diversifying the livelihoods of rural populations, and acceleration of civilisational development in the countryside. The research also highlighted the role of institutions in promoting entrepreneurship and supporting economic initiatives undertaken for local development.

The reference materials used for analysing individual issues were derived chiefly from own field research.

Especially the data from the 2005 survey of the representative sample of approximately 8 thousand rural households (including approximately 3.7 thousand households comprising a holder of an individual agricultural holding) and from the interviews conducted within rural gminas were employed. Furthermore, the available general statistical data was used, mainly from the Central Statistical Office (GUS) and Eurostat, yet in many cases, in order to deepen the analyses, some additional, unpublished data were ordered.



In accordance with the Multi-Annual Programme schedule, the research, having such a broad thematic scope, was divided into the following six research tasks:

- factors behind marginalisation and competitiveness in the social and economic structure of Polish rural areas after the EU accession;
- the scope and consequences of differentiation of farm functions in regional perspective;
- the role of non-farming activities in shaping new structures in rural areas;
- institutional factors of social and economic development of rural areas;
- highly commercial farms in family farming;
- “Agricultural land market” analysis.

On the basis of analyses conducted and studies prepared, 45 concise publications (reports), mostly of a monographic character, were published, as well as approximately 180 articles in economic and agricultural periodicals; also 160 of lectures were given at national and international conferences and Institute seminars.

The presented publication covers principally the main issues analysed within the framework of individual research tasks. The material provides a comprehensive basis for identifying the most important problems of agricultural and rural development from the point of view of transformations in the agrarian structure, the economic strength of agricultural holdings, and regional factors determining transformations in rural social and economic structures aimed at enhancing their efficiency.

We hope that reading our Synthesis, entitled “Regional differentiation of agricultural development and its impact upon economic and social problems of rural areas”, will encourage the reader to become acquainted with other reports of our team, prepared within the framework of Multi-Annual Programme (their list is at the end of this publication).

*Alina Sikorska*

## **2. Factors behind marginalisation and competitiveness in the social and economic structure of Polish rural areas after the EU accession**

### **2.1 Introduction**

In highly developed countries, agriculture retains its significance, though it is not the leading sector of economy. Rural areas, however, account for the major portion of territories of such countries and, consequently, remain an important determinant of social and economic policy, whereas rural development is increasingly reliant on the activity of local entrepreneurs and on gaining external financial resources.

At the same time, EU enlargement with new member states creates opportunities for enhancing the competitiveness of European agriculture on global markets, making it possible to stabilise rural areas as a whole, and thus contribute to improving the welfare within the entire European Union. To attain these targets it is necessary for support programmes under the Common Agricultural Policy to take greater account of the needs of new Member States, most of which have to eliminate development gaps separating them from the EU-15 countries.

Rural environment is undergoing constant changes, becoming in effect a part of general national economy, integrally connected with the rest of society. Apart from the systemic changes brought about by the transition of Polish economy, the EU accession also had an impact on social and economic position of rural population, which had to adjust to the new living and working conditions. Putting the CAP principles in practice resulted in a new situation for Polish farmers, a situation characterised by an increased competition, the necessity to introduce new production methods and technologies, and the need to maintain sustainable development. However, Polish farmers were also given an opportunity to obtain support in the form of direct payments or under programmes launched within the framework of CAP.

In this context, one of basic issues relating to rural and agricultural development in the recent years, and also the main subject of analyses, consisted in examining the degree of adjustment of human potential to the challenges posed by market economy. It involved in particular determining and analysing the factors having fundamental influence on contemporary development processes.

The scope of research on these issues, carried out in the years 2005-2009, included the changes in demographic processes as well as in social and professional structures of the population. The principal aim of the research was to diagnose the scale of disproportion in civilisation level of rural areas, and to indicate regions where the development process was particularly lagging behind. The analysis also covered some issues relating to human capital in rural areas – defined chiefly as social and economic activity of the population living in agricultural holdings. In addition, the research showed that rural areas are underdeveloped and they lag behind in terms of technical infrastructure and equipment of households in durables.

The level and regional differentiation of financial support that Polish farmers received under the CAP in the first years after the EU accession was also investigated.

The research conducted allowed for establishing the main factors provoking marginalisation or increasing competitiveness of this environment after the EU integration. It was determined that they result not only from the demographic and social situation and living conditions in the countryside, but principally from a change in the quality of human capital in Polish agriculture. This notion usually designates a set of individual characteristics such as: predispositions, state of health, knowledge, abilities and skills. In the face of growing competitiveness in agriculture, both on local and global levels, the success on the market is relatively more easily achievable for persons who are active, willing to take risk, and professionally prepared to conduct agricultural activity. In the present paper, the measure of human capital quality was the level of education (general and agricultural) of managers of agricultural holdings and the frequency with which they used advisory services. Then, the relation between these factors and the performance of holdings was examined. For the purposes of establishing this relation, an eta-square coefficient was calculated. The research material used to prepare the study comprised of the data from GUS for the years 2005-2009 and the results of questionnaire research carried out in 2005 by IAFE-NRI among 8604 families, 3705 of which had agricultural holdings of utilised agricultural area of more than 1 ha. The families participating in the research lived in 76 villages situated in diverse regions of the country. The selection of villages where the research was conducted was purposeful and representative in nature, and was made in function of social and economic characteristics and agrarian structure of agricultural holdings situated within the regions distinguished. All the families living in the villages chosen participated in the questionnaire. The reference points for determining the dynamics of changes occurring were the results of research conducted on a similar group in 2000.

## 2.2 Demographic and social changes in rural areas

### Changes in demographic structure of the countryside

According to the data from GUS, in 2008, rural areas were inhabited by approximately 38.9% of Poland's population, that is, by 14.8 million people. In comparison to 2000, the number of inhabitants living in these areas rose by nearly 215 thousand (that is, by approximately 1.5%). At the same time, the total number of Poland's inhabitants decreased by 0.4%, that is by approximately 138 thousand. After Poland's accession to the European Union, namely after 2004, rural population increased by approximately 95 thousand, while the overall number of the country's inhabitants fell by almost 58.2 thousand. Despite the increase in the absolute number of rural inhabitants in the years 2004-2007, their percentage share in the total population rose very insignificantly.

According to the data from GUS, in 2007, similarly to 2004, there were 101 women for every 100 men living in the countryside. Therefore, rural areas were characterised by a gender balance, by contrast to the cities with 111 women for every 100 men. The gender balance concerned the rural population in its entirety, yet certain differences were observed in individual age groups.

Similarly to the urban population, the predominance of men was visible in younger age groups. In the case of rural population, the predominance of women started in the 55-59 age group, whereas in the case of urban population this phenomenon was noticed as early as in the 35-39 age group.

As a result of the longer life expectancy of women than men on average, the feminisation ratios were substantially more elevated than in older age groups. In 2007, in the countryside there were 143 women for every 100 men in the 70-74 age group, whereas among the persons over the age of 80, the analogous ratio was as high as 229.

A positive aspect of demographic changes in Poland is the constant rise in life expectancy. In 2008, in comparison to 2000, women's life expectancy increased by 2 years, and men's – by 1.1 years. In relation to the previous years these ratios were even higher. For instance, in comparison to 1995, women's life expectancy rose by 3.6 years, and in the case of men – by 3.7 years. However, changes in the future life expectancy of rural and urban populations are not expected. It is estimated that women born in rural areas in 2008 will live 80.2 years on average, whereas men – 71.3 years.

From the perspective of impact of demographic conditions on the country's economy, both the age structure of the population as a whole, as well as changes in the proportion between persons in the productive and non-productive age groups are important.

In 2007, the number of inhabitants in the pre-productive age in rural areas amounted to 3.4 million, which accounted for 44.7% of Poland's population in this age group. The share of persons in the pre-productive age in the total rural population was 23.8%, which means that since 2004 this age group had shrank by 1.9 percentage points, and since 1995 – by 7.0 percentage points. Despite a decrease in the proportion of children and youth, Polish countryside population was still characterised by a greater share of this age group in comparison to the cities.

The fall in percentage of persons in pre-productive age was mainly attributable to the decrease in fertility rate of women, both from the countryside and from the cities, observed since the beginning of transition.

In the years 1995-2008, the overall fertility rate decreased by 28%, while in the years 2004-2008, a 9.1% rise in this ratio was observed (to the level of 1.5 child per woman). A decline in the share of persons below the age of 18 in the total number of inhabitants, both in the countryside and in the cities, observed in the recent years was a consequence of reaching the productive age by persons born at the beginning of the 80., that is, during the demographic boom.

In 2008, almost 9.3 million people in the productive age lived in rural areas, which means that in relation to 2004 their number rose by 434 thousand (that is, by 4.9%). Compared to 1995, this was an increase by 1,171 thousand (that is, by 14.5%). With a rise in the number of persons in the 18-59/64 age group also the share of this group in the total number of rural inhabitants increased (by 7.5 percentage points in the years 1995-2008, and by 2.4 percentage points in the years 2004-2008).

In 2008, the number of inhabitants in the post-productive age amounted to nearly 2,3 million, which constituted approximately 37% of Poland's population in this age group (Table 1).

In 2008, the share of persons in the age group 60/65 and above in rural population was nearly 15.5%, which did not differ significantly from the analogous percentage in the urban population (almost 16%), and was similar to the proportion registered in rural areas in 1995 (15.4%), and in 2004 (15.5%).

When assessing the impact of demographic characteristics of the population on economic conditions, usually the demographic burden rate is used, indicating how many younger persons, that is, below the age of 18, and older persons, that is, in the age group of 60/65 and older, there are for every 100 persons

in the productive age. In 2008, for rural areas this rate equalled 60, which means that since 2004 it had fallen by 6 points, and since 1995 – by 22 points. The decrease in the burden of persons in the non-productive age was a result of the rise in the number and percentage of persons in the productive age observed in the recent years.

Table 2.1 Number of inhabitants in the productive and non-productive age in Poland in the years 1995-2008 (in thousands)

Specification	1995	2000	2004	2008
Total number of inhabitants				
cities	23.876	23.670	23.470	23.288
countryside	14.733	14.584	14.704	14.848
Including in the countryside:				
in the pre-productive age	4.372	4.026	3.601	3.349*
in the productive age	8.092	8.277	8.829	9.263
in the post-productive age	2.269	2.281	2.274	2.287*
Number of persons in the non-productive age for every 100 persons in the productive age				
cities	64	58	52	52
countryside	82	76	66	60

\*data for 2007.

*Source: own development on the basis of data from the 2005 and 2008 Demographic Yearbooks and the 2009 Concise Statistical Yearbook prepared by GUS.*

The demographic burden rates calculated for the population living in the countryside were higher than in the case of the cities (52 in 2008), which implies that throughout the entire period analysed the burden caused by persons in the non-productive age was lesser in the cities than in the countryside. The disparities in the abovementioned rate between urban and rural areas were attributable to the differences in the percentage of persons in productive age. In 2008, the share of persons in the age group 18-59/64 in the cities amounted to 65.8%, and it was 3.4 percentage points higher than in the countryside.

When broadening the analysis of data provided by GUS and concerning the age and gender of rural inhabitants, taking into account the questionnaire

data from IAFE-NRI, it is worth noticing the differences between the characteristics of persons from families having agricultural holdings and those from non-farming families.

In 2005, people living and working on farms were slightly younger than those from non-farming families, as illustrated by a 4-percentage-point smaller fraction of persons in the post-productive age in the former group.

The questionnaire circulated by the IAFE-NRI revealed considerable differences in the demographic burden rate between the population from farming families and that from non-farming ones. In 2005, the demographic burden rate on farming families amounted to 59.4 and was lower by nearly 11 percentage points than the rate observed in non-farming families.

The research by the IAFE-NRI revealed that despite the gender balance observed in rural areas, the in farming families there were less women than in the non-farming ones. In 2005, for every 100 men there were 97 women in the farming families, and 104 women in the non-farming ones. The research showed that in the regions where agriculture is the dominating source of employment (the central-western and central-eastern macroregions) the number of women was lower than in the areas where the non-farming activities have been widespread for many years (Southern Poland).

### Changes in spatial mobility of rural population

Poland's accession to the European Union contributed to changes in the migration processes, especially as regards the intensity of this phenomenon and the directions of migration flows. The rural areas were also affected.

Population flows have an impact on the size and social as well as professional structure of rural population. There are three types of flows: migration, flows related to modifications of the administrative division, and changes in social and professional status that are not connected with physical movement of people.

According to questionnaire research conducted periodically by IERGŻ-NRI, in the years 2000-2005, in 76 villages located in various regions of the country, a minor increase in the migration of rural populations was observed, as compared to the years 1996-2000. A greater number of migrants originated from families running agricultural holdings of utilised agricultural area of more than 1 ha than from families without agricultural holdings.

In both groups, an increase in migration to other rural areas and a significant rise in foreign migration were observed. On the other hand, a decline was

observed in migration to the cities, which nevertheless remain the most frequent migration destination of rural population.

The members of farming families most often embarked on individual migrations, whereas a characteristic feature of movements of persons from non-farming families was the migration of entire families.

The questionnaire materials also provide grounds for determining the scale of inflow of people to the villages studied, which has been relatively stable since the half of the 90. As a rule, the comparatively largest influx of immigrants is directed towards the group of non-farming families. In the years 2000-2005, the places of the immigrants' previous residence were usually located in other rural areas.

Traditionally, the migrants were characterised, in the context of the entire population surveyed, by a relatively younger age and, consequently, a relatively higher level of education. If we were to analyse the education structure of mobile persons, without taking into account the quantitative changes, we could conclude that no disproportion was observed between the education level of persons leaving rural areas and those arriving in rural areas. A comparatively high percentage of young persons among migrants should be linked with the fact that it is usually the young, who have completed education and are beginning their professional activity, who find it the easiest to make a decision to migrate.

As to the gender criterion, it should be stated that women more often than men left rural areas, and especially the farming families. Yet, men slightly more frequently than women made up a group that moved into the surveyed villages, especially the group joining non-farming families.

The agricultural holdings of a small area were relatively most often affected by migration, regardless of its direction. Nearly a half of interviewed persons, leaving the farming families, originated from agricultural holdings of utilised agricultural area of no more than 5 ha.

An important factor influencing the flow of people are the changes in their social and professional status, resulting from: purchase or sale of land, broadening the lease or sub-lease of land, acquisition or transfer of land by way of dividing land among family members. The fact that a half of all the emigrants from the farming families and one third of emigrants from the non-farming families did not change their place of residence, but only their social and professional status, indicates that these processes were of a relatively considerable importance.

The social and professional mobility is connected with the transformations taking place within rural communities. In the years 2000-2005, similarly to the preceding periods, a common trend in the rural areas consisted in a decrease



in the share of farming families contrasted with an increase in the number of families without a holder of an agricultural holding. Thus, relatively most often social and professional mobility consisted in the change of status of rural population - from farming to non-farming.

The persons arriving in agricultural holdings had a comparatively higher level of education and were relatively younger than the emigrants from these agricultural holdings. This fact did not contribute, however, to improving the education and age structure of managers of agricultural holdings because only some of new members of farming families took on the function of a manager of agricultural holding. In addition, the position of the manager of agricultural holding was more often occupied by men than by women, who are usually better educated than men.

### **2.3 Changes in the quality of human capital in Polish agriculture**

#### Characteristics of human capital in agriculture

As follows from the data provided by the IAFE-NRI, in the years 2000-2005, a process was observed consisting in the improvement of human capital quality within the group of farmers studied, measured by the level of formal general and agricultural education and by the frequency of using advisory services (Table 2.4).

A slight increase in the percentage of persons with agricultural qualifications acquired at school, as compared to the previous study (from 23% to 24%), was accompanied by a significant improvement in the level of general education. The percentage of managers of agricultural holdings with secondary and higher education increased (by 6 and 2 percentage points, respectively). The improvement in the quality of general education among persons running agricultural holdings should be attributed to the influx into agriculture of young people whose qualifications were getting better. It could thus be stated that the persons studied were adapting increasingly effectively to the changing situation on the labour market, and that the chances for employment in non-farming sectors were rising, which, however, does not alter the fact that still too few owners of agricultural holdings have specialist professional qualifications, which poses an obstacle in meeting the challenges involved in effective absorption of support under the national and EU agricultural policy, and in making use of scientific and technical progress.

Table 2.4 Percentage breakdown of holding managers in function of education and the frequency of collaborating with advisors

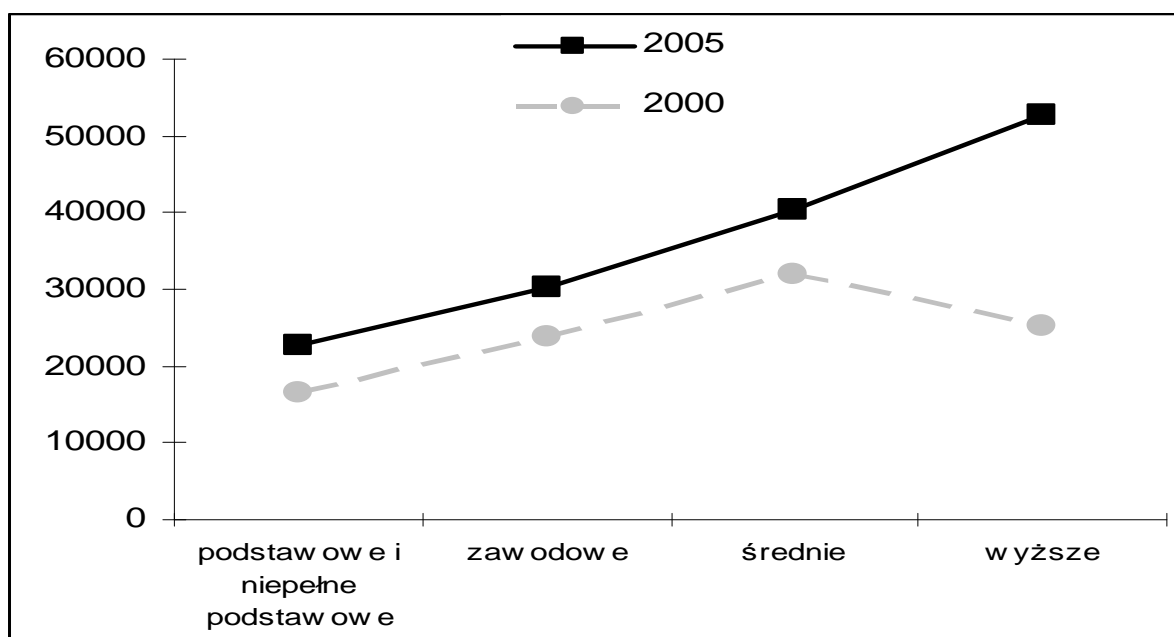
Specification	2000	2005
general education		
primary and incomplete primary	36.1	26.6
vocational	45.6	46.0
secondary	15.8	22.3
higher	2.5	5.1
agricultural education		
school-based	23.0	24.3
training-based	27.0	19.5
none	50.0	56.2
collaboration with advisors		
steady	5.9	5.7
temporary	11.3	22.2
none	82.8	72.1

*Source: own development on the basis of the questionnaire circulated by the IAFE-NRI in 2000 and 2005.*

The inclusion of Polish agricultural sector under the CAP mechanisms brought about the necessity to strengthen the initiative in the field of adapting to the new conditions for conducting agricultural activities. On the other hand, a demand was created for knowledge and skills useful in designing and implementing modernisation processes in production units, and in making use of social measures as well as of measures for supporting income and environment protection. An increase in the demand for specialised information is documented, among others, in the results of research by IAFE-NRI. In the years 2000-2005, the percentage of farmers temporarily using agricultural advisory services doubled (from 11% to 22%).

In addition, a positive correlation was observed between the economic performance of agricultural holdings and the level of education (agricultural and general) of the persons studied. The above is also true for the frequency of using advisory services (Charts 2.1-2.3). The highest values of average commercial production were observed in the group of owners of agricultural holdings who had school-based agricultural education (PLN 61 thousand) and higher general education (PLN 53 thousand), as well as in the group of persons using advisory services (PLN 138 thousand) on regular basis.

Chart 2.1 Value of commercial production in individual agriculture and level of education of holding managers



PL	EN
podstawowe i niepełne podstawowe	primary and incomplete primary
zawodowe	Vocational
średnie	Secondary
wyższe	Higher

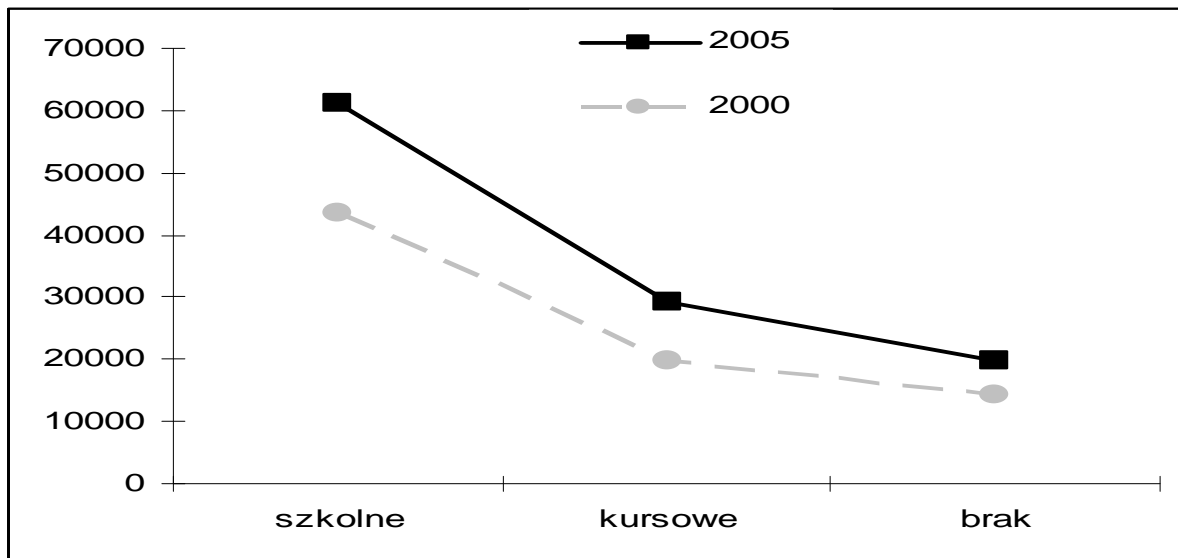
correlation between the scale of commercial production and a farmer's general education year 2005: eta square = 0.010; p = 0.000; year 2000: eta square = 0.014; p = 0.000;

Source: own calculations on the basis of the questionnaire circulated by the IAFE-NRI in 2000 and 2005.

From among the variables selected for the research, it was the variable indicating how frequently the holding manager cooperated with an advisor that was most tightly correlated with the scale of commercial production (eta square = 0.130).

Taking into account the still limited popularity of advisory services (72% of respondents did not cooperate with an advisor at all) and the relatively low level of education, it should be stated that the quality of human capital in domestic agriculture remains insufficient and requires further investments. This is possible thanks, *inter alia*, to the EU rural development policy for the years 2007-2013.

Chart 2.2 Value of commercial production in individual agriculture and level of agricultural education of holding managers



PL	EN
Szkolne	school-based
Kursowe	training-based
Brak	no agricultural education

correlation between the scale of commercial production and a farmer's agricultural education: year 2005: eta square = 0.047;  $p < 0.000$ ; year 2000: eta square = 0.071;  $p < 0.000$ ;

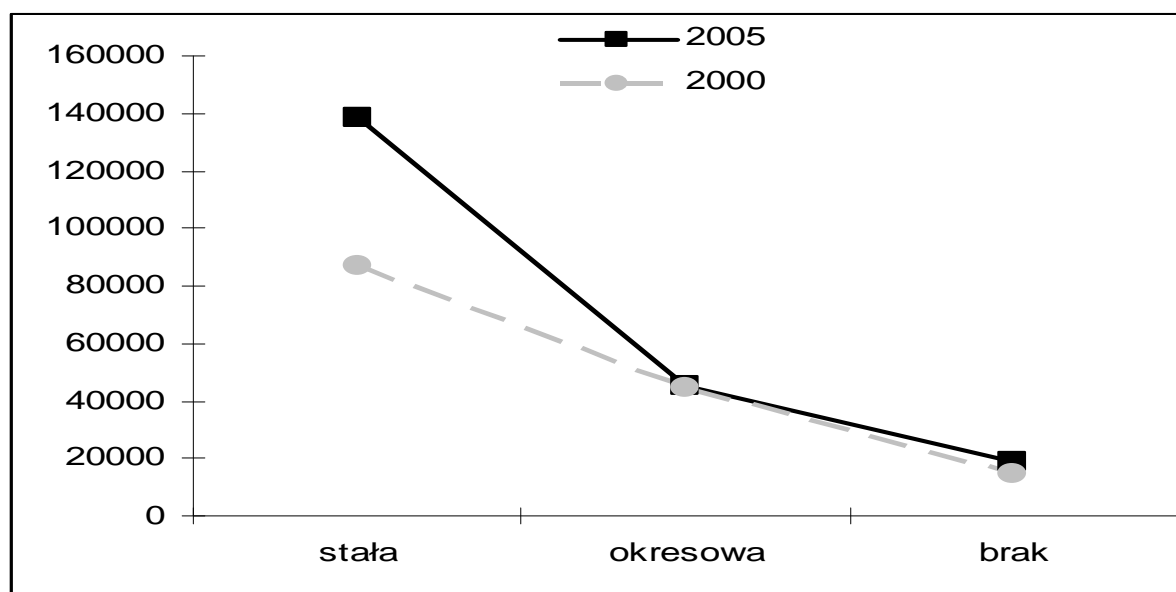
*Source: own calculations on the basis of the questionnaire circulated by the IAFE-NRI in 2000 and 2005.*

### Changes in the quality of human capital, by generation

A growing importance of social and demographic characteristics of a population in establishing the determinants and results of economic activity provokes a description of the population of holding managers with division into generations. This issue is crucial from the point of view of the needs and progress as regards the transformation of agricultural structures in Poland. For this purpose, the data taken from the questionnaire research by IAFE-NRI and concerning two groups of farmers, namely the retired and the young, was analysed.

By means of specific agricultural policy measures, targeting agriculture and rural areas, the European Union and individual countries take actions to encourage professionally active persons with agricultural education to become farmers. Indeed, it is universally believed that young age and high qualifications positively affect the development potential and economic performance of agricultural holdings. Financial support for young farmers, early retirement pensions, trainings or advisory services are to strengthen and adjust human potential in the agricultural sector.

Chart 2.3 Value of commercial production in individual agriculture and frequency of collaborating with an advisor



PL	EN
Stala	on regular basis
Okresowa	on temporary basis
Brak	none

correlation between the scale of commercial production and the frequency of working with an advisor: year 2005: eta square = 0.130;  $p = 0.000$ ; year 2000: eta square = 0,178;  $p = 0.000$ .

Source: own calculations on the basis of the questionnaire circulated by the IAFE-NRI in 2000 and 2005.

As follows from the questionnaire prepared by IAFE-NRI, every tenth individual agricultural holding in Poland is managed by a retired person. In contrast to agricultural holdings run by young farmers, the units held by retired persons were the most numerous in the areas with agriculture characterised by fragmentation and traditionality (the south-eastern macroregion including the Małopolskie, Świętokrzyskie, Podkarpackie and Śląskie voivodeships), and the least frequent in the areas where agricultural holdings usually performed well economically (the central-western macroregion, that is, the Wielkopolskie and Kujawsko-Pomorskie voivodeships).

The data concerning assets, human resources and production performance suggested that the holdings of retired persons often lacked market orientation. It is indicated by, among others, a considerable share of units without any output (31%) in this group, and by a relatively low value of average commercial production (PLN 16 thousand) (Table 2.5).

The majority of units held by retired persons could therefore be categorised as subsistence agricultural holdings. These holdings constituted mainly

a place of residence and source of supply in agricultural products for the holder and their family or served as a means of increasing the family's income.

Two thirds of farmers from this group were the persons receiving pensions from the Social Insurance Institution (ZUS), which allowed them for continuing small-scale agricultural activities in order to supplement their income. Most persons from this group planned to maintain agricultural activity. Only in the holdings that were relatively stronger in the economic terms and produced commercial production on a larger scale handing over the function of holding manager was usually a matter of the nearest future, and in most cases the successor was already appointed.

Table 2.5 Selected data concerning particular groups of agricultural holdings

Specification	Holdings	
	of retired persons	of young farmers
Surface (in ha of utilised agricultural area)	4.6	10.3
Commercial production (in PLN)	16,285	39,172
Holdings without any commercial production (in %)	30.9	8.3
Labour input (AWU)	1.03	1.52
Labour input per 1 ha (AWU/ha)	0.22	0.15
Commercial production per 1 ha of utilised agricultural area (ha/AWU)	2434	3478
Commercial production per 1 AWU (PLN/AWU)	10,886	23,575
Investments in fixed productive assets (in %)	17.1	44.4
Collaboration with an advisor (in %)	11.8	33.8
Lack of inventory (in %)	46.6	28.7
Lack of tractors and agricultural machinery (in %)	41.0	18.2

*Source: own calculations on the basis of the questionnaire circulated by the IAFE-NRI in 2000 and 2005.*

As follows from the questionnaire distributed by IAFE-NRI, nearly every fifth individual holding was managed by a young farmer. Young farmers were usually men who took over their holding from a family member. Despite the fact that they prevailed significantly over the older holding managers in terms of education – 44% of young farmers had secondary and higher education, only 6% of the respondents had gained their professional qualifications at school.

The holdings of young farmers were larger in terms of surface, less effort-consuming and more efficient than the holdings ran by retired persons. These units modernised their productive assets, conducted investment activities and used credits more often than other holdings. All this meant that many young farmers intended to strengthen the position of their holdings on the agricultural market. Nevertheless, it does not alter the fact the holdings of young farmers did not form a homogenous group as regards the scale of commercial production. In some of these holdings, the scale of commercial production was rather small, or there was not such production at all, most often when the young farmer worked outside the holding. Holding land could have been beneficial because of the possibility to obtaining own food products, high annuities from the land possessed, and after the accession to the European Union – the possibility to receive direct payments.

## **2.4 Summary**

Rural human resources are an important capital and development potential since rural areas account for nearly 40% of the population. The population tied to agriculture has become considerably younger in the recent years. The proportion of the youngest persons (that is, in the age of 15) has grown. Despite the fact that only 37.7% of Poland's population in the productive age lived in rural areas, the overall increase in the size of this group of population in the recent years was attributable mainly to the rural population.

The absorption of persons with higher education that is lower in the countryside than in the cities, worse remunerations and generally poorer living standards are among the most important reasons behind the migration of rural population to the cities and across the borders of the country.

The analysis of demographic features of emigrants from rural areas indicates that after the accession to the European Union migrants were usually young and well educated. Nine out of ten persons leaving rural areas in 2005 were in the mobile productive age, and six out of ten persons had completed at least secondary education. In the case of both farming and non-farming families, more often it were women who left rural areas, and since women were better educated than men, the emigrants' level of education was relatively high.

Due to their young age, the emigrants are characterised by the highest fertility rate, thus the scale of emigration affects the number of births in rural areas. The decline in the number of persons in the productive age upsets the proportion between the employed and unemployed. If the group of migrants is dominated by either of the sexes, it may have an impact on the process of entering into marriages. Nonetheless, migration from the countryside may be beneficial for rural areas from the point of view of a gradual decrease in the overstaffing in agriculture. Migrations are often an effect of a better use of labour in agricultural holdings, that is, of excluding the abundant workforce from agricultural production. Moreover, it should be borne in mind that a part of these persons will return with higher qualifications and greater experience, and that financial transfers to their places of origin may contribute to improving the living conditions of their families, intensifying investments in their holdings or taking up non-farming activities.

In the current situation when human capital is playing an increasingly prominent role in shaping the development processes within the economy, education is gaining importance both as regards the general transformations in the environment inhabited and in the individual aspect as it determines a person's prospects on the labour market and their chances for satisfying their professional and cultural aspirations.

For many years, there have been significant disproportions in the education of the populations of rural and urban areas, yet in the countryside, in the same way as in the cities, the educational aspirations are rising. In 2007, similarly to the previous years, rural areas, as compared to the cities, registered a nearly two times lower percentage of persons with at least secondary education and nearly three times lower percentage of persons with higher education.

The fact that women from rural areas give birth to more children than women in the cities means that the parents from the countryside are more burdened with childcare responsibilities. Even though the rural families are less numerous than years before, the relationship of the contemporary parents from the countryside (both mothers and fathers) towards their children is marked with aspirations reaching far beyond the agricultural profession. Indeed, the involvement of children in working in the agricultural holding has decreased. The children are provided with conditions appropriate for studying, investments in their development are made, and as far as possible their leisure time is ensured, contrary to the common belief.

The principal sign of a change in the attitudes and aspirations of the members of rural families are the actions undertaken with the view of improving the



family's current and future living conditions. It translates, *inter alia*, into a concern about the future generation.

The results of research imply that in the years 2000-2005 there was an increase in the quality of human capital in the group of farmers surveyed, measured by the level of education – general and agricultural, and the frequency of using professional advisory services. In the period studied, in the overall number of managers the most dynamic increase was observed in the share of persons having secondary and higher education and temporarily using agricultural advisory services. The analysis of data confirmed the existence of a positive, though weak, relationship between the variables representing human capital and the value of commercial production of the agricultural holdings studied. Among the variables selected to be used in the study, the strongest influence on the scale of commercial production was exerted by the frequency of collaboration between a holding manager and an advisor. Considerable differences in average values of agricultural production sold were noticed between the groups distinguished in function of the level of education (general and agricultural) and the frequency of using advisory services. The data cited does not change the fact, however, that Polish agriculture is still characterised by an insufficient level of human capital (level of education, participation in the training system) and a mismatch between the needs and resources in this respect.

At the same time, it has to be taken into account that the young generation raised in the market-economy conditions might introduce several important and positive changes to the actions aimed at modernising agricultural holdings because, apart from the ability to adapt relatively more effectively to the new economic reality, young persons usually have the appropriate qualifications. In agriculture, as in the entire economy, the human factor is gaining importance as regards providing development stimuli. Presently, not only the typically professional knowledge matters, but also broad preparation in the domain of managing a holding or employing new technologies. Better educated persons find it significantly easier to function in the shifting market conditions, which also requires the ability to find information and use it.

In 2005, similarly to five years earlier, almost 20% of the population participating in the IAFE-NRI study was tied to agricultural holdings of young farmers. The population from this group was characterised by a better demographic potential than the persons from other units, the aging process being observable in both groups. The educational progress revealed to be a positive phenomenon and is beginning to perform a vital function in stimulating rural development.

The interest of young people in the agricultural profession and in consequence maintaining a favourable age structure among holding managers will undoubtedly depend on many different determinants: macroeconomic trends, situation on the domestic labour market, but also the state of the agricultural sector itself. An important role may be played by the tendencies which revealed in the policy regarding rural development after Poland's accession to the European Union. It chiefly relates, on the one hand, to the improvement of business outlooks for agriculture and the availability of numerous structural programmes, and on the other hand, to the uncertainty as regards the future shape of the CAP.

A growing competition and frequent changes of the situation on agricultural markets require relatively broad knowledge, skills and participation in training systems. The possibility to invest in human capital in agriculture by means of diverse instruments is provided by the EU and domestic rural development policies for the years 2007-2013. The analysis of expenses financed from the EAFRD in individual Member States showed that in the years 2007-2013 Poland allocated the comparatively highest amount of resources for the realisation of measures aimed at strengthening human capital. The ratio indicating the intensity of support to the policy instruments intended to enhance human capital in Poland was 17%, while the average ratio for EU-27 was 7%. Such an elevated value of the ratio in question was connected with the important role within the Polish EAFRD ascribed to the measures directly relating to the improvement in the domain of human capital (primarily by means of the early retirement programme). The support to the instruments directly strengthening human capital in agriculture (trainings, advisory, diffusion of information) remained low, though, and remained at a level similar to the EU average.

### **3. Scope and consequences of differentiation of farm functions in regional perspective**

#### **3.1 Introduction**

According to universal definition of agricultural holding and of agriculture, the standard functions of agricultural holding include: rational use of land, water and climate; production of agricultural raw materials and of food, especially in the form of commercial production, but also in the form of self-supply of households in food; production of agricultural raw materials; providing the population working in agriculture with an income comparable to that of people engaged in non-farming activities; protection of natural agricultural environ-

ment; and satisfying the requirements of a viable holding, which under the EU directives is understood as the ability to restore the production potential, and to invest in innovations in production and its structures.

The functions of agricultural holdings are evolving faster than the mentality and culture of farming population. The view by Władysław Grabski, expressed in 1930, seems to remain cogent: “The countryside is consistently differentiating and assimilating at the same time. Work as a process was, next to own land, a foremost value. Farmers are usually individualistic and separatist. This way, a character type was shaped which is reluctant to change, conformist and not very flexible. The primary rule in running a farm was to minimise the risk and ensure self-efficiency, not to maximise profit. A farmer became a vegetative consumer, not an enterprising producer.”

The heritage of agricultural population – in the form of mentality and culture described above – is in contrast with the current situation which requires practically all persons involved in agriculture to change the traditional pattern. The above applies in particular to households making rational use of agricultural holdings, aiming to accumulate land and specialise production, as well as to introduce innovations in techniques and technologies. On the other hand, for the majority of agricultural holdings unable to restore their production potential, the basis of economic subsistence is connected with employment in non-farming sectors and with leasing land (holdings) to neighbours having or creating viable agricultural holdings. In other words, today’s reality requires that a vast part of agricultural population changes occupation.

### **3.2 Description of the situation in agriculture**

Polish agriculture maintains its ability to ensure to the entire nation food security and self-efficiency, understood as an import-export balance of trade in agricultural raw materials and food. Despite the fact that during the 20 years of transition Poland has experienced relatively long periods when the farmers’ income earned from working in agricultural holdings constituted only a half of the country’s average remuneration from employment, and although this income has always been considerably lower than the country’s average, agriculture kept the strength necessary to supply the market and food industry with the amount of agricultural raw materials and food matching the demand.

Throughout the entire transition period, Polish agriculture preserved high environmental quality of the agricultural raw materials and food produced. The degree of chemicalisation in Polish agriculture has not resulted in exceeding the food contamination standards. Owing to sufficient supply and good quality of

agricultural raw materials on the one hand, and to the high effectiveness of industry processing agricultural raw materials into food, including products facilitating the preparation of meals, on the other hand, the entire food economy gained strength. During the last five years after Poland's accession to the European Union, the export of agricultural and food products has risen from EUR 4.0 billion to EUR 11.3 billion, and import – from EUR 3.6 billion to EUR 9.8 billion. The increase in the net export of agricultural raw materials and food has become a symbol of rational development of the entire food economy, though the main driver and beneficiary of this development has been the food and agricultural industry.

Characterised by excessive fragmentation, making limited use of export refunds (applicable to some agricultural raw materials), exposed for many years to unfavourable price scissors, and being under competitive pressure from agriculture of some EU Member States on the one hand, and on the other – facing too weak dynamics in internal demand for food products, Polish agriculture failed for several years to increase the volume of global and final agricultural production, and it reduced production in some segments.

The production of cereals surpassed its domestic use only four times over the last 20 years, and during 16 years Poland was a net importer of cereals. Poland decreased its production of fodder plants, potatoes, strawberries and tobacco. During the last 20 years, Polish agriculture reduced its cattle population from the level of 11-13 million to 5 million animals, the sheep population – from 5.0 to 0.35 million animals, the pig population – from the level of 20-22 million to 14 million animals, and the production of milk – from the level of 15-16 billion litres to 10-11 billion litres. Poland has not managed to create basis for horsemeat production.

The changes in the level of agricultural production have been reflected in the level of food consumption. The yearly consumption of milk per capita fell from approximately 280 litres to 170 litres (which might be causing the increase in the incidence of osteoporosis), and of beef – from 16 kg per capita to approximately 4.0 kg per capita per year. Beef was replaced by poultry meat, even though which, however, is not a good equivalent of beef. Poultry meat contains half the amount of aminoacids which are not produced by the human body but are indispensable to optimal nutrition.

The daily consumption of animal proteins in grams in Poland is expressed by a ratio of 50.1 gram per one inhabitant. The standard consumption in the EU Member States of the Western Europe is at the level of 60-77 grams per cap-

ita per day. Only Bulgaria and Romania have a lower consumption of animal proteins.

The extrapolation of the trend consisting in changes of prices of agricultural products, and the trend towards changes of prices of agricultural production means, especially of energy and services, give grounds to believe that the agricultural holdings of the area of 8-16 ESU, which have a share of 145 thousand in the overall number of 245 thousand viable holdings, will find themselves in an increasingly difficult economic situation. Many of these holdings will face the dilemma whether to limit the income dedicated to consumption or whether to resign from restoring the entire production potential. Only the holdings with a current economic strength of above 16 ESU will maintain the income parity with the income of the population engaged in non-farming activities. Such a situation might last until the yearly GDP rises by 4.5-5% per year, that is, until 2014 or 2018.

Also the growth tendency in the number of viable holdings is at risk, despite the increase in average area payments per one holding. Within the entire EU funds, the share of resources for early retirement pensions fell by 50% in the years 2007-2013 in comparison to the years 2004-2007, which renders the structure of spending the EU funds for agriculture unfavourable.

Animal production is likely to be affected, since large holdings avoid broadening their activities in this area, mainly due to the fact that increasing the input in plant production is more profitable than investing in animal production. Holdings of small utilised agricultural area which do not have an opportunity to increase plant production also lack the resources to invest in developing animal production. Holdings that are not viable and holdings with economic size of 8-16 ESU are not competitive in livestock farming. They are too short of funds to create stocks sufficiently numerous to achieve the threshold of viability.

An increase in the employment rate in Poland, and a gradual rise in the income of the population might contribute to boosting the demand for food. It may be assumed that it will concern, *inter alia*, animal products, which in turn might have a limited but considerable importance for agriculture.

Apart from domestic determinants, also the global situation will affect the demand for food. An exceptionally fast economic development of Asian countries with very large populations (China, India, Vietnam, Indonesia) on the one hand, and the growing deficit of water for agriculture (due to the climate change) in many parts of the world, including Asia in Africa, on the other hand, support the hypothesis that the world will suffer from a growing acute and serious shortage of agricultural raw materials and food. For the countries in the

moderate climate zone, including Europe, such situation will create new opportunities for marketing considerable amounts of agricultural raw materials and food. In such circumstances, the relation of food prices to the prices of non-food products might change in favour of food products. It should be envisaged, though, that this process will develop slowly.

### **3.3. Factors determining the increase of the role of viable holdings in Polish agriculture**

A representative census of agricultural holdings conducted in 2007 by GUS provided a basis for estimating that 245 thousand of agricultural holdings achieved the criterion of economic size expressed by the 8 ESU indicator which means that in comparison to 2002 this group increased by 30 thousand, that is, each year there were on average 5 thousand more holdings fulfilling the viable holding criterion. Hence, it may be assumed that in 2010 the number of holdings satisfying the 8 ESU requirement, that is, the minimum criterion for considering a holding as viable, will arrive at a value by 10 thousand higher than in 2007, and will reach approximately 260 thousand units.

It should be added that the net increase in the number of viable holdings depends to a considerable extent on the scale of support, such as, for instance, early retirement pensions for farmers who will transfer a specified amount of land to enlarge their neighbours' viable holding.

Viable holdings clearly comprise of two groups differing in the income condition. Approximately 110 thousand holdings of economic size exceeding 16 ESU constitute a group relatively immune to sudden changes on agricultural markets (in terms of prices and supply). A different situation can be observed in the sub-group of holdings of economic size between 8 and 16 ESU, which still are very easily affected by market conditions. These holdings require the State to conduct cautious taxation and pricing policies.

It seems reasonable to develop a programme for starting animal production in holdings of an economic size surpassing 16 ESU. Such holdings have the potential to establish farms producing fattening cattle, or pigs or sheep, or even horses for horsemeat. Most of these farms can expand their production on the basis of their own resources and using credit.

The sub-group of viable farms of the size of 8-16 ESU should activate the concentration and production specialisation processes, triggered by the requirements of food industry, which expects the supply of standardised agricultural raw materials in large amounts.

An issue of particular importance for further development of agricultural holdings is the ability of agricultural services to help farmers create supporting programmes for their holdings.

In the majority of rural areas, both viable and marginal holdings can be distinguished among all the holdings. The situation is favourable as the holders of marginal agricultural holdings, who depend on non-farming livelihood and decide to lease their land to neighbours, have no problem finding parties to such transactions. There are some voivodships, though, where the network of viable holdings is not dense enough to stimulate concentration of agricultural land.

The above is true for the four eastern voivodships, but some poviats of the Mazowieckie, Łódzkie, Małopolskie and Opolskie voivodships are also affected.

In the sub-regions specified above, the advisory services should identify a certain number of households using agricultural holdings and comprising persons interested in employment in agricultural professions. This group should receive support in transforming their agricultural establishments into viable units which will lease or purchase their neighbours' agricultural land.

The major role of viable holdings in improving agrarian structure should be encouraged by legal provisions on land lease. A new special act on leasing neighbours' land is crucial.

In the face of inevitable concentration processes in agriculture, the social and economic development of rural areas will rely more and more heavily on finding the ways to stimulate economic activity within the population which is not to be employed in agricultural holdings. The above applies not only to non-farming rural population, but first of all to persons associated with holdings from the so-called marginal group.

An agricultural holding may, thus, be marginal not only from the point of view of commercial production. It may be marginal in terms of social needs of persons living in the household. In the past, due to market shortages, part time farmers who supported their income with non-farming activities would invest their money earned outside agriculture into their holding; nowadays, such a situation is rare.

Increasing the possibility of rural population finding non-farming employment is essential, not only for reducing rural unemployment, but also in order to give impetus to agrarian changes. A multifunctional rural development in the Polish context should be a process receiving special support, especially if we assume, after the European Union, that in 2020 at least 64 persons out of every 100 in the productive age will be employed.

### 3.4 Summary

In all the regions (NTS-1 regions) a process takes place, and should continue, of gradual elimination of marginal, non-viable agricultural holdings, which ensure neither the employment for farming families nor the income comparable to that of people employed outside agriculture. This process will be possible only when the situation on the labour market ameliorates, which will allow for increasing the non-farming employment of rural population. The countryside of the future should be in 75% populated by persons employed outside agriculture and in 25% – by people working in agriculture. It may initially be estimated that the overall demand for new non-farming workplaces in the upcoming several years will amount to 1.5-2.0 million.

It should be underlined that the demand for new workplaces is highest in regions characterised by considerable agrarian fragmentation, that is, mostly in such voivodships as Podkarpackie, Świętokrzyskie or Lubelskie, rather than in such voivodships as Wielkopolskie, Dolnośląskie or Opolskie.

It may be predicted that the target model for Polish agriculture will consist in assimilation to the French model of post-family-managed agriculture, based chiefly on commercial companies. France envisages that after 2020, 40% of agricultural holdings will form commercial companies the shares in which will be inheritable. For Poland, such a state will be achievable in 2030.



## **4. Role of non-farming activities in shaping new structures in rural areas**

### **4.1 Introduction**

In the research on socio-economic processes occurring in rural areas growing attention is devoted to non-farming factors that influence the forming of new structures. It is so because of a process, which has been observed for several years now, whereby rural population abandons farming activities and takes up gainful employment. The scale of these transformations is illustrated, among others, by a regular increase in the proportion of families having an agricultural holding whose main livelihood is constituted by non-farming income, and in the percentage of non-farming families which do not have land at all or exploit parcels of utilised agricultural area of less than 1 ha.

The share of non-farming families in the population of rural households has been on the rise for several years, contributing to strengthening the role of this socio-economic group in development of local communities.

In the period before 1989, the population from non-farming families, due to its educational structure and employment in non-farming sectors of economy and, consequently, its relatively high social status, often led a lifestyle characteristic of city dwellers. Income stability resulting from employment in the non-farming branches of economy, employee benefits, contribution into the development of social life in the countryside, and the status of “rural intelligentsia” caused this socio-economic group to become the driver of change in the quality of life in the countryside, and of progress in levelling the development differences between urban and rural areas.

Economic difficulties during the transition period, as well as growing unemployment, significantly affected rural population, especially the non-farming families, as reflected by a decrease in economic and social status of non-farming families. Even in small units the fact of owning an agricultural holding became extremely important, as a holding ensured a basic living standard for a family. This situation contributed to a rise in hidden unemployment, yet it allowed the rural families to survive the difficult period on the labour market, thanks to the income from agricultural production, often supplemented with earnings from temporary employment.

Also the structure of non-farming economic activities in rural areas implies that the standing of rural entrepreneurs who owned an agricultural holding was better. Frequently, the land held or some buildings belonging to the holding were used for a non-farming activity, making it easier for farm owners to start

their own business than it would be for those without a farm. Having own holding, on the one hand allows for reducing the initial expenditure on leasing/constructing the premises (often also on purchasing the machinery) for the purposes of economic activity, and on the other hand, it gives a sense of a lower risk involved in potential failure of the enterprise. Moreover, Common Agricultural Policy instruments supporting entrepreneurship are addressed exclusively to farmers and members of their families, which is intended to promote the diversification of activities by means of creating alternative sources of income.

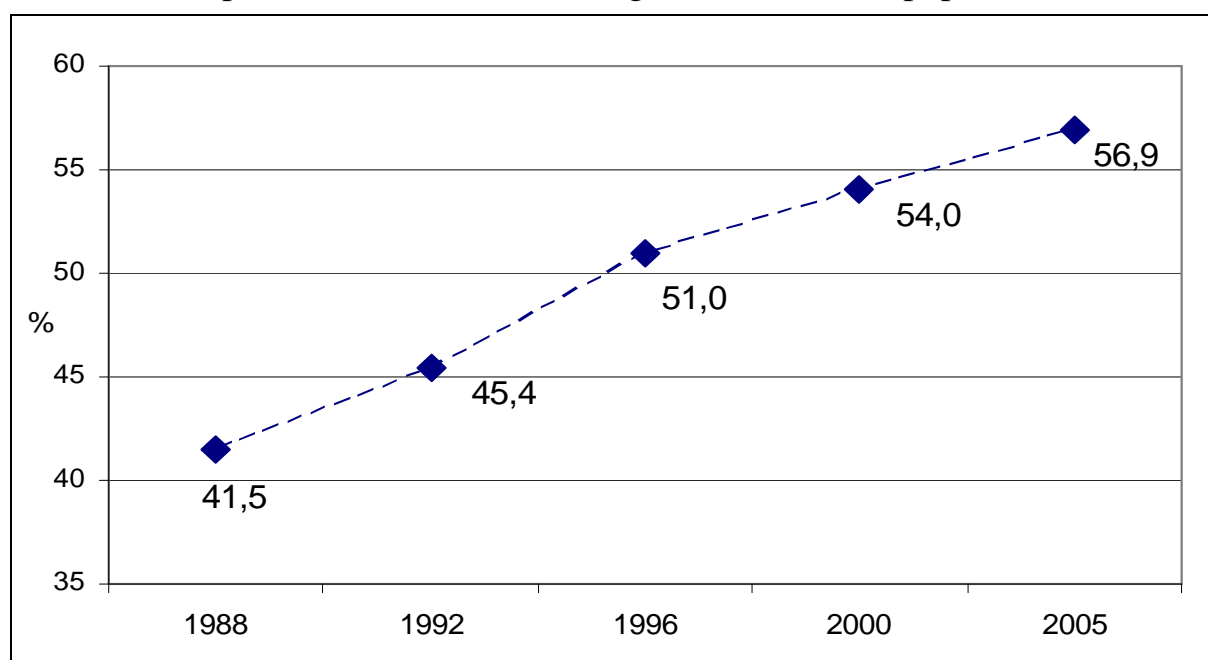
Households of persons who are not users of an agricultural holding already constitute more than a half of rural households, and their number is slowly, yet steadily, rising. The future increase in the size of this group will depend mainly on the situation on off-farm labour market, as well as on the living standards, and on older farmers ceasing economic activity.

#### **4.2 Non-farming population in the structure of rural community**

It follows from the research by IAFE-NRI that in the recent several years the share of families without agricultural holdings in the overall rural population has been systematically increasing. In the group studied in 2005, the number of non-farming families was higher by nearly 3 percentage points than five years earlier. The basic feature of this process was the abandonment by rural population of farming activities and its professional activation in other sectors of economy, or its withdrawal from production due to reaching the retirement age (Graph 4.1).

The research confirmed that despite the rise in the number of non-farming families in all the macroregions, important regional differences remained as regards the scale of this process. Over five years, the number of non-farming families was increasing the fastest in the south-eastern and south-western macroregions. In comparison to 2000, the former saw a rise in the number of non-farming families by almost 4 percentage points, while the latter – by 2.5 percentage points. Whereas in the decade of 1996-2005, the greatest increase in the number of rural families not exploiting land occurred in the northern macroregion (a surge by over 14 percentage points). This area has for years distinguished itself with a high proportion of rural inhabitants not associated with family farms. In the past, such situation resulted from the existence of large clusters of State agricultural holdings in this area.

Graph 4.1 Share of non-farming families in rural population



Source: questionnaire by IAFE-NRI in 1988, 1992, 1996, 2000 and 2005.

Changes in the share of non-farming families in rural community should be linked especially with the fact that nowadays the sense of uselessness in agriculture is becoming increasingly widespread, which is in turn related to the economic necessity to seek new livelihoods.

The scale of changes in the division of rural families in function of the criterion of owning an agricultural holding did not have an impact on regional specificities in this respect. Such polarisation of families was more distinct in western and northern parts of the country, while in eastern and southern parts it was less significant.

### 4.3 Characteristics of enterprises operating in rural areas

The possibilities for development of entrepreneurship in rural areas offer an actual means of improving the living conditions of rural communities, provide an important source of income, but also contribute to reducing hidden unemployment in agriculture, and therefore have a positive influence on the concentration processes in agriculture.

Development of rural entrepreneurship has a remarkable impact on the transformations in economic structure of rural populations, and it determines the economic potential of a given area. Taking this fact into account, an attempt was made to study the phenomenon of creating and developing non-farming economic activity in rural areas.

A characteristic feature of the villages studied was their localisation away from urban agglomerations and infrastructure facilities (main communication and transport routes), which had a considerable influence on the size of the market within which the businesses operated in terms of space.

An analysis of the research material collected in the surveyed villages revealed 638 functioning business entities, which meant that there were approximately 8 entities on average in every village.

As far as the average number of enterprises operating in one village is concerned, the northern and the south-western regions had the highest number of companies – ten enterprises on average. Such results may be explained by a large percentage of non-farming population living in these areas. In these regions the ratios of the number of business entities per one farming family were highest (0.32 and 0.27, respectively) in comparison to 0.17 in the entire group studied. This reflects the global macroeconomic situation in the country with the division into individual macroregions, which may suggest that entrepreneurship remains closely correlated with the level of local development.

Rural enterprises are strongly connected with the features of the region in which they operate, and the activities of the majority of them were undertaken in response to local needs and with the view of satisfying local demand, as indicated by the analysis of entities and types of activities they conducted. From among the business entities from the villages examined, 47% were conducting trading activities, over 38% were providing services, and only 10% were involved in production.

The entities engaged in trade predominantly chose the types of activities that did not require great financial input or special warehouse surface in order to be launched (for example, selling gas cylinders). The trading units included mainly convenience shops, which are widespread as they may be located in the farm or residential buildings already owned. Apart from trade, the most often chosen direction of non-farming business activity was the provision of diverse services of general interest. The majority worked in renovation and construction, transport, vehicle repair, or rendered hotel and catering services. Only every tenth rural enterprise covered by the study was engaged in production (which in principle is most capital-consuming), mainly of construction materials, furniture and food.

Over 68% of the businesses surveyed operated chiefly on local markets (village, neighbouring villages, gmina). The territorial scope of activities of only slightly above 13% of undertakings covered a powiat, and of only nearly 7% – a voivodship. Almost 8% of the companies had a nationwide reach, and only 4% of the entities operated internationally.

It was also observed that there were considerable differences among the enterprises studied as regards the scale of activities in function of entity type. 61% of entities operating on local markets conducted trading activities. The largest share in the powiat (54.1%), voivodship (53.7%) and national (54.1%) markets was taken by service-providing units. Production companies, on their part, were the most active entities in foreign trade.

Having analysed the scope of operations of business entities surveyed, one may conclude that this scope is related with the activity conducted. Trading enterprises, whose activities are almost exclusively aimed at satisfying the basic living needs of rural population, usually operate on local markets. Local demand for services and finished products is too weak, however, to ensure profitable operation of entities from these sectors – because of a highly limited area. Therefore, with the view of maximising profit, service-providing businesses are targeting customers from the entire country. Managing production units, on the other hand, requires both a significant financial contribution and professional qualifications from persons taking up activities of this kind. In consequence, the majority of relatively large establishments conduct production activities often reaching beyond the borders of the country.

Table 4.5 Structure of economic entities in function of range of operations

Macroregions	Percentage of entities in function of range of operations				
	village, neighbouring villages, gmina	powiat	voivodship	country	international
Total	68.4	13.3	6.4	7.5	4.4
Central-western	66.2	9.9	8.4	12.7	2.8
Central-eastern	64.1	19.6	6.7	6.7	2.9
South-eastern	71.8	7.8	7.0	9.2	4.2
South-western	67.4	13.5	5.6	2.3	11.2
Northern	76.1	8.3	4.2	8.3	3.1

Source: Own calculations on the basis of the questionnaire by ZPSiR, IAFE-NRI from 2006.

The enterprises are usually owned by locals. It follows from the research that in the case of 80% of companies situated in the villages surveyed, the person running the business lived in the closest vicinity, and that over three quarters of these entities operated no further than within the territory of their gmina.

The structure of rural population was dominated by persons in the productive age. Many of them engaged in a gainful occupation, and some were employed in rural economic entities. Thus, creating new workplaces for persons populating the countryside is such an important element of the multifunctional rural development. The research showed that over 83% of businesses functioning in rural areas had employees, and nearly a half of entities in this group offered from 2 to 5 workplaces. It should be emphasised at this point that additional workplaces were created mainly in the units owned by persons from outside of the village where the business was operating. On the other hand, people living and conducting their activities in the surveyed villages most often employed one person, usually a family member. Making use of family labour resources by persons running business in their own village is usually informal, unregistered and, consequently, relatively cheaper.

The level of technical infrastructure, which is lower than in urbanised areas, and the specificity of the local market are the reasons why small enterprises significantly reduce their operating costs by using the assets of their holdings and households.

The above has been confirmed by results of the research, which showed that nearly 47% of owners of non-farming economic entities operating in rural areas were owners of agricultural holding, proves that the real property was used for the purposes of non-farming activities. Area structure in this case was dominated by small holdings (almost 85% of these holdings had a utilised agricultural area of less than 10 ha).

Some differences have been observed in terms of area of the holdings: in the central-western macroregion most persons conducting business activities were also owners of farms with the area of 10.00-19.99 ha. In the central-eastern, south-eastern and southern macroregions, self-employed persons were most often owners of small holdings with the area of from 1.00 to 2.99 ha. The northern macroregion was characterised by the greatest share of persons simultaneously conducting economic activities and owning land of utilised agricultural the area of 5.00-9.99 ha, which, it should be stressed, largely reflects the agrarian structure in individual parts of the country.

In general, a relatively large group of rural entrepreneurs pursued non-farming economic activities using their household buildings (nearly 77%). Such exploitation of buildings contributes to a better use of tangible assets

owned, and at the same time it reduces the cost of activities conducted since it eliminates the necessity to rent buildings or to construct facilities for the purposes of economic activity.

Local character of the activities undertaken by rural enterprises is often connected with the non-business functions performed by the entrepreneurs. In the villages studied, over 40% of the owners actively participated in the social life. In regions having a strong tradition of entrepreneurship (for example, in the south-eastern parts of the country), the proportion of persons managing business entities and engaging in local life amounted to as much as 70%. The most widespread form of social activity was providing material support to cultural and sporting events (holiday festivities, competitions), helping schools (co-financing trips or meals in school cafeterias) and local organisations such as the Volunteer Fire Brigades (co-financing the purchase of equipment). The owners of entities operating in rural areas also offered various forms of support to social initiatives (for instance, cleaning the village).

The development of small and medium enterprises in rural areas might, to a limited extent, bring about the multiplier effect. While the number of small businesses will be on the rise in areas close to large agglomerations, which is connected with the process of suburbanisation and migration of urban populations to suburban areas, in typically rural areas the number of functioning companies will depend principally on local demand for goods and services. Furthermore, it may be claimed that the development of rural entrepreneurship will rely to a considerable extent on exogenous factors, relating mainly to the development of infrastructure, availability of support for investment activities of businesses, and reduction of administrative barriers faced both by those willing to start economic activities and by the enterprises already in business.

The research carried out let us conclude that the impact on the development of entrepreneurship in rural areas is heavily reliant on the policies implemented on local level, which is connected with relatively high confidence of local communities in local government bodies of gminas, linked with the belief that the Gmina Office is a central unit shaping local development.

Local government units as well as informational and advisory institutions functioning in the immediate environment of a village play an important role in informing inhabitants of the countryside on the possibility of establishing and managing one's own business. Apart from direct actions contributing to the development of rural enterprises (for example, advisory and information services), local government bodies of gmina and powiat have an influence, through investments, on the level of technical infrastructure that stimulates local economic growth, which in turn is conducive to the increase in the number of businesses

operating in a given area.

The results of research confirm that own business is an important source of income for rural families, and the workplaces created in small business entities provide opportunities for reducing the level of hidden unemployment in agriculture. Hence, the actions supporting development of rural enterprises stimulate the processes of concentration in agriculture.

Also the towns, playing the role of local centres of development, may be regarded as an important factor in advancing local economy, a significant part of which is composed of rural enterprises. This is why the amelioration of transport infrastructure, especially of the routes connecting the towns with the countryside, might contribute to the increase in rural employment and to the improvement in conditions for the functioning of small enterprises, by expanding the territory on which they operate.

#### **4.4 Summary**

The analysis of rural inhabitants living outside agricultural holdings has revealed that this group is gaining importance within the overall rural population. Therefore, the countryside may no longer be associated exclusively with farming activities. As much as 57% of families constituting rural population live outside agricultural holdings. In some areas, and especially in the South-West and in the North, this group accounts for three quarters of rural families. Even in the eastern parts of the country, that is, where agricultural holdings were characterised by particularly traditional forms of family ties, irrespective of the economic status of individual persons, nearly a half of rural population consists of non-farming families.

The reasons for abandoning agriculture should be sought mainly in the changes that took place in this sector of economy as a result of the new macro-economic conditions. After Poland's accession to the European Union, agricultural holdings faced the challenge of operating in the conditions of strong competition, and the necessity to reduce production costs. On the other hand, the improvement in general economic conditions, as well as considerable agrarian fragmentation characteristic of Polish agriculture, and the resulting hidden unemployment in agriculture encouraged a growing number of families to change their status from farming to non-farming. Such attitudes were fostered by growing possibilities to taking up employment. Consequently, above 70% of new families without an agricultural holding emerged as a result of leaving farms.

Regional differences in demographic structure of non-farming population are chiefly determined by the possibility of earning income without the need to



change the place of residence. Thus, in the areas where opportunities for finding employment outside agriculture are very limited, retired farmers make a relatively numerous group in demographic structure of non-farming population.

Despite the fact that the majority of families earning their living derived income from employment, the focus should also be on the non-farming persons who earned income from self-employment. Rural households for which economic activities present the main source of livelihood still constitute a small fraction of families pursuing gainful activities, and among the causes of such situation should be included primarily the lack of experience in running own business.

It is probable that changes in the number of non-farming families will become more dynamic, and that this group will make a growing part of rural community.

The research has shown that increase in self-employment in the group of non-farming families was triggered by the already advanced processes of multi-functional rural development. An example of this relation was a comparatively high proportion of non-farming population earning their living from self-employment in the south-western macroregion. This region is characterised by high agrarian fragmentation and by long-standing traditions of pursuing gainful employment by rural population.

On the basis of analysis of the material from the research by IAFE-NRI it may be stated that the development of entrepreneurship in rural areas is a real means to improve living conditions of local community. The results of research confirm that own economic activity is an important source of income for rural families, and the workplaces created in small business entities provide opportunities for reducing the level of hidden unemployment in agriculture. Hence, the actions supporting development of rural enterprises stimulate the processes of concentration in agriculture.

The specificity of operating conditions for rural business entities, and considerable significance of such entities for local development, should represent an important element in the policy addressed to rural areas, which requires the continuation of research in this scope.

## **5. Institutional factors of social and economic development of rural areas**

### **5.1 Introduction**

The institutional approach is receiving more and more attention in discussions on socio-economic development of rural areas. This is connected with new institutional economics, according to which institution supplements economic factors in terms of determining conditions of rational behaviour of individuals and of society in the social process of management. Including institution in the management process results in making the measures taken more predictable, which undoubtedly has an impact on transaction costs, creating a need for a more thorough analysis of institutional system understood as the entirety of institutions participating in the rural development process.

The notion of institution has diverse definitions. The present analysis borrowed the definition from Douglas C. North – a representative of new institutional economy – who states that an institution is a group of functionally connected legal norms and principles (institutional environment), as well as the organisational structure distinguished (organisations) and mechanisms of its functioning. Institution is regarded as an important rural development factor, having quantitative and qualitative aspects.

Our deliberations here focus on institutions promoting development of farming and non-farming activities, as well as of human capital.

In this approach, institutions influence the factors related with gaining and improving resources that the area examined offers, which creates possibilities for active use of these resources in rural development. It was assumed that different institutional solutions in the areas studied constitute a basis for explaining the differences in development between those areas. The analyses aimed to identify the institutions taking part in development of primary spheres of economy in rural areas, and to assess their roles.

Institutions taken into account were operating at national, regional and local levels, as well as in public, non-governmental and private sectors.

In order to specify the competences of the institutions, the main existing sources were used, that is the legislation of the Republic of Poland, statutes of organisations, as well as publications and field research conducted in rural areas in several voivodships. Rural areas were understood a rural and urban-rural gminas. The empirical material was gathered in the years 2005 and 2006 by means of distributing questionnaires in 683 organisations promoting rural development in the gminas of Mazowieckie, Podlaskie, Podkarpackie, Opolskie, Wielkopolskie, Warmińsko-Mazurskie and Zachodniopomorskie voivodships.

Moreover, in 193 gminas the activities of institutions encouraging local entrepreneurship were described. Also 190 enterprises were examined that conducted diverse activities, had various legal statuses, and were located in the abovementioned voivodships. Connections with institutions were investigated of 400 agricultural holdings of varying production types and economic sizes, and located in different regions of the country. Such connections were also examined in 323 educational establishments in the gminas of 5 poviats of Mazowieckie voivodship (Ciechanowski, Płocki, Ostrołęcki, Radomski and Siedlecki poviats).

Moreover, many phenomena were analysed on the basis of the Regional Data Bank of GUS.

## **5.2 Institutions in the process of modernising agricultural holdings**

The Common Agricultural Policy leads to an increase in the involvement of public sector in development of agriculture, including the process of modernising agricultural holdings, which may be judged as the State's interference with the market. In general, such a situation is discouraged as it causes distortions in the market. In the current context, though, this sector is undeniably important for the further development of agriculture. This is because the market failure, which is attributable to, *inter alia*, external factors, existence of public goods, informational asymmetry or market incompleteness, might have unfavourable results, such as an increase in unemployment and inflation, and a general lack of stability.

The negative impact of market failure may, however, be reduced through the introduction of appropriate institutional solutions. For this reason, the research was oriented towards searching for such patterns of interaction between market and non-market institutions and agricultural holdings that would be conducive to the process of modernising holdings, and that would consequently lead to sustainable agricultural development. The aim of the research was to answer the question: to what extent is the process of modernising agricultural holdings determined by the local institutional set-up, which in general embraces the formal and informal entities entering into direct interactions with farmers. At the same time, the analyses conducted allowed for defining the farmers' view on current institutional system, and their expectations as regards public sector services.

The ways that institutions influence the processes of modernising agricultural holdings may be remarkably diverse, because these processes have a multi-dimensional character. For example, modernisation may cover single fixed assets composing the resources of agricultural holdings. Furthermore, every holding goes through various phases during its operation. Different factors, external, for example, affecting the holding may produce reactions that will

vary in function of the phase the holding is in at a given moment. The reaction is always provoked, but the intensity of changes differs. It is the resources of production factors, the production structure, manner of management manner, and connections with the market that evolve. Sometimes, such changes are insignificant, almost unnoticeable, but sometimes they are profound, planned in advance and consequently implemented – in such a case the process consisting in both restructuring and modernising the holding is activated.

In the recent years, agricultural holdings have been undergoing the modernisation process, leading towards upgrading of production techniques and to re-orientation towards market-driven ways of functioning. An important role in this process is assumed by local institutions – organisations within the meaning of new institutional economics – operating in the environment of agriculture. These institutions form the framework and mechanisms governing the behaviour of users of agricultural holdings within the management process, and their influence on functioning of agricultural holdings facilitates, among others:

- faster adjustment of holdings to changing economic and organisational conditions;
- engagement in effective market activity;
- access to information on the situation on agricultural markets;
- reduction of transaction costs.

The major part in the functioning of agricultural holdings is played by public institutions (central and local government administration), which mainly employ administrative and policy mechanisms. To the environment of holdings also belong private institutions, associated in a formal or informal manner. The institutions established in a formal manner include co-operatives or branch companies and associations, and the informally associated ones are the mutual-help organisations.

Field research indicates that the intensity of voluntary cooperation of farmers with local institutions varies. In the years 2006-2007, the managers of the agricultural holdings studied (400 holdings) contacted each year on average 3,444 institutions, that is, there were 8.6 cases of cooperation per one farmer. The greatest number of farmers (42.5%) declared from 8 to 10 contacts, and only a small number of farmers (4%) indicated the maximum number, that is, more than 14 cases of joint action. Such a high number of contacts may indicate existence of a visible demand for institutions guaranteeing security – reducing the risk – within the management process. Over 27% of farmers declared to be cooperating with 5-7 institutions, getting 2-3 different forms of support. This may suggest a certain specialisation in operation of local institutions targeting

agricultural holdings. The intensity of cooperation was also diverse, depending on the region. The most elaborate relationships with local institutions were developed by farmers from Podkarpackie and Śląskie voivodships, and the least complex – by farmers from Warmińsko-Mazurskie voivodship.

Nearly all the farmers surveyed used principally three forms of help, namely: advisory services, trainings, information on the EU programmes, and completing applications and documents required under the EU programmes. Using this kind of services results primarily from the willingness to obtain the EU funds on the basis of development plans prepared. The least often, farmers asked for help in obtaining a certificate or in enlarging their holdings' resources – land, capital, labour.

Certain regularity may be observed as regards the farmers' attitude towards local institutions. The same or very similar services are provided to holdings both by traditional organisations – Agricultural Advisory Centres or Chambers of Agriculture, and by the newly-established institutions from the private or non-governmental sectors. Yet, the farmers' trust in the new associations or private companies is significantly lower than in the public sector organisations. Private companies play a dominating role only in helping to sell goods or services – as much as 72.3% of farmers pointed to this type of support. Contrary to the public organisations, the greatest obstacle to the functioning of private institutions working for farmers definitely consists in financing their services.

It was also concluded on the basis of the research carried out that the level of cooperation with public sector is rather diverse, and depends on the nature of services provided by individual organisations. The unquestionably highest number of agricultural holdings in the surveyed group used the help of Agricultural Advisory Centres and of the Agency for Restructuring and Modernisation of Agriculture, which resulted from the possibility that farmers have to obtain financial support under the Common Agricultural and Rural Development Policy. Over 90% of holdings benefits from such help – which means that those institutions are indispensable in the current institutional set-up. The opposite end of the continuum of importance to farmers is occupied by the Regional Development Agency and by Poviast Labour Offices. This, however, does not mean that these organisations are of no use for rural and agricultural development. Yet, it indicates that the development policy implemented, despite the changes observed, still has a sectorial rather than regional character.

Agricultural holdings did not limit their cooperation with public sector to one or two organisations – most often, they used the services of 4 or 5 entities. It may thus be stated that the spheres of influence exerted by particular institutions on agricultural holdings do not converge. Nevertheless, none of those institu-

tions is capable of individually catering for the needs of the vast majority of holdings. The diversification of cooperation, on the other hand, leads to an increase in the transaction costs of public services. Therefore, it may seem that in the context of modernising agricultural holdings and optimising public expenditure, it would be reasonable to concentrate various forms of support in a smaller number of organisations. However, it follows from the analysis of institutional environment and institutional set-up that an excessive concentration of these services could result in impairing their quality.

A vital element from the point of view of modernising agricultural holdings consists in introducing new, innovative solutions – both in the field of agricultural production and in the area of organisation and management. A fairly important function in this domain is performed by research institutes. The research conducted showed that only slightly above 15% of holdings used their services, but over a half of this group made frequent contacts within the cooperation framework established. This may mean that farmers find the quality of services offered satisfactory, while the specialist character of these services narrows the pool of farmers interested. The modernisation of holdings with a view to increasing their competitiveness on European market will require research and development centres to prepare an offer addressed to a wider group of holdings. Yet, these services do not have to be provided by way of direct contacts with agricultural holdings; they may be delivered indirectly, through agricultural advisory units and local government bodies.

Furthermore, the research conducted confirmed the existence of a relationship between the area of a holding and its use of services provided by particular public sector organisations. It emerges from the probit method analysis, though, that the increase of the area of holdings not using the services thus far will not result in a statistically significant rise in the probability of entering into cooperation. It may be stated that the size of holding is connected with the characteristics of demand for public sector services, but the increase in size of holdings that do not display such a need does not create this demand, at least in the short term. Should the vector of this correlation change its direction, it might be claimed that holdings that did not establish cooperation to date have little chances for increasing their utilised agricultural area.

One of the research objectives was to analyse the scope and areas of cooperation with organisations belonging to the sphere of the market. This group included financial institutions, that is, co-operative and commercial banks, credit guarantee funds, as well as the institutions associated with the market for food products, such as wholesale markets and exchanges, and other private institutions operating in the area of supply, marketing and processing, as well as co-

operatives, economic self-government bodies (in the form of chambers of industry and commerce), and insurance institutions. From among market organisations listed above a particularly important role in the process of modernising holdings is played by banks. On the one hand, they permit direct involvement of foreign capital in the modernisation process, and on the other hand, they allow for a more effective use of public resources transferred to holdings under various instruments of the Common Agricultural Policy. Banking services are becoming increasingly accessible to farmers, but the scope of using banks' offer by agricultural holdings still remains narrow, being limited to a banking account and the related basic operation services. A considerable increase in the farmers' interest in credit, especially for investments, is directly related to the inclusion of Polish agriculture under financial instruments of the CAP. After 2004, nearly 60% of investment credits used by farmers were the bridging loans for financing projects refunded under the EU programmes.

The percentage of farmers using deposit products remains relatively small, and it is particularly low in the case of other, more sophisticated banking products and services, for example, electronic banking. This is partly connected with the still low level of informatisation in rural areas, and with the resulting limited possibility to access banking services offered on-line. Farmers use agricultural credits (investment and working-capital credits) more willingly in the co-operative banks, whereas they are more eager to take credits in current account, bank deposits or investment funds in commercial banks (also because the majority of co-operative banks have included such products in their offer only recently).

However, agricultural holdings do not use the entire potential resulting from cooperation with local institutions. The above is proved, among others, by the 42%-level of ineffectiveness in using the services offered by diverse organisations in the investment activities undertaken. Moreover, better results of cooperation are obtained by large and economically stronger holdings. It may thus be argued that the scale, scope and manner of providing services remains unadjusted to the internal modernisation potential. Further research is thus necessary in order to determine the desirable directions of changes in institutional system that will allow not only for improving and rationalising the distribution of public resources devoted to modernisation of agricultural holdings, but also for increasing the effectiveness of cooperation between farmers and public, private and non-governmental sectors.

To sum up, it should be stated that the specific characteristics of Polish agriculture and the State's policy cause the modernisation to be greatly depend on solutions adopted within the institutional system. The modernisation of hold-

ings is not effected solely by the operation of market mechanisms – it is a result of relationship between the holding and its environment and the institutional set-up. In other words, institutions are among main factors in modernising agricultural holdings, however, the use of this potential is determined by specific features of individual holdings on the one hand, and on the other hand, the cooperation of farmers with individual organisations from the environment of agriculture has an impact on changes in the internal conditions of management.

### **5.3 Institutions in the development of non-farming economic activity**

Increase of non-farming economic activity is one of the most important factors influencing the processes of change in rural areas, while institutional factors remain a vital determinant of this development. The issue of supporting entrepreneurship in Poland has still not been treated thoroughly enough. According to the recent report “Doing Business 2010”, prepared by the World Bank, Poland occupies the 72<sup>nd</sup> place on the list of countries classified in function of the ease of doing business (conducting economic activities). The report focuses on 10 most important areas of economic activity – from establishing a company to its liquidation. Poland’s position in the World Bank’s ranking, and the importance of developing entrepreneurship in rural areas indicate the necessity to raise the issue of institutions as a vital factor in development of entrepreneurship in rural areas.

It follows from the field research carried out in the years 2005-2006 and concerning institutional factors in development of non-farming economic activities in rural areas that the key role was played by non-governmental organisations and local government bodies. The non-governmental organisations accounted for the 70% of the total number of 683 organisations studied, which proves the relatively strong social participation in the economic growth process. The weakness of these organisations were their limited financial resources in comparison to the public and private sectors. There were considerable differences across regions in the organisations’ involvement in supporting the development of non-farming economic activities in rural areas. The greatest share of non-governmental organisations in the overall number of organisations studied was observed in Wielkopolskie voivodship – over 60%. An equally high social participation in economic growth was characteristic of Opolskie voivodship where this type of activity involved over 50% of the organisations surveyed. The completely opposite situation was observed in Podkarpackie voivodship – here, the actions for social development were more widespread.

The actions promoting non-farming economic activity, undertaken by the organisations studied, were mainly aimed at supporting local government units.



They focused on implementing projects financed from public funds provided, for instance, by Voivodship Labour Offices for trainings addressed to unemployed. Due to complicated procedures, cooperation under the rules specified in the Act on Public-Private Partnership was not initiated. An obstacle to this cooperation consisted in, for example, the necessity to prepare exhaustive financial analyses of undertakings whose value not exceeding EUR 50 thousand. Moreover, actions for the benefit of local government bodies were of priority value chiefly for organisations from the voivodships with a generally lower level of economic growth. The most comprehensive help was provided by organisations from Wielkopolskie voivodship. Almost 60% of these organisations were engaged in identifying niches in the market and disseminating information on new technologies. This actions were predominantly a result of different expectations and higher qualifications of market participants than in other voivodships examined.

The directions of support for economic activity were to a considerable extent determined by human capital and by financial means available to organisations. Nearly 40% of them were already involved in implementing projects financed from the European Union budget, and further 30% were preparing to participate in such actions. The greatest activity in this respect was demonstrated by organisations from Podlaskie and Warmińsko-Mazurskie voivodships, approximately 50% of which already had experience in fulfilling tasks under these projects. A particularly high interest of organisations in the possibility of receiving funds for the implemented tasks was registered in Podkarpackie voivodship, that is, in areas where the frequency of exploiting this source had hitherto been low.

The influence of organisations on economic growth is the fastest and the most visible at the local level. This is due to the fact that scope of such influence is limited. In consequence, the result of actions taken by a given organisation may consist in an increase in employment or budgetary revenue of local government units in the territory of one or several gminas. It was noticed that gminas from Mazowieckie, Opolskie and Wielkopolskie voivodships, where over 50% of organisations studied were engaged in supporting economic growth, had employment rates and own revenue by 30% higher than the areas that did not receive such aid.

The empirical analysis allowed for retrieving data concerning the use by gminas studied of direct and indirect instruments for stimulating local economic activity. The direct instruments are targeted at a specific type of local entities, and are used to obtain an explicit effect in the form of the desired attitudes towards local government bodies. Indirect instruments governing local development take the form of economic indicators that describe changes in the set-up of local economics, and are addressed to all entities. These tools are meant either to

stimulate business entities and the investors interested to conduct activities in compliance with the strategy of the gmina adopted, or to limit the interest in activities considered undesirable.

A separate category of direct instruments was composed of financial forms of public support for investors including, *inter alia*, tax reliefs, cancellations or exemptions, granting credit sureties and guarantees, as well as lending the property held by the gmina for unpaid use, offering it for lease, tenancy, perpetual usufruct or sale. Over two thirds of gminas declared to be using these tools – 67.1% in Mazowieckie, 48.6% in Opolskie, 62.7% in Podkarpackie, 68.2% in Podlaskie, 69.6% in Warmińsko-Mazurskie, 65.7% in Wielkopolskie and 65.1% in Zachodniopomorskie voivodships.

Form among five basic direct instruments (running an investor service unit, operating a municipal enterprise, cooperating with various organisations, providing an entrepreneur assistance point, preparing an investment offer) the provision of public services by local government bodies was the most frequent in the group of studied gminas (approximately 50%). Nearly 40% of the gminas surveyed – from 23% in Podkarpackie voivodship to almost 67% in Opolskie voivodship – declared to be promoting the gmina as investor friendly, and to have delimited investment plots of land in attractive locations, having connected them to utility infrastructure.

From among the direct instruments supporting entrepreneurship mentioned the least popular in the gminas studied was the creation of separate structures intended to service investors and of the Local Entrepreneur Assistance Points for Small and Medium Enterprises. Only every fourth gmina had an entrepreneur assistance point, and slightly less than 20% established special entrepreneur support units.

Environmental factors having an impact on the use of individual instruments were also determined. It was revealed that an important factor causing differences in the nature of instruments used was the size of gmina in terms of population, the gmina's ability to absorb EU funding, and its localisation in the region.

As regards indirect instruments to support entrepreneurship available to gminas, the most prominent role was played by the strategy adopted by a given gmina, and by the actions undertaken for rising qualifications of local population. Approximately 90% of the gminas had a development strategy drawn up, which resulted mainly from the legal provisions in force, and which constituted a basis to obtain the EU funding.

Only 70% of the gminas surveyed undertook measures to improve professional qualifications of adults. This is a negative phenomenon, given the impor-

tance of education in creating the value of companies and in the process of building a competitive socio-economic structure of a gmina. In the gminas which were taking actions towards rising professional qualifications, the most widespread measure consisted in disseminating information on such possibilities (65% of gminas), aid in organising trainings (31% of gminas), and making premises in own establishment available (39%); the least often chosen measure was funding of grants (13%). A small percentage of gminas (approximately 14%) had a spatial development plan devised, on the basis of which local government bodies determined the intended use of land as well as the manner of its management and development. Thanks to these plans the authorities of the gminas could actively shape the conditions of management, and make decisions concerning the competitiveness of their territory.

The study also included an attempt at delimiting and grasping the quantitative aspect of the effect of using the instruments for the socio-economic profiles of the gminas. The results of the analysis confirm the hypothesis on the positive correlation between the level of development of non-farming economic activity and the use by the gminas of both direct and indirect instruments. The majority of the gminas studied (76%) also saw an increase in the number of business entities entered into the register in 2006 in comparison to 2000. It was concluded, though, that the interaction between the instruments used and the economic processes was more visible for direct than indirect instruments. Generally, a hypothesis may be ventured that the growth of non-farming activity and its structure depend on the actions undertaken by local authorities and *vice versa*. It may furthermore be stated that this situation is a typical example of feedback between the phenomena under study. Only in such a situation then can the development opportunity for these gminas arise, which will be based on the following series of mutual influences: “increase in the number of entities – increase in the gmina’s revenue – further development of non-farming economic activity (strengthened potential of the gmina).”

Therefore, it should be stated that the potential for creating conditions for innovative entrepreneurship lies in local government bodies. It should be added that the activity of local authorities is also determined by their competences. Insufficient competences, a situation which in economics is referred to as failure to absorb innovations by local structures, results from a low level of education and from inadequate experience on the part of local authorities. It should also be stated that in the area studied, broader competences (education) of local authorities were observable in Mazowieckie and Wielkopolskie voivodships, which is confirmed by greater innovations of the economy in the gminas located in these voivodships.

In relation to non-farming economic activity, the local government units should, among others, play the role of a guardian and representative of enterprises' interests and it should seek new investments. However, only 45% of the enterprises surveyed stated that local authorities promoted the interests of enterprises, and 10% claimed that the local government did not express interest in the development of enterprises operating in the territory of the gmina.

A conclusion may be drawn from the questionnaires that entrepreneurs are not fully satisfied with local authorities administration. The entrepreneurs expect support in the form of competent personnel and adequate advisory services, which will allow for reducing the investment risk in their gmina. To achieve this would require a change in gmina management – from administrative to managerial, where pro-investment measures are inspired by local authorities. The success of these actions depends to a considerable extent on creating a vision of local development, including cooperation with enterprises and organisations from business environment.

#### **5.4 Summary**

The influence of local institutions on the development of rural areas is visible in numerous aspects: economic, social and environmental. The research confirmed the need for an active participation of local institutions in encouraging changes in rural areas. In order to strengthen the role of these institutions it is necessary to clearly define the offer of local organisations addressed to various groups within the community, as well as to stimulate the activity of local communities themselves, whose actions might reinforce the institutional sphere and multiply the sources of financing of educational services. The amount of EU resources available, a large volume of which is to be used for the purpose of equalising educational opportunities and preventing social exclusion, opens up possibilities to accelerate the pace of improvement in the quality of human capital in rural areas.

## **6. Highly commercial farms in family farming**

### **6.1 Introduction**

The free-market economy and the challenges posed by growing competition force the entities from Polish agricultural sector to restructure and modernise. In the recent years, positive changes have been more and more frequent, despite a series of difficulties in the successful evolution of the process of reconstructing and modernising agriculture. In consequence of transformations conducive to effectiveness, as well as of adjustment difficulties within agricultural holdings, the polarisation tendencies were reinforced, especially those concerning market activity of individual units. This was reflected in the increasingly visible division of agricultural holdings into two groups: farms serving principally the residential or self-supply functions, and market-oriented entities whose principal aim is to meet the competition requirements and to continue professional development. One of the ways of achieving these goals is to increase the scale of commercial agricultural production. This issue is of great importance for family farms, characterised by a relatively limited scope of agricultural activities they conduct.

The value of family-based management system, prevailing in Polish agricultural sector, is underlined in the context of social and political stability of the country, as well as of economic equity. In many countries, the agricultural policy is founded on a universal principle that family agricultural holding is a basic entity functioning within agricultural structures, and legislation is constructed in such a way as to encourage development processes in such units. Large-scale units are the best example of agricultural entities combining social values resulting from family character of such holdings with economic features that permit building competitive advantages. Such holdings make it possible for their holders to obtain agricultural income ensuring their families an acceptable living standard guaranteeing further development of agricultural establishment.

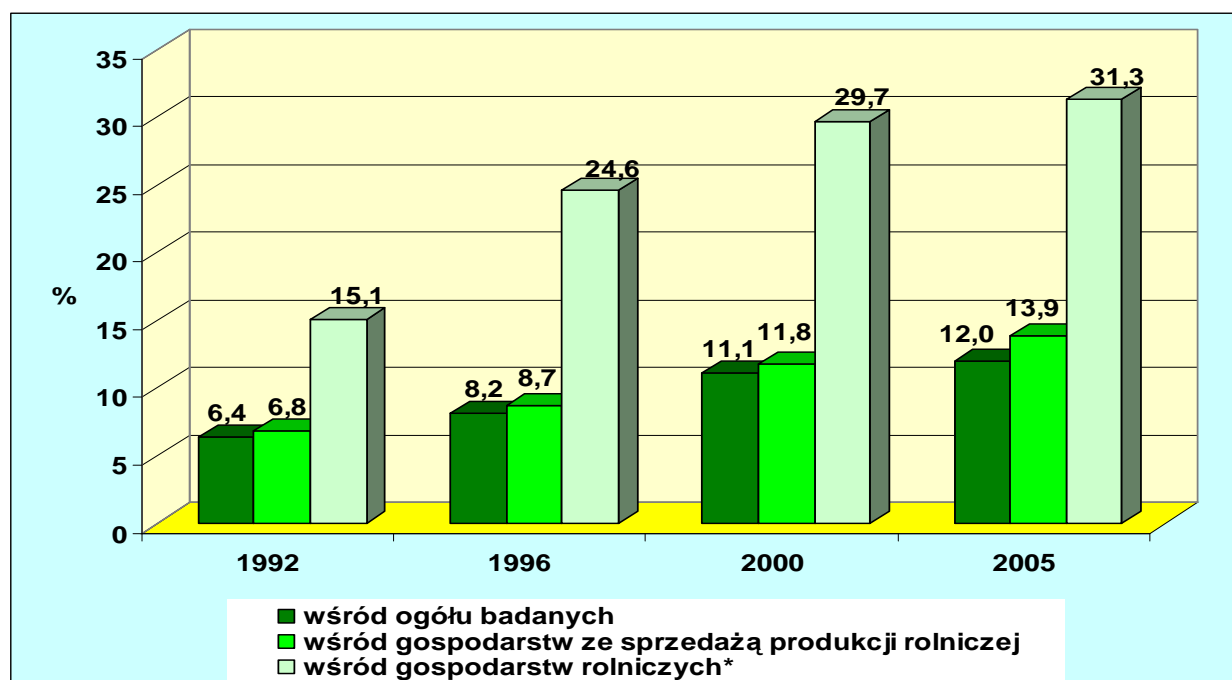
For the purposes of research in this area, the term large-scale holdings (used interchangeably with the term highly commercial farm) covered all the holdings whose yearly volume of commercial production allowed for generating agricultural income per one person employed full-time at a level at least equal to the average remuneration of people working outside agriculture. The size of commercial production thus defined was at least twice higher than the average sales volume per one market-oriented holding in the entire group. The economic size of holdings defined as highly commercial was at least 8 ESU. The number and place of this category of entities within agricultural structures indicates the

direction in which agriculture evolves and the factors that are decisive for changes taking place. Not only is this knowledge of cognitive importance for detecting regularities in transformations taking place in agricultural sector, but it also provides valuable information on instruments stimulating the restructuring and modernisation of agriculture and increasing its competitiveness. Enhancing the competitiveness of agriculture is among the priorities of rural development.

## 6.2 Number and production resources of highly commercial farms

The research conducted has suggested that in the years 1992-2005 the net number of highly commercial family farms rose by 59%, and their share in the overall number of individual agricultural holdings doubled (from 6% to 12%), and that these changes occurred mainly before the year 2000. In 2005, the number of large-scale holdings was by approximately 2% higher than five years earlier, and their share in the total number of surveyed holdings increased from above 11% in 2000 to 12% in 2005.

Chart 6.1. Share of large-scale holdings in family farming



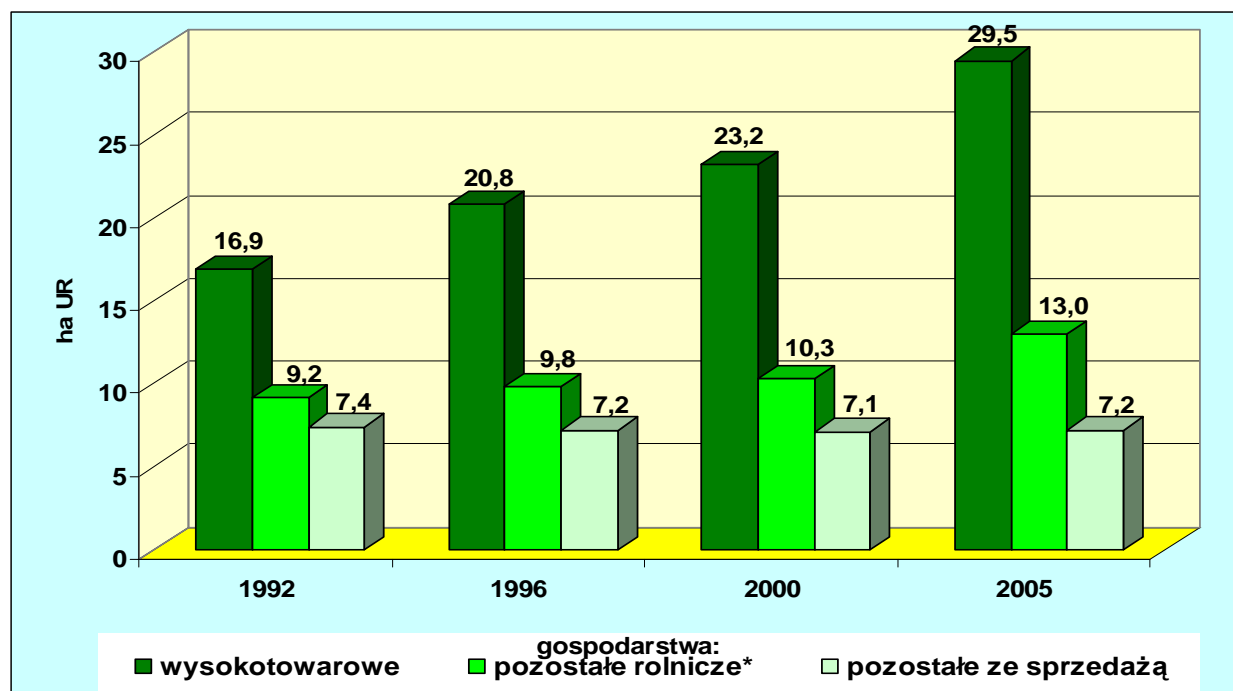
PL	EN
wśród ogółu badanych	in the total number of holdings surveyed
wśród gospodarstw ze sprzedażą produkcji rolniczej	among holdings with commercial agricultural production
wśród gospodarstw rolniczych*	among agricultural holdings*

\* Holdings providing an income constituting the principal livelihood of its user and their family.

Source: Elaborated on the basis of the questionnaire by IAFE-NRI from 1992, 1996, 2000 and 2005.

From the point of view of ensuring food security, meeting market requirements and guaranteeing appropriate living standards for farming families, importance is attached to the scale of commercial production of holdings producing goods intended mainly to be placed on the market, and especially those products that provide basic source of livelihood of farmers and their families. Even in the last mentioned category, despite some progress, the scope of concentration of production was still relatively limited. In 2005, in less than every third agricultural holding, the size of production met the criterion specified for highly commercial farms. It should be added, though, that this scale was over twice as large as in 1992 when only every seventh holding being the main source of income for a farming family was a large-scale one.

Chart 6.2. Average area of the holding groups distinguished



\*

PL	EN
gospodarstwa:	holdings:
wysokotowarowe	highly commercial farms
pozostałe rolnicze*	other agricultural holdings*
pozostałe ze sprzedażą	other holdings with commercial production

\* Holdings providing an income constituting the principal livelihood of its user and their family.

Source: Elaborated on the basis of the questionnaire by IAFE-NRI from 1992, 1996, 2000 and 2005.

It follows from the analyses that the sector of highly commercial family farms is growing steadily. The increase in the number of large-scale holdings was accompanied by relatively intense processes consisting in concentration of production resources within this group of entities. The scale of transformations aimed at increasing the effectiveness of large-scale holdings, which occurred during the 13-year-long period studied, was reflected in structural changes within this group and in the widening gap between them and other types of entities producing agricultural raw materials.

The analysis of changes in the situation of large-scale holdings in terms of production revealed that the processes consisting in concentration of production resources were relatively manifest in case of utilised agricultural land. This tendency is highly desirable; in the context of fragmentation in Polish agriculture, the units of a larger area have better chances for achieving a strong position on the market. Reaching a reasonable scope of concentration of agricultural land is favourable not only from economic, but also from environmental point of view.

The analyses conducted revealed that the process of increasing land resources in large-scale holdings was autonomous, and took place irrespective of the existing economic situation, which proves the existence of internal development forces in this group (Chart 6.2).

In the years 1992-2005, the average area of a highly commercial unit increased from 16.9 ha to 29.5 ha of UAA, that is, by nearly 75%. These tendencies were particularly strong in the years 2000-2005 when the average area of a commercial unit rose by 6.3 ha of UAA (from 23.2 ha to 29.5 ha of UAA).

Concentration of land in highly commercial farms should be judged as a considerable advancement, especially given the fact that tendencies exhibited by other units producing marketable goods differed. A 3% decrease in the average area of cultivated land was observed (from 7.4 to 7.2 ha of UAA). In consequence, there was a significant increase in the scope of land concentration in large-scale holdings, which was also the case when the number of this group was stagnating, that is, in the 2000-2005 period. In the years 1992-2000, the percentage of land in large-scale holdings rose from 11% to 31%, and in 2005 it amounted to as much as 38%.

The processes of concentration of agricultural land led to even more dynamic increase in the scale of livestock farming, in the situation when some large-scale holdings were withdrawing from animal production. In the years 1992-2005, the percentage of highly commercial livestock farms fell from 94% to 75%, and at the same time the stocking rate, defined as the number of animals expressed in livestock units (LU) per 100 ha of UAA, increased from 60.1 LU to 102.5 LU per 100 ha of UAA, that is, by 71%. This process



took place mainly in the 2000-2005 period when the stocking rate surged by nearly 64% (in 2000, it amounted to 62.9 LU/100 ha of UAA), whereas in the 1992-2000 period the rate in question increased by only 5% (in 1992, the stocking rate was 60.1 LU/100 ha of UAA).

Progress in agricultural activity is also determined by the increase in the level and quality of technical equipment in the workplace, that is, in agricultural holding. The research carried out revealed that this domain also underwent considerable changes, and the large-scale units strengthened their dominant position, as confirmed, among others, by a high level of technical infrastructure and by the scope of work mechanisation. In 2005, 59% of large-scale holdings were well equipped in means of mechanisation, and this proportion was by 45 percentage points higher than for other entities, where the corresponding proportion was 14%. Thirteen years earlier, the analogous difference equalled 10 percentage points (16% against 6%).

Many of the analyses conducted emphasised that increasing competition strengthens the correlation between the economic standing of individual holdings and the quality of labour. Of special importance in this context are characteristics of the population with professional approach to farming, that is, the population with steady and full-time employment in agricultural holdings (engaged mainly in agricultural occupations), since this group plays the key role in shaping the economic situation of agricultural entities. Such relations confirm changes in the characteristics (age, education) of persons engaged mainly in agricultural occupations in large-scale units; skills of such persons being particularly important for their ability to compete.

Table 6.1 Labour input in agricultural activity

Year	Annual work units							
	in highly commercial farms				in other market-oriented holdings			
	total per		including own per		total per		including own per	
	one holding	100 ha of UAA	one holding	100 ha of UAA	one holding	100 ha of UAA	one holding	100 ha of UAA
1992	2.23	13.8	2.00	12.4	1.48	21.2	1.44	20.6
2005	2.00	6.8	1.72	5.8	1.13	15.7	1.10	15.3

Source: Elaborated on the basis of the questionnaire by IAFE-NRI from 1992, 1996, 2000 and 2005.

The research work completed suggested that there was a remarkable improvement in this respect in the years 1992-2005 as regards population engaged mainly in agricultural occupations. This tendency was more noticeable in large-scale units than in the rest of market entities. This phenomenon was observed for all education levels above the statutory level, but it was more evident at higher education level. In consequence, the disproportions in the level of education between the populations covered by the comparison were growing.

In the years 1992-2005, in the population fully engaged in large-scale holdings the proportion of persons who finished their education at the level of primary or middle school (*gimnazjum, completed at the age of 16*) decreased over twice (from 40% to 17%) . During this period, a visible progress was observed in the popularisation of secondary and higher education. The greatest progress was observed in the group of higher schools graduates with steady and full-time employment in large-scale holdings. In the years 1992-2005, the percentage of such persons rose by more than eight times, nevertheless, they still accounted for only nearly 10% of the employed. Yet, this share was five times larger than in other market entities, where only 2% of persons involved mainly in agricultural occupations completed higher education.

During the period analysed, a progress was observed in the area of professional training for farmers. In 1992, 34% of persons employed fully and permanently in large-scale holdings, and 16% of persons from other market entities had school-based agricultural education. Thirteen years later, that is, in 2005, these proportions were 44% and 24%, respectively.

Transformations of production assets and positive changes in the characteristics of the population engaged in agricultural activities provoked processes consisting in rationalising employment in holdings, which translated into a decrease in labour input. In the years 1992-2005, the total labour input per 100 ha of UAA in large-scale holdings decreased by 51% (from 13.8 to 6.8 AWU per 100 ha of UAA), which indicates an improvement in the effectiveness of management. In the remaining holdings producing goods for sale the processes of rationalising employment were clearly weaker than in the large-scale holdings. As a result, in 2005, the labour input per 100 ha of UAA in large-scale holdings was more than two times smaller than in other units with commercial production (6.8 AWU against 15.7 AWU). In 1992, the corresponding difference was significantly lower and amounted to nearly 45% (13.8 AWU against 21.2 AWU).

### **6.3. Efficiency and economic and financial results of highly commercial farms**

Efficiency, or in other words economic effectiveness, is understood as the ability of an entity to generate certain results from a given input. The measure of efficiency of a given economic entity is its ability to use the production capability, and above all, to improve this use.

Among the indicators of farming efficiency, its effectiveness should be highlighted. In conditions of market economy, each enterprise, including agricultural holding, should strive for such adjustment of production factors where the input is not wasted, i.e. it should aim at the maximum possible effectiveness.

The survey conducted showed some improvement in general effectiveness of the use of production resources in family operated highly commercial farms. Such improvement was proved by an increase in the average level of technical effectiveness of production in highly commercial farms. In 1992, the increase rate in the examined sample was 0.445, and thirteen years later it reached 0.772. The diversification of the analysed group as regards the level of technical effectiveness of production also increased, as proved by the value of standard deviation of this indicator. In 1992-2005, the indicator increased from 0.089 to 0.172, which proves that the sector of highly commercial family farms is becoming increasingly polarised as to the effectiveness of use of production factors, and that some entities have emerged, whose effectiveness is relatively higher, as compared to the examined group. Moreover, in 2005 it was established for the first time that a relatively numerous group of highly commercial farms used their production potential in an optimal way, as proved by the indicator of technical effectiveness of their production, which was close to 1. This was the case for large surface units, characterised by significant value of fixed assets, high and comprehensive level of mechanisation of work, and high quality of labour force.

An analysis of individual factors affecting technical effectiveness of production in highly commercial family farms revealed that such factors constitute a heterogeneous group, differing mainly in terms of their strength and impact. The endogenic factors relating to individual highly commercial farms that were statistically significant for the improvement of technical effectiveness during all the years of analysis include:

- the length of time the agricultural activity was under management, combined with the fact that the person managing a given agricultural holding was in the working age;
- the total amount of agricultural investment expenditure – the less effective farms were generally investing more;

- the area of cultivated land – the influence of this factor was constantly growing (in 1992-2005, the regression coefficient grew from 0.11 to 0.34);
- the level of risk taking – reflected in financing the increase in production assets from external capital, i.e. by incurring debts (bank credits).

Progress in farming efficiency in highly commercial entities is also illustrated by the growth of productivity of production factors. An analysis of land and labour productivity has shown that highly commercial sector has witnessed some improvement in the use of production capacity. In fact this improvement has been relatively significant, as illustrated by growing differences in the productivity of land. In 2005, the average value of sales per 1 ha of utilised agricultural area in highly commercial farms was PLN 5.5 thousand, and the same indicator in the group of other commercial units was PLN 2.2 thousand, which was only 41% of the level of sales per area unit in highly commercial sector. In 1992, the corresponding indicator was 64%. Even greater changes were observed in the sales volume per 1 full time employed person. In 2005, the average value of agricultural commercial production per 1 AWU (Annual Work Unit) was PLN 81.2 thousand. The comparable indicator for other market units was in the same time less than 16% of the work productivity level in the group of highly commercial farms. A corresponding difference in 1992 was 22%.

The growth of volume and of quality of production resources, as well as favourable changes in the functioning of highly commercial farms resulted in some improvement of their economic condition, as shown by their income obtained from agricultural activities.

An analysis of agricultural income shows that during the whole examined period highly commercial farms stood out in this respect, and the difference between them and the rest of the units kept growing. In 2005, the average agricultural income per 1 family in highly commercial sector was PLN 80.5 thousand, and calculated into 1 FWU (Family Work Unit) it was PLN 46.8 thousand. Corresponding values among the rest of commercial farms were about PLN 10.0 and 9.1 thousand, i.e. respectively approximately 12% and 18% of the income gained in the group of highly commercial units. In 1992, the corresponding difference was 16% and 22% respectively.

One of comprehensive measurements of economic and financial situation of agricultural holdings is their investment activity. The frequency and scale of investments show the condition of individual entities, indicating at the same time their possibilities to develop further and to enhance their competitiveness.

An analysis of the collected data has revealed that during the examined period the investment effort of highly commercial farms kept increasing gradually. In 1988-1992, the share of investing units in the group of highly commercial farms was by 30% higher than among other market entities (83% compared to 53%), and in the five years between 2000 and 2005 – the difference was 44% (81% compared to 37%).

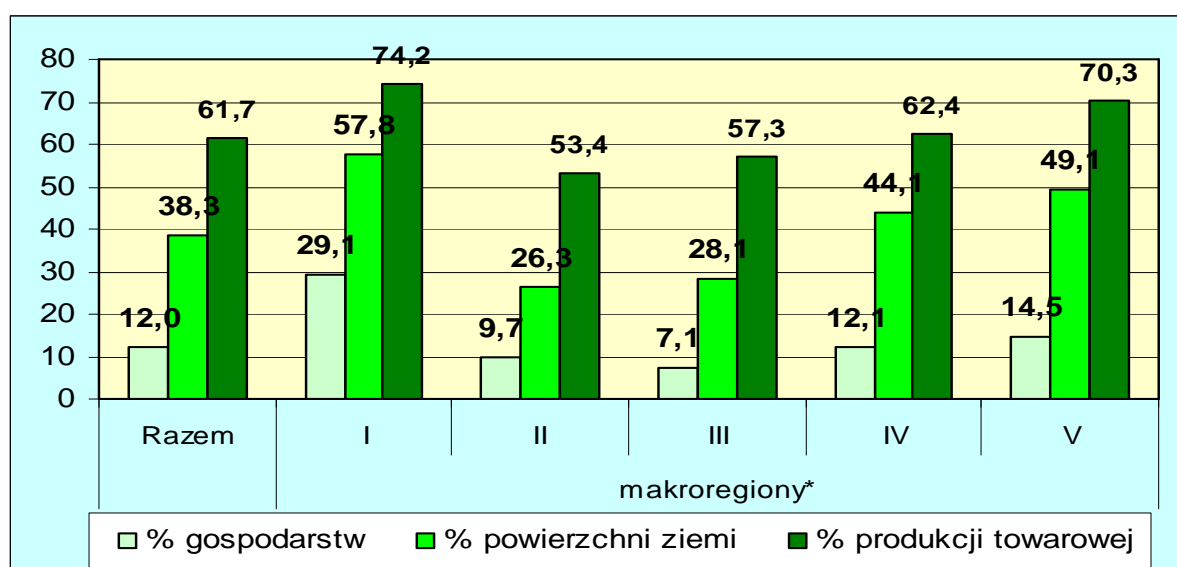
The advantage of highly commercial entities grew even faster as regards the expenditure for agricultural investment. During the five years between 2000 and 2005, the average value of financial expenditure for agricultural investments in highly commercial farms was PLN 121.4 thousand, and in the remaining group it was PLN 15.5 thousand, which accounts for less than 13% of investment expenditure among the highly commercial farms. In 1998-1992, the investment expenditure of other highly commercial entities accounted for 25% of financial input in the highly commercial sector. These tendencies were also reflected in the volume of agricultural investment expenditure per 1 ha of utilised agricultural area.

It results from an analysis of kinds of undertaken investment that enhancing competitiveness not only required a considerable investment scale, but also brought about the need of constant quantitative and qualitative changes in the production resources owned, which resulted in the necessity to introduce changes in the structure of implemented investments. The investments reported in 1992-2005 in highly commercial farms showed that the decisions to implement them were conditioned mainly by the possibility to create conditions to increase production scale and quantity, and to decrease its costs. These targets were achieved not only by means of purchasing agricultural land, but also, to a growing extent, by implementing progress (mainly biological) in agricultural activity conducted. Such motivation was proved by the kind of investments made, and in particular by the growing purchases of technical instruments of new generation, allowing for complex mechanisation of production processes and purchases of breeding stock of farm animals. A very dynamic increase was observed in purchasing material for breeding animals with valuable genetic parameters. The percentage of highly commercial farms buying breeding animals with documented pedigree grew fourfold, and in 2000-2005 it was 22%. Investments in farm buildings, in particular complex mechanisation of livestock handling and of obtaining animal products, were particularly conducive for obtaining animal raw material of increasing quality.

## 6.4 Regional diversification in development of highly commercial sector of individual farming

Due to differences in economic development between individual regions, the extent of all the presented and analysed dependencies and changes in the group of highly commercial farms varied between regions, though such dependencies and changes were universal. The above was reflected by territorial disproportions in the advancement of the process of formation of the sector of competitive entities in family farming. The development level in this group is determined not only by the number of highly commercial farms, but also by the volume of production resources (in particular, land), and by their share in commercial production of the agricultural sector (graph 6.3).

Graph 6.3 Regional diversification in development of highly commercial sector of individual farming



PL	EN
% gospodarstw	% of holdings
% powierzchni ziemi	% of land area
% produkcji towarowej	% of commercial production

\* Specified macroregions include the following voivodships: I Środkowozachodni (Middle-Western) – Kujawsko-Pomorskie, Wielkopolskie; II Środkowowschodni (Middle-Eastern) – Łódzkie, Mazowieckie, Lubelskie, Podlaskie; III Południowo-Wschodni (South-Eastern) – Świętokrzyskie, Małopolskie, Podkarpackie, Śląskie; IV Południowo-Zachodni (South-Western) – Opolskie, Lubuskie, Dolnośląskie; V Północny (Northern) – Zachodniopomorskie, Pomorskie, Warmińsko-Mazurskie.

Source: Elaborated on the basis of the questionnaire by IAFE-NRI from 1992, 1996, 2000 and 2005.

The research proved that the groups of family highly commercial entities are best developed in the west-central macro-region (Wielkopolskie and Kujawsko-Pomorskie voivodeships). This region has for a long time been characterised not only a relatively good area structure, but above all – a high level of agricultural farming culture, farmers' skills and their competence, as well as active modernisation of production potential and enhancing the market position of their farms. In 2005, highly commercial entities accounted for 29% of all family farms. 58% of the total agricultural land used by individual farmers was cultivated in highly commercial farms, and which accounted for 74% of total agricultural commercial production of the region.

On the other hand, the lowest share of commercial production generated by highly commercial farms and the lowest percentage of land used by them was found in the east-central macro-region. In 2005, highly commercial units in this region managed only 26% of utilised agricultural area, and accounted for 53% of commercial production.

The analysis of spatial differentiation in the growth of highly commercial sector of family farming draws attention to the situation in the south-east macro-region, characterised – as is commonly known – by the lowest percentage of highly commercial farms, by the most fragmented area structure in Poland, and by the largest group of residential farms in the country. The units in this macro-region, which produced agricultural products predominantly for sale as their main source of income, were characterised by relatively large scope of specialisation and relatively high production intensity. Consequently, their value of sale per area unit was high. Structurally speaking, in 2005, in the south-east macro-region as little as 7% of agricultural holdings used 28% of agricultural land and accounted for over 57% of commercial production.

## **6.5 Summary**

The analyses carried out have shown that from the moment when free market economy was introduced, family farming in Poland has witnessed gradual evolving of market oriented sector, consisting of highly commercial farms with strong economic position, whose income from agriculture was at least equal to non-agricultural income. In 1992-2005, the net increase in the number of such entities was 59%, and their share in the total number of individual agricultural holdings grew from 6 to 12%. This growth took place predominantly in the years 1992-2000, when the percentage of highly commercial units increased from 6 to 12%. Farming efficiency level of this group is comparable to that in

non-agricultural sectors. Consequently, it can be stated that highly commercial farms are competitive on both national and international markets, and work on such farms is becoming increasingly attractive. In 2005, the average agricultural income per one full time employed person was PLN 46.8 thousand, that is almost two and a half times higher than the average net salary in national economy as a whole.

The growing number of highly commercial farms was accompanied by relatively intensive processes of concentration of production resources in this category of entities. Structural changes in highly commercial farms that were observed in the periods analysed show that the pace of favourable economic developments in 2000-2005 was considerably faster, compared to the previous period. Those processes clearly indicate that the impact of integration with the EU and of implementation of CAP on the transformation of the sector of highly commercial family farms sector was beneficial. Covering Polish agriculture by CAP resulted not only in growing requirements, but also in some improvement of economic situation in agriculture, and in greater opportunities to use various EU funds to support modernisation of agricultural activities. The above factors increased the investment activity of people managing highly commercial farms. In 2000-2005, agricultural investments in highly commercial sector accounted for almost 40% of total production investment projects in individual agricultural holdings, and used 72% of all financial resources spent for this purpose. In 1992-1996, the corresponding indicators were 18 and 45% respectively.

The investment growth resulted in an increase in the competitiveness of highly commercial family farms, as shown, among others, by growth of their production potential measured in terms of their economic size. In 2005, the average economic size of a holding in the group of highly commercial farms was about 33 ESU (European Size Unit), while in 1996 the parallel indicator was 10 ESU. Also the share of highly commercial farms in terms of sales in the total commercial production of individual farming grew from 20% in 1992 to 62% in 2005, and the entities of this category were using 38% of total agricultural area.

To ensure competitiveness of Polish agriculture, food security and satisfactory income from working on the farm, the sector of highly commercial family farms should keep growing, which would involve extending the production scale, which, in turn, leads to concentration of production resources, especially the land. The need of such transformation is reasoned not only by the nature of structural changes in highly commercial farms, but also by the results of model estimation. The analysis and estimation (using hierarchical logit models) of influence of individual features of highly commercial farm (e.g. its area, labour



force quality, investment activity, technical equipment, market relations, progress implementation etc.) on the scale of commercial production 1992-2005 indicates that impact of those features considerably depends on exogenic factors. Only the area of agricultural land was a feature that maintained its statistical significance and the right direction of dependence, irrespective of external conditioning. Increase in the area of cultivated land by 1 ha has raised the chances of an agricultural holding to enter the higher production level by 3-4%.

On the basis of works carried out it can be estimated that around a half of agricultural land, including agricultural holdings of legal persons, is efficiently used. Such area, however, is too small to definitely conclude what is the situation on the market of agricultural products and what is the condition of agricultural sector. To ensure competitiveness and food security, approximately 75% of agricultural land should be managed by economically strong entities, which should constitute about 25% of all the agricultural holdings. To alter such situation, it is necessary to accelerate the pace of the process of agrarian changes in family holdings, which, as indicated by experience gained so far, is a highly complex one. The essence and pace of such transformation depends on many factors, which go beyond the scope of agriculture itself.

Pro-effective structural evolution in terms of area as well as concentration of land resources in competitive entities is connected with the processes of liquidation of agricultural holdings. Simulations carried out have shown that in order to obtain the required amount of agricultural land used by economically stable entities, the number of individual farms should be decreased by half. As a consequence, the average size of a family farm would be 13 ha of utilised agricultural area. In the group of competitive entities, the average area should be around 50 ha. For the sake of comparison, corresponding indicators are at present 7.8 and 29.5 ha of utilised agricultural land. To reach this objective, it would be necessary for almost 66% of persons to resign from working in own holdings.

On the basis of tendencies that have appeared so far, it can be predicted that the processes in current conditions will proceed very slowly (30-35 years). That is why instruments accelerating agricultural restructuring processes should be implemented, in particular those which support the diversification of professional activity of citizens.

## **7. Functioning of the market of agricultural land**

### **7.1 Introduction**

Accelerating agrarian changes requires a growth in the number of market transactions in agricultural land, as non-market (family) transactions usually petrify the existing structure. It should also be taken into account that the situation on land market is determined by numerous and diversified factors, relating to both economic and social conditions – land is necessary in every kind of human activity and there are various ways of using its resources. On the other hand, it should be borne in mind that in the family farming model (predominant in Poland), family relations and the farming sphere influence each other, resulting in a situation where demographic features as well as social and professional aspirations of family members affect decisions on how to use the property owned.

The influence of the state policy should also be taken into account when analysing the processes taking place on agricultural land market. The aim of state policy is not only to streamline the agricultural structures, but also to improve the competitiveness of national agriculture on global markets, and to control transfer of land to non-agricultural sectors. The supply of land, which is limited, leads to competition between such sectors of economy as agriculture, forestry, engineering, energy, transport and communication for this production factor. Transfer of land between individual economy sectors is usually mono directional – from agriculture to non-agricultural branches. Reversing the situation, i.e. reclaiming land for agricultural purposes, is in general not possible at all or it requires considerable input.

In the context of dependencies mentioned above, and in particular due to the fact that land can be considered as a good of special importance, with its social and economic functions going well beyond its role of one of three agricultural production factors, while attempting to describe the land market one should take account of a range of conditions. As regards period after 2004, one should first of all take into consideration the changes in Polish economy and agriculture that were brought about by our integration with the European Union, especially covering our agriculture with CAP and opening foreign labour markets for Polish citizens.

## **7.2. Conditions for agricultural land transactions**

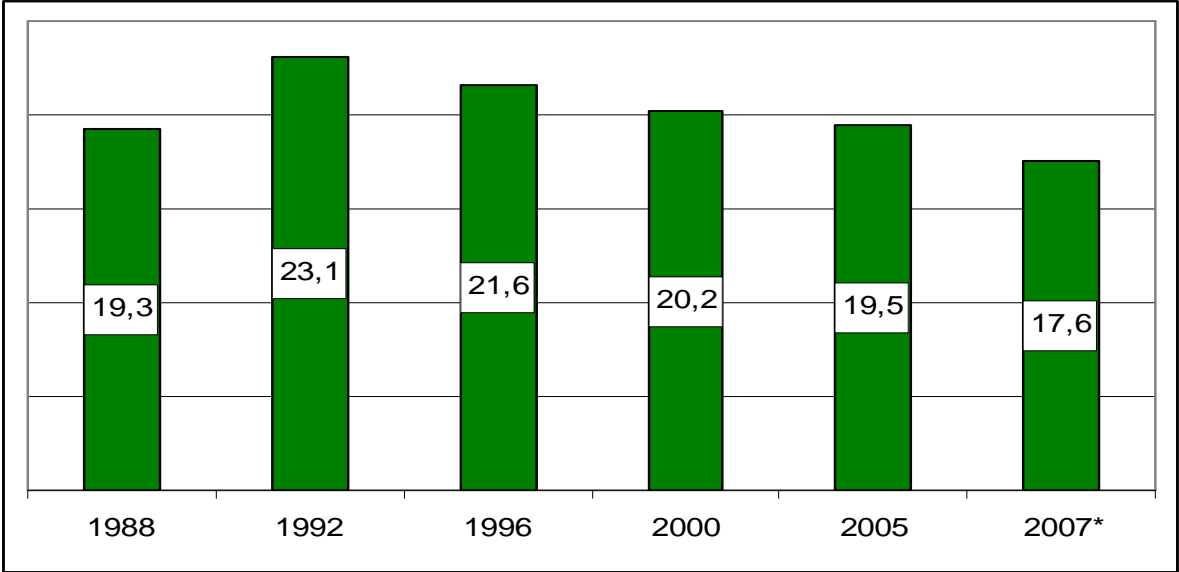
In individual farming, which is typical for 80% of utilised agricultural areas in Poland, there is a specific relation between the workplace and the household. This relation is based on private and family ownership, reflected among others in a common practice to hand down agricultural property together with the function of farm manager. Research carried out by IAFE-NRI shows that over 90% of family farms in Poland are inherited. The prevalence of this manner, that is traditional and family based, of commencing agricultural activity has several consequences, directly and indirectly influencing the shape of social and economic structure of our agriculture. The dependencies observed affect first of all the characteristics of persons employed as farmers. Characteristics of such persons are determined by the composition of their family, as well as by professional aspirations of young family members, and the tendency among older generation to give up farm management. As a consequence, getting independent as a farmer is usually connected with demographic ageing of the family or with a special life situation. At the same time, the decision of someone from the closest family to take over the function of farm manager depends on its perspective attractiveness. Such attractiveness depends on the value of inherited property, on economic trends in agriculture, on prospects for finding a profitable job outside agriculture and, last but not least, on the life plans and professional aspirations of potential successors.

Interrelation between family and farming spheres results in a situation where the farm becomes more than a typical workplace, and the motivation to take it over is not always connected with plans for agricultural production. Depending on the attitudes of family members, and on the main sources of income and its volume, the current manager and his/her potential successor may strive to increase the production scale or to reduce it. Taking the farms over through a generation shift within a family can in a way enhance the lack of stability in using the production potential of holdings, as their future depends on demographic characteristics of potential successors, their education and professional preferences. It should also be taken into account that there is always a group of farms which for various reasons, including the life situation and characteristics of family members, as well as current social and economic tendencies (e.g. large-scale migration from the country), have no successors.

The determinants described do not only influence the shape of changes in ownership of agricultural land within families, but also significantly affect the

situation on the market of agricultural land, especially on its supply side, and they have an impact on the pace and nature of transformation in agrarian structure. In the nineties, especially the early nineties, these dependencies were reflected mainly in high intensity of non-market land transactions. The change of pension act and the lack of balance on the labour market resulted in a faster pace of generation shift among people carrying out agricultural activity, so the group of Polish farmers became much younger.

Graph 7.1 Percentage of agricultural holdings managed by people aged up to 35 in the total number of individual agricultural holdings



\* Source: questionnaire by IAFE-NRI 1998, 1996, 2000, 2005 and assessment for 2007.

In the following years, the share of young farm managers kept gradually decreasing, mainly in result of growing opportunities for gainful employment, both in the country and in the European Union, which significantly reduced the scale of unemployment in the years 2006-2007. As a consequence, young people were more inclined to take up non-agricultural employment than in the previous years. Although most of them did not give up ownership of their land, the tendencies to adjust the size of farm to its main function were more distinct than previously. When a farm was used mainly as a living place and a source of self-supply for the family, some owners reduced the land area (by sale or tenancy). Still, the scale of this phenomenon was too small to significantly accelerate the agrarian changes. To cause such an effect, longer periods are required of favour-

able economic trends which are conducive to satisfying professional aspirations and give the sense of stability of economic status.

The influence of macroeconomic processes on agricultural development was reflected first of all in the growing polarization of economic and production functions of farms, with stagnation in the total number of holdings. Thus, the macroeconomic conditions have contributed first of all to a change in structure of farming families, by their income sources. Growing competitiveness and resulting elimination of weaker entities from the market led to a situation where only a little more than one-fifth of rural families lived on revenues from agriculture, while two-thirds of this population received income from other sources.

However, a group of farms of specifically agricultural character started to emerge from among farms in general, striving to adjust their production potential to market requirements, introducing biological progress and interested in improving the quality of their products. The market mechanism was conducive to strengthening these entities in agribusiness structures. Those holdings made up a group which making the most of opportunities given by the EU integration and of the support provided to agriculture and rural areas under CAP. The above is true not only about the support programmes, which required from potential beneficiaries to be entrepreneurial in their business activities, but it is also true about the so-called direct area payments, as proved, among others, by highly diversified amounts of area payments, depending on area features of farms in individual regions (Table 7.1).

Considering the fact that all decisions concerning production plans are taken at farm level, the differences in average amount of payments received affect the differences in nature of local transactions in agricultural land. The fact that rich farms obtain considerably large amounts through direct payments undoubtedly enhances their market position and raises their investment capacity. On the other hand, economically weak entities, localised in regions where agricultural land is relatively cheap, even though they obtain relatively high capitalisation from their land property in relation to area payment, but this amount is not significant in the total family income, and a farm usually fulfils functions not related to agricultural business activities.

Greater interest in purchasing land was the effect of better economic situation in agriculture. Integration with the EU and implementing support programmes under CAP led to considerable improvement of the condition of Polish agriculture. There was an unprecedented inflow of financial resources to this

sector, the percentage of farms which increased and modernised their production property was doubled, and income per one person employed in agriculture rose by 50%.

Table 7.1 Regional diversity in average area payments per 1 agricultural holding (total single and other payments)

Specification	2004	2005	2006	2007
<b>Poland</b>	<b>5,210.31</b>	<b>5,538.87</b>	<b>6,465.53</b>	<b>6,481.30</b>
Dolnośląskie	7,444.60	7,766.38	9,253.13	9,122.12
Kujawsko-Pomorskie	7,889.31	8,168.52	10,196.84	10,372.98
Lubelskie	3,544.18	3,838.08	4,683.43	4,762.83
Lubuskie	9,656.14	10,537.85	12,170.83	12,142.23
Łódzkie	3,936.45	4,230.71	4,804.19	4,808.15
Małopolskie	1,967.68	2,161.71	2,386.61	2,256.71
Mazowieckie	4,774.92	5,160.15	5,861.23	5,921.62
Opolskie	8,495.30	8,718.31	10,920.97	11,073.01
Podkarpackie	2,083.71	2,334.26	2,645.75	2,505.84
Podlaskie	7,531.93	8,047.37	9,067.53	9,264.12
Pomorskie	9,607.44	10,092.51	11,834.79	11,784.94
Śląskie	3,147.22	3,451.00	3,879.59	3,769.24
Świętokrzyskie	2,596.83	2,810.87	3,272.23	3,247.00
Warmińsko-Mazurskie	12,492.46	12,952.38	14,706.72	14,854.15
Wielkopolskie	7,652.23	7,964.84	9,556.99	9,722.30
Zachodniopomorskie	14,492.41	15,119.70	17,500.10	17,463.72

Source: data of Agency for Restructuring and Modernisation of Agriculture (ARMA), GUS

Apart from conditions relating to the growth of agricultural sector, in particular the advantages resulting from including Polish farmers in the support scheme under CAP, the situation on the land market was also affected by macroeconomic processes. They not only determined the opportunities to leave agri-

culture and take up other employment, but also influenced the pace and scope of conversion of land for non-agricultural purposes.

Due to benefits gained by the owners from transfer of land to construction sector or for infrastructure purposes, sectors such as agriculture and forestry will always be at disadvantage in competition for this production factor. Economic growth of the country brings about a continuity of urbanisation process, as well as of processes of development of various branches of industry, services and infrastructure. As a consequence, the surface of land used for agricultural production steadily decreases. It should be highlighted that this process is gradual and highly differentiated locally; it is well visible in vicinity of big agglomerations, whose receptive labour market attracts new inhabitants, thus changing the functions of the neighbourhood (the so called residential villages). Urbanisation of suburban villages was very intense in the period when, under rural development programmes, individual gminas were received grants for infrastructure development. Available data indicate that the most active were those areas, where a large part of inhabitants was involved in non-agricultural activities.

It should therefore be expected that, irrespective of legal protection granted to agricultural, natural and landscape environment, depending on the pace of macroeconomic development, the volume of land used for agricultural purposes will gradually diminish. Such trend became clearly noticeable after Poland's accession to the EU: between 2000 and 2004, around 2% of agricultural land on average was eliminated from agricultural use, while in the years 2004-2007 the corresponding indicator was 2.7%.

Irrespective of social and political systems, it is usually assumed that land, no matter to whom it belongs, is at the same time a national property, and it is the obligation of the state to protect it. To this end, legal acts establishing the rules for trade in agricultural land have been adopted.

The most important legal regulations as regards the trade in agricultural estate, currently in force in Poland, include: Article 23 of the Constitution of the Republic of Poland of 1997, pursuant to which the basis of the agricultural system of the State shall be the family farm; the Act of 19 October 1991 on management of the agricultural property of the State Treasury and establishing a special institution for this purpose (currently Agricultural Property Agency); and the Act of 11 April 2003 on formation of the agricultural system. Separate rules define the manner in which land can be sold to foreigners. Each of the above binding regulations addresses different issues, and they all affect the

transactions in agricultural property – to a different extent, and with the use of different instruments.

Taking into account intentions of the legislator and the actual wording of the provision, it seems that the declaratory recognition in the Constitution of family farm as the basis of the agricultural system of the State has the weakest connection with trade in agricultural land. Nevertheless, although this regulation resulted from political premises, the constitutional guarantees have restored the value to the land owned, thus influencing the situation on agricultural land market. The above has been confirmed by results of analyses of agricultural land transactions in subsequent years, indicating that bringing back the importance of annuity resulting from the ownership of land had a growing influence on the supply/demand relations on agricultural land market, and it contributed to an increase in benefits resulting from the ownership itself. Thus, it should be recognised that the provision on stability of family farms, although it did not directly refer to the conditions shaping the transactions in agricultural land, it indirectly affected them.

The basic legal act regulating transactions in agricultural property is the act on formation of the agricultural system. The Act determines the upper limits in terms of area of family farm (up to 300 ha of utilised agricultural land), and it specifies the rights of Agricultural Property Agency as the main institution supervising transactions in agricultural land.

Apart from arrangements concerning transactions in agricultural land, also legal principles of designating utilised agricultural area for non-agricultural purposes are established. Existing procedures considerably limit and hinder the elimination of good quality soil from agricultural use. Such process is nevertheless in progress, and it is especially intense in the vicinity of big cities.

The described processes obviously contribute to the growth of land prices on agricultural market. It should, therefore, be taken into account that – irrespective of legal protection of agricultural, natural and landscape environment, depending on the pace of macroeconomic development, the volume of land used for agricultural purposes will gradually diminish. Such trend became clearly noticeable after Poland's accession to the EU: between 2000 and 2004, around 2% of agricultural land on average was eliminated from agricultural use, while in the years 2004-2007 the share was 2.7%.

It should also be underlined that a land owner is interested in changing the classification of land use – from agricultural to non-agricultural – only when



he/she intends to sell it. It is caused by the existing tax system, i.e. relatively low agricultural property tax and low-cost social insurance (KRUS, Agricultural Social Insurance Fund). The listed regulations significantly limit the transformation processes within agricultural structures, which affects the situation on agricultural land market, limiting in particular the supply.

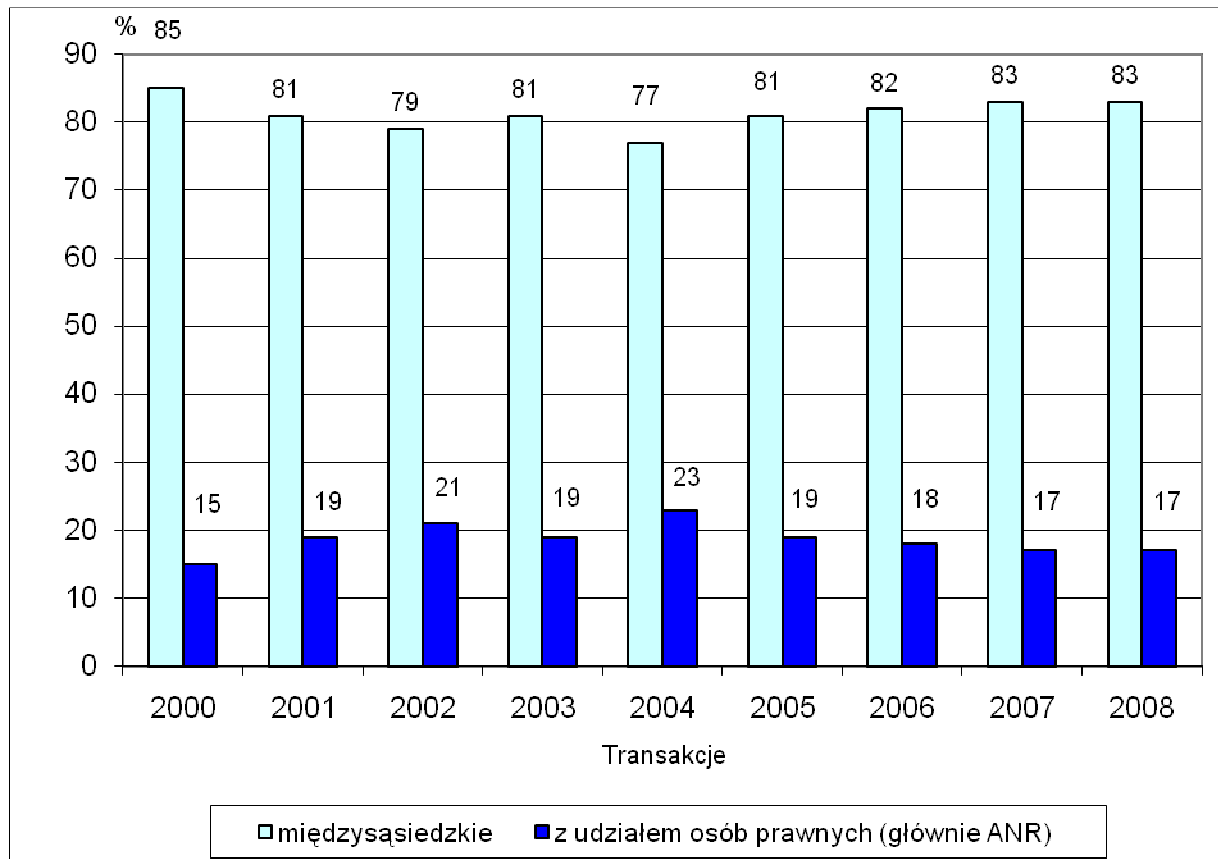
### **7.3 Situation on agricultural land market after the EU accession**

The period directly preceding the accession process was characterised by stagnation on agricultural land market. Expectations connected with the introduction of new agricultural policy rules after integration with the European Union limited the land market mainly in terms of supply. Potential sellers of land were reluctant to sell it because of forecasts predicting a significant growth of land prices, and they postponed final decision until the moment when they could become acquainted with the new situation and calculate the benefits. The unwillingness to dispose of land was enhanced by the promise that direct payments would soon be available.

Additional factor enhancing the unwillingness to dispose of land was the continuous lack of balance on the labour market. High unemployment rate (about 20%) and uncertainty of employment strengthened the security functions of agricultural holdings owned. During that period, legal persons were parties to almost a quarter of all land purchase/sale transactions.

In subsequent years, the significance of land purchase/sale transactions concluded with participation of legal persons (mainly the Agricultural Property Agency) was gradually falling. This phenomenon resulted, to a large extent, from the fact that majority of land from the Stock of State Treasury had already been distributed. Currently, the Agricultural Property Agency is focused on secondary restructuring of the leased large-area properties and on owners supervision of the leased property. When starting privatisation at the beginning of the nineties, the Agency included more than one-fourth of the total land into its Stock. Currently, the Agricultural Property Agency has permanently disposed of approximately half of the land, and majority of the rest is leased. In line with the applicable regulations, a significant part of this land is sold to current lessee without a tender procedure, also the sale of land designated for investment is continued. It should, nevertheless, be taken into account that the decreasing stock of land owned by State Treasury will have increasingly limited impact on the land market, as well as on the improvement of agrarian structure. Thus, it may be predicted that the lack of balance between supply and demand in agricultural land transactions will be growing.

Graph 7.2 Share of entities in transactions in agricultural land, by the number of transactions



PL	EN
Transakcje	Transactions
międzysąsiedzkie	between neighbours
z udziałem osób prawnych (głównie ANR)	with participation of legal persons (mainly the Agricultural Property Agency)

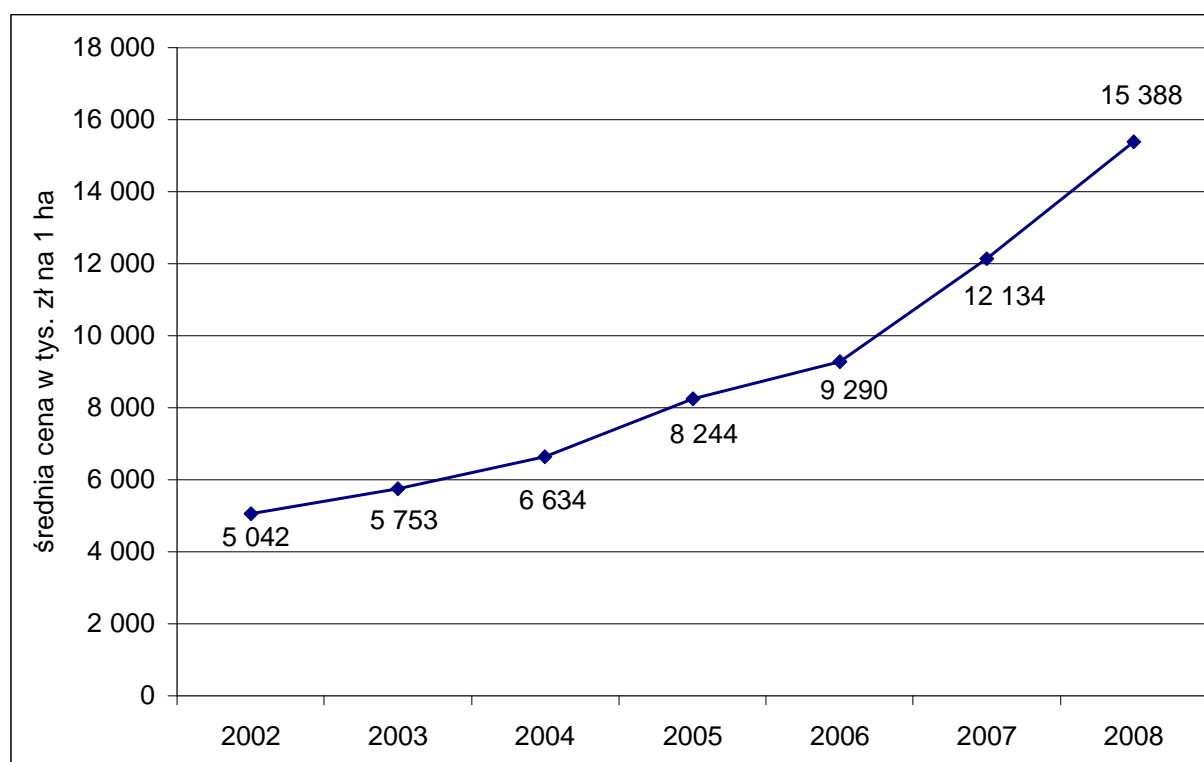
Source: Calculations based on the data from Statistics Division of the Ministry of Justice.

The impact of integration with the European Union and of covering Polish agriculture by the EU Common Agricultural Policy started to become visible in 2005, and practically from that time a considerable growth in land prices and in number of agricultural land transactions has been observed.

The rise of land prices was combined with a growing demand for land. The farmers started to be more and more determined to extend production potential of their holdings, while the benefits of owning land property became more apparent. Such benefits were connected both with making the scale of direct payments dependent on the area, and with the possibility to use structural funds for investments in agricultural holdings. The increase in land demand was also

triggered by the growing profitability of agricultural production, as after Poland's accession to the European Union a visible extension of markets in agricultural raw materials was observed. Motivations connected with enlarging the production scale were particularly strongly reflected in regional diversification of land prices, and by dynamics of their growth.

Graph 7.3 Average prices of agricultural land in private transactions



PL	EN
średnia cena w tys. zł na 1 ha	average price in PLN thousand per 1 ha

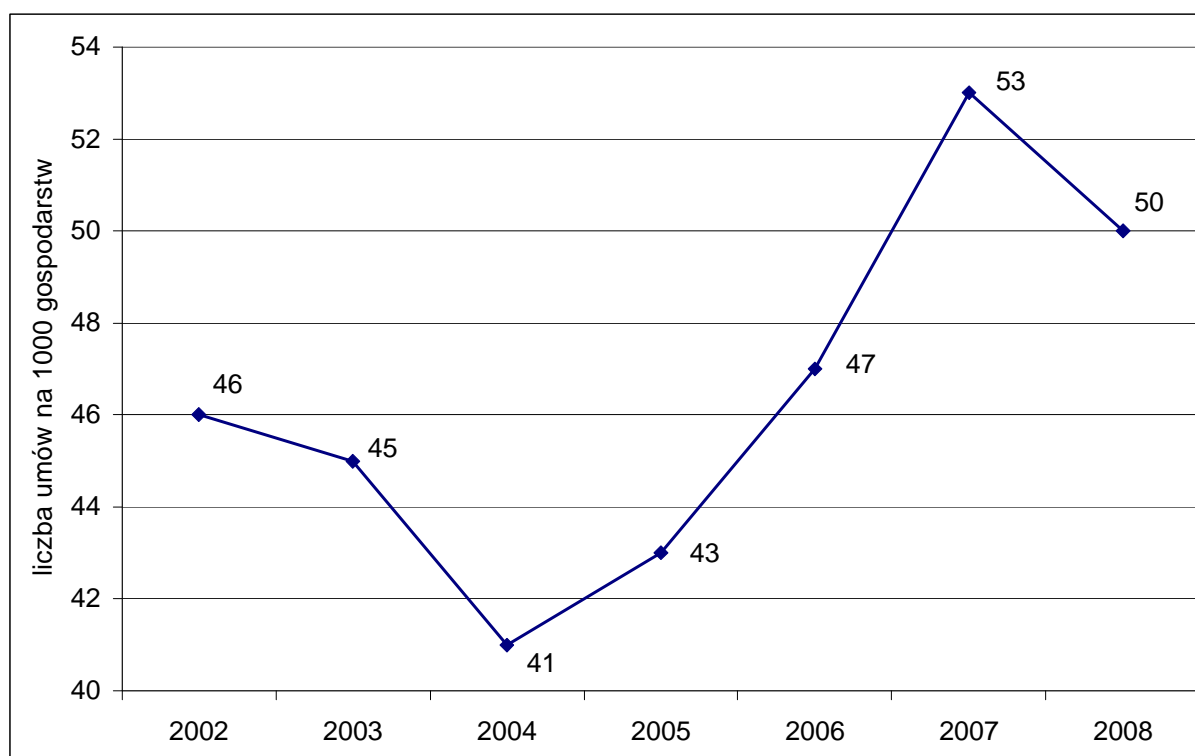
Source: Data from GUS

Regional differences in land prices and in the pace of their going up indicated that they were constantly affected by the features of local agriculture, by the attractiveness of a given location, as well as by general economic development of the region and the related demand pressure and on the scope of excess of demand over supply of plots of land available for sale.

Invariably, the most highly valued agricultural land was that located within areas exceptional in terms of agricultural condition, with the largest share of highly commercial individual farms, and with the greatest concentration of rich and professionally managed agricultural holdings. These features were typical mainly for central-western regions of the country, i.e. Wielkopolskie and Kujawsko-pomorskie voivodships. For example, in 2008 the price of agricultural

land in Kujawsko-pomorskie voivodship was 66% higher than the country average (in 2007, the difference was 57%) and in Wielkopolskie voivodship – by 59% (previously- by 65%). It should, therefore, be concluded that throughout all the analysed period the priority of agriculture prevailed in assessing the market value of land, which is also proved by the characteristics of regions with relatively cheapest land. Three voivodships – Świętokrzyskie, Podkarpackie and Lubuskie were always in that group. Social and economic problems of rural areas situated in these parts of the country depend to a large extent on general economic conditions, and especially on earning opportunities. In Świętokrzyskie voivodship as well as in Podkarpackie region such situation results from the fragmented agrarian structure, and from economic weakness of numerous agricultural holdings. Most owners of land in these regions make a living from non-agricultural work or pensions, and they treat their agricultural holdings as places to live and as a source of self-supply in food products.

Graph 7.4 Average number of purchase/ sale transactions in land per 1000 agricultural holdings



PL	EN
liczba umów na 1000 gospodarstw	number of agreements per 1000 agricultural holdings

Source: Data from GUS.

The growth of prices of agricultural land was undoubtedly the most spectacular effect of integration with the EU. It should also be noticed that despite the observed dynamic growth of agricultural land prices in Poland, they were still much cheaper than agricultural properties in the so called “old EU”. Considering climate conditions, quality of soil and trends in agricultural production, France and Germany may be regarded as countries with similar features. In 2006, average prices of agricultural land in France were 68% higher than in Poland. In Germany, whose agriculture is to a certain extent similar to that in Poland because of public sector privatisation in former GDR, in 2007, the market value of land in eastern states was only 29% higher than in Poland, while in the “old” states it was over five times higher.

From the perspective of improving agrarian structure in Poland and raising the competitiveness of Polish farms on national and international agricultural markets, increasing the number of land transactions has bigger impact on prices than the processes of price convergence. Although after Poland’s accession to the EU certain favourable symptoms became apparent: the invariably small supply of land offered for sale was the main barrier for activating concentration processes.

Just before the accession and directly after it (2003-2004), most of people selling land seemed to be anticipating an increase in land prices, and they seemed to be waiting for such an increase. In this period the number of purchase/sale transactions in agricultural property on the local market was approximately by 10% lower than in previous years, which contributed to some growth of the role of Agricultural Property Agency in transactions in land. In 2005, compared to 2004, the number of purchase/sale agreements in private transactions increased by 5.4%. In absolute numbers, there were 3.2 thousand more notary agreements concluded than previously, but taking account of the total number of individual agricultural holdings, which is estimated at ca. 1.851 thousand, the difference was not significant, and did not affect considerably the pace of agrarian changes.

The gradual revival of land market was proceeding in subsequent years; it was the strongest in 2007, when, according to the data of the Ministry of Justice, a total of 95.6 thousand notarial acts were concluded concerning purchase/sale transactions in agricultural properties, that is 14% more than in the previous year. For comparison, the analogous growth between 2005 and 2006 was smaller, namely 10%. Increase in the number of transactions in agricultural land occurred in both land market segments, i.e. transactions made between neighbours, transactions with participation of legal persons (mainly the Agricultural Property Agency). As compared to 2006, the number of transactions con-

cluded in 2007 on private market increased by 15%, and of transactions with participation of State Treasury or local government – by 8% (previously the differences were 11 and 5%). In 2008, as a result of adverse economic trends, the number of transactions slightly decreased.

Despite a noticeable increase in the number of purchase/sale transactions in land, in general changes in area structure of individual agricultural holdings were quite insignificant. The number of transactions in land was too small to radically reduce the number of agricultural holdings. In 2004-2007, this number fell by just 2.6%, which can be associated with the fact that possessing a small agricultural holding with non-production functions has several advantages. The share of entities of 2-5 ha of utilised agricultural area increased in the 2004-2007 period by 3.4%. Nevertheless, it should be taken into account that this growth resulted from the attitude of some owners of non-productive entities who were more eager than in previous years to dispose of part of their land, and to adjust their assets to actual use. The number of agricultural holdings covering 5-20 ha of utilised agricultural area decreased by nearly 10%. A gradual growth in the number of entities willing to dispose of land resulted in most part from the growth of market price of land, and from improving situation on the labour market, reflected not only by falling unemployment, but also by growing salaries in national economy, which ensured a sense of economic stability for families earning their living mainly from employment, and encouraged them to make non-agricultural investments. As a consequence, the polarisation of agricultural holdings according to their size was becoming increasingly apparent. The number of medium-sized agricultural holdings was falling, while the group of the largest holdings was growing. According to the data from GUS, in 2004-2007 the number of entities covering 20-50 ha of utilised agricultural area grew by 8.1% and the number of those covering over 50 ha grew by more than 11%.

It should be emphasised that the described processes were significantly diversified regionally, and that concentration of land was proceeding relatively fastest in the North and West of the country, while concentration tendencies were weakest in southern and central regions characterised by the highest agrarian fragmentation.

Because of the insufficiency of land for sale, temporary lease could become an important instrument of improving the agrarian structure in Poland.

#### **7.4 Summary**

In the current macroeconomic conditions, especially increasing regional (international) competition in agriculture, the improvement of agrarian structure

of Polish holdings is becoming a priority. Statistical data clearly indicate that in Poland a significant part of the possessed land is not used for commercial agricultural activity, but has merely a security function, and is a very profitable capital investment.

The unwillingness to sell land that is not used for economic activity by its owners or is not the main work place for a person indicated as the holding manager results from the fact that such land is usually treated as inherited property, making a part of family assets. This traditional attitude to land property is reinforced by the agricultural policy implemented. In current law, the definition of a farmer is based not on the criterion of work and source of income, but on the type of ownership (disposing) of agricultural land property of certain area. The above is applicable to the access to support programmes under the Common Agricultural Policy, especially to direct payments, which do not require any particular activity apart from fulfilment of relatively undemanding conditions concerning the maintenance of agricultural land in appropriate agricultural condition. The existing criteria for defining agricultural holding do not include a requirement to carry out economic activity in the form of agricultural production with the aim to obtain at least parity income from work at a family holding. The applicable legislation is also important in this respect, as it ensures a range of tax privileges resulting from agricultural use of land. Consequently, it should be said that current legal, economic and social conditions petrify the existing agrarian structure, and limit the process of concentration of production resources, in particular agricultural land.

To improve the effectiveness of use of land stock it is necessary to regulate formal and legal rules of leasing agricultural land. Such regulations should focus on private lease first of all, which is always very unstable, and often arranged in the form of oral agreement of parties for a relatively short period. Lease of land could in the future play more important part in the process of land concentration. From the point of view of potential lessee, it is especially important to secure the lease period and the conditions specified in the lease agreement. From the point of view of land owner, it is most important to collect money due for the lease, and to secure the right to ownership important.

## 8. Conclusions

In analyses of economic and production situation in Polish agriculture, and while assessing the competitiveness of Polish agricultural holdings on national and foreign markets, the need to accelerate concentration of land used for agricultural purposes is strongly highlighted. Attention is brought to the fact that fragmented agrarian structure translates into a large number of agricultural holdings poorly equipped with production factors, with limited investment capacity, and numerous labour force of poor quality generating a relatively small income. As a consequence, the existing conditions restrict economic development of agricultural sector, which results in a civilization gap in rural areas, and generally lower living standard in the country.

Table 8.1. Agricultural holdings and structure of land use in EU and in Poland according to their area

Specification	Utilised agricultural area in ha				
	up to 5	5-10	10-20	20-50	over 50
Agricultural holdings (million)					
EU-27 (14.5)	71.5	10.9	7.1	5.7	4.8
EU-15 (5.8)	54.6	12.9	10.7	11.2	10.6
Poland (2.6)	70.1	15.5	9.5	4.0	0.9
including individual agricultural holdings covering more than 1 ha (1.8)	57.5	22.2	13.5	5.7	1.1
Agricultural areas (in ha million)					
EU-27 (172.0)*	8.6	6.4	8.4	15.1	61.5
EU-15 (124.9)*	4.5	4.3	7.1	16.9	67.2
Poland (16.2)	18.1	17.5	20.8	18.4	25.2
including individual agricultural holdings covering more than 1 ha (14.1)	18.5	20.1	23.8	21.0	16.6

\* area expressed in UAA (Utilised Agricultural Area): areas used for agricultural purposes, comprising arable land, grassland, pastures and area used for cereal crops and vegetable gardens.

Source: own calculations on the basis of Data from GUS (Statistical Yearbook of Agriculture and Rural Areas, GUS, Warsaw 2008), and from European Commission

([http://ec.europa.eu/agriculture/agrista/2008/table\\_en/en354.htm](http://ec.europa.eu/agriculture/agrista/2008/table_en/en354.htm), 10.09.2009 r., data for 2005).



A range of measures aimed at supporting concentration processes in agriculture were initiated under the state agricultural and social policy, both before and after the integration with the European Union. Those measures, however, have not brought about any significant results so far, and the nature of agrarian changes remains evolutionary.

After Poland's accession to the EU (i.e. during the 2004-2008 period), the number of individual agricultural holdings of at least 1 ha of utilised agricultural area, increased from about 6 to 7%, whereas the share of utilised agricultural areas owned by those units increased from 35 to 38% of total utilised agricultural area. For comparison, the analogous data for EU-27 were 10.5% and 76.6%, respectively. The differences in the scale of land concentration are even more apparent if the data on area structure in Polish agricultural holdings are compared with that concerning the EU-15.

It should be highlighted that the scale of differences is significantly broader when we take account of the area used by individual categories of agricultural holdings than when we divide holdings into groups by area. This means that the main problem of Polish agriculture consists in insufficient average area of market-oriented entities, and too large total area of ineffective properties.

Among 1,808 thousand individual agricultural holdings of more than 1 ha of utilised agricultural area only 1,700 thousand carry out any agricultural activity, 220 thousand of which are agricultural holdings able to restore their production potential. Direct surplus of those holding exceeds over 8 ESU, which means that they are competitive on the European agricultural markets. The average size of such agricultural holdings is about 33 ha of utilised agricultural area, which means that these units are more than three times larger than country average. In general, it may be estimated that including the sector of highly commercial farms, about half of agricultural areas is used rationally. To change the situation would require acceleration of agrarian changes, as the research shows that the increase by 1 ha of utilised agricultural area raises by 3-4% the chance of a given holding to enter a group with higher production level.

It should be indicated that although in 2002-2007 about 1.5% of such agricultural holdings were eliminated each year (in the previous five years this rate was about 1%), the pace of this process is invariably too slow to speed up significant changes in the structure of agricultural holdings.

The data gathered in a representative "Farm structure survey", carried out by GUS in 2007, indicated that at that time agricultural activity was the main source of livelihood for only 25% households comprising an agricultural holding

user (in 2005, this rate was 27%) and 34% if a group of individual agricultural holdings covering more than 1 ha of utilised agricultural area is taken into account (in 2005, the rate was 36%). A similar tendency was observed in analyses of results of regional surveys carried out periodically by the Social and Regional Policy Department of IAFE-NRI.

Thus, it should be concluded that the fact of possessing land can to a decreasing extent be associated with agricultural economic activity, and a significant group of people fulfilling the function of agricultural holding managers can hardly be included into a category of people working as farmers. This is reflected not only by the small significance of income from agriculture in the livelihood of agricultural families, but also by an analysis of features of main users of holdings. The above is reflected, for example, by the widespread non-agricultural education, which in case of young managers of agricultural holdings was a feature of a half of the group. In the majority of such entities the older generation was carrying out agricultural activity.

Due to the fragmentation of Polish agriculture, the number of agricultural holdings in Poland accounts for 17.5% of all agricultural holdings in EU-27, and the number of people employed in agriculture, forestry and fisheries accounts for 16.6% of the number of people employed in this sector in the European Union (according to the data of Eurostat for 2007). The number of Polish holdings is far from the European average: 1,800 thousand in Poland compared to 507 thousand per one EU state. The situation is similar for employment in agriculture: in the EU countries the average is 6%, and in Poland it is 19% (measured at the NUTS-2 level).

Consequently, the majority of our agricultural holdings, especially those family operated, is not competitive and agricultural income of people employed there is strikingly low. This situation could be changed and the concentration process could be accelerated by more market transactions in land. Considerable pressure has been observed for several years at the supply side (in effect, the prices of land are growing at a highest pace not recorded so far), however, the extremely limited supply of land offered for sale is still an obstacle. The stock of Agricultural Property Agency is running down, and transactions in agricultural land are carried out mainly outside the market (the so called family transactions). Almost 90% of agricultural holdings are transferred as family inheritance, while the growing prices enhance the importance of agricultural land owned as capital, and improve its attractiveness as an asset.

Necessary structural changes in agricultural sector with the aim to improve its competitiveness and ensure satisfactory income from agricultural activ-

ity would require acceleration of the process of reducing the number of people working in family holdings, and specialisation in terms of employment. Reducing the number of people working in agricultural production will involve considerable changes in area structure, as well as modernisation of agricultural production techniques. Development regularities observed so far show that the phenomenon of people leaving agriculture usually precedes agrarian changes, and that it forces farmers to employ efficient production methods.

The analyses conducted show that nowadays, to make Polish agriculture competitive, an intensive process of concentration of land resources in market-oriented holdings is necessary – not only to ensure competitiveness of Polish agriculture, but also in the context of sustainable development of agriculture and of rural areas. Let us point out that what Polish agriculture needs is not extreme concentration, but an increase of land stock in holdings able to effectively compete on the increasingly liberal agricultural market.

Improvement of area structure of individual holdings and concentration of agricultural areas in entities having capacity to compete involves the process of liquidation of holdings. Their number should be reduced nearly by half, which will result in the situation when the average area of individual holding of than 1 ha of utilised agricultural area will be 13 ha of utilised agricultural area. As regards the group of holdings having the capacity to compete on local and regional markets, they should account for 25% of the total existing entities, and their average size should be about 50 ha of utilised agricultural area. For comparison, in 2007 the corresponding rates were 7.8 ha, 12%, and 29.5 ha of utilised agricultural area. Changes in the area structure require above all the acceleration of diversification of economic activity of farmers. Almost every third person should give up employment in their own agricultural holding.

On the basis of tendencies observed so far, it can be predicted that the process of changes in area structure with a view to improve the competitiveness of agriculture will proceed very slowly (30-35 years) in current conditions. That is why instruments should be implemented intensifying the process of liquidation of some holdings, and conducive to changing the farming occupation for employment in non-agricultural fields.

Greater access of rural community to non-agricultural jobs is a necessary condition for reducing the number of ineffective holdings and, in consequence, for changing the agrarian structure in Poland. Some symptoms of such situation were visible in 2007, when the economic trends were exceptionally favourable, which not only led to temporary improvement on the labour market, but also resulted in more market transactions in agricultural land. Thus, the macroeco-

conomic conditions, as well as relatively high profitability of numerous companies and enterprises guaranteed the stability of employment and attractive salaries. In such situation, the owners of agricultural holdings that did not ensure sufficient income were more eager than in previous years to dispose of at least part of the possessed land, and to invest in non-agricultural activity or consumption.

Supporting the undertakings which create new jobs in rural areas is important not only because of the need to transform agrarian structure, but also due to the need to stimulate local economic development preventing excessive migration. Local institutions, especially local governments, play an important part in this respect. Their task is, among others, to take care of developing social infrastructure, which results in improvement of human capital, which, in turn, translates into active participation in local development.

The research and analyses carried out so far have shown that structural changes taking place in rural areas after the EU integration have been to a significant extent a continuation of earlier processes, and that the intensity and pace of development have been enhanced. This was true especially for persistent regional differences in the formation of the group of highly commercial individual holdings with strong market position, and for the advancement of the process of multifunctional rural development. Also the increasingly apparent polarisation of agricultural holdings has been accelerated in terms of agrarian structure, their market activity and diversification in sources of livelihood of rural families.

However, structural changes in Polish agriculture, stimulating the competitiveness of Polish farms on national and foreign markets, still require a ca. 60% reduction in the number of people employed in this sector, especially in family operated holdings, which account for almost 98% of people working in agriculture. The target number of people associated with agriculture should be about 680 thousand, which accounts for approximately 4% of professionally active population. Such rate would be close to the European Union average.

**Annex 1. List of selected publications and papers published in foreign languages, presenting the results of research carried out under a task entitled**  
**“Regional diversification in agricultural development and its influence on economic and social problems of rural areas”**

1. Chmielewska B., Mierosławska A., *Entwicklung der Landwirtschaft und des laendlichen Raums in den regionalen Entwicklungsstrategien in Polen*, [in:] *Online-Fachzeitung des Bundesministeriums für Land und Forstwirtschaft, Umwelt und Wasserwirtschaft*“ (wersja internetowa, październik 2008, [www.laendlicher-raum.at](http://www.laendlicher-raum.at)).
2. Chmielewska B., *Diversification of Economic Situation of Households*, Part 3, chapter 2 [in:] *Agri-Food Sector in the face of current challenges*, (second edition), Scientific editors: A. Ukrainets, P. Sabluk, A. Kowalski; Leading editors: T. Mostenska, B. Chmielewska, Y. Bilan, Wyd., National University of Food Technologies, NSC Institute of Agrarian Economy, NRI Institute of Agricultural and Food Economics, Centre of Sociological Research, Kyiv 2009, (monografia), s. 167-176.
3. Chmielewska B., *Income situation of farmer families in Poland in the light of economic transformations and European integration*, [in:] *Ukrainian-Polish Cooperation in the Context of Globalization*, Series of monographs Economic & Studies, No 1, Supplement A, s. 117-125, Kyiv-Ternopil 2008.
4. Chmielewska B., *Стан і перспективи зми у альськогосподарському секторі в СС-27*, розділ 3.1 [in:] *Сільське господарство - харчова промисловість - сільські території (колективна монографія)* / За ред. Тетяна Мостенська, Варвара Хмільська, Юрій Білан, Марек Вігер. Wyd., Національний університет харчових технологій (Київ); Інститут економіки сільського господарства і АПК (Варшава); Центр соціологічних досліджень (Тернопіль), Київ-Варшава, 2009, (monografia), (ISBN 978-83-60903-87-2), s. 127-143.

5. Chmieliński P. *Influence of localisation on the development of rural communities* [in:] *Agrarian Perspectives XVIII. Strategies for the future*, vol 1., Czech University of Life Science, Praha 2009, s. 61.
6. Chmieliński P., Karwat-Woźniak B., *Prospects for the development of agriculture and rural areas in Poland* [in:] *Certain aspects of structural change in rural areas. The experience of selected countries. Raport PW nr 165, IERiGŻ-PIB, Warszawa 2009, s. 68-80.*
7. Chmieliński P., Karwat-Woźniak B., *Socio-demographic characteristics of labour resources in agriculture* [in:] *Quality of Labour Resources, Economic & Competition Policy v. 11, University of Szczecin, Szczecin 2007, s. 85-94.*
8. Chmieliński P., Otłowska A., *Развитие на предприемачеството в селските райони две години след присъединяването на Полша към Европейския Съюз, Икономика и управление на селското стопанство № 3/2007, София 2007, s. 108-114.*
9. Chmieliński P., Otłowska A., *Changes in the socio-economic structure of the non-farming rural population in 2000-2005*, *Oeconomia nr 3/2008, s. 25-32.*
10. Chmieliński P., Otłowska A., *Non-agricultural economic activities in rural areas in Poland* [in:] *The economic and social issues of sustainable development*, vol. III, edit. B. Mickiewicz, Agricultural University in Szczecin, Szczecin 2007, s. 13-21.
11. Chmieliński P., Otłowska A., *Roliata na mestnata vlast za podpomagane na priedpriemaczite w selskite rajoni* (Rola samorządów terytorialnych we wspieraniu przedsiębiorczości na obszarach wiejskich), *Ikonomiczeski Žiwot nr 46/2082, Sofia 14.11.2007.*
12. Chmieliński P., Otłowska A., *Stimuli za ikonomiczata na selskite regioni* (Stymulowanie gospodarki obszarów wiejskich), *Ikonomiczeski Žiwot nr 41/2007, Sofia 10.10.2007.*
13. Chmieliński P., *Changes in labour resources in family farms in Poland in 2000-2005*, artykuł złożony do publikacji w materiałach konferencji: «Молодежь в науке – 2009», Mińsk, 21-24 kwietnia 2009.
14. Chmieliński P., *How does the location of village influence the development of rural communities?* [in:] *Rural areas pressing question*, rozdział w monografii pod kierunkiem prof. Věry Majerovej, Czech University of Life Sciences w Pradze.
15. Chmieliński P., *Regional differences in the economic situation of the rural families without farms* [in:] *Sustainable local development, EU supporting tools for agriculture and rural areas for 2007-2013*, eds.

- p. Mickiewicz, B. Mickiewicz, Akademia Rolnicza, Szczecin 2008, s. 21-26.
16. Chmieliński P., *Socio-economic factors stimulating development of rural entrepreneurship in Poland* [in:] Conference proceedings of 100th EAAE Seminar: Development of Agriculture and Rural Areas in Central and Eastern Europe, edited by D. Tomic, M.M. Sevarlic, EAAE, Novi Sad 2007, s. 90-94.
  17. Chmieliński P., *Support programmes for the development of rural entrepreneurship in Poland*, 'Agriculture and Economics' Vol. LV, No 1 (1-138) 2009, Belgrade 2009, s. 31-41.
  18. Chmieliński P., *The Impact of the Common Agricultural Policy on the Development of Rural Entrepreneurship in Poland*, "Agricultural Science" T. 14. Priedas, Lithuanian Academy of Science, Vilnius, 2007, s. 35-40.
  19. Chmieliński P., *Wyzmozności za podkrepa i barieri pred razvitieto na malkite i srednite predprijatija w Polska* Икономика и управление на сепското стопанство, № 3/2009, Национален Център за Аграрни Науки, София 2009, s. 80-86.
  20. Chmieliński P., *Условия за развитие на предприемачеството в селските райони на Полша* Икономика и управление на сепското стопанство, № 3/ 2008 София 2008, s. 83-88.
  21. Dudek M., *The farmers' early retirement scheme as an instrument of structural changes in the rural areas after Poland's accession to the EU*, Multi-level Processes of integration and Disintegration, Proceedings of the Third Green Week Scientific Conference, edit. F. Schaft, A. Balmann, Studies on the agricultural and food sector in the Central and Eastern Europe, Vol. 52, Leibniz Institute of Agricultural Development in Central and Eastern Europe IAMO, s. 29-36.
  22. Dudek M., Wrzochalska A., Zwoliński Ł., *Assessment of the changes in the socio-economic structure of rural areas in 2000-2005*, Raport Programu Wieloletniego nr 79.1, IERiGŻ-PIB, Warszawa 2008.
  23. Dudek M., *Priemstwenost na stopanstwata na fermerite w predpensjonna wyzrast w Polska*, (Sukcesja w gospodarstwach rolników w wieku przedemerytalnym w świetle badań IERiGŻ-PIB), Agricultural Economics and Management, № 3/2009, Agricultural Academy, Sofia, s. 137-144.
  24. Dudek M., *The farmers' early retirement scheme as an instrument of structural changes in the rural areas after Poland's accession to the EU*,

- “Modern Agriculture in Central and Eastern Europe 3<sup>rd</sup> Green Week Scientific Conference 2009 “Multi-level Processes of integration and Disintegration, Book of Abstracts, s. 17.
25. Dudek M., *The selected factors affecting development of young farmers' holdings after the accession of Poland to the European Union*, Youth seeks progress. Paper collection of scientific conference of phd. students, Lithuanian University Of Agriculture, Akademija 2009, s. 135-138.
  26. Gospodarowicz M., Kołodziejczyk D., *Financial institutions and the development of rural areas in Poland*, Riga Technical University, Faculty of Engineering Economics, s. 56-73.
  27. Gospodarowicz M., *Local institutional network and the socio-economical situation of polish farms*, [in:] *AGRI-Food Sector in the Face of Current Challenges*, National University of Food Technologies Ukraine), NSC “Institute of economy UAAS (Ukraine), NRI Institute of Agricultural and Food Economics (Poland), Centre of Sociological Research (Ukraine), Kyiv, 2009, s. 206-212.
  28. Gospodarowicz M., *Local institutional network and the socio-economical situation of polish farms*, [in:] *AGRI-Food Sector in the Face of Current Challenges*, (wydanie drugie – uzupełnione i poprawione) National University of Food Technologies Ukraine), NSC “Institute of economy UAAS (Ukraine), NRI Institute of Agricultural and Food Economics (Poland), Centre of Sociological Research (Ukraine), Kyiv, 2009, s. 226-232, (zadanie 4018 i 4019).
  29. Gospodarowicz M., *Local institutional network and the socio-economic situation of polish farms*, [in:] A. Ukrainets, P. Sabluk, A. Kowalski [ed.] *AGRI-Food Sector in the Face of Current Challenges*, National University of Food Technologies, Kyiv 2009.
  30. Gospodarowicz M., *Selected aspects of indirect market discipline In banking supervision*, Publishing House, Saint-Petersburg State University of Economics and Finance, s. 204.
  31. Karwat-Woźniak B., Chmieliński P., *Социално-демографска структура на населението и трудови ресурси във фамилните стопанства в Полша*, Agricultural Economics and Management, National Centre for Agrarian Science, Bulgaria, No 3/2007, s. 120-124.
  32. Karwat-Woźniak B., Chmieliński P., *Highly commercial farms in family farming in Poland*, Raport 72.1. IERiGŻ-PIB, Warszawa 2007, 103 s.
  33. Karwat-Woźniak B., Chmieliński P., *Population and labour in family farming in Poland*, Raport nr 28.1, IERiGŻ-PIB, Warszawa 2006, 44 s.



34. Karwat-Woźniak B., Chmieliński P., *Prospects for the development of agriculture and rural areas in Poland*, [in:] *Certain aspects of structural change in rural areas. The experience of selected countries*, Raport nr 165, IERiGŻ-PIB, Warszawa 2009, s. 68-80.
35. Karwat-Woźniak B., Gospodarowicz M., *Promieni i i konomiczeskoto položenije na visoko stokowite stopanstwa w perioda na prestrukturirane i europejska integracija*, *Agricultural Economics and Management*, № 3/2009, Agricultural Academy, Sofia 2009, s. 35-45.
36. Karwat-Woźniak B., Parzuchowski L., *Rodzinne gospodarstwa wysokotowarowe*, *Nowe Życie Gospodarcze* nr 24 2008/2009 s. VIII-X.
37. Karwat-Woźniak B., *Economic potential of Polish agriculture and the possibilities of its developing in globalization period*, *Economics&Sociology*, 2009 Vol. 2. No 2/2009, Kyiv - Ternopil, s. 54 –68.
38. Karwat-Woźniak B., *Employment and the extent of the use of labour resources in individual farming in Poland – change tendencies in the conditions of increasing competition*, *Jurnal of International Studies*, Vol. 1. No 1, Supplement A, Foundation of International Studies Centre of Sociological Research, Kyiv-Ternopil 2008, chapter 12, s. 126 -136.
39. Karwat-Woźniak B., *Highly commercial family farms in the light of the sustainable development of agriculture and rural areas in Poland* [in:] *Agri-Food sector in the face of current challenges*, National University of Food Technologies (Ukraine), NSC “Institute of economy UAAS (Ukraine), NRI Institute of Agricultural and Food Economics (Poland), Centre of *Sociological Research (Ukraine)*, Kyiv 2009, s. 179-188.
40. Karwat-Woźniak B., *Highly commercial family farms in the light of the sustainable development of agriculture and rural areas in Poland* [in:] *Agri-Food sector in the face of current challenges (second edition)*, National University of Food Technologies (Ukraine), NSC “Institute of economy UAAS (Ukraine), NRI Institute of Agricultural and Food Economics (Poland), Centre of Sociological Research (Ukraine), Kyiv 2009, s. 199-208, wydanie II, uzupełnione i poprawione.
41. Karwat-Woźniak B., *Highly commercial farms in peasant agriculture*, [in:] *Multi-Annual Research Programme. 2005 Research Synthesis*, Raport 23.1, IERiGŻ-PIB, Warszawa 2005, s. 65-66.
42. Karwat-Woźniak B., *Highly commercial farms in peasant agriculture*, [in:] *Multi-Annual Research Programme. 2006 Research Synthesis*, Raport 56.1, IERiGŻ-PIB, Warszawa 2006, s. 88-91.

43. Karwat-Woźniak B., *Regional differentiation in the socio-economic conditions of functioning of the agriculture in Poland - limitation or stimulation of the development?*, 15 s., rozdział w monografii Czech University of Life Sciences Prague.
44. Karwat-Woźniak B., *Regional differentiation in the socio-economic development conditions of the agriculture in Poland*, [in:] *Agrarian perspectives XVIII. Strategies for the future, Volume 1, collection of papers of international scientific conference*, Praha, 2009, s. 97.
45. Karwat-Woźniak B., *Socio-economic characteristics of highly commercial family farms (changes in 2000-2005)*, Raport 83.1, IERiGŻ-PIB, Warszawa 2008, 53 s..
46. Karwat-Woźniak B., *The area of cultivated land as a factor determining economic potential of private farm*, *Economics&Sociology*, Vol. 2. No 1/2009, s. 47-57.
47. Karwat-Woźniak B., *Интеграцията на Полша в Европейския съюз и процеса на формиране на високостокския сектор във фамилните стопанства*, *Agricultural Economics and Management*, National Centre for Agrarian Science, Bulgaria, No 3/2007.
48. Karwat-Woźniak B., *Основни характеристики на високостокските стопанства в периода на интеграция на Полша в ЕС*, *Икономика и управление на селското стопанство*, № 3/ 2008, София, s.43-49.
49. Karwat-Woźniak B., *Формування сегментів високотоварних с/г господарств і можливості їх подальшого розвитку* [in:] *сільське господарство харчова промисловість сільські, території національний університет харчових технологій (київ) інститут економіки сільського господарства і апк (варшава) центр соціологічних досліджень* (Тернопіль), Київ-Варшава 2009, s. 55-66.
50. Kołodziejczyk D., Gospodarowicz M., *Risk Adjustment Deposit Insurance Premium – an Overview over the Theoretical Methods of Estimation*, [in:] *Education and Economy*, Tallin University of Technology, Tallin 2007, s. 27-29.
51. Kowalski A., Wigier M., Chmieliński P., *Poland's adjustment to challenges of changing agricultural policy of the European Union* [in:] *The role of knowledge and human capital in multifunctional agricultural and territorial rural development*, Thematic proceedings of 113<sup>th</sup> Seminar of EAAE, eds. D. Tomic, Z. Vasilevic, D. Cvijanovic, Belgrade 2009, s. 201-209.

52. Michna W., *Можливості розвитку сільськогосподарських підприємств у десятилітніх часових горизонтах*. розділ 3.2 [in:] *Сільське господарство - харчова промисловість - сільські території (колективна монографія)* / За ред. Тетяна Мостенська, Варвара Хмільська, Юрій Білан, Марек Вігер. Wyd., Національний університет харчових технологій (Київ); Інститут економіки сільського господарства і АПК (Варшава); Центр соціологічних досліджень (Тернопіль), Київ-Варшава, 2009, (monografia) (ISBN 978-83-60903-87-2), s. 144-150. (R)
53. Mierosławska A., *Local entrepreneurship windows in the development of the eastern Poland's rural areas*. [in:] *Agri-Food Sector in the face of current challenges*. Scientific editors: Anatoliy Ukrainets, Petro Sabluk, Andrzej Kowalski; Leading editors: Tetyana Mostenska, Barbara Chmielewska, Yuriy Bilan, Wyd., National University of Food Technologies, NSC Institute of Agrarian Economy, NRI Institute of Agricultural and Food Economics, Centre of Sociological Research, Kyiv 2009, (monografia) (ISBN 966-451-006-8), s. 198-205. (R)
54. Mierosławska A., *Local entrepreneurship windows in the development of the eastern Poland's rural areas*, [in:] *Agri-Food Sector in the face of current challenges, (second edition)*, Scientific editors: Anatoliy Ukrainets, Petro Sabluk, Andrzej Kowalski; Leading editors: Tetyana Mostenska, Barbara Chmielewska, Yuriy Bilan, Wyd., National University of Food Technologies, NSC Institute of Agrarian Economy, NRI Institute of Agricultural and Food Economics, Centre of Sociological Research, Kyiv 2009, (monografia) (ISBN 966-451-006-9), s. 102-108. (R)
55. Mierosławska A., *Молочна кооперація в Польщі в період реструктуризації*. розділ 2.5 [in:] *Сільське господарство - харчова промисловість - сільські території (колективна монографія)* / За ред. Тетяна Мостенська, Варвара Хмільська, Юрій Білан, Марек Вігер. Wyd., Національний університет харчових технологій (Київ); Інститут економіки сільського господарства і АПК (Варшава); Центр соціологічних досліджень (Тернопіль), Київ-Варшава, 2009, (monografia) (ISBN 978-83-60903-87-2), s.102-107. (R)
56. Otłowska A., *Non-agricultural rural population in the socio-economic transformation period related to the Polish accession to the European Union*, [in:] *Agri-food sector in the face of current challenges*, A. Ukrainets, P. Sabluk, A. Kowalski [ed.], Ukraine, National University of Food Technologies, NSC Institute of Agrarian Economy, Institute of Ag-

- gricultural and Food Economics-NRI, Centre of Sociological Research, Kijów 2009, s. 189-197.
57. Otłowska A., *Non-agricultural rural population in the socio-economic transformation period related to the Polish accession to the European Union*, [in:] *Agri-food sector in the face of current challenges (second edition)*, A. Ukrainets, P. Sabluk, A. Kowalski [ed.], Ukraina, National University of Food Technologies, NSC Institute of Agrarian Economy, Institute of Agricultural and Food Economics-NRI, Centre of Sociological Research, Kijów 2009, s. 209-217.
  58. Otłowska A., *Parcels of non-farming rural families and methods of using them* 'Economics & Sociology', Vol. 2, No 2, 2009, Kijów-Ternopil 2009, s. 91-100.
  59. *Regional Absorption Capacity of Farm Income Support in Poland*, [in:] *Proceedings of European Workshop on the Evaluation of Farm investment support and Improvement of processing and marketing of agricultural products*, Working Papers of Agricultural Economics, No. 03/2006, Federal Agricultural Research Centre, Braunschweig 2006.
  60. Sikorska A., Chmieliński P., Wrzochalska A., *The regional diversification of agriculture in Poland and Common Agricultural Policy*, Bulgaria Rusticana, Wydawnictwo BAN, Sofia 2009, s.20-32.
  61. Sikorska A., Chmieliński P., *The socio-economic structure of the non-farming rural population in Poland*, Raport PW nr 82.1, IERiGŻ-PIB, Warszawa 2007.
  62. Sikorska A., Karwat-Woźniak B., Chmieliński P., *Changes in the agricultural land market and agrarian structure of individual farms in Poland*, Economics & Sociology, 2009 Vol. 2. No 1/2009, Kyiv - Ternopil, s. 67-79.
  63. Sikorska A., Karwat-Woźniak B., Chmieliński P., *Landscape-cultural mosaic as a factor of local development in Poland* [in:] *Unicity, uniformity and universality in the identification of the landscape and cultural mosaic*, Architettura del Paesaggio, Allegato al n. 20/2009.
  64. Sikorska A., Karwat-Woźniak B., Chmieliński P., *The impact assessment of changes in the agricultural land market on agriculture and rural development in Poland* [in:] *The influence of EU agricultural policy on land use and rural development*, Collection of seminar papers, VUZE, Praha 2007.
  65. Sikorska A., *Diversifikacija na istocznicite na dohodi na selskite domakinstwa w Polsha*, Ekonomika i Uprawnenije, Jugozapaden universitet Neofit Rilski, Stopanski Fakultet, Blagoevgrad, godina V, Broj 1/2009, s.2-6.

66. Sikorska A., *Funkcjonirane na pazara za zemedelska zemia*, (Funkcjonowanie rynku ziemi rolniczej), *Agricultural Economics and Management*, № 3/2009, Agricultural Academy, Sofia 2009, s. 67-71.
67. Sikorska A., *Razmer, dinamika i demografski osobennosti na nezemedelskata socialna grupa w selskite rajoni na Polska*, *Ekonomika I Upravljenje*, Jugozapaden universitet Neofit Rilski, Stopanski Fakultet, , godina V, Broj 2/2009, Blagoevgrad 2009, s. 6-10.
68. Sikorska A., *Strukturni promeni w dohodite na selskite domakinstwa w Polska*, *Ikonomiczeski Život*, Sofia artykuł złożony w redakcji w XI 2007
69. Sikorska A., *Strukturni promeni w dohodite na selskite domakinstwa w Polska*, *Ikonomiczeski Život*, Sofia artykuł złożony w redakcji w XI 2007
70. Sikorska A., *Tendencii w razwitiето na zemedelskite stopanstwa sled pri-syediniawaneto na Polska kym europejski syjuz*, *Ikonomiczeski Život*, Sofia artykuł złożony w redakcji w XI 2007.
71. Sikorska A., *Мястото на неземеделското население в социално-икономическата структура на полското село* *Икономика и управление на сепското стопанство*, № 3/ 2008, София 2008, s.89-96.
72. Sikorska A., *Структурни промени в селската икономика*, *Икономика и управление на сепското стопанство*, № 3/ 2007.
73. Sikorska A., *Socio-economic and Legal Conditions of the Changes in the Situation of Agricultural Land Market in Poland*, [in:] *Agri-Food Sector in the Face of Current Challenges*, edited by A. Ukrainets, P. Sabluk, A. Kowalski, T. Mostenska, B. Chmielewska, Y. Bilan, National University of Food Technologies, NSC Institute of Agrarian Economy UAAS, Institute of Agricultural and Food Economics-NRI, Centre of Sociological Research, Kyiv 2009, s. 157-167.
74. Wrzochalska A., Zwoliński Ł., *Migracjonni procesi w selskite rajoni sled wlizanieto na Polska* (Procesy migracyjne na obszarach wiejskich w Polsce po wstapieniu do UE), [in:] *Bylgarskoto selo- meždu romantikata i trezwata precelka*, Bulgaria Rustikana, Instytut Socjologii Bułgarskiej Akademii Nauk, Związek Naukowców Bułgarskich- Sekcja Nauki Socjologiczne, Bułgarski Związek Socjologów Wsi i Socjologów Rolniczych, Trojan 2009.
75. Wrzochalska A., Zwoliński Ł., *Промени в социално-икономическото положение след влизането на Полша в ЕС*, (Przemiany warunków

- społeczno-ekonomicznych po wstąpieniu Polski do UE), Икономика и управление на сепското стопанство, № 3/ 2008, София, s.101-106
- 76.Wrzochalska A., *Czoweszki resursi w selskite rajoni na Polska*, Ikonomiczeski Żiwot nr 33/2068, Sofia 15 awgust 2007
- 77.Wrzochalska A., *Izbrani aspekti odnosno uslowiata na ziwot i zdrowoslownoto systojanije na selskoto naselenije wyw Polska- Selected aspects of life and healt conditio of the rural population in Poland*, Agrarni nauku, godina I, broj 2, Agrarni Uniwersitet – Plovdiv 2009, s 1-8.
- 78.Wrzochalska A., *Social and economic changes in rural areas in the first years of EU membership*, [in:] *Economic Choices made in the Polish Economy in Globalization*, pod red. naukową D. Kopycińskiej, Uniwersytet Szczeciński, Katedra Ekonomii, Szczecin 2007, s. 55-64
- 79.Wrzochalska A., *The living standards of rural families one year after EU accession*, Raport Programu Wieloletniego nr 36.1, IERiGŻ-PIB, Warszawa 2007.
- 80.Wrzochalska A., *Uswojawane na sredstwa po miarka Syzdawane na stopanstwa na mladi fermeri ot Sektornata Operatywna Programa w Polska. Regionalni razliczija*, (Wykorzystanie środków finansowych w ramach SPO w Polsce w gospodarstwach młodych rolników. Różnice regionalne), *Agricultural Economics and Management*, № 3/2009, Agricultural Academy, Sofia 2009, s. 121-126.
- 81.Wrzochalska A., *Zdrawni usługi i zdrowoslowno systojanije na selskoto naselenije w Polska sled prisjediniawaneto i kym Europejski Syjuz*, Икономика и управление, Jugozapaden Uniwersytet Neofrit Rilski Stopanski Fakultet, Blagoewgrad 2008, godina IV, broj 1/2008, s. 67-74.
- 82.Wrzochalska A., *Социално-икономически промени в селската среда през първите години на членство в ЕС*, Икономика и управление на сепското стопанство, № 3/ 2007, Sofia 2007.
- 83.Wrzochalska A., *Условия на живот и здравословно състояние на селското население след присъдияването на Полша към ЕС*, (Warunki życia i zdrowia ludności wiejskiej po akcesji Polski do UE), Икономика и управление на сепското стопанство, № 3/ 2008, София, s. 96-100.
- 84.Wrzochalska A., *Условия на живот и здравословно състояние на селското население след присъдияването на Полша към ЕС*, (Warunki życia i zdrowia ludności wiejskiej po akcesji Polski do UE), Икономика и управление на сепското стопанство, № 3/ 2008, София, s.96-100

85. Zwoliński Ł., Wrzochalska A., *Промени в социално-икономическото положение след влизането на Полша в ЕС*, (Przemiany warunków społeczno-ekonomicznych po wstąpieniu Polski do UE), *Икономика и управление на селското стопанство*, № 3/ 2008, София, s. 101-106.
86. Zwoliński Ł., *Migracija na sełskoto naselenije w perioda 2000-2005 g*, (Migracje ludności wiejskiej w latach 2000-2005), *Agricultural Economics and Management*, № 3/2009, Agricultural Academy, Sofia 2009, s. 132-136.
87. Zwoliński Ł., Raport Programu Wieloletniego Nr 58.1 *Selected demographic characteristics of the rural population in 2000-2005*, IERiGŻ-PIB, Warszawa, 2008.





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