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Barbara Chmielewska
*Institute of Agricultural and Food
Economics – National Research
Institute
General Economics Department
chmielewska@ierigz.waw.pl*

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SOURCES OF INCOME AS AN INDICATOR OF CHANGES IN THE FARM FUNCTIONS

ABSTRACT. The report discusses the changes in the functions of agricultural holdings and how this impacts rural development. The functions of agricultural holdings have been identified on the basis of identifying the main sources of income. As a result of the transformation of Polish economy and integration with the EU, the functions of agricultural holdings have to a large extent changed. Households and production holdings are now treated as two separate entities. At the same time polarization has been noted with two distinct categories of holdings that have emerged: (1) agricultural holdings and commercial farms; (2) subsistence farms, social holdings and recreational holdings. The number of holdings with mixed sources of income has also increased. A farmer family no longer specializes in one domain only and is now multi-professional. In addition, agricultural holdings and rural areas evolved from single-functional to multi-functional in nature.

JEL Classification: Q12, P2 **Keywords:** functions of agricultural holdings, polarization.

Introduction

Throughout the centuries, the primary function of an agricultural holding has been food production and providing income for the family working on a farm and forming a household together. Although “the primary function of a peasant family holding is still food production which provides the family with basic material living conditions” (Tomczak 2005), at present there has been an important shift in terms of the functions of farms. Most importantly, households and production holdings are now being treated as two separate entities. Technological progress and mechanisation of farming made workforce less necessary in the fields and in the work with animals. Relations between prices became much less favourable for agriculture. In addition, due to fragmented agrarian structure, especially in small holdings, agriculture-based income ceased to be able to provide families with a satisfactory standard of living. A farmer family no longer specialized in one domain only and is now multi-professional. Similarly, agricultural holdings as well as production holdings started to perform social, recreational, environmental and cultural roles.

This shift stemmed to a large extent from the fact that it was difficult to find employment in any other sector than the agricultural one. Initially, farmers were able to get

an additional income by working in the cities but in the late 1980s and early 1990s this market became much less accessible for those who were not in demand in the agricultural sector. Those persons have a low level of education which is frequently not adequate in terms of what employers expect. Another important obstacle for employment proved to be housing problems (absence of inexpensive accommodation in the city) and transportation difficulties (commuting to work). Rural population was forced to “organise” their own workplaces in their place of residence. Agricultural holdings and rural areas were becoming multi-functional rather than single-functional.

Definition of an agricultural holding

The term “agricultural holding is defined by the Act *on the Agricultural System* of 2003 (Act 2003). The Act refers to the definition of an agricultural holding included in the Civil Code¹, the difference being that the Act sets a minimum size of a holding per 1 ha of agricultural land (Article 2²). The Act also introduces the category of a “family holding”. A family farm is any holding in which the total agricultural land is not greater than 300 ha and which is managed by an individual farmer (Article 5). This definition is complemented by the principles of state agricultural system development set out in the Act (Article 1), namely:

- 1) improving area structure of agricultural holdings;
- 2) preventing excessive concentrations of agricultural property³;
- 3) ensuring that agricultural economic activity in agricultural holdings is only conducted by persons qualified to do so.

This provision indirectly speaks of the direction that transformation of the function of agricultural holdings is taking.

Even though “agricultural parcel” might be a better term, the term “agricultural holding” is still used by the Central Statistical Office in bulk statistics also in relation to holdings whose total area is lower than 1 ha of agricultural land. According to the definition provided by the Central Statistical Office: “An agricultural holding is an agricultural area with woodland areas, buildings or parts of buildings, machinery and livestock, if they constitute or may constitute an organised economical entity, having the rights and duties connected with running an agricultural holding”. Agricultural holdings farmed individually include: Individual holdings with an area larger than 1 ha of agricultural land, run by farmers on own and non-own land, (2) individual holdings with an area of 1 ha of agricultural land (agricultural parcels, including for example, on-the-job parcels) used for agricultural purposes by natural persons and owners of livestock who do not own agricultural land” (Statistical Yearbook of the Central Statistical Office 2008).

Traditionally, in Polish legislation, the terms “agricultural holding” and “enterprise” were treated as two separate entities as it was assumed that the activity of an agricultural holding is aimed at agricultural production and not at trading activity (there was no such term as “agricultural enterprise”) However, throughout the years the legal construction of the agricultural holding evolved from describing it in terms of its underlying elements to

¹ Civil Code of 1964 defines an agricultural holding in the following manner: “*agricultural areas with woodland areas, buildings or parts of buildings, machinery and livestock, if they constitute or may constitute an organised economical entity, having the rights and duties connected with running an agricultural holding*”. Agricultural products made and stock are also considered an element of the agricultural production unit.

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³ In Polish law there are three types of property: land, building and premises (part of building). Their respective definitions are provided in Article 46 (1) of the Civil Code.

describing it in terms of its functions. There has also been a shift from treating the agricultural holding as a property unit to treating it as a part of an economic whole (Budzinowski 2005).

In most countries of the world, both in the developed and developing ones, family holdings, understood as property, workplace and accommodation of an agricultural family, are the most basic production unit. "At the same time, for many farmers and peasant families in the whole world, family farming is not only a source of income and a profession, but also a lifestyle, a source of achieving goals and aspirations of an agricultural family" (Tomczak 2005).

In the Treaty of Rome and in secondary legislation of European Communities, there is no single and uniform definition of an agricultural holding.

The role of CAP in changes of the functions of agricultural holdings and rural areas

The most important shift in the function of agricultural holdings was caused by political system and economic transformation in Poland in the late 1980s and early 1990s and integration of our country with the European Union in 2004, which in turn meant that Polish agriculture needed to comply with the EU Common Agricultural Policy (CAP). The main assumption behind activities undertaken by the European Union as part of the reformed Common Agricultural Policy, both in its market and structural aspects, is that agriculture-based income will increase, and that standard of living, working and producing will improve as agricultural economy is developed in an environmentally-friendly manner (website of EC). The earlier activities did not "solve such problems of rural areas as: much lower income of the rural population compared to average wages and salaries in the country, ageing population, higher employment rate, limited access to basic services, social marginalisation, fewer employment prospects, absence of balance between agricultural activity and its impact on rural areas and the environment" (Wigier 2007).

The new support system as part of the CAP is aimed at promoting sustainable and market-oriented agriculture. The European Commission has mentioned three priorities which need to be taken account of in the future rural development policy. These include:

- increased competitiveness of the agricultural sector by supporting restructuring;
- improved condition of the environment through better land management (Natura 2000);
- improved standard of living in rural areas, promoting diversification of economic activity in rural areas and supporting it using relevant resources of rural policy.

In Poland, implementation of the CAP entails first and foremost direct financial support for holdings in the form of direct payments for agricultural lands, which include:

- Single Area Payment Scheme (SAP), wholly EU-funded, calculated in relation to arable land maintained in good condition;
- Complementary National Direct Payments (CNDP) for land in which particular plants are cultivated (EU-funded and national budget funded) and for hops cultivation (finance from the national budget only) (ARiMR 2007⁴).

In 2006, ARiMR for the first time introduced separate sugar payments. In 2005-2006 agricultural producers cultivating willow trees or multiflora roses used for energetic purposes, benefitted from national budget based payments, and since 2007 farmers have been able to apply for wholly EU-funded payments for energy plants cultivation (which replaced the hitherto used wholly national budget funded payments for energy plants) and for

⁴ The list of plants which can benefit from complementary payments is provided, on an annual basis, by way of regulation of Minister of Agriculture and Rural Development *on types of plants which can benefit from complementary payments*.

complementary payments for plants intended for feed cultivated on permanent pastures, the so-called “animal payments” (ARMiR 2007).

Types of direct payments granted to farmers and payment rates changed throughout the years. It was due to both currency exchange rates and the increase in the percentage of payments in Poland compared to payments that farmers received from EU-15. In 2005 these amounted to 60% and the rates in Poland were as follows: Single Area Payment (SAP); PLN 225.00/ha; Complementary National Direct Payments – other plants: PLN 282.35/ha; Complementary National Direct Payments – hops: PLN 870.02 /ha (ARiMR 2007).

In 2009, Polish farmers received 90% of the rate of payment granted to farmers in EU-15. In 2009, the structure payments was as follows: Single Area Payment (SAP) – PLN 506.98/ha, Complementary National Direct Payments, including: payment for the group of primary crops (Complementary National Direct Payments) – PLN 356.47/ha, payment for areas of hop crops (production-related payment) – PLN 507.54 /ha, payment for areas of hop crops (payment non-related to production) – PLN 861.32/ha, payment for the area of plants intended for feeds, cultivated on permanent pastures (animal payments) – PLN 502.62/ha; payments for cultivation of energy plants – PLN 190.33/ha; sugar payment PLN 53.47/tonne, rape payments PLN 176 /ha, separate fruit and vegetable payment (tomato payment) – PLN 166.82/tonne; soft fruit interim payments – PLN 1691.80 /ha (of which PLN 972.78 from UE budget and PLN 719.02 from national budget) (website: ppr.pl).

ARiMR provides guidelines on its website concerning requirements for farmers applying for payments: “Farmers who are applying for direct payments and mountain area management payments and other less favoured areas (LFA) payments and for agri-environmental aid as well as funds for afforestation of agricultural land, need to demonstrate compliance with standards and requirements of Cross Compliance for a whole calendar year. Since 2010 additional new standards have been in force. These oblige farmers to hold water use and wastewater disposal permits in some contexts as well as to conserve characteristic features of the landscape; they prohibit them from destroying protected plant and animal habitats and permit, provided that some conditions are met, cultivation of given crop species for more than three years on the same parcel. Characteristic features of the landscape such as: trees, which are natural monuments, ditches which are up to 2 metres wide, must be conserved on the agricultural parcel. Every farmer must ensure that animal and plant habitats in protected areas, i.e. national parks, landscape parks, areas of protected landscape, ecological lands, landscape-nature protected complexes, nature reserves, documentation sites and natural monuments, are not destroyed”.

The new requirements that farmers applying for payments need to meet as well as additional environmental standards in force since 2010 and also the possibility of receiving domestic and EU financial support for other aims after accession (ARiMR 2007⁵), prompted many holdings to change their production structure and implement new functions of the holding (tourism, recreation, ecology). The increase in the number of certified organic farms or agro-tourist farm testifies to this fact.

In 2002-2004, the number of certified organic farms increased from 882 to 1,683 (an increase by 90.8%). Even though the growth rate was slower in the following years, in 2007 the number of certified organic farms (6,618) was 7.5 times greater compared to 2002. The małopolskie, podkarpackie and lubelskie voivodeships had the largest number of organic farms and these are areas with a fragmented agrarian structure and substantial workforce resources (Statistical Yearbook of Agriculture and Rural Areas 2008).

⁵ For instance, enhancing their product portfolios and increasing production scale, alignment of agricultural holdings with EU standards, alignment with sanitary and veterinary requirements, improving production quality, supporting agri-environmental undertakings, support for holdings owned by young farmers, building farm tourist facilities and job creation.

The number of agrotourist facilities increased in 2002-2004 by 28.1% (from 3,163 to 4,052). In 2005, compared to the year before, an increase by 61.6% was noted. In the following years, increase in agrotourist base was noted in Poland and that despite a lower growth rate. In 2009 there were 10,200 farm tourist facilities offering 98,100 places. In other words, the increase was substantial –as this is 2.5 times more compared to 2004. The largest number of facilities and accommodation places was noted in the małopolskie, podkarpackie and the warmińsko-mazurskie voivodeships. The natural landscape conditions in those regions are favourable for the development of tourism and activity of this kind may be an ideal alternative source of income for small farms (the małopolskie and podkarpackie voivodeships) or rural families, who lost their jobs following liquidation of state holdings (Janusiewicz, Łopaciński 2009).

Economic condition of agricultural holdings

The primary function of agricultural holdings is production. Central Statistical Office mentions the following tendencies in production:

- holdings totally switch to subsistence farming;
- holdings partially switch to subsistence farming;
- holdings sell their goods mainly to the market.

As a result of capitalist transformation of the system, throughout 1990s and also in the present decade, a holding polarization⁶ process was noted. A very large number of agricultural holdings sells much less to the market and many of them resort to subsistence farming. Only a small proportion of holdings became commercial farms.

According to National Agricultural Census in 2002 442.5 thousand individual holdings produced goods for own use and 790.5 thousand for own use mainly. This accounted for 56.7% of total individual farms. These were holdings from the 0-2 ha area category. 941 thousand holdings produced goods intended for the market mainly and most (359 thousand) produced agricultural goods worth of PLN 5-15,000 (38.2% of holdings selling goods intended mainly for the market). These were holdings from the 5-10 ha area category. The larger the area of holdings grew, the more important their production function became (the value of agricultural goods sold increased).

According to L. Klank, only about 15% of agricultural holdings benefitted from the transformation and more than a half was marginalised to the subsistence farming sector, with agricultural production based income of 2.5-5 thousand annually per one family (Nowicki 2003).

In the period of transformation and integration (the last decade of the 20th century and the first decade of the 21st century) the structure of agricultural holdings changed only slightly. However, two tendencies emerged: polarization of the structure and concentrations of land in the largest holdings and that despite the slow growth rate of their total number. Polarization was a result of rational decisions of farmers: either a “retreat” from agriculture (switching to the social group) or making it larger in order to obtain a larger market share or maintaining the existing one. A progressive process of polarization of family holdings into social and market-oriented holdings was observed.

In the early days of Polish integration with the EU (in 2004) the structure of agricultural holdings was as follows (Józwiak 2006):

- the first “pole” covered social holdings (about 1 m holdings of size up to 2 ESU, including 670 thousand with an area of less than 1 ha, i.e. 36% of the total number),

⁶ The term “polarization” is mainly used in agricultural economics to emphasize the polar character of differences between agricultural holdings in terms of size, income, production etc.

agriculture production based income in those holdings was very modest and consisted 9-10% of total family income;

- the second pole covered Polish farms (about 220-230 thousand holdings, i.e. of the total number) with a size of 8 ESU or more, which was indicative of a large production scale and positive reproduction of fixed assets.

In 2007, as many as 68% (more than 1.6 m) of individual holdings had a low economic strength (up to 2 ESU) and 21.8% (520.9 thousand) were holdings which did not pay the parity fee (2-8 ESU). Holdings which paid the parity fee but provided low return on equity (8-16 ESU) accounted for 6.8% (82 thousand) and the holdings in which there was a parity between own work and profitability (i.e. more than 16 ESU) accounted for 4% only. (96.6 thousand of holdings)⁷

Area polarization of holdings was a slower process than their socio-economic polarization. In rural families in particular, a process of income polarization can be noted. This process can be evidenced by a large scale of peasant poverty (or rural poverty more generally speaking) on the one hand and on the other by the fact that few farmers – agricultural producers and apt managers of holdings with a high production potential - have a high income. In 2008, average monthly income of an individual holding per 1 person in a farmer household in the area category of 20.00 ha and more was 2.7 greater compared to the 1.00- 4.999 group. The same was the case with one-person holdings compared to six-person holdings: 3.2 times and 2.2 times respectively.

Polarization of functions of family holdings was caused by the emergence of alternative sources of income. For instance, there is a large share of temporary work and social benefits in the income structure (Zegar 2006). Some proportion of holdings, especially those with large areas of agricultural land and extensive production resources transformed into family enterprises, creating a base for agricultural families. Some proportion of rural population gave up agricultural activity which resulted in an increase in the number of rural families which are not in possession of an agricultural holding. “As a result – as A Sikorska writes - the number of rural non-peasant population constantly increased”. In 1988-2005, the percentage share of families with an agricultural holding user decreased from 58.5% to 43%, whereas in the very same period the percentage share of families without an agricultural holding user increased from 41.5% to 57% (Sikorska 2007). The emergence of a large proportion of rural families without a holding in the course of system transformation was more obvious; a large number of this population became economically inactive (with some of them working on a temporary basis or illegally); and emigrated.

An example of the changes in the country and in the rural community are also changes in the structure of individual holdings in terms of the main source of income for holdings. In 2002, households in which 50% of income was based on pensions and disability benefits (30.9%) were most numerous. Households with temporary work based income came second (27.1%) and agriculture-based income (20.8%) came third. However, in 2007 households with 50% of total income based on temporary work (increase by 31.6%) were first, households with agriculture based income (increase by 25.3%) came second and pension and disability benefit income based household were ranked third (decline by 24.1%) (Statistics and characteristics 2002).

⁷ This category also included holdings with an area of up to 1 ha (parcels to be more precise). Unfortunately, the empirical data available does not allow us to categorize this group as an entity which could be considered separate from the total group of holdings classified according to their economic strength.

Changes in the number and size structure of individual farms

In 2002-2007 there was a drop in the total number of farms by 12.1%, it included decrease by 21.1% for farms with the agricultural land area of up to 1 ha (parcels) and with the agricultural land area of above 1 ha by 7.6%. A drop was also noted in the area of agricultural lands, which were used both in the group of parcels, as well as in the group of farms with the area of above 1 ha of agricultural land (Table 1).

Table 1. Changes in the number of individual farms in Poland within the period before and after CAP introduction

Area of agricultural land in ha	Number of farms					
	in absolute numbers			%	structure in %	
	2002	2007	difference 2007-2002	<u>2007</u> 2002	2002	2007
Total	2,928,578	2,575,113	-353,465	87.9	100.0	100.0
from 0 to 1 ha	976,852	771,050	-205,802	78.9	33.4	29.9
above 1 ha	1,951,726	1,804,063	-147,663	92.4	66.6	70.1
in ha	in absolute numbers			farms larger than 1 ha = 100		
1-2	516,836	422,533	-94,303	81.8	26.5	23.4
2-3	280,996	273,675	-7,321	97.4	14.4	15.2
3-5	348,466	340,303	-8,163	97.7	17.9	18.9
5-10	426,520	399,868	-26,652	93.8	21.9	22.2
10-15	182,505	166,435	-16,070	91.2	9.4	9.2
15-20	83,790	77,474	-6,316	92.5	4.3	4.3
20-30	64,080	65,189	1,109	101.7	3.3	3.6
30-50	31,432	37,126	5,694	118.1	1.6	2.1
50-100	11,977	15,615	3,638	130.4	0.6	0.9
100 and more	5,124	5,846	722	114.1	0.3	0.3

Source: *Statystyka i charakterystyka gospodarstw rolnych w 2002 r. (Statistics and characteristics of agricultural holdings in 2002)*, CSO, Warsaw 2003, p. 112 and *Charakterystyka gospodarstw rolnych w 2007 roku (Characteristics of agricultural holdings in 2007)*, CSO, Warsaw 2008, p. 154.

Analysis of the change in the number of farms (above 1 ha) by size groups showed that in 2002-2007 the number of farms in the size group covering farms from 1 to 20 ha decreased, and it increased in the size group of farms above 20 ha.

The highest rate of decrease was noted in the 1-2 ha group (drop by 18.2%), the lowest – 3-5 ha group (2.3%). In absolute numbers the number of farms decreased the most in the following size groups: 1-2 ha (drop by 94.3 thousand); 5-10 ha (drop by 26.6 thousand) and 10-15 ha (drop by 16.1 thousand).

The highest growth rate was noted in the 50-100 ha group (increase by 30.4%). In absolute numbers the number of farms increased the most in the 30-50 ha size group (increase by 5.7 thousand).

In the 2002-2007 period the area of agricultural land belonging to individual farms decreased by a total of 3.0%; the group of farms with the area of agricultural land of up to 1 ha (parcels) noted a drop of 16.6% and the group of farms above 1 ha – by 7.6%. In the group of holdings with the area of agricultural land amounting to more than 1 ha the decrease rate of for the drop in the area was much slower than for the number of farms, which points to a positive change in the agrarian structure – increase in the average area of farms (Table 2).

Table 2. Changes in the total area of individual farms in Poland within the period before and after CAP introduction

Introduction	Area of farms							
	in ha			%	structure in %		average in the group, in ha	
	2002	2007	difference 2007-2002	$\frac{2007}{2002}$	2002	2007	2002	2007
Total	14,858,425	14,418,199	-440,226	97.0	100.0	100.0	5.07	5.60
from 0 to 1 ha	396,482	330,824	-65,658	83.4	2.7	2.3	0.41	0.43
above 1 ha	14,461,943	14,087,375	-374,568	97.4	97.3	97.7	7.41	7.81
farms larger than 1 ha								
in hectares				in % (in total above 1 ha = 100)			in hectares	
1-2	725,041	613,315	-111,726	84.6	5.0	4.4	1.40	1.45
2-3	684,603	667,412	-17,191	97.5	4.7	4.7	2.44	2.44
3-5	1,353,354	1,322,528	-30,826	97.7	9.4	9.4	3.88	3.89
5-10	3,029,132	2,836,174	-192,958	93.6	20.9	20.1	7.10	7.09
10-15	2,213,745	2,019,873	-193,872	91.2	15.3	14.3	12.13	12.14
15-20	1,437,827	1,333,099	-104,728	92.7	9.9	9.5	17.16	17.21
20-30	1,536,608	1,568,085	31,477	102.0	10.6	11.1	23.98	24.05
30-50	1,171,762	1,387,460	215,698	118.4	8.1	9.8	37.28	37.37
50-100	799,707	1,044,238	244,531	130.6	5.5	7.4	66.77	66.88
100 and more	1,510,163	1,295,191	-214,972	85.8	10.4	9.2	294.72	221.57

Source: *Statystyka i charakterystyka gospodarstw rolnych w 2002 r. (Statistics and characteristics of agricultural holdings in 2002)*, CSO, Warsaw 2003, p. 112 and *Charakterystyka gospodarstw rolnych w 2007 roku (Characteristics of agricultural holdings in 2007)*, CSO, Warsaw 2008, p. 154.

Analysis of the change in the area of agricultural land by size groups of farms (above 1 ha) showed that in the 2002-2007 period the area of agricultural land in the groups of farms from 1 to 20 ha and 100 and more ha decreased and it increased in the groups amounting from 20 to 100 ha. The highest rate of decrease was noted in the 1-2 ha group (drop by 15.4%), the lowest in the 3-5 ha group (drop by 2.3%). The decrease in the number of hectares of agricultural land was the greatest in the following groups: 100 and more ha (drop by 215.0 thousand ha); 10-15 ha (drop by 193.9 thousand ha) and 5-10 ha (drop by 192.9 thousand ha). The highest growth rate of the agricultural land acreage was noted in the 50-100 ha group (increase by 30.6%); this group also noted the highest increase in the agricultural land resources (by 244.5 ha).

In the 2002-2007 period the average size of agricultural land in an average farm in Poland increased from 5.07 to 5.60, including an increase from 0.41 to 0.43 ha in the group of farms below 1 ha, and an increase from 7.41 to 7.81 ha in the group of farms above 1 ha. The average size of agricultural land of a farm also increased within the period in all size groups except for two. A drop was noted in the 5-10 ha size group (from 7.10 to 7.09 ha of agricultural land) and in the size group of the greatest farms (100 and more ha) from 294.72 to 221.57 ha of agricultural land (Statistics and characteristics 2002).

Analysis of the change in the average area of agricultural land in individual size groups of farms points to a tendency for "strengthening" the area of the smallest and larger farms and "weakening" the area of medium-sized and the largest farms.

In the 2002-2007 there occurred a clear division in the number and structure of farms, which were aggregated according their economic strength expressed in ESU (Poczta, Śledzińska⁸). An increase was noted in the number of farms representing two extremes, i.e.:

- farms of very small economic strength (up to 4 ESU);
- farms of moderately small economic strength (only in the subgroup 12-16 ESU) and moderately large economic strength (16-40 ESU); large (40-100 ESU) and very large (100 and more ESU),

and a decreased for farms:

- of small economic strength (4-8 ESU) and moderately small economic strength (only in the subgroup 8-12 ESU).

In the 2002-2007 period the number of farms increased the most in the group of up to 2 ESU (197.3 thousand), which consisted in 90.3% of the total increase in the number of farms. However, a drop was noted in the number of farms in the group of 4-6 ESU (drop by 9.8 thousand). The highest growth rate in the number of farms was noted in the group of 40-100 ESU (increase by 53.1%), and the highest rate of decrease in the group of 6-8 ESU (a drop by 9.0%). The changes that took place in the structure of farms aggregated according to their economic strength show a clear polarity: an increase in the number of economically weakest and strongest farms, and a drop in the number of small and medium-sized farms (Table 3).

Table 3. Changes in the number and structure of individual farms (together with parcels) carrying out agricultural activity by Economic Size Unit (ESU) in total for Poland within the period before and after CAP introduction

Specification	2002	2007	Changes in 2002-2007		Structure in %		Average area of agricultural land in a farm in ha
			in absolute numbers	in %	2002	2007	2007
Total	2,168,679	2,387,246	218,567	110.1	100.0	100.0	5.95
from 0 to 2	1,426,385	1,623,700	197,315	113.8	65.8	68.0	1.99
from 2 to 4	280,207	299,589	19,382	106.9	12.9	12.5	6.86
from 4 to 6	148,259	138,433	-9,826	93.4	6.8	5.8	9.74
from 6 to 8	91,113	82,884	-8,229	91.0	4.2	3.5	12.20
from 8 to 12	100,358	95,577	-4,801	95.2	4.6	4.0	15.88
from 12 to 16	48,528	50,504	1,976	104.1	2.2	2.1	20.04
from 16 to 40	62,530	79,916	17,386	127.8	2.9	3.3	30.88
from 40 to 100	9,155	14,020	4,865	153.1	0.4	0.6	67.61
from 100 to 250	1,646	2,123	477	129.0	0.1	0.1	171.33
250 and more	498	501	3	100.6	0.0	0.0	495.76

Source: *Statystyka i charakterystyka gospodarstw rolnych w 2002 r. (Statistics and characteristics of agricultural holdings in 2002)*, CSO, Warsaw 2003, pp. 302-303 and *Charakterystyka gospodarstw rolnych w 2007 roku (Characteristics of agricultural holdings in 2007)*, CSO, Warsaw 2008, pp. 296-297

⁸ Classification of farms according to their economic strength in ESU; very small (up to 4), small (4-8), moderately small (8-16), moderately large (16-40), large (40-100), very large (100 and more).

Sources of income as an indicator of change in the function of farms

Taking into account the lack of continuity as regards publication of data on the number of individual farms by the direction of their production and its scale (concerns production for own or market needs; see Table 1) for the needs of the analysis of the change in the function of farms an “over 50% indicator was adopted to determine the share of income in the total income of a household from the following sources: (1) agricultural activity; (2) agricultural activity and paid employment; (3) paid employment; (4) paid employment and agricultural activity; (5) non-agricultural activity; (6) retirement and disability pensions; (7) non-earned sources” (Table 19, Statistics and characteristics 2002; Table 83, Characteristics 2007).

It was assumed that the increase in 2002-2007 period in the number of farms, in which over 50% of income was obtained from “agricultural activity” points to an increase in the group of farms that fulfil functions within the scope of agricultural production. Increase in the number of farms in which over 50% of income was obtained from agricultural activity and paid employment points to a growth in the group of farms that fulfil mixed functions. Increase in the number of farms in which over 50% of income was obtained from non-agricultural activity, which covers: paid employment and non-agricultural activity shows an increase in the group of farms that fulfil non-agricultural functions (including: subsistence, recreational functions).

Increase in the number of farms in which over 50% of income was obtained from retirement and disability pensions and non-earned sources of income points to an increase in the group of farms that fulfil social functions (including: subsistence, recreational functions). An increase in the significance of the production function of a farm points to farms development tendency towards their “agricultural” function (single-employment), increase in the significance of the mixed function – towards multi-functionality (multiple-employment) and of the non-agricultural function - towards subsistence and recreational functions of farms (Table 4; 5; 6).

After Polish integration with the EU (2002-2007 period) positive changes were noted in the structure of farms by the predominant source of income, which were manifested, primarily, in the increase in the share of farms that live on paid employment and a drop in farms living on social and non-earned sources of income. Increase in the share of farms in which over 50% of income was obtained from agricultural activity can point to a growth in the production and agricultural function of farms. Undoubtedly, this partly results from the contribution of the EU financial resources directed to farms under different forms (direct payments or subsidies for restructuring and modernisation of farms, for development of semi-subsistence farms or for young farmers), but not all farms that received payments increased production. The first group of farms owns their better financial results from agriculture only to subsidies.

Second group of farms that noted an increase of their share in the structure in the 2002-2007 period covers the group in which over 50% of income was obtained from paid employment. This suggests that for a family employed, above all, in non-agricultural employment the farm fulfils a subsistence function, recreational function or it acts as the place of residence (for example, some part of land may be leased). However, according to J. St. Zegar, the non-farmers also cover a group of economically viable farms, which “do not have (...) a significant position in the structure of individual farms as their share in the general number of farms amounts only to 1.3%” (approx. 31 thousand of farms) (Zegar 2009⁹).

⁹ “The term “non-farmers” should be understood as households in which the predominating part of income derives from non-agricultural sources.” (...) Agricultural holdings used by households consisting of farm users that obtain their basic (major) income from non-agricultural sources (paid employment, retirement and disability

Table 4. Changes in the source of income of individual farms according to the major source of income of a household before and after CAP introduction

Farms in which over 50% of income was obtained from:	Poland						Share of Mazowieckie Voivodeship Poland in general = 100*	
	Individual farms				Changes in 2002-2007		2002	2007
	number		Total = 100 (%)					
	2002	2007	2002	2007	in numbers	in %	2002	2007
agricultural activity	609,572	602,878	20.8	25.3	-6,694	98.9	17.1 (1)	18.3 (1)
agricultural activity and paid employment	25,326	29,151	0.9	1.2	3,825	115.1	16.1 (1)	11.8 (3)
paid employment	793628	755298	27.1	31.6	-38330	95.2	12.9 (1)	11.8 (3)
paid employment and agricultural activity	79,878	101,926	2.7	4.3	22,048	127.6	10.3 (4)	9.4 (3)
non-agricultural activity	168,369	117,576	5.8	4.9	-50,793	69.8	13.2 (1)	15.5 (1)
retirement and disability pensions	905,996	574,368	30.9	24.1	-331,628	63.4	9.6 (5)	9.3 (5)
non-earned sources of income	151,875	26,302	5.2	1.1	-125,573	17.3	12.7 (1)	12.1 (2)
Other farms	193,315	179,746	6.6	7.5	-13,569	93.0	11.3 (3)	12.0 (3)

*Total number of farms in Poland in a given group of farms, in which over 50% of income was obtained from a given activity. The figure in brackets stands for the rank in the country.

Source: *Statystyka i charakterystyka gospodarstw rolnych w 2002 r. (Statistics and characteristics of agricultural holdings in 2002)*, CSO, Warsaw 2003, p. 299; *Charakterystyka gospodarstw rolnych w 2007 roku (Characteristics of agricultural holdings in 2007)*, CSO, Warsaw 2008, p. 463.

Third group of farms that noted an increase of their share in the structure in the 2002-2007 period covers the group in which over 50% of income was obtained from two sources of income: paid employment and agricultural activity, and the greater growth rate was noted for the sub-group "paid employment and agricultural activity" than for "agricultural activity and paid employment" sub-group. The increasing tendency in this group of farms can have a positive impact on the improvement of infrastructural equipment and marinating vitality of rural areas.

Analysis of the change in the structure of farms according to the predominant source of income points to an increase in their production and dual-employment functions and a drop

pensions, etc.) shall be termed jointly as households used by non-farmers for the purposes of this article." "Under the conditions of Polish agriculture the term economically viable farms, in general, refers to these farms for which the economic size amounts to at least 8 ESU."

in social function. This confirms the tendency of farms to polarization; on the one hand, towards single-functionality (commercialization), on the other, towards multiple-employment. In a multiple-employment farm the agricultural holding constitutes not only an additional source of income (financial or in the form of subsistence), but it also fulfils a significant environmental and recreational functions and it maintains vitality of rural areas. Tables 5 and 6 illustrate the regional differentiation of changes in the function of individual farms.

Table 5. Regional differentiation of changes in the function of individual farms according to the source of income in households

Specification	Individual farms, in which over 50% of income was obtained from:								Other farms			
	agricultural activity		agricultural and non-agricultural activity		paid employment and non-agricultural activity		retirement and disability pensions and non-earned sources of income					
	Functions of individual farms*											
	agricultural production		mixed		non-agricultural		social		2002		2007	
					subsistence, recreational							
	2002		2007		2002		2007		2002		2007	
Poland in general = 100												
Poland	20.8	25.3	3.6	5.5	32.9	36.6	36.1	25.2	6.6	7.5		
Voivodeships in general = 100												
Dolnośląskie	17.6	18.8	2.5	3.5	35.9	44.3	38.1	26.8	5.9	6.5		
Kujawsko-Pomorskie	39.8	42.9	2.7	2.9	26.1	29.4	25.8	18.7	5.7	6.1		
Lubelskie	24.2	27.8	4.0	1.8	28.3	32.2	36.9	25.9	6.6	8.9		
Lubuskie	12.2	15.6	2.4	3.7	35.4	40.4	44.1	35.0	5.9	5.3		
Łódzkie	27.3	28.7	4.4	6.3	32.1	34.9	29.4	21.2	6.7	8.9		
Małopolskie	10.9	12.5	4.4	8.0	36.5	43.6	40.2	27.2	8.0	8.8		
Mazowieckie	28.2	35.7	3.3	4.2	33.7	34.8	28.8	18.3	5.9	7.0		
Opolskie	19.2	19.3	3.2	4.7	35.9	43.0	35.7	27.3	6.0	5.8		
Podkarpackie	6.9	7.5	5.2	8.9	34.7	40.6	45.4	35.6	7.8	7.5		
Podlaskie	38.6	43.5	3.0	3.1	23.8	29.2	29.0	17.8	5.6	6.3		
Pomorskie	27.1	33.7	2.5	4.9	32.5	35.4	31.9	18.0	6.0	8.1		
Śląskie	6.3	8.0	1.9	3.9	39.8	42.7	45.7	39.6	6.2	5.7		
Świętokrzyskie	19.1	30.8	4.1	6.7	28.9	30.7	41.0	22.9	7.0	9.0		
Warmińsko-Mazurskie	30.0	37.5	1.8	3.0	27.5	31.3	35.4	23.0	5.3	5.1		
Wielkopolskie	33.8	38.5	4.3	4.4	30.7	32.3	24.5	17.3	6.7	7.5		
Zachodniopomorskie	17.7	25.0	2.0	5.1	35.5	38.3	39.1	24.2	5.7	7.4		

*Functions of individual farms: Agricultural (production) - households, in which over 50% of total income was obtained from agricultural activity; Mixed – over 50% of income was obtained from agricultural activity and paid employment; Non-agricultural (non-production, subsistence, recreational) – over 50% of income was obtained from paid employment and non-agricultural activity; Social (non-production, subsistence, recreational) – over 50% of income was obtained from retirement and disability pensions and non-earned sources of income.

Source: Author's own elaboration on the basis of: *Statystyka i charakterystyka gospodarstw rolnych w 2002 r.* (Statistics and characteristics of agricultural holdings in 2002), CSO, Warsaw 2003, p. 299; *Charakterystyka gospodarstw rolnych w 2007 roku* (Characteristics of agricultural holdings in 2007), CSO, Warsaw 2008, p. 463.

Table 7. Regional differentiation of functions of individual farms according to the source of income in a household in 2002-2007

Voivodeship		Total number of farms in a given voivodeship = 100%		Voivodeship		Total number of farms in a given voivodeship = 100%	
Functions of individual farms according to the source of income* Total number of farms in a given voivodeship = 100							
agricultural				mixed			
2002		2007		2002		2007	
1	2	3	4	5	6	7	8
Voivodeship	%	Voivodeship	%	Voivodeship	%	Voivodeship	%
Kujawsko-Pomorskie	39.8	Podlaskie	43.5	Podkarpackie	5.2	Podkarpackie	8.9
Podlaskie	38.6	Kujawsko-Pomorskie	42.9	Łódzkie	4.4	Małopolskie	8.0
Wielkopolskie	33.8	Wielkopolskie	38.5	Małopolskie	4.4	Świętokrzyskie	6.7
Warmińsko-Mazurskie	30.0	Warmińsko-Mazurskie	37.5	Wielkopolskie	4.3	Łódzkie	6.3
Mazowieckie	28.2	Mazowieckie	35.7	Świętokrzyskie	4.1	Zachodniopomorskie	5.1
Łódzkie	27.3	Pomorskie	33.7	Lubelskie	4.0	Pomorskie	4.9
Pomorskie	27.1	Świętokrzyskie	30.8	Mazowieckie	3.3	Opolskie	4.7
Lubelskie	24.2	Łódzkie	28.7	Opolskie	3.2	Wielkopolskie	4.4
Opolskie	19.2	Lubelskie	27.8	Podlaskie	3.0	Mazowieckie	4.2
Świętokrzyskie	19.1	Zachodniopomorskie	25.0	Kujawsko-Pomorskie	2.7	Śląskie	3.9
Zachodniopomorskie	17.7	Opolskie	19.3	Dolnośląskie	2.5	Lubuskie	3.7
Dolnośląskie	17.6	Dolnośląskie	18.8	Pomorskie	2.5	Dolnośląskie	3.5
Lubuskie	12.2	Lubuskie	15.6	Lubuskie	2.4	Podlaskie	3.1
Małopolskie	10.9	Małopolskie	12.5	Zachodniopomorskie	2.0	Warmińsko-Mazurskie	3.0
Podkarpackie	6.9	Śląskie	8.0	Śląskie	1.9	Kujawsko-Pomorskie	2.9
Śląskie	6.3	Podkarpackie	7.5	Warmińsko-Mazurskie	1.8	Lubelskie	1.8
non-agricultural				social			
Śląskie	39.8	Dolnośląskie	44.3	Śląskie	45.7	Śląskie	39.6
Małopolskie	36.5	Małopolskie	43.6	Podkarpackie	45.4	Podkarpackie	35.6
Dolnośląskie	35.9	Opolskie	43.0	Lubuskie	44.1	Lubuskie	35.0
Opolskie	35.9	Śląskie	42.7	Świętokrzyskie	41.0	Opolskie	27.3
Zachodniopomorskie	35.5	Podkarpackie	40.6	Małopolskie	40.2	Małopolskie	27.2
Lubuskie	35.4	Lubuskie	40.4	Zachodniopomorskie	39.1	Dolnośląskie	26.8
Podkarpackie	34.7	Zachodniopomorskie	38.3	Dolnośląskie	38.1	Lubelskie	25.9
Mazowieckie	33.7	Pomorskie	35.4	Lubelskie	36.9	Zachodniopomorskie	24.2

1	2	3	4	5	6	7	8
Pomorskie	32.5	Łódzkie	34.9	Opolskie	35.7	Warmińsko-Mazurskie	23.0
Łódzkie	32.1	Mazowieckie	34.8	Warmińsko-Mazurskie	35.4	Świętokrzyskie	22.9
Wielkopolskie	30.7	Wielkopolskie	32.3	Pomorskie	31.9	Łódzkie	21.2
Świętokrzyskie	28.9	Lubelskie	32.2	Łódzkie	29.4	Kujawsko-Pomorskie	18.7
Lubelskie	28.3	Warmińsko-Mazurskie	31.3	Podlaskie	29.0	Mazowieckie	18.3
Warmińsko-Mazurskie	27.5	Świętokrzyskie	30.7	Mazowieckie	28.8	Pomorskie	18.0
Kujawsko-Pomorskie	26.1	Kujawsko-Pomorskie	29.4	Kujawsko-Pomorskie	25.8	Podlaskie	17.8
Podlaskie	23.8	Podlaskie	29.2	Wielkopolskie	24.5	Wielkopolskie	17.3

*Just like in Table 6; Explanation of the scale: orange was adopted to represent the share of 30% and more (in mixed group 3.0% and more); yellow: 29.9-20% (2.9-2.0%); green: 19.9-10% (1.9-1.0%); blue: up to 10% (up to 1%).

Source: Author's own elaboration on the basis of Table 6.

In 2002 the most “agricultural”¹⁰ voivodeships covered four voivodeships: Kujawsko-Pomorskie, Podlaskie, Wielkopolskie and Warmińsko-Mazurskie. In 2007 this group was increased to seven voivodeships (by Mazowieckie, Pomorskie and Świętokrzyskie). The group of voivodeships with a large acreage of an average farm was joined by the medium-sized farms that can provide for an improvement in the efficiency of farming.

In 2002-2007 also the group of voivodeships with the highest (according to the scale adopted for this ranking¹¹) share of farms fulfilling “mixed” functions noted an increase from nine to fourteen, as well as the group of “non-agricultural” farms (according to the scale adopted for this ranking¹²) – from eleven to fourteen voivodeships. However, the group of voivodeships with the highest (according to the scale adopted for this ranking¹³) share of individual farms fulfilling “social” functions noted a decrease from eleven to three voivodeships. This confirms the thesis on improvement of the economic and social condition of farms related to agriculture in rural areas after Polish integration with the EU.

Specialized dairy farms (Podlaskie Voivodeship) constitute a good example of a change in the function of a farm. In Podlaskie Voivodeship the share of farms in which over 50% of the total income was obtained from agricultural activity increased from 38.6% in 2002 to 45.5% in 2007, and in the ranking of voivodeships by the agricultural function of farms it noted an increase from the second to the first rank in the country.

¹⁰ The following scale was adopted: the voivodeships with the highest share of farms fulfilling the “agricultural” function cover these voivodeships in which 30.0% and more farms showed that over 50% of their total income was obtained from agricultural activity.

¹¹ The following scale was adopted: the voivodeships with the highest share of farms fulfilling the “mixed” function cover these voivodeships in which 3.0% and more farms showed that over 50% of their total income was obtained from agricultural and non-agricultural activity.

¹² The following scale was adopted: the voivodeships with the highest share of farms fulfilling the “non-agricultural” function cover these voivodeships in which 30.0% and more farms showed that over 50% of their total income was obtained from paid employment and non-agricultural activity.

¹³ The following scale was adopted: the voivodeships with the highest share of farms fulfilling the “social” function cover these voivodeships in which 30.0% and more farms showed that over 50% of their total income was obtained from retirement and disability pensions and non-earned sources of income.

Summary

- Changes in the function of farms and their regional differentiation follow from the political transformation of our country (at the beginning of 1990), Polish integration with the European Union (EU) and the fact that Polish agriculture was covered with the Common Agricultural Policy (CAP) (since 2004).. This transformation was manifested, above all, in the division of Polish farms into two groups: agricultural and commercial farms, as well as subsistence, social and recreational farms.
- Positive changes were noted in the structure of farms by the predominant source of income, which were manifested primarily in the increase in the share of farms that live on paid employment and a drop in farms living on social and non-earned sources of income.
- The group of the most agricultural voivodeships taking account their over 50% share of income deriving from agricultural activity in the total income of the household cover the following voivodeships: Podlaskie, Kujawsko-Pomorskie, Wielkopolskie, Warmińsko-Mazurskie, Mazowieckie, Pomorskie and Świętokrzyskie. Among these voivodeships the share of farms with the predominance of agricultural income was shaped at the level from 43.5% (Podlaskie voivodeships) to 30.8% (Świętokrzyskie Voivodeship).
- All voivodeships note a large share of individual farms, in which over 50% of the total income consists of income from paid employment and non-agricultural activity. Among a total of 16 voivodeships in the country, for 14 this share is shaped at the level from 44.3% in Dolnośląskie Voivodeship to 30.7% in the Świętokrzyskie Voivodeship. Only in two voivodeships this indicator was lower than 30%, but it was still high (in Kujawsko-Pomorskie Voivodeship – 29.4%; and in Podlaskie Voivodeship – 29.2%).
- The direction of changes in the function of farms can be either a determinant of development or stagnation on rural areas.
- There was also a significant regional diversification as regards the activity of farms within the scope of obtaining EU resources, both in the form of subsidies and other forms of financial support.

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