INSTITUTE OF AGRICULTURAL AND FOOD ECONOMICS
NATIONAL RESEARCH INSTITUTE

Population and labour in family farming in Poland

no 28.1
Warsaw 2006

Bożena Karwat-Woźniak
Paweł Chmieliński

MULTI-ANNUAL PROGRAMME 2005-2009

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

Population and labour in family farming in Poland

INSTITUTE OF AGRICULTURAL
AND FOOD ECONOMICS
NATIONAL RESEARCH INSTITUTE

Population and labour in family farming in Poland

Authors:
dr inż. Bożena Karwat-Woźniak
mgr inż. Paweł Chmieliński

Scientific Editor:
dr hab. Alina Sikorska, prof. IERiGŻ-PIB

MULTI-ANNUAL PROGRAMME 2005-2009

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

Warsaw 2006

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

This publication was prepared as a contribution to the research on the following subject **Regional differentiation of agricultural development and its impact upon economic and social problems of rural areas** within the framework of the research task *Highly commercialised farms in peasant farming*

The purpose of the study was to evaluate the labour resources in the individual farming and their exploitation

Translated by
Dariusz Sielski

Statistical assistance
mgr inż. Urszula Maciejczyk-Kempińska

Cover Project
AKME Projekt Sp. z o.o.

ISBN 83-89666-69-3

Instytut Ekonomiki Rolnictwa i Gospodarki Żywnościowej
– Państwowy Instytut Badawczy
00-950 Warszawa, ul. Świętokrzyska 20, skr. poczt. nr 984
tel.: (0·prefiks·22) 50 54 444
faks: (0·prefiks·22) 827 19 60
e-mail: dw@ierigz.waw.pl
http://www.ierigz.waw.pl

Contents

Introduction

Human potential in agriculture and its utilisation have been the subject matter of a number of analyses which primarily emphasised the issue of excess labour in this sector of the economy. It is a widespread opinion that one of the most important factors hindering economic changes in agriculture is the excessive number of workers engaged in this sector. Advancing the desirable structural changes mostly involves the activation of concentration processes in the agrarian structure, the reduction in the number of persons employed in agricultural production and the improvement in labour productivity. The activation of such processes has been hampered not only by macroeconomic conditions, particularly labour market imbalance, but also by socio-demographic characteristics of the farming population.

In most developed countries, structural changes in agriculture coincided with the migration to highly urbanised areas which accompanied industrial development in the 1950s and the 1970s. As a consequence, in the late 20th century the share of employment in agriculture ranged from 2.3% in Belgium to 9.5% in the Netherlands[1]. At present, the possibilities of increased migration related to a rise in employment in industry are limited as nowadays economic growth is primarily based on modern, usually labour-saving technologies[2], which contribute to the diminishing importance of traditional labour[3]. Economic performance is increasingly dependent on management skills, frequently related to the educational level of main economic decision-makers.

Similar tendencies have also been observed in the Polish economy, with 16.6% of the economically active population still employed in agriculture in 2002[4]. Furthermore, labour productivity in agriculture, compared to labour productivity in non-agricultural sectors, is lower due to high employment in agriculture accompanied by a low share of this sector in generating gross domestic product[5]. Therefore, the problem of off-farm employment in rural areas

---

[1] K. Duczkowska-Małysz, M. Duczkowska-Piasecka: *Korzyści i zagrożenia związane z integracją polskiego rolnictwa z rolnictwem Unii Europejskiej,* [in:] *Determinanty transformacji struktury agrarnej w rolnictwie polskim,* Roczniki Akademii Rolniczej w Poznaniu CCCVII, Vol. II, Poznań 1999, p. 30.

[2] Cf. *Handbook of Agricultural Economics, Volume 1A – Agricultural Production*, B.L. Gardner, G.C. Rausser (eds.), North-Holland, New York, 2001, p. 279.

[3] Cf. Woś A.: *Agrobiznes. Makroekonomia*, Wydawnictwo KeY Text, Warszawa 1996, p. 97.

[4] I. Frenkiel: *Struktura demograficzno-zawodowa ludności wiejskiej w świetle wyników Narodowego Spisu Powszechnego 2002,* [in:] *Uwarunkowania i kierunki przemian społeczno-gospodarczych na obszarach wiejskich,* A. Rosner (ed.), IRWiR PAN, Warszawa 2005, p. 92.

[5] During the first decade of transition, the share of agriculture in GDP declined from 7.2%

has become increasingly important, particularly for farming families. Hidden unemployment observed in the countryside, even if favourable for the state in the short term, adversely affects restructuring and modernisation processes in agricultural holdings, thus in the whole sector. The living costs of persons redundant in terms of production activities, as well as of those actually unemployed, are incurred by farming families, not by the state. It is negatively reflected in the economic performance of agricultural holdings and the level of agricultural investment spending.

Due to the complexity of the issue of labour resources and inputs in family farming, this problem represents a major determinant of successful restructuring of the agricultural sector. Economic activity of the farming population and alternative income sources for farming families are both important elements and prerequisites of rural development. Multiple activities are becoming increasingly widespread[6], which determines increased significance of non-agricultural education in rural development. At the same time, due to technological progress, knowledge and the ability to make use of it, has been gaining in importance as the basis for economic activity, including agricultural activities. This means that both the diversification of income sources and economic efficiency of agricultural holdings are closely related to the quality of human capital, primarily determined by the educational level[7]. As a result of technological changes, increased significance of knowledge in the production process, also in terms of the perception of labour resources, a clear-cut distinction between two components of the previously uniform definition of labour should be taken in consideration[8]:

(1) labour seen as manual work aimed at performing a specific task,

(2) management activities performed by the farm manager (i.e. decision making).

Labour in agriculture combines both elements, also representing the farmer's deliberate efforts to influence natural processes[9].

The competitive advantage of a farm increasingly depends on farmers'

---

in 1990 to 3.3% in 2001, see W. Ziętara, *Wydajność pracy w rolnictwie i w różnych typach gospodarstw rolniczych*, "Roczniki Naukowe SERiA", Vol. V, no 1, Warszawa 2003, p. 316.

[6] See A. Kaleta: *Wielozawodowość na obszarach wiejskich – perspektywa globalizacji,* [in:] *Polska wieś 2025,* J. Wilkin (ed.), Fundusz Współpracy, Warszawa 2005, p. 130.

[7] Cf. Gall, M.D., Gall, J.P. & Borg, W.R. (2003). *Educational research: An introduction*. Boston: Allyn & Bacon, p 34.

[8] G.L Cramer, C.W. Jensen, D.D. Southgate, *Agricultural Economics and Agribusiness*, (8th Edition), John Wiley & Sons, Inc. New York, 2001 p. 79.

[9] A. Leopold: *Praca w rolnictwie*, [in:] *Gospodarstwo rolnicze wobec wymogów współczesnego rynku i Unii Europejskiej,* SGGW, Warszawa 1997, p. 35.

knowledge since the modern agricultural sector is based on capital and information rather than on other production factors[10]. Modern production technologies are inherently labour-saving, therefore the economic strength of farms is increasingly dependent on skills and the ability to acquire new skills by farm managers[11]. At the same time, the possibility to intensify non-agricultural economic activities by members of farming families depends on their educational level since improved qualifications make off-farm employment more likely. Thus, there are more possibilities for cutting employment in agricultural activities, as well as the number of redundant persons on the farm. Therefore labour quality is of particular interest to the European Union[12] whose agricultural policy is closely related to the level of social development of the farming population.

Research findings presented in this paper are based on various source data available, the main empirical material being the findings from field surveys conducted regularly by the Institute of Agricultural and Food Economics – National Research Institute (IERiGŻ-PIB), mostly from the 2000 and 2005 studies. The survey covered all agricultural holdings of more than 1 ha of agricultural land at the disposal of natural persons, located in 76 villages across Poland. Those locations were deliberately selected to make the size of the analysed farms proportional to the actual area structure, both at the national level and across regions (voivodships and five macroregions[13]). The surveyed units accounted for some 1/500 of the actual number of family farms, and in the 2000 and 2005 surveys their number was 3,927 and 3,705 respectively.

The survey questionnaire was designed to collect a great variety of detailed information, not only on the features of family farms, but also on the demo-

---

[10] W. Coleman, W. Grant, T. Josling, *Agriculture in New Global Economy*, Edward Elgar Pub., Cheltencham-Northampton, 2004, p. 51.

[11] *Employment Dynamics in Rural Europe*, I.J. Terluin & J.H. Post (eds.), CABI Publishing, 2000, p. 20.

[12] See *The Cap and the Regions, The Territorial Impact of the Common Agricultural Policy*, M. Shucksmith (ed.), K.J. Thomson, D. Roberts, CABI Publishing, 2005, p. 121.

[13] Poland was divided into five Macroregions according to the administrative division into voivodships and similarities between historically developed characteristics of the socio-economic structure of particular rural areas and agriculture. Specific Macroregions include the following voivodships: **the Central-Western Macroregion** (I) – the Wielkopolskie and Kujawsko-Pomorskie voivodships; **the Central-Eastern Macroregion** (II) – the Łódzkie, Mazowieckie, Podlaskie and Lubelskie voivodships; **the South-Eastern Macroregion** (III) – the Śląskie, Małopolskie, Świętokrzyskie and Podkarpackie voivodships; **the South-Western Macroregion** (IV) – the Opolskie, Dolnośląskie and Lubuskie voivodships; **the Northern Macroregion** (V) – the Zachodniopomorskie, Pomorskie and Warmińsko-Mazurskie voivodships. For more on the division into Macroregions see: A. Sikorska: *Zmiany strukturalne na wsi i w rolnictwie w latach 1996-2000 a wielofunkcyjny rozwój obszarów wiejskich. Synteza,* IERiGŻ-PIB, Warszawa 2005.

graphic characteristics, the educational level, economic activities of managers and members of their families.

The large number of farms included the analysed sample, the wide range of collected materials, as well as the application of the same research method, which was the precondition for the continuity and comparability of data, enabled a multidimensional analysis of labour in family farming.

This paper focuses on the following issues:

- **changes in the number and socio-demographic characteristics of the farming population, particularly of farm managers,**
- **the degree of utilisation of own labour resources,**
- **the extent and form of hiring labour,**
- **the assessment of labour inputs in family farming, their differentiation and determinants,**
- **the identification of changes in labour relations in family farming and the effect of labour hired in family farms on the rural labour market.**

The empirical material from field studies was combined with selected GUS data from the 2005 sample farm structure survey, regarding agricultural holdings of more than 1 ha of agricultural land and held by natural persons. Documentation prepared for such farms concerned inputs of own labour of farm holders and their families, as well as the scale and extent of hired labour.

1. The socio-demographic characteristics of the farming population

For years Polish agriculture has been characterised by land fragmentation and the closely related surplus farming population. According to the surveys, in 2000-2005 there were no major changes in this respect. The fall (by more than 6%) in the number of persons in farming families recorded over that period primarily resulted from the reduction in the total number of agricultural holdings, the respective rates being only slightly different. Consequently, the share of the population engaged in family farming in the total rural population went down from 53% in 2000 to 50% in 2005. At the same time, there was no change in the size of an average farming family, approximately 4.1 persons both in 2000 and in 2005.

1.1. The demographic structure

The stabilisation of the farming population was accompanied by certain changes in its demographic structure. According to IERiGŻ-PIB data, in 2005

the demographic structure of the group living on family farms continued to be favourable. However, it should be noted that although in 2005 the age of mobility population (aged 44 or under) represented the largest group (40%), in comparison with 2000 there was a slight increase (from 20% to 23%) in the share of other working age persons (aged over 44) and a decline (from 26% to 22%) in the pre-working age population. The post-working age population remained virtually unchanged.

Table 1. The age structure of the farming population by size group and macroregion

Specification		Share of*			
		the pre-working age population	the working age population		the post-working age population
			the age of mobility	the age of non-mobility	
		Figures in a row add up to 100			
Total	1992	26.7	37.6	18.7	15.0
	1996	27.8	38.4	18.4	15.4
	2000	26.1	39.2	20.1	14.6
	2005	22.1	40.0	22.7	15.2
Size groups (ha of agricultural land)					
1-5		20.2	40.3	23.4	16.1
5-10		22.3	39.3	22.4	16.0
10-15		23.6	40.5	22.0	13.9
15-20		24.6	40.3	21.2	13.9
20-30		24.4	40.0	21.8	13.8
30-50		25.6	41.1	22.5	10.8
50 or more		27.0	44.6	20.7	7.7
Macroregions					
Central-Western M.		24.2	41.5	22.2	12.1
Central-Eastern M.		22.8	38.8	23.0	15.4
South-Eastern M.		20.2	40.4	21.9	17.5
South-Western M.		19.7	41.8	25.5	13.0
Northern M.		25.0	41.3	21.7	12.0

** Economic age groups according to GUS:* ***the pre-working age population*** *– persons aged 17 or under;* ***the working age population*** *– women aged 18-59 and men aged 18-64;* ***the post-working age population*** *– women aged 60 or over and men aged 65 or over. The* ***working age population*** *was subdivided into two groups: the* ***age of mobility population*** *(younger working age population) – persons aged 18-44 – and* ***age of non-mobility population*** *(older working age population) – women aged 45-59 and men aged 45-64. This division is applied throughout the paper.*

Source: Surveys by the Institute of Agricultural and Food Economics – National Research Institute: 1992, 1996, 2000 and 2005.

Furthermore, it should be emphasised that similar patterns of change were observed irrespective of the farm size. Nevertheless, members of families holding relatively larger farms were relatively younger than persons with smaller agricultural holdings (Table 1). The differences mostly concerned a smaller share of persons aged 45 or over, i.e. the working age population over 44 years of age and the post-working age population. At the same time, the share of persons aged 44 or under in families holding large farms was higher.

The symptoms of ageing processes in the farming population could be also observed across regions, with macro-regional differences in the demographic structure of the rural population engaged in family farming continuing in 2005, as in previous years. Traditionally, the least favourable age structure of the rural population engaged in family farming was found in the South-Eastern Macro-region, where Poland's highest share of the retirement age population (18%) was accompanied by a relatively low share of the pre-working age population (20%). At the same time, it recorded the sharpest fall in the share of persons aged 18 or under (the share of this group in the total population declined from 25% to 20%) in 2000-2005. In this connection, the South-Eastern Macro-region may be particularly affected by problems related to the ageing rural population in the future.

The situation was different in the Central-Western and Northern Macroregions where the pre-working age persons accounted for one-fourth of the population engaged in family farming in those regions. At the same time, those Macroregions were characterised by the lowest share of the retirement age population (12%).

The analysis of the structure of the farming population by sex demonstrated that in 2000-2005, as in previous years, the relations between the number of women and men were similar and rather stable. The share of women in farming families remained unchanged, at approximately 49%.

1.2. The educational level

Performance assessments of agricultural holdings in a competitive environment frequently raise the issue of the relatively low educational level of the farming population. It results from years of young people's career choices, unfavourable for agriculture. Furthermore, involvement in work on the family farm has often been dependent on the family situation rather than on actual qualifications.

Table 2. Changes in the educational level of the farming population

Year	Share* of persons with					
	general education				vocational education	
	primary education**	basic vocational education	secondary and post-secondary education	higher education	agricul-tural	other
2000	41.4	39.3	17.1	2.2	14.4	42.6
2005	33.9	37.5	23.3	5.0	15.0	48.2

** Including persons aged 15 or over who completed their education. Their total number equals 100.*
*** This group comprises persons who completed lower secondary education, some 0.3 of the total population in question.*
Source: 2000 and 2005 surveys by the Institute of Agricultural and Food Economics – National Research Institute.

The figures indicate that in 2000-2005 there was an improvement in the educational level of members of farming families (Table 2), with regard to both general education and vocational qualifications. Increased indicators were observed at all levels of post-primary education, but it was particularly evident in the case of higher education (the share of persons with higher education rose from slightly more than 2% to 5%), as well as secondary and post-secondary education (up from 17% to 23%). Despite those positive changes, in 2005 nearly 34% of farming family members continued to have only general education at primary level, whereas 38% had basic vocational education.

However, there was an increase in the share of persons with non-agricultural education. Between 2000 and 2005, it went up from less than 43% to over 48%. At the same time, the share of persons who completed agricultural education remained virtually unchanged, at some 14-15%.

The educational level of the farming population is not tantamount to qualifications of farm workers[14] since some of them engage in farm work only to a limited extent, especially if they have gainful employment and choose careers outside agriculture[15]. The quality of labour in the farm mostly depends on the qualifications of permanent full-time workers engaged in agricultural activities. Basically, due to the degree of involvement in farm work, only this group actively shapes agricultural activities and largely determines actual economic and production performance of agricultural holdings.

---

[14] See A. Szemberg: *Rolnictwo chłopskie*, [in:] *Wieś i rolnictwo w 1992 roku,* Studia i Monografie, no. 71, IERiGŻ-PIB, Warszawa 1994, pp. 44-46.
[15] A. Sikorska: *Struktura społeczno-demograficzna ludności wiejskiej,* [in:] *Analiza produkcyjno-ekonomicznej sytuacji rolnictwa i gospodarki żywnościowej w 2001 roku,* IERiGŻ-PIB, Warszawa 2002, p. 427.

The improvement in the educational level was also noted in the group of permanent full-time farm workers, although their qualifications tended to be generally lower than those of the total population engaged in family farming. According to the survey findings, in 2005 the highest shares in the educational structure of persons mostly engaged in agricultural activities were recorded in the case of persons with general education at primary and basic vocational levels (43% each). Secondary vocational education or post-secondary education characterised more than 21% of the total number of farm workers, whereas higher education, despite more than twofold growth, was only reported by less than 6% of persons mainly engaged in agricultural activities.

1.3. Farm managers

The pace of structural changes in agriculture and, above all, progress in agricultural activities of farms are primarily determined by the qualifications and skills of their managers. It is a widespread opinion that changes in individual agricultural holdings and their economic and production performance go hand in hand with the characteristics of their managers[16]. Therefore, the age structure and the educational level of such persons represent significant elements of the quality assessment of labour resources in family farming.

Analyses have shown that the demographic structure of farm managers continues to be rather favourable. In 2005, farmers at the age of mobility accounted for nearly 44% of the total number of managers. However, it should be emphasised that in 2005, for the first time from the early 1990s, the share of farm managers at the age of mobility was lower than the share of those aged over 44 (at nearly 47% of the total number of managers). At the same time, it should be pointed out that the share of retirement age persons among managers of family farms remained unchanged, at some 10% both in 2000 and in 2005.

According to IERiGŻ-PIB surveys, women managers of family farms represented a stable and relatively minor group. In 1992-2005, women accounted for some one-fifth of farm managers, while their agricultural holdings were characterised by rather limited area of agricultural land. The symptoms of the deteriorating demographic structure of family farm holders could be observed regardless of the size and the geographical location of agricultural holdings. These changes were more evident in smaller farms and in regions characterised by a fragmented structure and relatively limited economic strength of family farms.

---

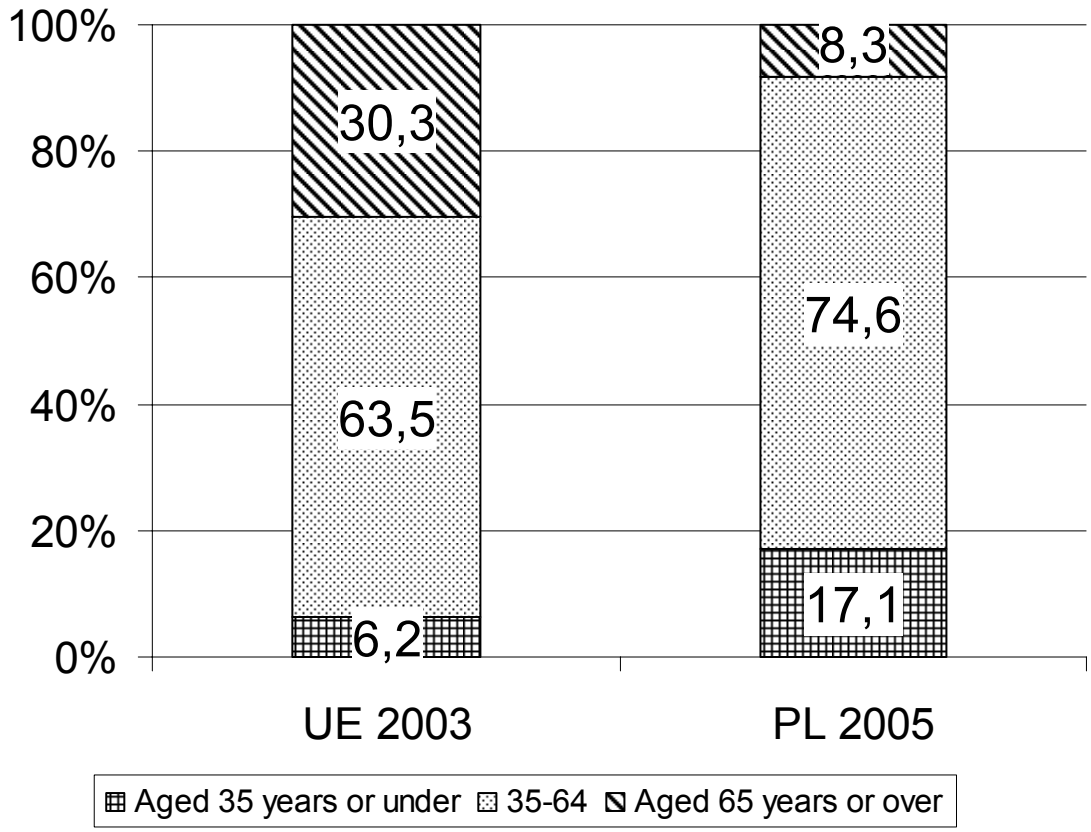
[16] See A.P. Wiatrak: *Czynniki różnicujące wydajność pracy w rolnictwie*, IRWIR PAN, Warszawa 1980, p. 48.

Figure 1. Managers of family farms by age and sex

The group of managers at the age of mobility includes pre-working age persons (2-5). Source: 2000 and 2005 surveys by the Institute of Agricultural and Food Economics – National Research Institute.

The surveys confirmed the long-standing regional differences in the demographic structure of farm managers. It should be emphasised that such disparities were caused not only by factors shaping the situation in agriculture (area structure, market activity and economic strength of agricultural holdings), but also by historically embedded differences in the level of socio-economic development across Poland, which have largely determined the progress in corporate restructuring, job opportunities and the scale of unemployment. These factors have affected young people's attitudes to career choice: whether to become farmers or to look for off-farm employment. As a consequence, in 2005 farm managers in the Central-Western and Northern Macroregions continued to represent a younger and less feminised group than managers of family farms in the south of Poland.

Figure 2. Farm managers in Poland and in the EU-15 by age group



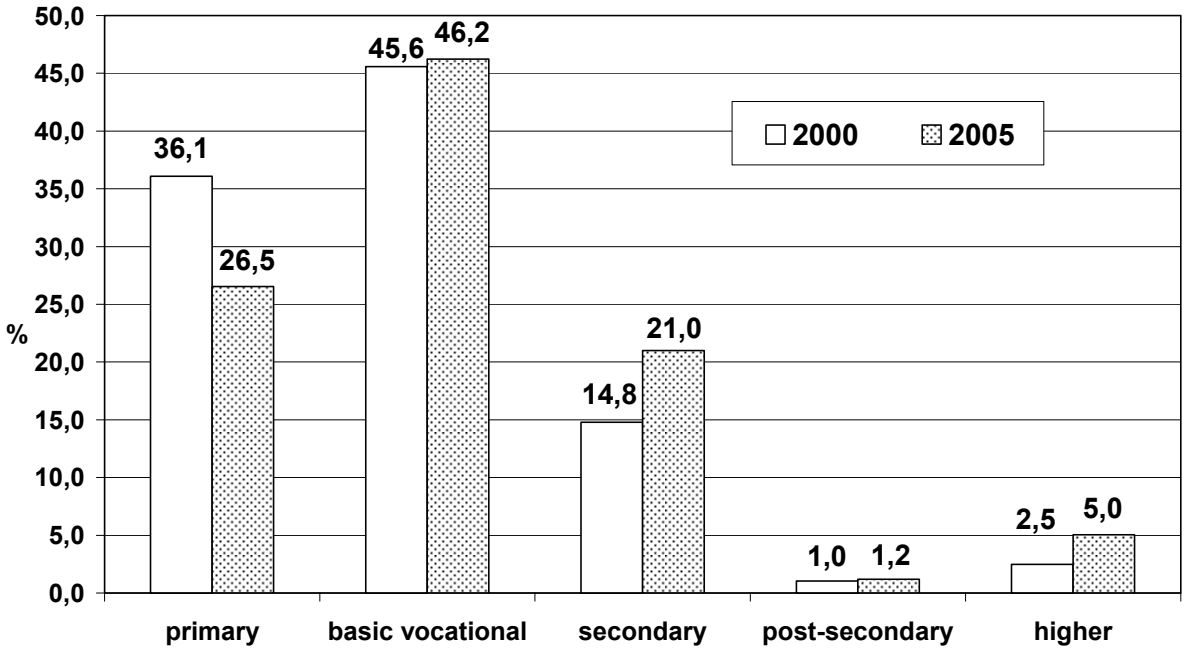
Source: Eurostat and the 2005 survey by the Institute of Agricultural and Food Economics – National Research Institute.

It should be emphasised that despite certain symptoms of the ageing of farm managers, the situation in Polish agriculture – in comparison with European agriculture – continues to be much more favourable (Figure 2). The share of young farm managers i.e. aged 35 or under, was nearly three times as high in Poland as the average share in the EU-15 countries. At the same time, the share of persons aged 65 or over was more than three times higher in the EU-15 than in Poland.

One should bear in mind that generational changes in the group of farm managers[17] have been accompanied by an increasing educational level of the population. This is true of both general education (Figure 3) and vocational qualifications (Table 3).

[17] According to IERiGŻ-PIB data, in 2000-2005 the manager was replaced by another in 16% of family farms, including more than 13% of agricultural holdings where the successor was younger.

Figure 3. General education level of managers in family farms



Source: 2000 and 2005 surveys by the Institute of Agricultural and Food Economics – National Research Institute.

In 2000-2005, there was a significant fall in the share of managers with primary education (from over 36% to less than 27%). As in 1996-2000, persons with basic vocational education represented the largest group and no major change was observed in their share (some 46%). Similarly, no essential changes were noted with regard to managers with general post-secondary education (approximately 1% both in 2000 and in 2005). Significant changes were only recorded in the case of secondary and higher education. In 2000-2005, the share of managers with secondary education increased from less than 15% to 21%. An even greater improvement was found in the group of farmers with higher education. Despite the fact that during the period in question the share of farmers with higher education showed a twofold increase farm managers with a university degree still accounted for 5% of farm managers.

The situation was slightly different with regard to the level of agricultural education, which is the most important indicator of farm managers' professional approach. In both compared years, the group of managers with agricultural school education was not only relatively small, but also its share remained virtually unchanged (23% in 2000 in comparison with over 24% in 2005). At the same time, the share of managers without agricultural qualifications showed an increase (from 50% to 56%).

Table 3. Agricultural education of farm managers

Year	Share of persons with agricultural education obtained		
	at school	at training courses	without agricultural education
2000	23.0	27.0	50.0
2005	24.4	19.5	56.1

Source: 2000 and 2005 surveys by the Institute of Agricultural and Food Economics – National Research Institute.

Furthermore, formal changes with regard to agricultural qualifications of farmers brought about reduced interest in completing training courses. This is related to changes in the educational system which – in order to popularise vocational education – used to foster all kinds of vocational courses, also agricultural training. At present, agricultural qualifications obtained at training courses are mostly characteristic of older persons, hence the share of such education is gradually diminishing as the age structure of farmers changes. Between 2000 and 2005, the fall in the share of farm managers with agricultural course training was significant, by more than 7 percentage points (Table 3).

In 2000-2005, there were no changes in managers' agricultural education obtained at school, but their non-agricultural qualifications showed an improvement. The share of managers with non-agricultural school education increased from 40% to 48%. The fact that non-agricultural vocational education is so common for managers should be attributed to the multifunctional character of agricultural holdings and a great number of subsistence and semi-subsistence farms. Their holders were primarily engaged in non-agricultural activities. Furthermore, it should be emphasised that for years off-farm employment has been considered more attractive than on-farm work, particularly in small agricultural holdings. Consequently, members of farming families have tended to pursue an education in areas other than agriculture.

2. Working life of persons living in agricultural holdings

A family farm represents a specific workplace since it mostly depends on work performed by persons living there. Due to the specificity of agricultural production (the seasonal nature of agricultural work), the extent and the need for farming family members to engage in production activities vary significantly. Therefore, the farming population is characterised by more intensive working

life than other Poland's residents[18]. Some of them engage in on-farm activities to a limited extent, especially if they are gainfully employed and choose a career outside agriculture. For this reason, multiple activities have been characteristic of a significant number of farming families. It is also confirmed by the findings from IERiGŻ-PIB surveys which suggest that in 2005 80% of farming family members aged 15 or over participated in the labour market. However, it should be emphasised that during the period in question a downward trend was observed with regard to the rate of labour market participation of the farming population as it was slightly over 87% in 2000.

Table 4. Persons aged 15 or over engaged in family farms by workplace

Specification	Share of persons		
	working exclusively on the farm	combining on-farm and off-farm employment	having only off-farm jobs
	Figures in a row add up to 100		
2000	72.4	23.4	4.2
2005	66.3	24.1	9.6
Size groups (ha of agricultural land)			
1-2	39.0	42.0	19.0
2-5	47.4	37.4	15.2
5-10	66.4	23.7	9.9
10-15	85.2	10.9	3.9
15 or more	83.0	11.0	6.0
Macroregions			
Central-Western M.	70.9	20.1	9.0
Central-Eastern M.	66.1	23.1	10.8
South-Eastern M.	64.7	26.7	8.5
South-Western M.	63.1	27.6	9.3
Northern M.	70.2	19.7	10.1

Source: 2000 and 2005 surveys by the Institute of Agricultural and Food Economics – National Research Institute.

In 2000-2005, the working population showed changes in the structure by workplace. The share of persons only engaged in off-farm activities doubled (from more than 4% to nearly 10%). The share of those working exclusively in agriculture declined from over 72% in 2000 to slightly more than 66% in 2005. At the same time, the share of persons combining on-farm and off-farm work

[18] See J. St. Zegar.: *Źródła utrzymania rodzin związanych z rolnictwem*, Studia i Monografie, no. 133, IERiGŻ-PIB, Warszawa 2006, from p. 73.

remained unchanged, at some one-fourth of the total farming population in both 2000 and 2005.

The surveys have demonstrated that the farm size affects the possibility of utilising family labour resources in agricultural activities (Table 4)[19]. This is reflected in the growing share of persons engaged in agricultural production as the farm size increases (81% in agricultural holdings of 1 to 2 ha of agricultural land and 96% in farms of 10 to 15 ha of agricultural land, the average share for the population in question was 90%). This relation mostly concerns the number of persons working exclusively on the farm. Within this group, the share of such persons rose as the farm size increased (from 39% in the smallest agricultural holdings to more than 85% in units included in the size group of 10-15 ha of agricultural land).

At the same time, it should be emphasised that the decline in the total number of farm workers recorded in 2000-2005 resulted from the fall in the number of persons engaged exclusively in on-farm activities. It was particularly evident in rather small agricultural holdings (up to 10 ha of agricultural land), whereas in larger farms the share of persons involved in farming remained virtually unchanged.

An analysis of the working life of the farming population identifies a specific situation in agricultural holdings of 10 to 15 ha of agricultural land, where in 2005 the share of persons working exclusively on the farm was relatively the highest (85%). It is also observable in the findings from the 2000 survey. In 2000, the share of persons working exclusively on their farms classified under this size group was the highest, at 83%. Such a high employment level may be attributed to demand for labour resulting from the relation between the farm size and the level of mechanisation of agricultural production. In farms smaller than 10 ha demand for family labour was so low that taking up off-farm work was indispensable rather than simply possible. Similarly, in agricultural holdings characterised by a rather large area (more than 15 ha) the extent of agricultural activities enabled production specialisation and increasing the level of mechanisation through investment, which brought about a reduction in the number of family members engaged in on-farm activities. Consequently, the share of those having off-farm employment was significant. Presumably, many agricultural holdings of 10-15 ha were large enough to provide work for most family members. At the same time, the extent of agricultural activities was too limited to

---

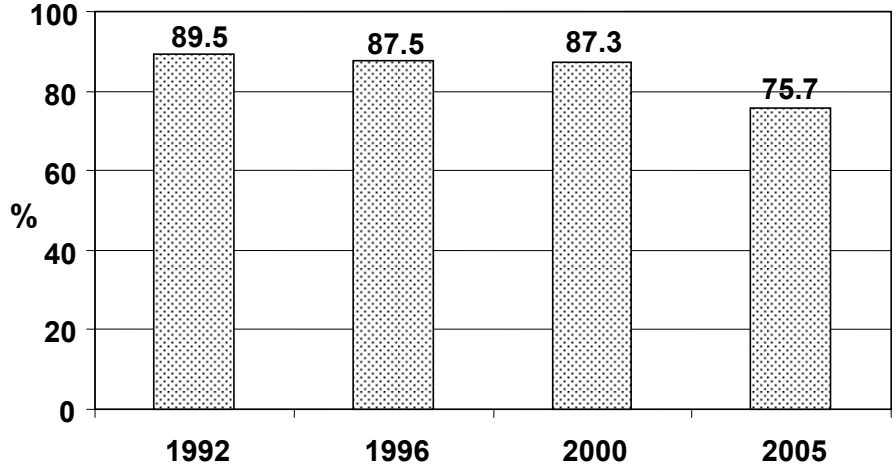
[19] Cf. Frenkiel I.: *Struktura demograficzno-zawodowa ludności wiejskiej w świetle wyników Narodowego Spisu Powszechnego 2002*, [in:] *Uwarunkowania i kierunki przemian społeczno-gospodarczych na obszarach wiejskich*, A. Rosner (ed.), IRWiR PAN, Warszawa 2005, p. 88.

trigger changes in the production process which could result in the reduction in the number of family members working on the farm. Therefore, this size group is characterised by the lowest share of persons with off-farm employment among the analysed size groups of family farms, at less than 4%.

In all agricultural holdings, regardless of their size and geographical location, the share of persons living in family farms but having only off-farm employment more than doubled between 2000 and 2005. The strongest growth was recorded in the case of farms of 2 to 5 ha of agricultural land (from 5% to 15%), and the least robust in agricultural holdings of 10 to 15 ha of agricultural land (from some 2% to less than 4%).

In 2000-2005, the most significant – nearly threefold – increase in the share of members of farming families having only off-farm employment was recorded in the Central-Eastern and Northern Macroregions, characterised by the relatively highest share of the farming population exclusively engaged in off-farm activities, where every tenth working person had only off-farm employment. As regards other regions, the growth rate of the number of persons having only non-agricultural jobs was distinctly lower, although previous IERiGŻ-PIB surveys suggested that the scale of this phenomenon had been increasing. Such tendencies were observed particularly in the South-Eastern Macro-region where the share of off-farm workers rose from nearly 5% in 2000 to more than 8% five years later. It should be emphasised that it was the lowest share among the Macroregions.

Figure 4. Changes in the share of persons working on their family farms



The number of farming family members aged 15 or over = 100%.
Source: 1992, 1996, 2000 and 2005 surveys by the Institute of Agricultural and Food Economics – National Research Institute.

Across Poland, opposite trends were noted with regard to the farming population engaged in on-farm activities. Those were primarily observed in the case of persons working exclusively on the farm since – as has already been mentioned – during the period in question the total population working on and off the farm remained unchanged.

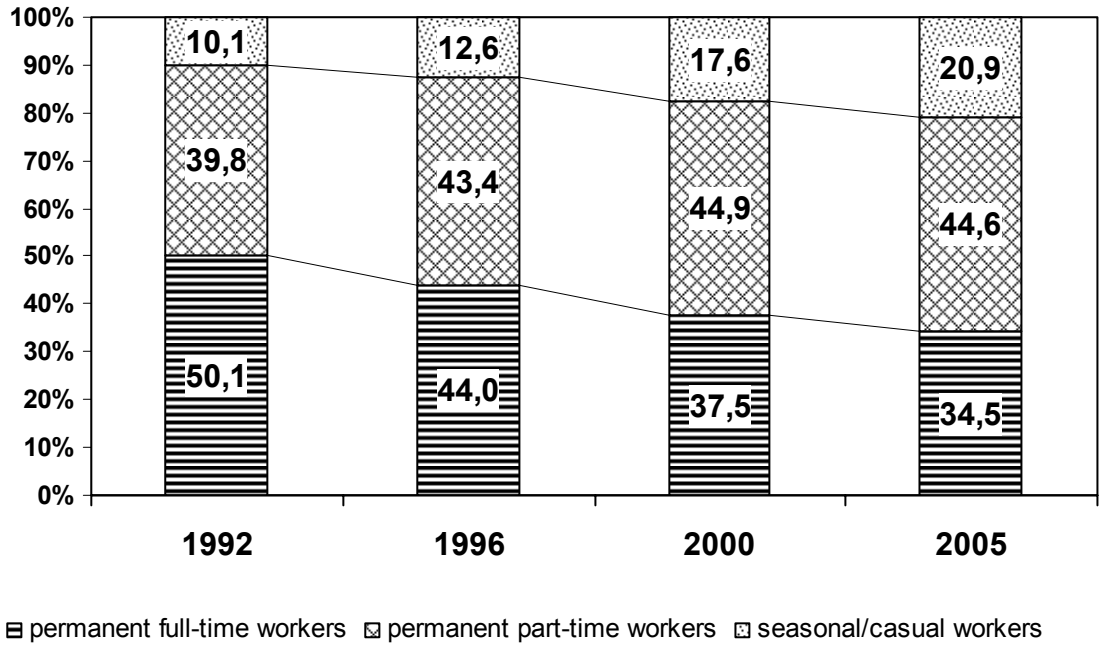
In 2000-2005, a particularly significant fall in the share of persons only engaged in on-farm activities was found in regions characterised by the highest development level of agriculture as well as the highest share of family members working exclusively on the farm, i.e. especially in the Central-Western Macroregion (from 80% to 71%). At the same time, this proportion declined only slightly in the South-Eastern Macroregion (from 68% to 65%).

It should be concluded that for the first time IERiGŻ-PIB surveys showed such distinct changes in the structure of the farming population engaged in on-farm and off-farm activities. This implies that on-farm work has been increasingly becoming only one of income sources, whereas other forms of earning a living have been gaining in importance in the budgets of farming families. A growing share of farming family members have been actively searching for alternative employment, frequently giving up on-farm work. There are indications that farming families have started to reduce employment and engage only necessary persons in on-farm activities. This process is reflected in the declining number of farming family members working on the family farm in subsequent IERiGŻ-PIB surveys (Figure 4).

Despite the fall in the number of persons engaged in on-farm activities, in 2005, as in previous years, most farming family members aged 15 or over (nearly 76%) worked on the family farm. However, it should be pointed out that during the period in question the share of persons working on their farms dropped from 87% to 76%, i.e. by an annual average of more than 2 percentage points, whereas it remained virtually unchanged between 1992 and 2000 as the share of the farming population engaged in on-farm activities only went down from less than 90% to slightly over 87%. It confirms the growing significance of off-farm employment as an income source for farming families.

According to the survey findings, the subsequent analysed periods witnessed a reduction not only in the number of on-farm workers, but also in working time spent on farming activities (Figure 5). This was primarily reflected in the fall (from over 50% to less than 35%) in the number of permanent full-time workers engaged on their family farms and more than twofold growth (from 10% to 21%) in seasonal or casual farm labourers. Furthermore, there was a marked rise in the number of persons engaged in agricultural activities every day, but for less than eight hours (from 40% to 45%).

Figure 5. Changes in working time of persons employed on the family farm



The number of farming family members aged 15 or over = 100.
Source: 1992, 1996, 2000 and 2005 surveys by the Institute of Agricultural and Food Economics – National Research Institute.

Part-time labour engaged on family farms has always significantly varied in terms of working time spent on farming activities. In 2005, those working on the farm for two hours a day or less accounted for nearly 38% of permanent part-time workers, whereas persons engaged for more than four hours a day – only for less than 19% (see Annex – Table A1).

Seasonal or casual farm labour has been characterised by even greater differences in terms of working time spent on the farm (see Annex – Table A2). In 2005, workers hired for 20 days a year or less represented the largest group (approximately 39%), while only less than 10% were employed for at least 75 days a year.

3. Family labour inputs in family farms

Due to considerable differences in the involvement of particular farming family members in agricultural activities, labour inputs are expressed in the equivalent of full-time jobs, i.e. full-time workers[20]. According to the calcula-

[20] The calculations for the analysed group of persons working on their family farms were based on the 1972 GUS ratios; A. Szemberg: *Przemiany agrarne i ludność w indywidualnym*

tions, **one annual work unit (AWU)[21] is tantamount to a situation where one full-time worker works on the farm for 2,120 hours per year (265 working days of eight hours per day).**

Table 5. Changes in family labour inputs in family farms

Year	Annual work units		Index (previous survey = 100)	
	per farm	per 100 ha of agricultural land	per farm	per 100 ha of agricultural land
1992	1.45	19.5	100	100
1996	1.37	16.6	94.5	85.1
2000	1.27	14.7	92.7	88.6
2005	1.13	11.8	89.0	80.3

Source: 1992, 1996, 2000 and 2005 surveys by the Institute of Agricultural and Food Economics – National Research Institute.

Changes in the number of persons working on the farm and in their involvement were accompanied by a reduction in labour inputs. In 2000-2005, labour inputs per farm declined by 11% (from 1.27 to 1.13 full-time workers). These favourable trends were also confirmed by an analysis of data on labour inputs per 100 ha of agricultural land (Table 5). This indicator dropped nearly by 20% (from 14.7 to 11.8 AWU per 100 ha of agricultural land). It was nothing new since similar tendencies had been observed before, particularly between 1992 and 1996 and returned with particular strength after 2000. Employment per 100 ha of agricultural land decreased by an annual average of more than 3.9% in 2000-2005, whereas the corresponding reduction rate was 3.7% in 1992-1996 and 2.8% in 1996-2000.

The increased propensity to cut employment observed after 2000 should be primarily attributed to the ongoing process of agricultural land concentration[22], the growing number of relatively large farms[23] and the improved machinery and equipment, especially enabling to comprehensively mechanise farming

---

rolnictwie, [in:] *Analiza produkcyjno-ekonomicznej sytuacji w rolnictwie i gospodarce żywnościowej w 1997 roku,* IERiGŻ-PIB, Warszawa 1998, p. 192.

[21] *Charakterystyka gospodarstw rolnych w 2005 roku,* GUS, Warszawa 2005, pp. 26-27.

[22] The survey findings suggest that in 2000-2005 the average area of a family farm rose by 9.4% (from 8.5 to 9.3 ha of agricultural land), whereas in 1992-2000 the average area of the analysed units had increased by 7.6% (from 7.9 to 8.5 ha of agricultural land).

[23] In 1992-2005, the share of agricultural holdings of 30 ha or more showed a fourfold increase (from 1.1% to 4.3%). Particularly strong growth was recorded in the case of farms of 50 ha of agricultural land or more whose share went up sevenfold (from 0.2% to 1.4%).

activities. Family labour is also likely to have been reduced due to greater opportunities for job migration, mostly to the EU-15 countries[24].

Efforts at more productive employment were observed with varying intensity across the analysed periods and size groups of agricultural holdings. The downward trend of employment relative to the area of agricultural land was common, although there were some cases of increased labour inputs (Table 6). In 2000-2005, it was found in units representing extreme size groups. A particularly strong rise was recorded in the smallest farms, i.e. those of 1 to 5 ha of agricultural land. In this group, the level of labour inputs increased by nearly 16%, whereas in farms of 50 ha or more this growth rate was less than half the figure, slightly over 6%. However, family labour inputs continued to be rather limited in the largest agricultural holdings, at 1.7 AWU per 100 ha of agricultural land.

Table 6. Family labour inputs in family farms by size group

Specification	Annual units					
	per farm			per 100 ha of agricultural land		
	2000	2005	Index (2000 = 100%)	2000	2005	Index (2000 = 100%)
Total	1.27	1.13	89.0	14.7	11.8	80.7
Size groups (ha of agricultural land)						
1-5	0.93	0.82	88.2	36.3	42.0	115.7
5-10	1.38	1.18	85.5	19.9	16.7	83.9
10-15	1.65	1.40	84.8	13.8	11.8	85.5
15-20	1.71	1.56	91.2	10.0	9.2	92.0
20-30	1.74	1.65	94.8	7.2	6.9	95.8
30-50	1.82	1.81	99.5	4.9	4.9	100.0
50 or more	1.58	1.66	105.1	1.6	1.7	106.3

Source: 2000 and 2005 surveys by the Institute of Agricultural and Food Economics –NRI.

Increased employment in holdings of 5 ha of agricultural land or less should be primarily attributed to the deteriorating situation in terms of machinery and technical equipment, due to developments such as reduced investment activity resulting from the discontinuation of commercial production and the growing number of holders of such farms[25]. At the same time, in order to maintain their market position, relatively small commercial farms developed niche, labour-intensive lines of production[26].

---

[24] Ł. Zwoliński: *Mobilność przestrzenna i społeczno-zawodowa ludności wiejskiej w latach 2000-2005,* IERiGŻ-PIB, Warszawa 2006, pp. 45-46.

[25] B. Karwat-Woźniak: *Zmiany aktywności rynkowej gospodarstw indywidualnych w latach 2000-2005,* Komunikaty, Raporty, Ekspertyzy, no. 519, IERiGŻ-PIB, Warszawa 2006, p. 6.

[26] The value structure of commercial output of farms between 1 and 5 ha of agricultural land was increasingly dominated by the sale of vegetables, fruit, crops grown under protection,

An increased labour input in the largest agricultural holdings is likely to have been caused by changes in their production profile, mostly the development of more labour-intensive production such as rearing of animals[27].

The general decline in labour inputs in family farming resulted from reduced employment in farms of 5 to 30 ha of agricultural land, and the sharpest fall was recorded in the size groups of 5-10 ha and 10-15 ha of agricultural land. Such holdings cut employment by some 15-16%, which accounted for nearly 86% of the decline in annual work units in all analysed farms. Employment in agricultural holdings of 15-30 ha has dropped by approximately 4-8%.

Table 7. Family labour inputs in agricultural activities by macro-region

Macroregions	Annual work units					
	per farm			per 100 ha of agricultural land		
	2000	2005	Index (2000 = 100%)	2000	2005	Index (2000 = 100%)
Total	1.27	1.13	89.0	14.7	11.8	80.7
Central-Western M.	1.45	1.34	92.4	11.0	9.7	88.2
Central-Eastern M.	1.41	1.16	82.3	15.8	12.1	76.6
South-Eastern M.	1.03	1.01	98.1	25.7	21.3	82.9
South-Western M.	1.16	1.04	89.7	11.3	9.0	79.6
Northern M.	1.44	1.21	84.0	8.6	6.5	75.6

Source: 2000 and 2005 surveys by the Institute of Agricultural and Food Economics – National Research Institute.

During the period in question, there was also a fall in labour inputs in family farming across Macroregions. Such tendencies were particularly strong in northern and central-southern Poland where the employment level per farm decreased by some 16-18%, whereas the fall in the respective ratio per 100 ha of agricultural land was even sharper, by approximately 23-24%.

The surveys indicated continuing significant differences between regions in own labour inputs in family farming (Table 7). The disparities in the number of full-time workers per 100 ha of agricultural land across Macroregions reflected the profiles of agricultural activities and the fact that more favourable area structure involves reduced employment and larger agricultural holdings.

---

herbs, mushrooms, flowers etc. The share of the value of these products in the total value of sold production of agricultural holdings in this size group rose from 42.4% in 2000 to 59.1% in 2005.

[27] In 2000-2005, the share of agricultural holdings of 50 ha or more engaged in animal production increased from 72.2% to 78.0%. At the same time, such farms more than doubled the number of livestock units (from 45.8 to 104.0).

This means that in 2005, as in previous years, employment in family farms was the lowest in the Northern Macro-region (6.5 AWU) and the highest in the South-Eastern Macro-region (21.2 AWU). Furthermore, it should be added that the long-standing regional differences in labour inputs in family farming further increased during the period in question. In 2000, the regional difference between the highest (the South-Eastern Macro-region) and the lowest (the Northern Macro-region) average labour input level per 100 ha of agricultural land was 199%, whereas it reached as much as 228% five years later.

The general and structural picture of family labour inputs in family farming was reflected in the results of the farm structure survey conducted by GUS in 2005[28] (see Annex – Table A4). In both analysed groups, labour inputs per farm of more than 1 ha of agricultural land were the same, at 1.13 AWU. Some differences were found in labour inputs per 100 ha of agricultural land. According to general statistics, own labour inputs per 100 ha of agricultural land in family farming was 14.4 AWU, markedly higher (by 22%) than those recorded in the survey sample analysed by IERiGŻ-PIB (11.8 AWU). The above-mentioned differences primarily stemmed from the disparities between the average size of a farm engaged in agricultural activities included in the IERiGŻ-PIB sample survey (9.6 ha of agricultural land) and the general size (7.9 ha of agricultural land) of a family farm of more than 1 ha of agricultural land involved in agricultural production, calculated on the basis of the farm structure survey.

Furthermore, it should be added that the findings from the structure survey of family farms also show size and regional patterns in the level of labour inputs. The highest ratios were recorded in rather small farms (32.0 AWU per 100 ha of agricultural land in farms smaller than 5 ha) and those located in the South-Eastern Macro-region (28.2 AWU per 100 ha of agricultural land). At the other extreme, relatively large agricultural holdings were characterised by the lowest ratios (1.6 AWU per 100 ha of agricultural land in farms of 50 ha or more), as well as those in the Northern Macro-region (6.3 AWU per 100 ha of agricultural land).

The identification of changes in labour force in family farms and the description of employment reduction processes should take into consideration not only the above-mentioned fall in the number of persons employed in agriculture, but also certain differences in its scale depending on the demographic characteristics of persons primarily engaged in agricultural activities[29]. This was reflected

---

[28] The survey covered a representative sample of some 200,000 agricultural holdings.

[29] Throughout the paper, this term refers to permanent full-time workers involved in farming, i.e. to farmers.

in developments such as changes in the share of work by selected groups of the population in the total labour inputs in family farming in specific years (Table 8).

Table 8. Share of permanent (full-time) workers engaged in agricultural production in total labour inputs in family farms

Year	Share of permanent work in total labour inputs*			
	Total	Women	Men	Aged 60 or over
1992	80.9	79.7	81.7	19.1
1996	77.1	70.8	81.3	10.7
2000	72.5	65.2	77.3	8.2
2005	69.7	63.1	73.9	4.1

** Total labour inputs in all agricultural holdings or in the whole group (broken down by sex or age) = 100.*

Source: 1992, 1996, 2000 and 2005 surveys by the Institute of Agricultural and Food Economics – National Research Institute.

The survey findings suggest that despite changes in own labour in family farming most labour inputs continue to be activities by farming family members who are permanent full-time workers employed on the farm. In 2005, they accounted for nearly 70% of the total family labour inputs in the surveyed agricultural holdings. Their share dropped by 11 percentage points compared to 1992 when it reached almost 81%. At the same time, it should be emphasised that those changes primarily resulted from a nearly fivefold decrease in the share of activities by post-working age persons (from some 19% to slightly over 4%) and in the corresponding share for women (from less than 80% to approximately 63%).

The described processes varied depending on the production and economic situation of farms and on the importance of farming activities as income sources for farm holders and their families (see Annex – Table A5). Therefore, the general picture of changes in family labour should additionally include the description of the structure of total family labour inputs in relation to the economic and production situation of agricultural holdings and their role in providing income.

The comparison between the 2000 and 2005 figures indicated a certain increase (from less than 83% to 85%) in the share of own labour of farming family members who were permanent workers in agricultural holdings where farming activities represented the main income source. The opposite was the case in the whole group of surveyed farms where this share showed a decline. At the same time, it should be added that the share of permanent farm workers decreased and the degree of vocational qualifications of workers in farming activities increased as the scale of commercial production rose. This is primarily

reflected in the growing share of activities by permanent full-time workers in total labour inputs (from 56% in farms characterised by commercial production up to PLN 10,000 to 86% in agricultural holdings selling more than PLN 10,000 worth of agricultural products).

4. Labour surplus and shortage

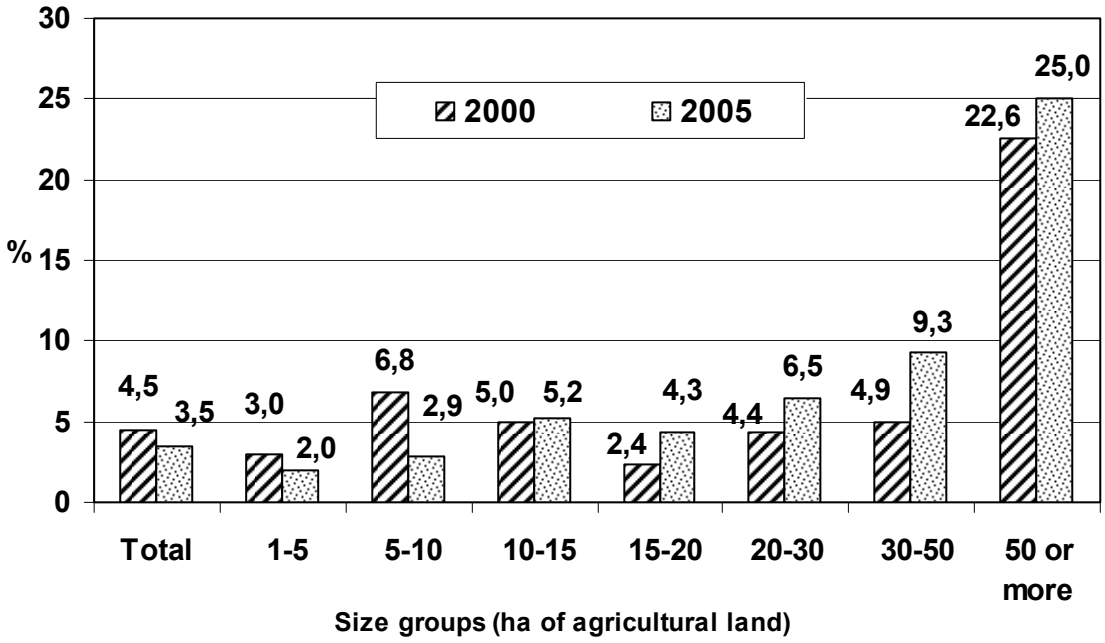
In general, family farming is characterised by labour surplus. But a certain group of agricultural holdings is faced with permanent labour shortage. It should be emphasised, however, that permanent (year-long) shortages of labour have been marginal in family farming.

In 2005, permanent shortages of labour were only reported by some 4% of farms, which was slightly less than in 2000 when they were found in 5% of agricultural holdings (Figure 6). All farms had to cope with labour shortage, but it was more relevant to agricultural holdings of 30 ha or more, and particularly to the largest ones (over 50 ha) since 25% of units in this size group reported this barrier. According to the survey findings, labour shortages in large farms primarily stemmed from inadequate machinery and equipment (the average area in this group was 98.2 ha of agricultural land) and the shortcomings in the comprehensive mechanisation of work, particularly in animal production, rather than from the labour-intensive production structure. Contrary to the rare occurrence of labour shortages in family farming, the problem of labour surplus was much more relevant, although a certain downward trend of excess labour was also observed. It was very different from the tendency characteristic of previous years when labour surplus in family farming had been increasing.

The scale of unutilised labour resources in family farms, i.e. the number of persons whose work is of little relevance to agricultural activities and primarily results from the lack of job prospects, may be determined on the basis of working time or the manager's assessment. Therefore, persons considered redundant, i.e. those included in the group of agricultural workers and willing to take up part-time or full-time work, may be regarded as basically unemployed (which is an element of hidden unemployment in agriculture)[30].

[30] *Zasoby pracy w rolnictwie indywidualnym*, U. Sztanderska (ed.), GUS, Warszawa 2003, pp. 250-251.

Figure 6. Share of farms with labour shortage according to respondents



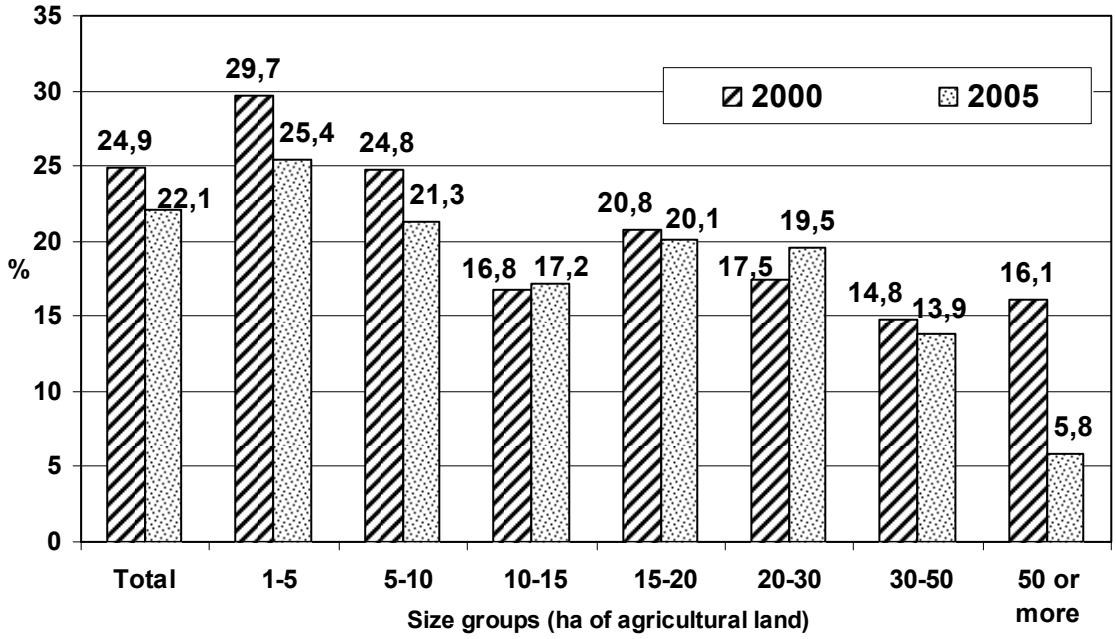
Source: 2000 and 2005 surveys by the Institute of Agricultural and Food Economics – National Research Institute.

The IERiGŻ-PIB field studies mostly relied on the manager's opinion on the usefulness of particular working age members of the farming family who helped on the farm for production activities. Furthermore, persons from this group had no permanent off-farm employment.

The survey findings suggest that in 2000-2005 there was a fall both in the share of farms reporting labour surplus (from less than 25% to some 22%) and in the share of working age persons considered redundant (from over 14% to approximately l3%). In 1996-2000, the share of agricultural holdings with labour surplus increased from 18% to 25%, whereas the share of redundant persons went up from 11% to 14%. This trend reversal may imply the diminishing overpopulation in family farming.

The tendencies observed in 2000-2005 were the least relevant to small farms (from 1 to 5 ha of agricultural land). Every fourth farm in this group reported labour surplus, while persons considered redundant accounted for nearly 16% of the total working age population living in such agricultural holdings. Definitely more significant changes were found in the largest farms. In this group, there was a marked drop both in the share of farms reporting excess labour resources (from 16% to 6%) and in the share of persons considered redundant in family farming activities (from nearly 11% to 4%). Thus, this group was the most successful in adjusting employment to actual needs of agricultural holdings.

Figure 7. Share of farms reporting labour surplus according to respondents



Source: 2000 and 2005 surveys by the Institute of Agricultural and Food Economics – National Research Institute.

Opposite situations were also found. Basically, a modest increase in labour surplus only occurred in farms of 20 to 30 ha of agricultural land. This group showed a slight rise both in the share of persons considered redundant (from 8% to less than 10%) and in the proportion of farms with excess labour force (from some 18% to less than 20%). The period in question witnessed reduced regional disparities between the most fragmented and overpopulated agriculture in the South-Eastern Macro-region and the rest of Poland.

The demographic characteristics of persons considered redundant in family farming activities remained almost unchanged. The group continued to be relatively young and better educated than other family members, with equal shares of men and women. Furthermore, most persons regarded as redundant in agricultural activities intended to take up gainful employment (84%), whereas rather few of them considered job migration (16%).

Between 2000 and 2005, as labour surplus in family farming declined, the share of agricultural holdings without successors also decreased (from 9% to 7%). It primarily concerned regions characterised by significant land fragmentation (such as the South-Eastern Macro-region – 10% of agricultural holdings had no successors). Such situations were rather rare in the Central-Western Macroregion distinguished by highly developed agriculture. Less than 2% of farms had no successors in this macroregion.

The reduction in the number of agricultural holdings without successors should be primarily attributed to increased profitability of agricultural production and the resulting possibilities for satisfactory income from agricultural activities on a sufficiently large scale. This is mostly reflected in the fact that the lack of successors was largely dependent on the farm size and the scale of farming activities. Most persons who were reluctant to take over farm management lived in small agricultural holdings (in the size group of 1 to 5 ha of agricultural land more than 11% of farms had no successors) and in subsistence or semi-subsistence farms (in the group of subsistence or semi-subsistence farms[31] 12% of holdings had no successors). At the same time, it was a rare case in farms of more than 20 ha of agricultural land, typically characterised by large-scale commercial production (only less than 2% of farms in this group had no successors).

4.1. Hidden unemployment in family farming

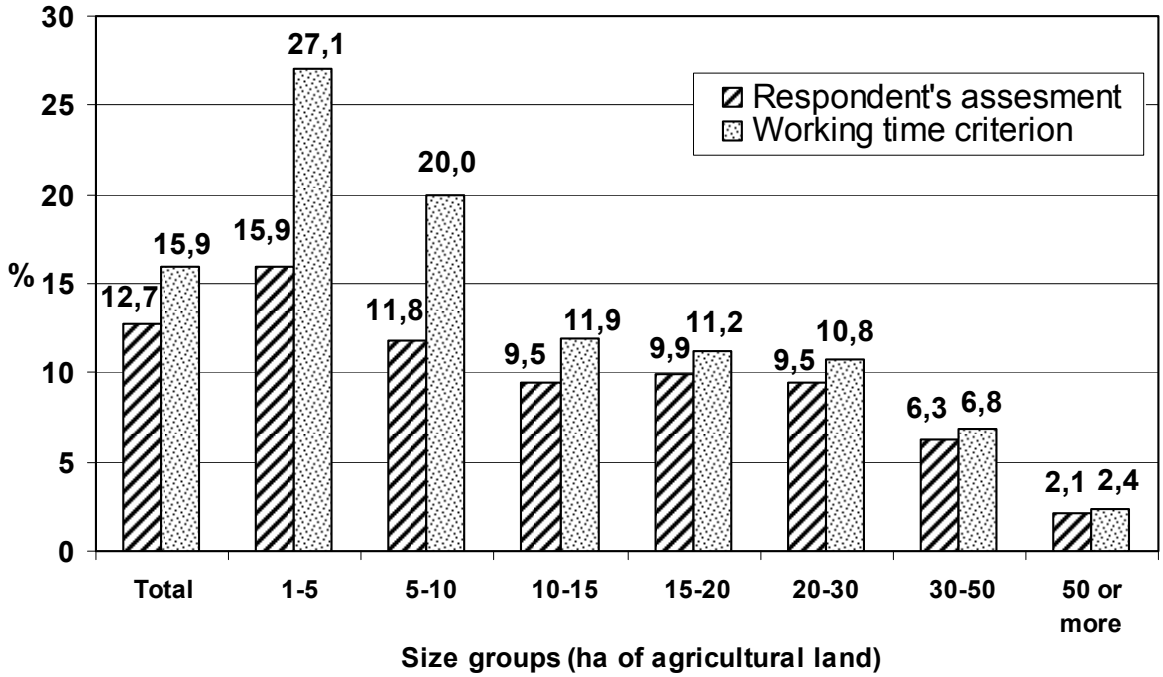
Survey findings also allow to apply objective criteria to the identification of the category of redundant persons, thus the rate of hidden unemployment in family farming. The criterion of unutilised working time was considered the most appropriate tool to determine the scale of this phenomenon.

The group of individuals considered redundant included all working age persons who worked only or mostly on the family farm, engaged in agricultural activities for three months per year or less, also in the case of longer working periods, but no more than three hours a day.

According to the working time criterion, the redundant persons accounted for nearly 16% of the total working age farming population, being slightly larger than the group identified on the basis of the respondent's assessment, which was almost 13% (Figure 8).

[31] Annual sales of agricultural output did not exceed PLN 10,000.

Figure 8. Share of redundant persons* identified on the basis of the respondent's assessment and the working time criterion



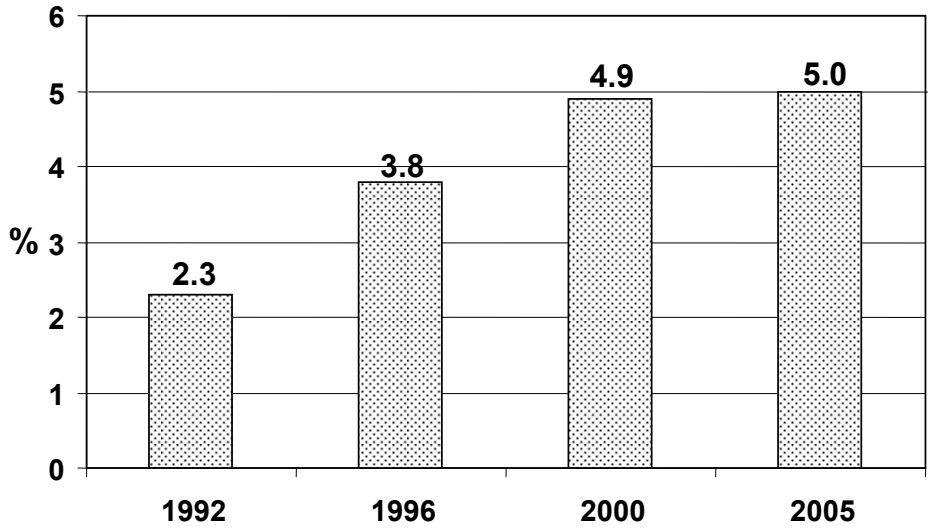
** The number of working age persons = 100.*
Source: 2005 survey by the Institute of Agricultural and Food Economics – National Research Institute.

In most size groups of agricultural holdings the differences were relatively minor, with the exception of those between 1 and 10 ha of agricultural land where the share of redundant persons identified according to respondents' assessment was half the figure determined on the basis of the working time criterion. In the group of persons considered redundant on the farm, less than 26% actively searched for off-farm employment and nearly 19% were registered as unemployed. Therefore, apart from registered unemployment (mostly concerning the non-farming population) of about 1.1 million individuals living in the countryside in mid-2005, an additional number of approx. 500,000 persons may be considered redundant from the point of view of farming activities (which represents an estimate of hidden unemployment in the agricultural sector).

5. Hired labour and employment relationships in agriculture

In 2005, the share of hired labour[32] in total labour inputs in family farming continued to be minor[33] (5%), despite an upward trend accompanying the development of market relations in family farming (Figure 9).

Figure 9. Share of hired labour in total labour inputs in family farming



Source: 1992, 1996, 2000 and 2005 surveys by the Institute of Agricultural and Food Economics – National Research Institute.

In 2000-2005, the share of agricultural holdings hiring labour (irrespective of the form) increased from less than 27% to over 31%. It was common practice to hire seasonal and casual workers, and recently it has become even more frequent (Table 9). The share of agricultural holdings hiring day-workers went up from less than 26% in 2000 to nearly 31% five years later. At the same time, there was a decline in the average number of workdays of hired labour, from 49 to 35, i.e. nearly by 29%. Thus, this form of hiring labour became spread in a greater number of agricultural holdings, while each farm reduced employment of hired workers. As in previous years, the main role of hiring seasonal and casual labour was to alleviate temporary shortages of family labour resources. The high share of farms hiring workers for several days or about two weeks per year is one of the factors which allow to draw such conclusions (Table 9).

---

[32] This group also includes neighbourhood help, but it excludes contract workers, i.e. those who rendered services on the farm.

[33] This limited share of hired labour was found both in farms included in the constant survey sample examined by IERiGŻ-PIB and in holdings of more than 1 ha of agricultural land covered by the farm structure survey conducted by GUS in 2005.

Table 9. Hired labour in the surveyed agricultural holdings

Year	Share of farms hiring workers*			Average number of workdays of hired labour per farm	Share of farms according to the number of workdays of hired labour			
	Total	of which:			up to 10	11-30	31-50	51 or more
		permanent workers	day-workers		days			
					Figures in a row add up to 100			
1992	34.1	0.6	33.6	30	49.4	36.9	5.6	8.1
1996	37.2	1.4	36.2	23	49.3	33.8	8.2	8.7
2000	26.9	1.5	25.8	49	42.9	31.3	7.4	18.4
2005	31.1	1.2	30.7	35	42.4	31.4	8.2	18.0

**Only agricultural holdings engaged in farming activities.*
Source: 1992, 1996, 2000 and 2005 surveys by the Institute of Agricultural and Food Economics – National Research Institute.

In 2005, agricultural holdings which paid for up to 10 workdays accounted for over 42% of the total number of farms hiring day-workers. Furthermore, it should be added that the share of this group has been gradually diminishing (from more than 49% in the 1990s to some 42% at present). At the same time, there has been a steady increase in the share of farms hiring relatively more labour (for 51 days or more). Between 1992 and 2005, their number more than doubled, at present they account for 18% of the total number of agricultural holdings hiring labour. In relation to the total number of farms, the respective share is some 5%.

The relatively high number of workdays of hired labour in this group of agricultural holdings (an average of 196 in 2005, ranging from 51 to 1,100) allows to draw the conclusion that under favourable conditions (the reduction in non-wage costs) some of them may decide to employ permanent workers.

In 2005, as in previous years, hiring day-workers was found in agricultural holdings of varying size, increasing in proportion to the farm size, in terms of both the popularity of this form of employment (from less than 19% in the smallest units to approximately 64% in holdings of 30 ha of agricultural land or more) and the number of workdays of hired labour (from 24 to 59).

Permanent hired workers in family farming continued to be marginal. The survey findings indicate that in 2005 holdings with permanent paid employees engaged in agricultural production only accounted for 1.2%, less than in 2000 when the respective share was 1.5%. Nevertheless, it does not imply the reduction in permanent hired labour since the number of employed persons rose from 1.2 to 1.5 per hiring farm. Consequently, in 2000-2005 the total share of this form of hire in total hired labour (in terms of AWU) even slightly increased (from less than 27% to over 31%) rather than decreased.

Table 10. Hired day-workers by size group and macro-region

Specification	Share of farms hiring labour		Number of			
			hired workers		workdays of hired labour per farm	
	2000	2005	2000	2005	2000	2005
Total	25.8	30.7	3,529	3,256	49	35
Size groups (ha of agricultural land)						
1-5	17.5	18.7	909	584	44	24
5-10	28.5	33.3	1,085	918	52	44
10-15	32.7	37.0	592	504	35	25
15-20	43.9	44.8	244	439	25	34
20-30	60.0	50.0	318	352	58	29
30 or more	80.6	63.8	381	459	131	59
Macroregions						
Central-Western M.	26.7	31.4	438	499	35	33
Central-Eastern M.	22.9	27.9	1,074	1,119	46	29
South-Eastern M.	33.4	36.1	1,577	1,042	62	40
South-Western M.	24.1	28.7	286	290	37	34
Northern M.	15.6	25.8	154	306	31	41

Source: 2000 and 2005 surveys by the Institute of Agricultural and Food Economics – National Research Institute.

In 2000-2005, there were no major changes in the structure of agricultural holdings with permanent hired labour. Permanent hired workers were found in farms regardless of their size, but they were concentrated in the largest agricultural holdings, nearly 26% of farms in this size group reported hiring a permanent worker.

Table 11. Permanent hired labour by size group and macro-region

Specification	Share of farms with permanent hired workers		Average number of workers per farm	
	2000	2005	2000	2005
Total	1.5	1.2	1.2	1.5
Size groups (ha of agricultural land)				
1-5	0.3	0.3	1.2	1.3
5-10	2.3	1.0	1.0	1.1
10-15	1.9	1.4	1.2	1.5
15-20	1.6	1.8	1.0	1.0
20-30	2.8	1.5	1.0	1.0
30-50	2.5	3.7	2.0	1.5
50 or more	25.8	25.5	1.6	2.2
Macroregions				
Central-Western M.	2.1	1.1	1.0	1.2
Central-Eastern M.	0.7	0.9	1.3	1.6
South-Eastern M.	2.1	1.0	1.0	1.4
South-Western M.	1.1	1.9	1.0	1.3
Northern M.	3.4	3.5	1.4	1.8

Source: 2000 and 2005 surveys by the Institute of Agricultural and Food Economics – NRI

The regional distribution of farms with permanent hired labour also changed slightly between 2000 and 2005. As five years before, the highest share of permanent hired labour characterised the Northern Macro-region where 3.4%-3.5% of farms hired permanent non-family workers in farming activities.

In terms of total labour inputs in family farming, hired labour is of marginal importance. In 2005, hired workers accounted for 0.059 AWU per family farm engaged in agricultural activities and for 0.619 per 100 ha of agricultural land. However, from the point of view of holdings hiring labour, the relations were slightly different. An average farm hiring labour paid for 0.19 AWU, or 1.27 AWU per 100 ha of agricultural land.

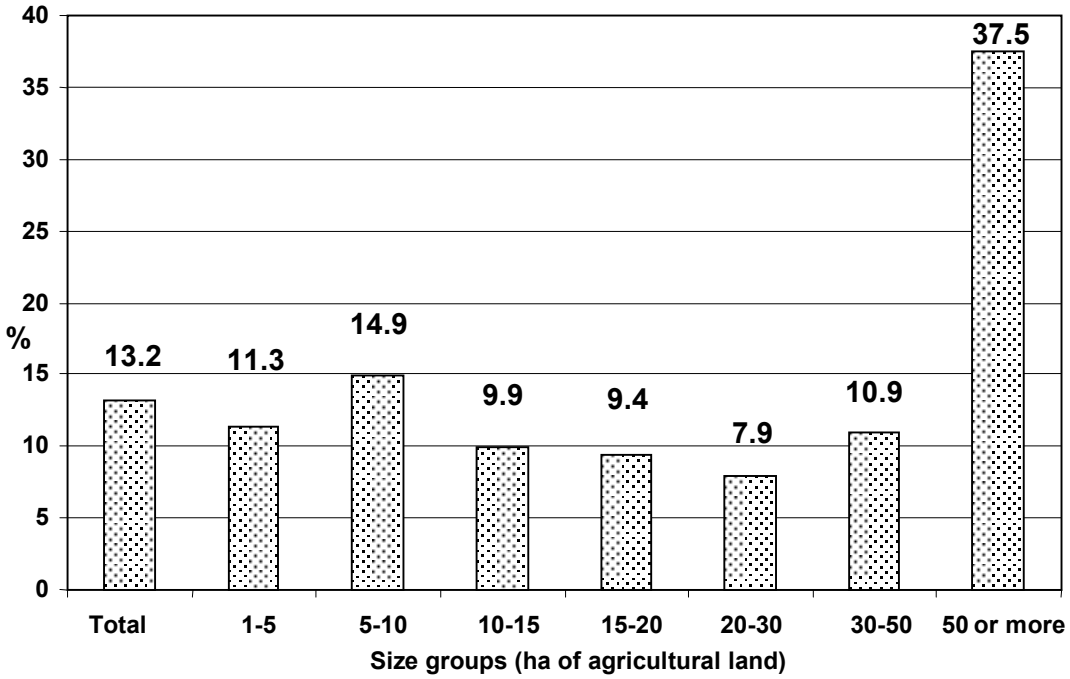
In 2005, the share of hired labour in total labour inputs in farms hiring non-family workers was over 13% (Figure 10). The lowest share (less than 8%) of non-family labour in total labour inputs was found in farms of 20 to 30 ha of agricultural land. At the same time, the highest share (nearly 38%) of hired labour was recorded in the largest agricultural holdings.

A detailed analysis of data concerning the relations between family and non-family labour inputs in farming activities indicated that although the share of hired workers in total labour inputs was minor (up to 20%) in a vast majority of agricultural holdings (82%), there was a group of farms where total labour inputs were dominated by hired labour. It was the case only in 4% of farms with hired workers, while the corresponding share for all units engaged in agricultural activities was even lower, at slightly over 1%. Such farms were mostly found in the Northern Macro-region where hired labour exceeded family labour in nearly 13% of agricultural holdings with hired workers. Those units accounted for almost 4% of all family farms located in the Northern Macro-region.

The relatively minor role of non-family labour in total labour inputs in family farming is also reflected in the findings from the farm structure survey conducted by GUS. In 2005, slightly more than 30% of agricultural holdings used hired labour in their farming activities. This group was dominated by farms hiring day-workers. Permanent hired labour was found in some 1% of family farms, which hired an average of 2.6 persons.

In 2005, employment opportunities in agricultural activities may be assessed as minor in the rural labour market. According to estimates, demand for permanent hired labour in family farming is approximately 30,000. As regards temporary employment, some 500,000-550,000 persons are needed for 1-2 months.

Figure 10. Share of non-family labour in total labour inputs in farms with hired labour by farm size



Source: 2005 survey by the Institute of Agricultural and Food Economics – National Research Institute.

In comparison with agricultural activities, many more jobs are generated by non-agricultural activities by farm holders. In 2005, farms with hired labour accounted for 1.6% of the surveyed holdings, the same share as in 2000. However, there was a fall in the average number of hired workers (from 4.8 to 3.9).

Therefore, during the period in question, the number of jobs in non-agricultural activities may be estimated to have declined by approximately 21%, being some 110,000 in mid-2005. It should be concluded that job opportunities for non-family labour, both in farmers' agricultural and non-agricultural activities, frequently based on farm assets, play a relatively minor role in reducing the imbalance in the rural labour market.

Summary and conclusions

The above analysis suggests that the farming population continues to decrease, which is related to changes in the number of agricultural holdings. The demographic structure of the farming population and of farm managers is still favourable. At the same time, the educational level of farming family members has been improving, although it continues to be rather low compared to that of the urban population.

According to the available information on the place of work of persons living on family farms, between 2000 and 2005 there was a significant reduction (from 72% to 66%) in the share of persons working exclusively on the family farm. At the same time, the share of persons with off-farm employment went up (from 28% to 34%), whereas an increased number of farming family members stopped working on the farm. The share of the farming population engaged exclusively in non-agricultural activities rose from slightly more than 4% to nearly 10%. Such a clear-cut distinction between on-farm and off-farm work was observed in the IERiGŻ-PIB survey for the first time. It means that work on the family farm has become only one of income sources, whereas other forms of gainful employment have been increasingly relevant to the budgets of farming families.

Changes in the farming population and the ongoing diversification of farmers' working life were accompanied by a major reduction in the number of individuals working on the family farm. Furthermore, their involvement in agricultural activities also declined. In 2000-2005, the number of persons working on their family farms decreased by an annual average of nearly 3%, which was higher than that recorded between 1996 and 2000 when the respective rate was some 2%. It was primarily due to the fall in the number of permanent full-time workers engaged in farming activities (by almost 22%). The drop in the number of permanent part-time workers was much less dramatic (by nearly 11%). As regards persons involved in agricultural activities only occasionally, the opposite was the case. There was a slight increase (by less than 2%) in the number of seasonal and casual farm workers.

According to the survey findings, in 2000-2005 family labour inputs (in terms of AWU) continued to decrease, both per farm (from 1.27 to 1.13 AWU, i.e. by 11%) and per 100 ha of agricultural land (from 14.7 to 11.8 AWU, i.e. by some 20%). At the same time, it should be emphasised that the reduction in family labour inputs in family farming was observed throughout the 1990s, but it was more dramatic in 2000-2005. The faster reduction in employment should be primarily attributed to the ongoing land concentration, the rise in the number

of relatively large agricultural holdings and improved machinery and technical equipment, especially enabling comprehensive mechanisation of work, as well as to increased job migration, mostly to the EU-15 countries.

There were still marked regional differences in the level of own labour inputs in family farming. The disparities in the number of full-time workers per 100 ha of agricultural land across Macroregions reflected the profile of agricultural production and the fact that larger farms employed fewer persons. In this connection, employment was the lowest in the Northern Macro-region (6.5 AWU) and the highest in the South-Eastern Macro-region (21.2 AWU).

Changes in opportunities for job migration and in commercial activities of agricultural holdings, as well as the improvement in agricultural machinery and equipment had no major effect on the situation of family farms in terms of labour utilisation. Although the scale of unutilised labour resources fell in 2000-2005, the group of persons considered redundant on the farm continues to be significant. This population determines hidden unemployment in family farming, estimated at some 500,000 in mid-2005.

The surveys confirmed a strong family character of labour relations in farms held by natural persons, despite the fact that the share of farmers hiring non-family labour (regardless of the form of employment) increased from less than 27% in 2000 to over 31% in 2005. Agricultural holdings which mostly relied on non-family labour were rare, only accounting for slightly more than 1% of the total number of family farms.

The main form of non-family labour employment was hiring day-workers, whereas permanent paid employees were marginal. In 2005, the share of agricultural holdings with permanent non-family labour engaged in agricultural production was slightly over 1%, with average employment of 1.5 persons.

Farms whose holders were engaged in non-agricultural activities on a sufficient scale to hire non-family labour (an average of 3.9 persons) represented a higher and growing figure (up from some 1% in 2000 to nearly 2% five years later).

Generally, it may be concluded that employment opportunities on family farms play a minor role in reducing the imbalance in the rural labour market. Farming families' agricultural and non-agricultural activities combined provided permanent employment for some 140,000 non-family persons. In this group, a vast majority (79%) of jobs were created in farmers' businesses involved in non-farming activities. At the same time, it should be added that family farming generated approximately 500,000 seasonal and casual jobs.

References

1. *Charakterystyka gospodarstw rolnych w 2005 roku*, GUS, Warszawa 2005.
2. Coleman W., Grant W., Josling T.: *Agriculture in New Global Economy,* Edward Elgar Co., Cheltencham-Northampton 2004.
3. Cramer G.L., Jensen C.W., Southgate D.D.: *Agricultural Economics and Agribusiness*, (8th Edition), John Wiley & Sons, Inc. New York 2001.
4. Duczkowska-Małysz K., Duczkowska-Piasecka M.: *Korzyści i zagrożenia związane z integracją polskiego rolnictwa z rolnictwem Unii Europejskiej*, [in:] Determinanty transformacji struktury agrarnej w rolnictwie polskim, Roczniki Akademii Rolniczej w Poznaniu CCCVII, Vol. II, Poznań 1999.
5. *Employment Dynamics in Rural Europe*, I.J. Terluin and J.H. Post (eds.), CABI Publishing 2000.
6. Frenkel I.: *Zmiany zatrudnienia i bezrobocia na wsi w latach 1992-1994*, [in:] Wieś i rolnictwo w okresie transformacji systemowej, PAN-IRWiR, Warszawa 1995.
7. Frenkiel I.: *Struktura demograficzno-zawodowa ludności wiejskiej w świetle wyników Narodowego Spisu Powszechnego 2002*, [in:] Uwarunkowania i kierunki przemian społeczno-gospodarczych na obszarach wiejskich, A. Rosner (ed.), IRWiR PAN, Warszawa 2005.
8. Gall M.D., Gall J.P. & Borg W.R.: *Educational research: An introduction*. Allyn & Bacon, Boston 2003.
9. *Handbook of Agricultural Economics, Volume 1A – Agricultural Production*, B.L. Gardner, G.C. Rausser (eds.), North-Holland, New York, 2001.
10. Karwat-Woźniak B.: *Gospodarstwa rozwojowe w procesach dostosowawczych do gospodarki rynkowej*, Studia i Monografie, no. 125, IERiGŻ-PIB, Warszawa 2005.
11. Karwat-Woźniak B.: *Zmiany aktywności rynkowej gospodarstw indywidualnych w latach 2000-2005*, Komunikaty, Raporty, Ekspertyzy, no. 519, IERiGŻ-PIB, Warszawa 2006.
12. Leopold A.: *Praca w rolnictwie*, [in:] Gospodarstwo rolnicze wobec wymogów współczesnego rynku i Unii Europejskiej, SGGW, Warszawa 1997.
13. *The Cap and the Regions, The Territorial Impact of the Common Agricultural Policy*, M. Shucksmith, K.J. Thomson, D. Roberts (eds.), CABI Publishing, 2005.
14. Podedworna H.: *Przemiany procesu pracy w rolnictwie*, Studia Socjologiczne, no. 3/2000.
15. *Polska wieś 2025*, J. Wilkin (ed.), Co-operation Fund, Warszawa 2005.
16. Sikorska A.: *Struktura społeczno-demograficzna ludności wiejskiej*, [in:] Analiza produkcyjno-ekonomicznej sytuacji rolnictwa i gospodarki żywnościowej w 2001 roku, IERiGŻ-PIB, Warszawa 2002, p. 427.
17. Szemberg A.: *Ludność i praca (wyniki ankiety IERiGŻ 1996)*, IERiGŻ-PIB, Warszawa 1997.
18. Szemberg A.: *Ludność i praca w gospodarstwach chłopskich*, Zagadnienia Ekonomiki Rolnej, no. 4-5/1993.
19. Szemberg A.: *Ludność i praca w gospodarstwach rolnych*, IERiGŻ-PIB, Warszawa 2001.
20. Szemberg A.: *Prognoza przemian w strukturze obszarowej i zatrudnienie w rolnictwie polskim do 2010 roku*, IERiGŻ-PIB, Warszawa 1996.
21. Szemberg A.: *Rolnictwo chłopskie*, [in:] Wieś i rolnictwo w 1992 roku (podsumowanie wyników badania ankietowego), Studia i Monografie, no. 71, IERiGŻ-PIB, Warszawa 1994.
22. Wiatrak A.P., *Czynniki różnicujące wydajność pracy w rolnictwie*, IRWIR PAN, Warszawa 1980.
23. Woś A.: *Agrobiznes. Makroekonomia*, Wydawnictwo Key Text, Warszawa 1996.
24. Woś A.: *Rolnictwo polskie wobec procesów globalizacji w gospodarce*, Studia i monografie, no. 105, IERiGŻ-PIB, Warszawa 2001.
25. *Zasoby pracy w rolnictwie indywidualnym*, U. Sztanderska (ed.), GUS, Warszawa 2003.
26. Zegar J. St.: *Źródła utrzymania rodzin związanych z rolnictwem*, Studia i Monografie, no. 133, IERiGŻ-PIB, Warszawa 2006.
27. Ziętara W.: *Wydajność pracy w rolnictwie i w różnych typach gospodarstw rolniczych*, Roczniki Naukowe SERiA, Vol. V, no. 1, Warszawa 2003.
28. Zwoliński Ł.: *Mobilność przestrzenna i społeczno-zawodowa ludności wiejskiej w latach 2000-2005*, IERiGŻ-PIB, Warszawa 2006.

ANNEX

Table A1. Working hours of permanent part-time workers engaged in agricultural activities

Specification	Share of persons working on the farm for:		
	2 hours or less	3-4 hours	5-7 hours
	Figures in a row add up to 100		
1996	30.2	52.9	16.9
2000	33.2	49.2	17.6
2005	37.5	43.8	18.7
Size groups (ha of agricultural land)			
1-5	40.9	43.0	16.1
5-10	32.3	44.2	23.5
10-15	35.3	44.1	20.6
15-20	32.4	48.9	18.7
20-30	35.1	44.7	20.2
30-50	41.8	38.0	20.2
50 or more	19.2	57.7	23.1
Macroregions			
Central-Western M.	31.9	47.6	20.5
Central-Eastern M.	40.0	43.9	16.1
South-Eastern M.	35.7	42.2	22.1
South-Western M.	41.3	46.8	11.9
Northern M.	39.3	42.6	18.1

Source: 1996, 2000 and 2005 surveys by the Institute of Agricultural and Food Economics – National Research Institute.

Table A2. Working time of seasonal and casual workers engaged in agricultural activities

Specification	Share of persons working on the farm for:						
	up to 20	21-30	31-50	51-75	76-100	101-150	151 or more
	days						
	Figures in a row add up to 100						
1996	59.5	16.8	10.1	8.1	3.6	1.3	0.6
2000	50.0	17.8	13.5	10.0	5.9	1.2	1.6
2005	38.6	19.7	18.1	14.1	8.4	0.6	0.5
Size groups (ha of agricultural land)							
1-5	41.8	19.9	7.2	13.1	7.2	0.2	0.6
5-10	30.6	19.4	23.1	15.1	10.8	0.6	0.4
10-15	36.3	19.4	15.4	16.9	9.5	2.5	-
15-20	46.7	22.2	11.1	12.2	7.8	-	-
20-30	41.9	18.6	19.8	11.6	7.0	1.1	-
30-50	28.0	16.0	14.0	26.0	14.0	2.0	-
50 or more	57.1	17.9	10.7	3.6	10.7	-	-
Macroregions							
Central-Western M.	49.7	24.5	6.9	10.7	6.9	1.3	-
Central-Eastern M.	36.2	18.8	11.6	18.7	12.5	1.3	0.9
South-Eastern M.	37.6	19.1	24.2	12.3	6.3	0.2	0.3
South-Western M.	51.3	14.2	14.2	13.2	7.1	-	-
Northern M.	29.3	33.4	20.0	8.0	9.3	-	-

Source: 1996, 2000 and 2005 surveys by the Institute of Agricultural and Food Economics- NRI

Table A3. Family labour inputs in the family farm

Specification	Labour inputs in AWU							
	per farm				per 100 ha of agricultural land			
	1992	1996	2000	2005	1992	1996	2000	2005
Total	1.45	1.37	1.27	1.13	19.5	16.6	14.7	11.8
Size groups (ha of agricultural land)								
1-5	1.07	1.06	0.93	0.82	41.5	38.5	36.3	42.0
5-10	1.54	1.47	1.38	1.18	23.6	20.7	19.9	16.7
10-15	1.79	1.66	1.65	1.40	16.2	13.8	13.8	11.8
15-20	1.95	1.80	1.71	1.56	12.3	10.5	10.0	9.2
20-30	2.11	1.90	1.74	1.65	11.3	8.1	7.2	6.9
30-50	1.96	1.68	1.81	1.81	6.4	4.6	4.9	4.9
50 or more	1.71	1.28	1.58	1.66	2.1	1.3	1.6	1.7
Macroregions								
Central-Western M.	1.59	1.51	1.45	1.34	15.3	13.2	11.0	9.7
Central-Eastern M.	1.46	1.41	1.41	1.16	20.3	18.4	15.8	12.1
South-Eastern M.	1.34	1.26	1.03	1.01	30.0	26.9	25.7	21.3
South-Western M.	1.40	1.20	1.16	1.04	14.1	10.0	11.3	9.0
Northern M.	1.64	1.50	1.44	1.21	13.4	10.4	8.6	6.5

Source: 1992, 1996, 2000 and 2005 surveys by the Institute of Agricultural and Food Economics – National Research Institute.

Table A4. Level of employment of the farming family on the family farm

Specification	Labour inputs in AWU		Share in total labour inputs		
			the manager	the spouse	other family members
	per farm	per 100 ha of agricultural land	Figures in a row add up to 100		
Total	1.13	14.4	50.8	28.9	20.3
Size groups (ha of agricultural land)					
1-5	0.79	32.0	52.6	28.3	19.1
5-10	1.39	19.5	50.7	28.6	20.7
10-15	1.65	13.5	49.9	29.4	20.7
15-20	1.81	10.5	48.5	30.3	21.2
20-30	1.90	7.9	47.5	30.5	22.0
30-50	1.97	5.2	46.5	31.1	22.4
50 or more	1.85	1.6	48.4	29.0	22.6
Macroregions					
Central-Western M.	1.25	10.6	52.1	29.8	18.1
Central-Eastern M.	1.19	15.3	50.7	29.1	20.2
South-Eastern M.	1.10	28.2	48.7	28.4	22.9
South-Western M.	0.90	8.4	54.6	28.6	16.8
Northern M.	1.02	6.3	55.4	28.5	16.1

Source: Badania struktury gospodarstw rolnych 2005, GUS.

Table A5. Changes in the share of farming activities by permanent full-time workers in family labour inputs

Specification	Share of permanent full-time work in total labour inputs*			
	Total	Women	Men	Persons aged 60 or over
2000				
Total	72.5	65.2	77.3	8.2
Categories of rural families**				
- farming families	82.7	73.8	88.0	4.8
- income-earning families	49.7	50.4	49.0	10.8
- pensioners' families	67.5	59.4	73.1	23.3
Farm characteristics				
- non-commercial farms	53.5	52.6	54.2	46.5
- commercial farms	73.5	66.0	78.4	26.5
2005				
Total	69.7	63.1	73.9	4.1
Categories of rural families**				
- farming families	85.0	77.3	89.3	2.3
- income-earning families	46.5	48.9	44.5	5.6
- pensioners' families	59.7	48.5	66.6	9.9
Farm characteristics				
- non-commercial farms	29.7	27.8	30.8	11.3
- commercial farms	71.8	65.8	76.0	3.9
- with sales of:				
PLN 10,000 or less	55.7	52.4	58.1	6.2
PLN 10,000-30,000	74.8	68.9	78.3	4.5
PLN 30,000-50,000	79.1	70.8	83.9	3.6
PLN 50,000-100,000	82.6	74.4	87.5	2.5
PLN 100,000 or more	85.9	77.9	90.4	1.1

** Total labour inputs in all agricultural holdings or in the whole group (broken down by sex or age) = 100.*

*** Families were broken down by main income source in the total family budget:* ***farming families*** *– most income was generated by agricultural activities;* ***income-earning families*** *– total family income was determined by income from paid employment and self-employment,* ***pensioners' families*** *– the family budget was dominated by pensions and other income sources other than work.*

Source: 2000 and 2005 surveys by the Institute of Agricultural and Food Economics – National Research Institute.

EGZEMPLARZ BEZPŁATNY

Nakład: 150 egz.
Druk: Dział Wydawnictw IERiGŻ-PIB
Oprawa: UWIPAL