AGRICULTURAL HOLDINGS AND THEIR LAND SIZE CHANGES IN LATVIA

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Abstract
The latest land reform in Latvia has substantially altered the structure of use of farmland leading to a great number of very small and fragmented agricultural holdings, yet, in terms of occupied total area and UAA, medium size (10.0-50.0 ha) and slightly larger (more than 50.0 ha) land holdings dominate. In Latvia the number of agricultural holdings tends to decline. On the contrary, the average UAA per agricultural holding rose (by 66%), reaching 23.2 ha in 2010. One can conclude that positive structural changes take place in the agricultural industry – the number of small farms has declined and the number of and the area farmed by large market-oriented farms has risen, thus the difference between the sizes of land holdings that emerged during the land reform and the land areas farmed by agricultural holdings has increased.
Key words: land holdings, size of farm, utilised agricultural area.

Introduction

Rational size of a farmland is one of the preconditions for its sustainable development. Rational size of a farmland should be understood as the concentration amount of its production forces which secures high competitiveness within external and internal markets. Rational size of a farmland provides an opportunity to harmonize and use more productively all the production resources, to manage farms with less losses increasing the competitiveness.

The farm size can be characterized by direct and indirect indicators. Direct size of the holding is characterized by the gross production or output of goods in monetary units. As regards the indirect indicators, only equally specialised and intensified farm sizes can be compared. The owned or used real and notional land area (total area, agricultural land, cultivated area, arable land and sown area), number of employees, amount of assets, number of food-producing domestic animals, tractors and machinery and other indicators often characterise the size of the farm.

Although the land area is not a direct indicator characterising the size of the holding, it is most commonly used defining or describing the rational household size. The reason for widespread use of this indicator is not only the fact that the land area is a relatively constant value, but also the fact that agricultural land is the main resource of production, and the entire organisation of production, the amount of the necessary investments and machinery and the construction of residential and commercial buildings, drainage, road management and other activities depend on the use of the farm land in the area. Besides, the land area has an impact on the amount of the production.

Using the farmland size as the indicator characterising the size of a holding, it should not be forgotten that its rational value has to be determined in accordance with the industry specialisation, intensification and other factors that influence the rational size of the holding to allow efficient usage of the land and repayment of the capital investments.

These considerations prompted the choice of the subject and *the aim of the research* was set – to analyse areas of farmlands in rural regions of Latvia by their used areas.

Methodology of research and materials

The data on economically active farms in Latvia were generalised from the Central Statistical Bureau of the Republic of Latvia (years 2003, 2005, 2007 and 2010) within the research. They are described as farms that are producing agricultural production independently of the amount of production and its way of use or that are keeping good agricultural and environment conditions in the land. According to the studies, all the farms in Latvia were subdivided conditionally into 4 groups: very small farms up to 2.4 ha, small farms from 2.5 – 9.9 ha, medium size ones –10.0 – 49.9 ha, and the large farms that exceed 50.0 ha. Summarizing the State Land Service's (SLS) State Real Estate Cadastre Information System (SRECIS) data (years 2001, 2006 and 2012), all the registered holdings containing land parcels with the real estate purpose of agriculture as the main economic activity were analysed.

In the research on the problems and elements, the monographic description, analysis and synthesis methods were used, while the descriptive statistical analysis method was applied with data analysis.

Discussions and results

The latest land reform in Latvia has substantially altered the structure of use of farmland leading to a great number of very small and fragmented agricultural holdings. In the beginning of the reform, natural persons used only 5% of the total agricultural area (Jankava, 2003a), whereas already in 2012 natural persons owned and held in usufruct the most part of the land (94%) transferred for agricultural use. According to the data of the land survey of administrative territories and territorial units of the Republic of Latvia as of 1 January 2012, the average total size of land units owned and held in permanent usufruct by natural persons was only 8.2 ha, while the average size of their utilised agricultural area (UAA) was 4.9 ha. The average area owned and held in usufruct by legal persons was even smaller – the average total area was 4.5 ha, including 3.1 ha of UAA (Table 1).

Table 1

Number and size of land units owned and held in usufruct by natural and legal persons in Latvia as of 1 January 2012

Owner status	Number of land units	Total area, ha	UAA, ha	Average size of land units	
				Total area, ha	UAA, ha
Property owned and held in usufruct by natural persons	434,255	3,569,624.7	2,140,165.1	8.2	4.9
Property owned and held in usufruct by legal persons	27,271	123,294.6	84,802.1	4.5	3.1

After analysing the changes in the size of land holdings from year to year, one has to conclude that the average size of land holdings decreased by 15% during a period of eleven years. An analysis of the UAA reveals a similar trend. One can find that in the period 2001-2012, the average size of UAA per agricultural holding decreased by 21% (Table 3.2). In the beginning of the reform (as of 2011), the average size of UAA was equal to 9.2 ha, whereas in 2012 the average size of UAA per agricultural holding was only 7.3 ha. This leads to a conclusion that in the result of the land reform and other processes (land transactions), the average size of agricultural holdings in Latvia's rural areas is still decreasing.

Table 2

Number and size of agricultural land holdings in Latvia in the period 2001-2012

Indicators/Years	2001	2006	2012	Change from base year, %
Number of land holdings based on their total area, ths	251.31	269.27	313.85	24.9
Total area, ths ha	3,649.26	4,063.37	3,860.84	5.8
Average total area per land holding, ha	14.5	15.1	12.3	-15.2
Number of land holdings based on their UAA, ths	233.85	276.41	313.85	34.2
Total UAA, ths ha	2,143.17	2,441.64	2,298.25	7.2
Average UAA per land holding, ha	9.2	8.8	7.3	-20.7

However, the average indicators do not show the real distribution of land holdings in Latvia's rural areas. The data of the State Land Service (SLS) of the Republic of Latvia (RoL) (years 2001, 2006 and 2012) on total area and the distribution of UAA by size interval summarised by the author reveal that the sizes of agricultural land in Latvia are very different, as the smallest ones are less than 1 ha and the largest ones – several hundreds of hectares (Fig.1).

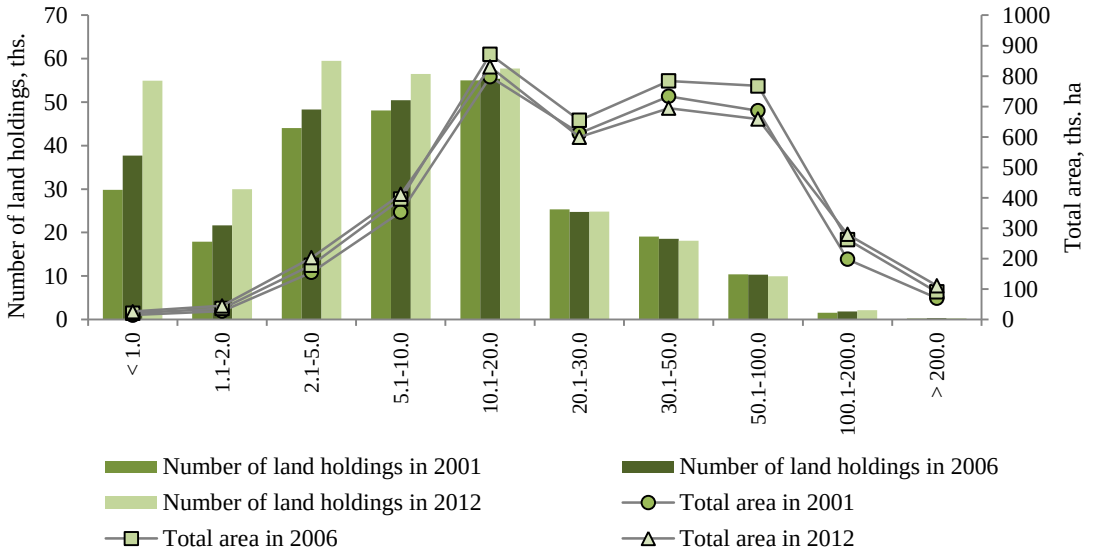

Fig. 1. Distribution of agricultural land holdings by number and total area in Latvia in 2001, 2006 and 2012.

The distribution of land holdings by their total area (Fig.1) shows that as of 1 September 2001, the highest proportion (22%) was comprised of land holdings sized 10.1-20.0 ha, land holdings sized 5.1-10.0 ha were also numerous (19%). Within the period of eleven years from 2001 to 2012, the greatest increase was observed for the size interval up to 1.0 ha, and the number of such land holdings rose 6%. Despite the fact that a stable situation has existed in the size interval of more than 100.1 ha since 2001, yet, the proportion of these land holdings in their total number accounted for less than one percent (0.8%) (Fig.1).

The analysis of various size groups in the distribution of land holdings by their total area (Fig.1) shows that as of 1 September 2001, the highest proportion (22%) was also comprised of land holdings sized 10.1-20.0 ha; the situation as of 1 September 2006 and 26 September 2012 remained the same.

However, the analysis of the other size intervals (Fig.1) shows that the distribution of land holdings by their total area slightly changed in 2006 and 2012. In the period of eleven years from 2001 to 2012, the total area proportion rose (by 3%) in the size interval of less than 10.0 ha and decreased (by 5%) in the size intervals of 20.1 to 100.0 ha, yet, their total area comprised the highest proportion (50.6%) in the total area.

It has to be noted that as of 2012, the number of land holdings in the size interval of more than 100.1 ha accounted for only less than one percent of their total number; yet, over the recent years, an increase in total area might be observed in these intervals, reaching 10% of the total area (Fig.1). Similar trends were observed in the distribution of land holdings by UAA (Fig.2).

The data of Fig.2 indicate that as of 1 September 2001, the highest proportion (49%) in the total number of land holdings belonged to land holdings with a size of UAA of less than 5.0 ha. Besides, there was an increase trend in the number of land holdings in this size interval; in the period of eleven years from 2001 to 2012, the number of land holdings in this size interval rose by 12%, yet, their UAA increased minimally (by 2%). Of the total UAA of Latvia, this group of agricultural land holdings (as of 26 September 2012) occupied only 13%.

Despite the fact that overall only 1% (as of 26 September 2012) of the total number of land holdings in Latvia were holdings with a UAA of more than 50 ha, their occupied UAA area was relatively large (16.8%) (Fig.2). However, one could observe a decrease trend in the number of medium size land holdings, whereas the UAA occupied by small and large land holdings tended to increase.

The summarised data give evidence that a relatively large number of small agricultural land holdings emerged in the result of the land reform in Latvia, yet, in terms of occupied total area and UAA, medium size (10.0-50.0 ha) and slightly larger (more than 50.0 ha) land holdings dominate (Platonova, Jankava, 2011).

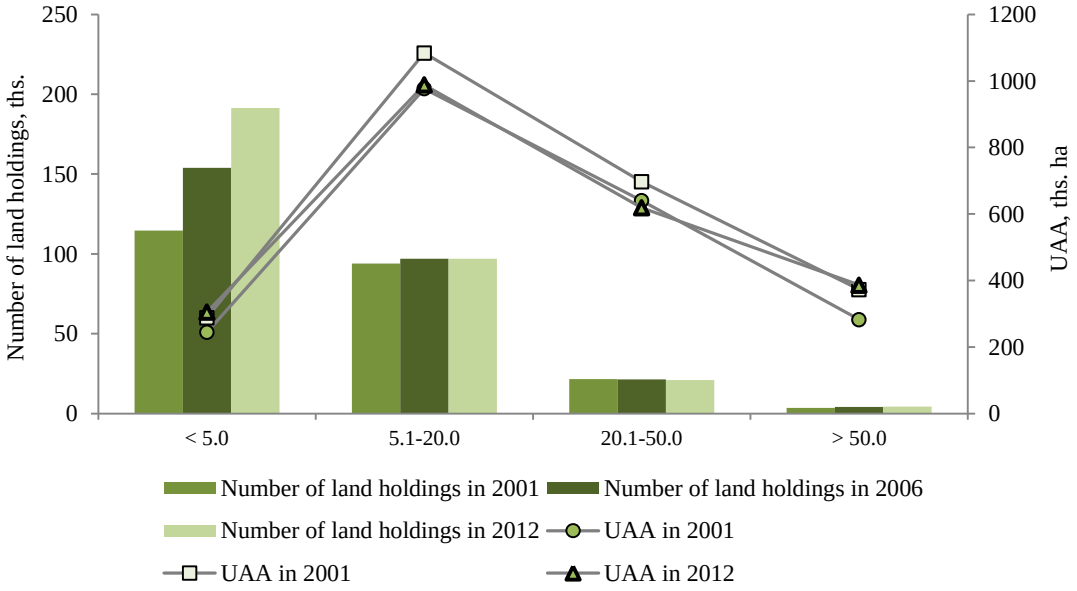

Fig. 2. Distribution of agricultural land holdings by number and UAA in Latvia in 2001, 2006 and 2012.

However, only an analysis of the data of the SLS of the RoL cannot produce information on the land area held by agricultural holdings, as data are available only on the land holdings that are registered with the SLS's SRECIS. In contrast, the CSB of the RoL collects data on the land held, i.e. owned and rented by agricultural holdings; therefore, within the present research, CSB data of the agricultural censuses (years 2003, 2005, 2007 and 2010) on economically active agricultural holdings in Latvia were also summarised.

In Latvia, the number of agricultural holdings tends to decline. As shown in Fig.3, the number of agricultural holdings decreased by 36% (from 131.4 thousand to 83.4 thousand) in the period 2003-2010. On the contrary, the average UAA per agricultural holding rose (by 66%), reaching 23.2 ha in 2010 (Fig.3).

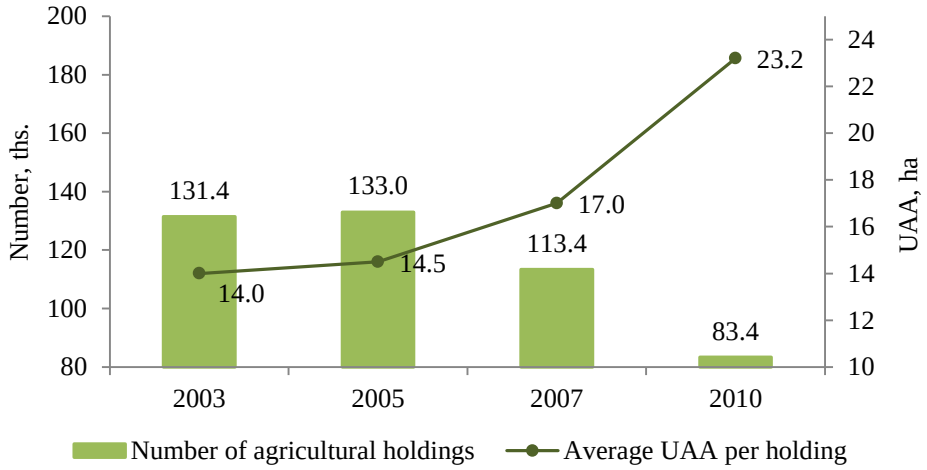

Fig. 3. Number of agricultural holdings and the average UAA per holding in Latvia in the period 2001-2010.

Land fragmentation and the small average size of farms are the result of land reform and privatization process not only in Latvia – similar processes are going on also in rural areas of our immediate neighbouring states – Lithuania (Atkoceviciene, Gudritiene, Sudoniene, 2011) and Estonia (Maasikamäe, Mugu, 2003), as well as in other Eastern and Western European countries (Hartvigsen, 2006).

According to the authors' research, based on RoL CSB data, in 2003, Latvian farms' average total area of agricultural land was 11.4 ha: besides, a third of the farms had a land area of less than 2.4 ha

(Fig.4). One of the preconditions for this situation was that the land reform law did not name the minimum land area, as opposed to the 1920s-30s reform when future division of the existing and new rural land properties of less than 10 hectares was prohibited (Likums par zemes..., 1937). Although, as it can be seen in Fig.4, over the time the trend of declining of very small farms and the increase in medium-sized and large farms can be observed (Fig.4).

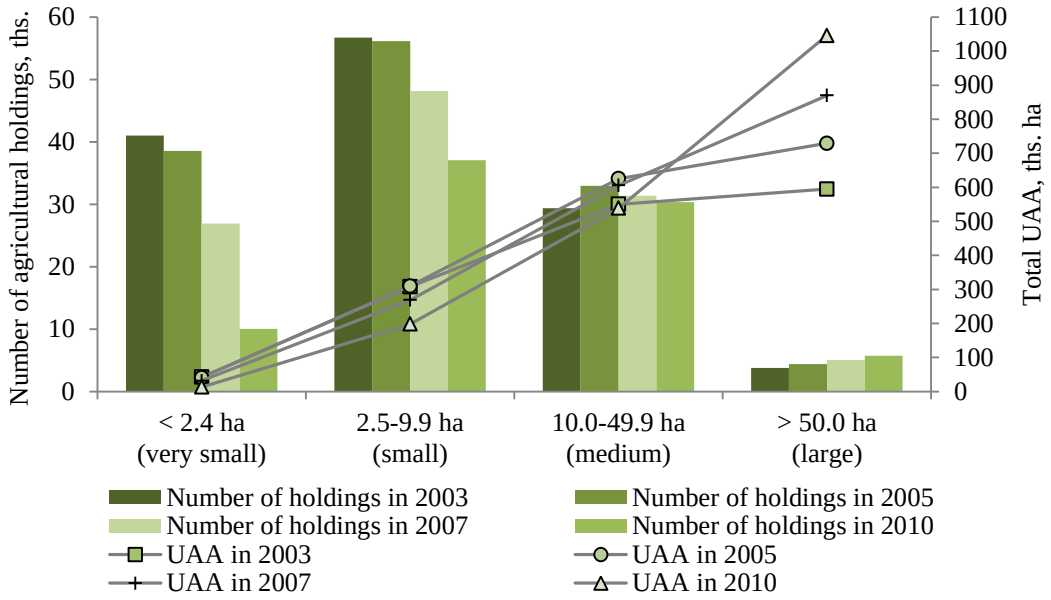

Fig. 4. Distribution of agricultural holdings by number and UAA in Latvia in the period 2003-2010.

The reason is mainly due to the fact that because of the gradually more favourable treatment of agriculture, in parallel with the land privatization process, land markets were developed, resulting in growing of farms through sale, lease or other transactions.

In the seven-year period from 2003 to 2010 in the UAA interval of more than 50.0 ha, not only the number of large agricultural holdings rose (by 53%), but also their UAA increased (by 76%). One can conclude that positive structural changes have been take place in the agricultural industry – the number of small farms has been declining and the number of and the area farmed by large market-oriented farms has been rising, thus the difference between the sizes of land holdings that emerged during the land reform and the land areas farmed by agricultural holdings has increased.

To identify associations between the economic size of agricultural holdings (in ESU) and the real size (in ha), the author analysed the data collected by Latvia's Farm Accountancy Data Network FADN (Table 3).

Table 3

Economic and physical sizes of farms in Latvia's regions in 2012

Region	Number of farms	Utilized agricultural area, ha	ESU, EUR	Rented UAA		Unutilised AA		ESU/ UAA
				ha	%	ha	%	EUR/ha
Zemgale	228	87.9	44,872	46.9	53.4	0.9	1.0	510
Vidzeme	222	75.0	32,836	42.7	57.0	1.3	1.7	438
Pieriga	175	68.8	41,059	33.3	48.4	1.1	1.5	596
Kurzeme	174	66.6	28,544	31.4	47.1	0.6	0.9	428
Latgale	201	44.6	17,595	15.8	35.5	1.6	3.7	395
On average in Latvia		64.1	31,770	33.2	49.5	1.2	1.8	474

An analysis of the data for Latvia's regions for 2012 leads to a conclusion that on average agricultural holdings managed a UAA of 64.1 ha. The largest average UAA was in Zemgale – 87.9 ha and Vidzeme with 75.0 ha. In contrast, the smallest UAA (44.6 ha) and the greatest proportion of unutilised agricultural area – 3.7% of the UAA – were in Latgale region (Table 3).

Even though the greatest farms, in terms of economic size, were in Zemgale, yet, per UAA ha, the highest economic size value was in Pieriga, EUR 596 per ha, exceeding the average level by 122 EUR, while in Latgale it was the lowest, EUR 395 (Table 3).

Table 3 shows that a certain association exists between the economic size and the real size of agricultural holdings – Zemgale is the leader both in terms of economic size and in terms of average UAA, whereas in Latgale region these indicators are the lowest. Riga region makes some corrections; therefore, one can conclude that other factors, too, could affect the economic size of farms, as the economic size of farms is employed to compare the production indicators and performance results of farms whose production patterns are different.

The area of rented land also plays an essential role in managing the land of farms. As shown in Table 3, in Latvia, a farm rents, on average, half of the UAA it manages.

The findings obtained show that in Latvia, under favourable conditions for agriculture, in parallel with the land privatization process, the land market has developed, resulting in the gradual emergence of larger and larger farms through sale, lease or other transactions, thus increasing the difference between the sizes of land holdings that emerged during the land reform and the land areas held by agricultural holdings. This is evidenced by a specialist of the Latvian State Institute of Agrarian Economics, A.Miglavs, and the head of the Land Policy Division, Spatial Planning Department, E. Kāpostiņš who in their research point out that the largest and most capable farms are able to use land more efficiently and the payback of their investments is shorter; besides, the farm productivity and efficiency rises in the agricultural industry on the whole. Such farms tend to expand by purchasing or renting the free land belonging to natural persons or municipalities (Miglavs, 2003; Kāpostiņš, 2003).

In the context of this problem, discussions take place in research papers of Lithuanian authors, too, (Lankelis, 2002; Atkoceviciene, Gudritiene, Sudoniene, 2011) who emphasise that with agricultural holdings becoming larger, their economic expenses per hectare decrease and, undoubtedly, small agricultural holdings are not able to survive under today's competition.

To make a detailed analysis of the economic indicators of farms, profit was analysed for small, medium and large agricultural holdings for a period of eight years, based on the information of Latvia's Farm Accountancy Data Network for the period 2005-2012 (Table 4).

Table 4

Changes in profit for various sizes of farms in Latvia in the period 2005-2012

Year	Small farms		Medium farms		Large farms	
	4-<15 ELV		25-<50		100-<500	
	profit (LVL)	change from base year (%)	profit (LVL)	change from base year (%)	profit (LVL)	change from base year (%)
2005.	311	-	9690	-	40864	-
2006.	1546	397.1	12947	33.6	53895	31.9
2007	8464	2621.5	13293	37.2	80839	97.8
2008.	-1891	-708.0	6896	-28.8	56063	37.2
2009.	-2800	-1000.3	-149	-101.5	6225	-84.8
2010.	-2300	-839.5	3188	-67.1	28655	-29.9
2011.	-1828	-687.8	3146	-67.5	26082	-36.2
2012.	-2784	-995.2	6350	-34.5	62954	54.1

The data (Table 4) on small farms (4-<15 ESU) show that profit tended to decline in the entire period of analysis. Beginning with the year 2008, these farms incurred losses. The greatest losses, compared with the previous year, were suffered in 2009. The profit of medium farms of economic size of 25-<50 ESU was volatile in the latest three years. This leads to a conclusion that the decrease in profit was not as significant as that for the group of farms of 4-<15 ESU. Farmers suffered the greatest losses in 2009 when, compared with 2008, the profit declined by 102% (25-<50 ESU). The greatest increase in profit for the largest farms (100-<500 ESU) was reported in 2007.

A comparison of the data (Table 4) suggests that the greater a farm is, the more profitable its performance is, which is evidenced by the changes in profit for the farm groups of various sizes.

Conclusions and proposals

1. Irrespective of large areas of agriculturally usable lands all over the territory of Latvia, farmland holdings are generally small and fragmented, which does not contribute to beneficial land use and its efficient management.
2. In the beginning of the reform (as of 2011), the average size of UAA was equal to 9.2 ha, whereas in 2012 the average size of UAA per agricultural holding was only 7.3 ha.
3. In Latvia, the number of agricultural holdings tends to decline - the number of agricultural holdings decreased by 36% (from 131.4 thousand to 83.4 thousand) in the period 2003-2010. On the contrary, the average UAA per agricultural holding rose (by 66%), reaching 23.2 ha in 2010.
4. The number of the very small (> 2.4 ha) economically active farms has decreased by 19% since 2003 and the number of the very large farms of over 50 ha has grown by 6%. It reveals a trend towards land consolidation.

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