

LAND TRANSFERS AND AGRARIAN CHANGES IN INDIVIDUAL FARMING

Abstract

Scattered agrarian structure remains a weakness of the Polish agriculture. According to the data from the Central Statistical Office, Agricultural Census 2010, the number of agricultural holdings decreased by approx. one-fifth in the last eight years. The aim of this paper is to define the role of market land transfers in the process of changes in farm area structure. The analysis covered factors influencing supply and demand situation on the land market, in particular the impact of the Common Agricultural Policy and the direct payments. The tendencies in non-market family land transfer were also presented. In this context, the paper describes the trends in changes in the agrarian structure observed in 2000-2011.

Introduction

When looking for ways of modernising the Polish agriculture and increasing income of the population employed in this sector, the improvement of the agrarian structure is invariably mentioned as the basic condition for achieving these aims. Measures to accelerate the transformation in this regard are justified primarily by the need to increase the competitiveness of the food sector on the domestic and international markets, to rationally use the production factors (especially land), as well as to improve the living conditions of the population working at the family farms.

Determinants of agricultural land market

In Poland, 87% of the total agricultural land remains in the hands of 1,563,000 farms with an area of at least 1 ha. The inclusion of agricultural plots below 1 ha increases the share of agricultural land owned by individuals to 88%, and the number of such units to 2,273,000 (Charakterystyka gospodarstw... 2012).

The contemporary characteristics of the Polish farms invariably are affected by historically shaped structures with a large number of entities, among which only a small part has production assets allowing to conduct professional farming activity. Consequently, agriculture is the main source of income only for less than 30% of households with a user of a farm, while only about 10% of the families who own land achieves their income solely from agricultural activities. On the basis of a research conducted in the Social and Regional Policy Department of the IAFE-NRI, it can be estimated that for about half of the farms there is no agricultural production conducted for the purpose of sale or its scale is symbolic and has only a marginal impact on the income situation of these families (Sikorska A. 2010).

The dominance of family farms in farming structures leads to a situation where changes in the agrarian system are primarily determined by the mobility within this set of farms. Due to the specific features of family farms, in which property, especially land, fulfils not only the role of a production factor but also a materially tangible possession of a family passed from generation to generation, the scale of transfers of agricultural land is *a priori* very limited, and agrarian transformation has an evolutionary character. The pace of change is determined by a wide range of various factors, among which the scale of population quitting agriculture and undertaking work in other sectors is of paramount importance.

Although the change in the allocation of economic activity from agricultural to non-agricultural is the most important impetus for stimulating the transformation of agriculture, it is not a sufficient condition for stimulating the market of agricultural land and the flow of land from subsistence farms to professional agricultural holdings. Activation of this process from the supply side, i.e. increasing the motivation for disposing of land, is not only associated with the abandonment of agricultural activity or its clear marginalisation, but also with the family's situation, its demographic pressure, e.g. demands related to its development phase, as well as random events.

In the case of the individual agriculture a decision to sell the land is always taken within the family and it is combined with the need to exchange the held capital into cash. Typically, this situation is created by a whole range of social and economic circumstances, among which the most important, but not the only role is played by having an alternative source of income. For example, depletion of production assets, in particular the sale of land, may be related to the education of the young generation whose career aspirations are associated with the work outside of agriculture or buying an apartment in the city. These can also be random situations requiring large cash resources such as medical treatment, etc. Financial resources may also be unlocked because of economic factors, especially when the main source of family's business is non-agricultural self-employment, and expanding the scale of this activity provides larger profits. In specific cases, when making a decision to sell the land, usually a whole range of diverse factors is taken into account to determine the usefulness of such a move. It should always be taken into account that when making a decision on liquidating land, motivations are similar to the ones when liquidating bank deposits.

The state of affairs on the demand side seems to be much simpler than in the case of supply conditions. Interest in buying agricultural land should be combined with the intention to increase farm's production assets, extend the scale of production, strengthen farm's market position and thus increase its income. The most important stimulator in the accumulation of such attitudes is a good situation in agriculture and a prediction that this situation will persist in the future. Still also in this case development phase of the family is important, especially having a successor who declared their intention to continue agricultural activities.

In addition to the motivation associated with better equipment of the farm, the interest in purchasing land can be of a speculative nature, that is the purchase of land for its lucrative resale. This usually occurs in the situation when there is a possibility of converting the land to non-agricultural purposes. The state protects agricultural land under its legal system (especially the areas assessed as being of a high soil valuation class) against such practices, but the expansion of non-agricultural needs (mainly in the vicinity of large cities) for the purposes of communication infrastructure and construction stimulates intensification of this phenomenon. Buying land can also provide a safe form of capital allocation, especially in precarious political and economic conditions.

Given the variety of factors that determine the transfer of agricultural land, and the impact of its recovery on agrarian transformation, it becomes especially important how these processes are influenced by such instruments as support for the Polish agriculture and rural areas conducted within the Common Agricultural Policy (CAP).

The CAP and transfers of agricultural land

Increasingly, one can come across the idea that the EU support contributes to petrification of the existing agricultural structures. This applies in particular to direct payments, which resulted in an increase in land prices.

Without questioning the impact of area payments on the market value of agricultural land, it must be noted, however, that initially subsidies to 1 ha accounted for about 8% of the land's prices, and with their dynamic growth this indicator was reduced.

The impact of support related to the inclusion of the Polish countryside in the CAP on the increase in land prices should primarily be seen in the context of increasing the demand on the land market. A significant stream of funds that were channelled to the countryside enabled the realisation of investment plans. This was related mainly to the group of farmers whose farms had already been market-oriented, and their owners linked their economic activity with enlarging the scale of production. It is primarily those farmers who obtained the EU funds and were interested in buying land leading to an increase in its price.

Due to a linear relationship between the size of subsidies and the size of the owned land, large size farms relatively quickly acquired the potential for fully funding their investment with the received subsidies. Taking into account only the single area payment scheme obtained for 2004 campaign, an owner of a farm

with an area of approximately 40 ha with this amount could buy 1 ha in 2005. Also in the following years these relations remained at a similar level.

With regard to the average amount per hectare, obtained after taking into account all area payments (SAPS + LFA + others), such investment in 2005 has already been available for farms with an area of 16 hectares, while in 2011, it increased to almost 24 hectares.

Given that the calculation concerned only one year, while direct payments have been available for eight years, the presented calculations illustrate the importance of the CAP instruments in stimulating demand on land market, which directly translates into an increase in its price. This does not change the fact that the mere establishment of area subsidies – increasing the benefits from the use of land – raised its market value.

However, other factors affecting the increase in demand for land and increasing its market value must also be taken into account. These were not only the economic benefits associated with the situation in the agriculture, resulting from the expansion of market outlets after the Polish accession to the EU, but also the pressure put by a growing competition motivating farmers to increase the scale of production. At the same time, not without significance was the sense of economic stability and conviction of the material benefits from investing in land sustained until the end of 2008.

These considerations are reflected in the rate of land price increases in subsequent years (Fig. 1).

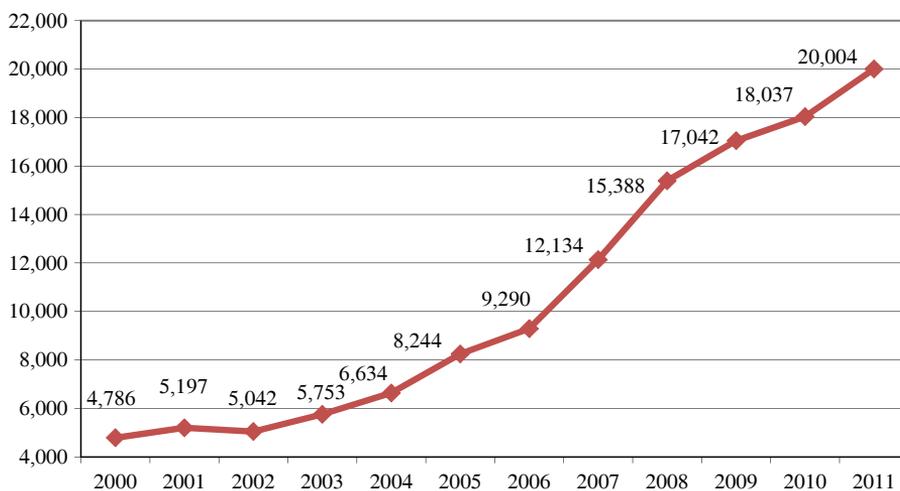


Fig. 1. Changes in the prices of land in private trade in 2000-2011 (PLN per 1 ha)

Source: Prepared based on CSO data.

According to the demand determinants, land prices increased quite significantly in 2005, by almost a quarter (24.3%) compared to 2004. In this case, the increase in demand on the land market could be influenced by transactions postponed due to the uncertainty concerning management conditions after joining the EU. The next period, when agricultural land prices rapidly grew (annual average of 29%) were the years 2006-2008, the period of a particularly favourable economic situation. In subsequent years, the pace of this process clearly waned after the deterioration in the economic situation.

Thus, the data presented clearly indicates that the demand for agricultural land and consequently an increase in its prices was determined by both greater opportunities for investment in agricultural holdings in connection with the subsidies received, and by a favourable economic situation in the agriculture. The importance of this second factor seems to be all the more significant as in the aftermath of the global economic crisis, in the 2008-2010 period, the interest in land purchase decreased significantly and the rate of land price increases was five times lower. In 2011, it began to increase gradually, albeit at a far smaller scale (between 2010 and 2011 the market value of land increased on average by 10.9%).

The best evidence for the fact that the increase in agricultural land prices cannot be seen as a barrier to agrarian transformation is data on changes in land ownership as a result of market transfers of agricultural land. The evidence collected by notaries clearly indicates that relatively the largest number of land purchase transactions was recorded in the periods in which the price rose relatively the fastest.

This situation was mainly caused by supply and demand conditions, including those determined by the specificity of land real estate. It must be taken into account that the market supply of land, as opposed to the ones for other goods, is closely related to the location and cannot be, as is the case of most other goods, moved to the areas of the highest demand. In addition, land has characteristics of a rare good, and it is subject to a constant pressure exerted by urban planning to convert it to non-agricultural purposes. The opposite situation, i.e. the acquisition of land with the intention of agricultural use is not always possible, generally very costly and relatively rare.

Empirical data shows that fluctuations in the number of land purchase transactions were observed at longer intervals. When analysing the differences in the frequency of such transactions, it should be noted that after periods of increased intensity of this phenomenon, there are periods of its significant decrease, while in the following years it gradually increases again. When looking for causes of the observed trends one should be aware that investment in land is usually associated with the plans to extend the scale of production and with the expectation of certain economic benefits. Further investments of this kind are typically moved to the time when expected profits are gained and funds for further investments are collected. In Polish conditions, importance of this factor is magnified by the fact that due to the fragmentation of the agrarian structure and diversification of livelihoods of families, only a part of the farms plays an important income role

and seeks to strengthen their market position by expanding scale of production. For many years this has been a fairly stable group, including 230,000-280,000 farms which is mainly responsible for generating demand in agricultural land market (Karwat-Woźniak B. 2009).

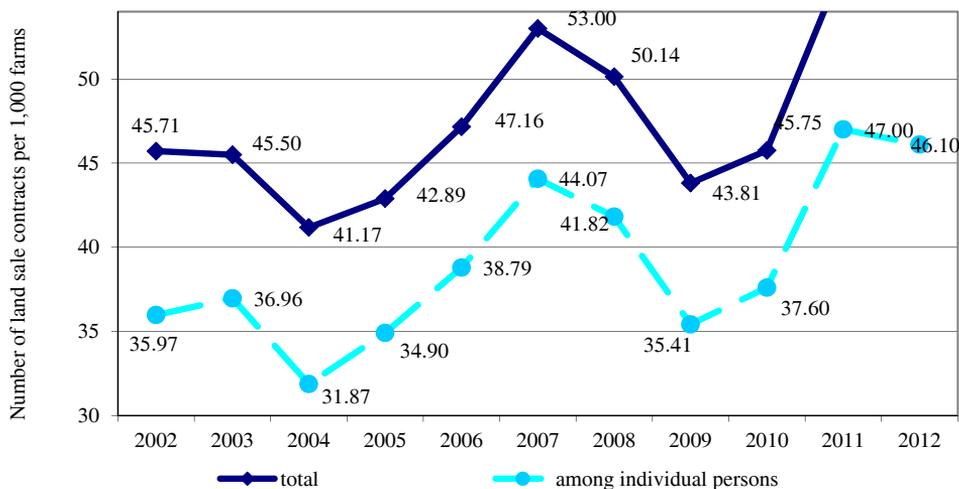


Fig. 2. Agricultural land sale transactions in 2002-2011

Source: Prepared based on the data collected by the Department of Statistics of the Ministry of Justice.

Although farms seeking to improve their market competitiveness by increasing their production assets are located throughout the country, they are distinguished by a particular density in midwestern region (voivodeships: Wielkopolskie and Kujawsko-Pomorskie), which in the case of land market, increases the importance of supply-side conditions on the scale of trade in the agricultural land. As a result, agricultural land in this region is more expensive in comparison with other Polish regions (Rynek ziemi rolniczej... 2011).

Assuming that due to the nature of the land market, supply conditions play a particularly important role on the scale of agricultural land transfers, increasing land market value should also be seen as an incentive for disposing of land unused for market agricultural production. This applies in particular to situations when the planned expenditure (investment or consumption) requires the collection of a sufficiently high sum of money. In this situation, a high market price of land may result in accelerating a decision to sell the owned land. However, even then a calculation is usually carried out taking into account the losses due to losing safe and stable income from direct payments and the capital rent for owned property. The importance of these factors weakens when the area of the plot is not large and the share of subsidies in the total family income is relatively low (Rynek ziemi rolniczej... 2011).

Even taking into account that the support for agriculture in the form of direct payments in some cases limits the size of supply in the agricultural land market, it cannot be unquestionably assessed that this phenomenon acts as a stop for the concentration processes. It should be also noted that in recent years the scale of land leases has significantly increased. Based on the field research it can be estimated that the share of farms with land lease more than doubled compared to 2000 when it amounted to 12%. Although between neighbours land lease is in most cases informal, and the payment is settled in the form of verbal commitments which are very diverse. At a local level, the impact of leases on the processes of land concentration is growing.

In conclusion, it should be emphasized that the unprecedented scale of support, received by the Polish rural areas after the EU accession, positively influenced the agrarian transformation by inducing demand on the agricultural land market. At the same time, increase in the agricultural land prices was creating higher supply on the land market. This phenomenon is very important in enhancing changes in the agrarian structure, especially when taking into consideration that in the Polish agriculture 88% of agricultural land remains in hands of individual farms, 90% of which was established on the basis of production assets acquired from the previous generation.

Non-market (family) land transfers

The multiannual research conducted by the IAFE-NRI on agrarian transformation in individual farming clearly shows that the non-market (family) land transfers contribute to a negligible extent to the creation of land concentration process (Karwat-Woźniak B. 2008). In this context, even a slight decrease in the share of non-market forms of acquisition of land in the whole agricultural land turnover can be interpreted as a manifestation of rationalisation of land management.

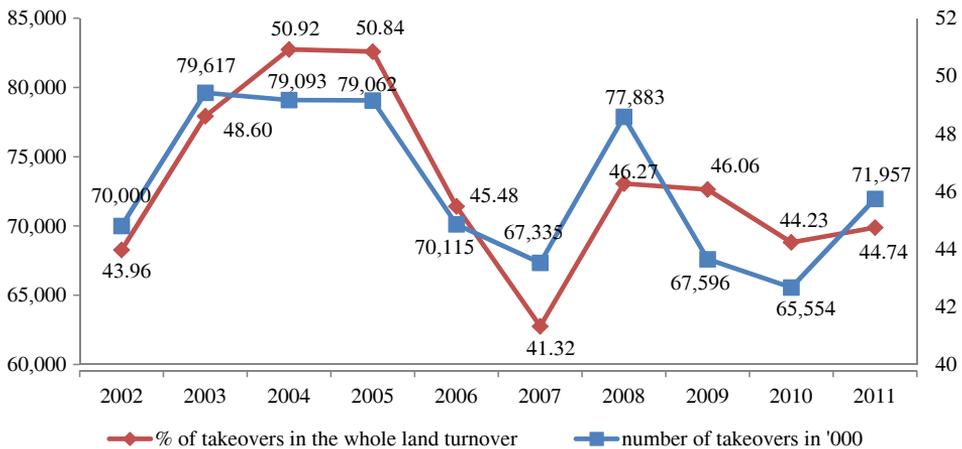


Fig. 3. Non-market agricultural land takeovers in 2002-2011

Source: Prepared based on the data collected by the Department of Statistics of the Ministry of Justice.

In 2002-2011, each year about 73,000 notarial acts were concluded, which concerned non-market land acquisition. Most of them (respectively 80,000; 79,000 and 79,000) were reported in 2003-2005, which at least partly resulted from clarification of property relations in connection with Poland's EU accession. Whereas the lowest number of non-market changes in land ownership took place in 2007, in a relatively good economic situation and with relatively the best public mood concerning the state of the economy. In contrast to non-market acquisitions, which at that time included 67,000 contracts, market land transfers were relatively intense, which was reflected in 96,000 contracts on land purchase. Thus, the non-market acquisition of agricultural real estate in 2007 amounted to 41% of the land transactions.

In subsequent years, when the economic situation deteriorated and unemployment grew, also the number of land acquisitions within families increased. This phenomenon was most remarkable in 2008. At this time, in relation to the previous period, the number of non-market contracts increased by about 16%, and their share in the land trade increased to 46%.

Although the increase in the number of family acquisitions can be observed in periods of uncertainty concerning the economic situation, in the light of changing economic conditions (increased unemployment) or announcements concerning new rules in social security policy (ASIF insurance), basically since 2006 a tendency to reduce the importance of non-market transfers of land ownership changes has been observed.

The importance of social factors in the agricultural land transfers is shown not only by the fact that donations continue to dominate among non-market acquisitions (79% of the non-market contracts), but, at the same time, there is an increase in the number of contracts concerning life-long care and shelter. Such provisions are included only in 3.1% of all non-market contracts, but their absolute number increased between 2010 and 2011 by as much as 31%. This, at least in part, demonstrates the growing problem of caring for the elderly in rural areas.

From the viewpoint of improving farm structure, it is a positive symptom that the number of family inheritances and land divisions in the non-market land acquisitions has gradually been decreasing as such forms typically lead to agrarian fragmentation. In the 2004-2011 period, the number of such contracts fell by 17.3%.

It should be emphasized that, although the number of market land transactions is increasing, every year more than 40% of notarial contracts relating to changes in the land ownership title is concluded outside the market and only a part of them supports the processes of agricultural land concentration. Nevertheless, the overall fluctuations in agricultural land transfers support the acceleration of changes in the agrarian structure, which is best evidenced by changes in the size of individual holdings, as well as their structure according to the area utilised.

Changes in the land size of individual farms

According to the 2010 Agricultural Census data, a group of individual farms with an area of 1 ha included 1,563,000 units, meaning that compared to 2002, the number of farms decreased by almost one-fifth (19.1%). Thus, the annual average was about 2.5%, while in the previous decade the figure was over two times lower (Raport z wyników... 2003, 2011). When interpreting these figures it must be taken into account that, in addition to changes in farm structures, the scale of the decline in the number of farms was influenced by infrastructure factors, transformation of the settlement network, especially rural urbanisation around the metropolis, which usually was connected with the conversion of land for non-agricultural purposes.

The IAFE-NRI survey data confirms an important role of local characteristics in shaping the changes in the number of farms. The surveys were conducted in 2000, 2005 and 2011 in the same 76 villages spread throughout the country. This was a deliberately chosen sample that meets the principle of representativeness in terms of agrarian structure of individual farms with an area of at least 1 ha in relation to the whole country and delimited socio-economic macro-regions. The last correction of the survey sample in terms of its right proportions in the sample size was conducted in 2000 (Sikorska A. 2001).

Although the research covers all households located within the surveyed village – according to the rules of sample selection – they are territorial units that are more agricultural than the general population of the Polish villages. The study sample included neither suburban units nor any villages with a clearly non-agricultural economic activity profile (such as holiday resorts, fishing villages, etc.). Therefore, although the sample replicated land structure of individual farming, its transformation process was less influenced by exogenous factors than for the actual population of farms.

The number of farms in the surveyed villages decreased by 15.2% between 2000 and 2011. This process was relatively most visible in the group of farms with an area of 10-15 ha, where more than a third of farms disappeared, and in the group of farms sized 5-10 hectares, where it concerned a fifth of farms. It draws the attention that far more changes in the farm structure were recorded in the 2005-2011 period than in 2000-2005, which confirms a thesis that the effects of the EU integration and the CAP support stimulated the activation of structural change in the agriculture.

The IAFE-NRI research, especially the comparison of the differences in the intensity of changes in the farm structure of the surveyed villages and Agricultural Census conducted by Central Statistical Office, underline that the severity and direction of the ongoing transformation is determined primarily by economic conditions. In areas that remain under the influence of a relatively absorptive labour markets related to infrastructural development, the loss in the number of units with a relatively small land area was marked very strongly. The possibility of very lucrative transformation of its property for non-agricultural purposes and local situation tended to catalyse the decision to leave the sector, especially if farming was not a source of income, and served mainly for

self-provision purposes. In the last decade, such a situation commonly appeared around large urban areas and contributed to the expansion of metropolitan areas (Smętkowski M. 2004).

Table 1

| Specification | Total | Groups of farms according to land size | | | | | |
|-------------------------|-------|--|-------|-------|-------|-------|------|
| | | 1-2 | 2-5 | 5-10 | 10-15 | 15-30 | 30+ |
| Number of farms | | | | | | | |
| 2000 | 3,927 | 674 | 1,104 | 1,014 | 596 | 427 | 112 |
| 2005 | 3,705 | 703 | 1,020 | 897 | 444 | 485 | 156 |
| 2011 (preliminary data) | 3,331 | 578 | 970 | 801 | 381 | 414 | 187 |
| Change: | | | | | | | |
| 2000-2005 | | | | | | | |
| – in absolute numbers | -222 | 28 | -86 | -114 | -150 | 52 | 48 |
| – in per cent | -5.6 | 4.2 | -7.8 | -11.2 | -25.2 | 12.2 | 42.9 |
| Average annual rate | -1.1 | 0.8 | -1.6 | -2.2 | -5.0 | 2.4 | 8.6 |
| Change: | | | | | | | |
| 2005-2011 | | | | | | | |
| – in absolute numbers | -374 | -125 | -50 | -96 | -63 | -71 | 31 |
| – in per cent | -10.1 | -17.8 | -4.9 | -10.7 | -14.2 | -14.6 | 19.9 |
| Average annual rate | -1.7 | -3.0 | -0.8 | -1.8 | -2.4 | -2.4 | 3.3 |
| Change: | | | | | | | |
| 2000-2011 | | | | | | | |
| – in absolute numbers | -596 | -96 | -134 | -213 | -215 | -13 | 75 |
| – in per cent | -15.2 | -14.2 | -12.1 | -21.0 | -36.1 | -3.0 | 67.0 |
| Average annual rate | -1.4 | -1.3 | -1.1 | -1.9 | -3.3 | -0.3 | 6.1 |

Source: Prepared based on the IAFE-NRI survey data.

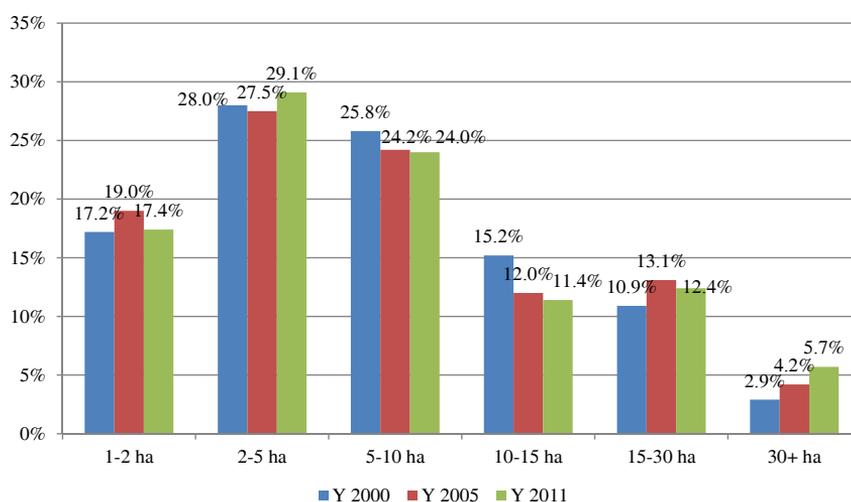


Fig. 4. Farm area structure in the case of respondents surveyed by the IAFE-NRI (per cent)

Source: Prepared based on the IAFE-NRI survey data.

This process in the overall scale was reflected in the 2010 Agricultural Census, where the loss of units with an area of 1 to 2 ha was most visible (compared to 2002 about one-third of them disappeared) (Raport z wyników... 2011). There was also a reduction in the number of other farms not exceeding the area of 20 ha, but this phenomenon was not as significant as in the group of farms with up to 2 ha. A sharp increase was observed only among the units with over 50 hectares. Whereas, for the farms covered by the IAFE-NRI survey polarisation processes were most strongly marked in the group of units with 10-15 ha, and the group with 5-10 ha observed the largest share of disappearances. This means that in areas characterised by a relatively weaker influence of non-agricultural factors, the primary mechanism leading to area changes is the market disappearance of economically weaker units, which do not have a sufficient level of production assets allowing them to meet the competition.

Despite the differences in the intensity of changes in the number of farms within the individual area groups, in both of these groups in terms of percentage the smallest units invariably dominated, i.e. farms with up to 5 ha. Throughout the individual agriculture covered by the 2010 Agricultural Census, they accounted for 55.1%, while in the IAFE-NRI research sample they amounted to 46.5%.

Moreover, both according to the CSO data, as well as to the results of the surveys, there was an increase in the share of individuals with a relatively large land area. In the 2000-2010 period, as for farms of at least 1 ha under individual farming, the share of farms with an area of 30 ha and more increased from 2.6% to nearly 4%, and in the IAFE-NRI sample it grew from 2.9% to 5.7%. According to Central Statistical Office, as a result of these changes, the entities of this group occupied 31% of the total agricultural land at the disposal of individual farms. In the case of the population covered by the IAFE-NRI survey it was 35.3%.

Although the material presented showed that as compared to the previous periods of agrarian transition, the changes accelerated and the apparent decrease in the number of farms and gradually growing process of land concentration in relation to the structure of farm proportions between the groups did not change significantly. From the point of view of changes in the agriculture, the most important seems to be a decrease in the number of units within the group of farms with 10-15 hectares, which proves primarily a competitive weakness of such farms because of too low level of production assets. It should be emphasized that the phenomenon was marked particularly strongly in the areas distinguished by relatively large clusters of high-yield agriculture in the northern and midwestern parts of Poland.

Summary

The main aim of this analysis was to document that regardless of the complexity of conditions affecting the changes in the agrarian structure of individual farming, the processes of agricultural land concentration were held primarily through market transfers of agricultural land. To a far lesser extent such transformations are the result of transfers of farms within families, because in this case the land is regarded not so much as means of production, but as assets transferred from generation to generation. This is confirmed by the effects of the RDP “Early retirement” measure, whose aim was to improve the agrarian structure and the acceleration of generational change in the individual agriculture. From 2004 to October 2011, a group of 74,000 farmers benefited from this measure and most of their farms were transferred to a successor derived among family members (53%) (Bułkowska M. 2011).

In the assessment of the CAP’s impact on the situation on the agricultural land market what is stressed in the first place is increase in its prices, which was triggered by the introduction of uniform area payments. Without questioning the importance of aid in determining the land’s market value, it cannot be expressly equated with barriers to the transformation of the agrarian structure. Analysis of data on the scale of agricultural land transfers after the Polish accession to the EU showed its clear increase. This paper documented it with land purchase transactions. It must be taken into account that during this period also the scale of leases grew significantly. Yet, their actual range is still difficult to determine because, as the field research shows, most leases are still informal, usually they are concluded only orally, and land owners take over the area payments for the land in question.

Summing up, it should, first of all, be taken into account that the most significant stimulus for structural changes in agriculture was the inflow of the EU funds to the Polish rural areas. The support received contributed to the growth in demand for agricultural land, especially in the case of relatively large-area farms, in which subsidies seriously increased investment capacity. Whereas, on the supply-side high payment for the liquidated land was a sufficient stimulus to undertake or extend the economic activity outside agriculture, or satisfy – yet unrealised in the absence of sufficient funds – their consumption needs. High land prices could act as a stimulus to liquidate the land, especially for owners of poorly equipped farms, who are living mainly from non-agricultural activities.

Regardless of the consequences of supporting the development of agriculture and rural areas with the CAP instruments, which – according to the research – primarily affected the increase in demand on the land market, the macroeconomic situation is crucial in determining the pace of agrarian transformation. As it determines chances of the rural population to improve their standard of living through activity in the non-agricultural sectors, and mainly this factor determines the scale of supply on the land market.

However, even a hypothetical recovery on the supply side can only in a negligible degree slow down the growth in land prices, as it is characteristic of

the macroeconomic development that the intensity of the conversion process of agricultural land to non-agricultural purposes usually increases in such a situation. In this context, one should predict that the price of agricultural land will continue to grow, while the pace and character of agrarian changes will increasingly be affected by the conditions associated with the social barriers that limit opportunities for transferring it into the non-agricultural status.

Literature:

1. Bułkowska M.: Efekty WPR w odniesieniu do rolnictwa [Effects of the CAP in relation to agriculture] [in:] Analiza efektów realizacji polityki rolnej wobec rolnictwa i obszarów wiejskich (collective work ed. M. Wigier). Program Wieloletni 2005-2011, nr 26. IERiGŻ-PIB, Warszawa 2011.
2. Charakterystyka gospodarstw rolnych. Powszechny Spis Rolny [Characteristics of farms: Agricultural Census]. GUS, Warszawa 2012.
3. Karwat-Woźniak B.: Gospodarstwa wysokotowarowe w rolnictwie chłopskim. Synteza wyników badań 2005-2009 [Market-oriented farms in peasant agriculture. Synthesis of 2005-2009 research findings]. Program Wieloletni 2005-2009, nr 151. IERiGŻ-PIB, Warszawa 2009.
4. Karwat-Woźniak B.: Zmiany w sytuacji ekonomicznej rodzinnych gospodarstw wysokotowarowych [Changes in the economic situation of the market-oriented family farms]. Program Wieloletni 2005-2009, nr 111. IERiGŻ-PIB, Warszawa 2008.
5. Raport z wyników. Powszechny Spis Rolny 2010 [Agricultural Census 2010 – findings]. GUS, Warszawa 2011.
6. Raport z wyników. Powszechny Spis Rolny 2002 [Agricultural Census 2002 – findings]. GUS, Warszawa 2003.
7. Rynek ziemi rolniczej. Stan i perspektywy [Agricultural land market status and prospects]. Analizy Rynkowe, nr 14. IERiGŻ-PIB, ANR, MRiRW, grudzień 2011.
8. Sikorska A.: Gospodarstwa bez produkcji towarowej w strukturach indywidualnego rolnictwa [Farms without commercial production in the structure of individual agriculture]. Komunikaty Raporty Ekspertyzy, z. 549. IERiGŻ-PIB, Warszawa 2010.
9. Sikorska A.: Zmiany strukturalne na wsi i rolnictwie w latach 1996-2000 a wielofunkcyjny rozwój obszarów wiejskich [Structural changes in the countryside and agriculture in 1996-2000 and multifunctional development of rural areas]. IERiGŻ, Warszawa 2001.
10. Sikorska A.: Źródła utrzymania rodzin użytkujących gospodarstwa rolne [Income sources in families with farms]. Komunikaty Raporty Ekspertyzy, z. 523. IERiGŻ-PIB, Warszawa 2006.
11. Smętkowski M.: Delimitacja obszarów metropolitalnych w Polsce [Delimitation of metropolitan areas in Poland]. Centrum Europejskich Studiów Regionalnych i Lokalnych, Uniwersytet Warszawski, Warszawa 2004.