

## **ECONOMIC AND SOCIAL ASPECTS OF AGRICULTURAL LAND USE IN UKRAINE**

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Ukraine has a significant land-resource potential. As of January 1st, 2016, the land fund of Ukraine is 60,3 million hectares or about 6 % of the territory of Europe [5, p. 63]. Agricultural lands amount approximately 19 % of the total European, including arable land – 27 %. The index of agricultural land per one person is the highest among European countries and amount 0,9 hectare, including 0,7 hectare of arable land (average European countries – 0,44 and 0,25 hectare, respectively) [6].

The total area of agricultural land is 42,7 million hectares or 70 % of the total area of the country, and the area of arable land is 32,5 million hectares or 78.4 % of all agricultural lands [5, p. 63]. In the structure of agricultural lands of enterprises and citizens, certain differences are observed due to market orientation and different development of the livestock sector (Pic. 1, Pic. 2). In particular, in the structure of enterprises, the share of arable land is 93,9 % and 3,2 % of pasture, and in the structure of land use of citizens is 74,2 % of the arable land share, 13,8 % of pasture, 7,4 % of hay plants, perennial stands – 3,9 %.

Such a structure of land resources of the country and land use leads to significant imbalances, the deepening of which may pose a threat to the environment and the living environment, as well as the efficiency of economic activity, sustainable development of the national economy in general.

In Ukraine more than 92 % of the territory is used for economic use. Extremely high level of cultivation of the territory is more than 54 % (in the developed countries of Europe it does not exceed 35 %). The actual forest area of Ukraine is only 16 %, which is not enough to ensure ecological balance (the average indicator of European countries – 25-30 %).

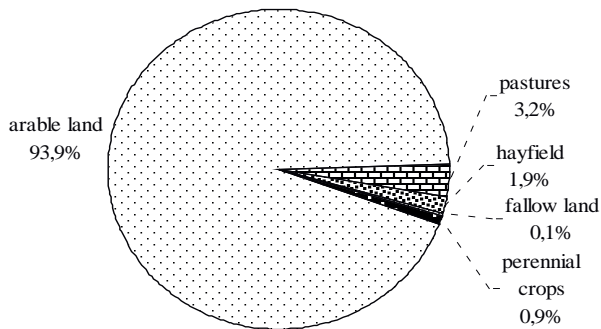


Fig. 1. Structure of agricultural land of agricultural enterprises on 1 January 2016  
*Source: it is built according to the data [5, p. 64]*

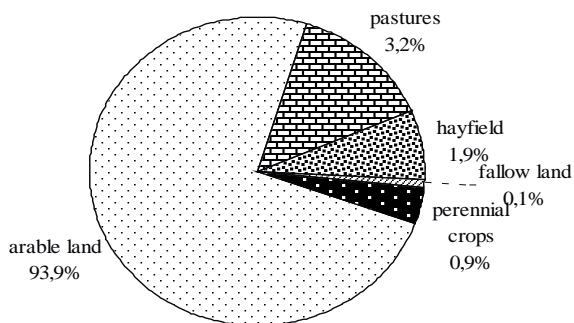


Fig. 2. Structure of agricultural land of individuals on 1 January 2016  
*Source: it is built according to the data [5, p. 64]*

The area of agricultural lands of agroforming in 2016, as compared to 2000, decreased by 39,1 % and amounted to 20,746.9 thousand hectares, including land holdings of state enterprises – by 97,1 %, and non-state enterprises increased by 9,9 times.

Among the agricultural enterprises of Ukraine 4,5 % of the land belongs to state enterprises, respectively 95,5 % – to non-state enterprises (table 1).

Table 1

**The structure of agricultural lands by categories of  
landowners and land users in Ukraine**

Indexes	Years					2016 (+, -) from	
	2000	2010	2012	2014	2016	2000	2010
Agricultural enterprises	100	100	100	100	100	x	x
state	6,2	5,0	4,7	4,6	4,5	-1,7	-0,2
non-state	93,8	95,0	95,3	95,4	95,5	1,7	0,2
Individuals	100	100	100	100	100	x	x
Including private peasant small-holdings and keeping of dwelling house and plots for farm structures	50,6	31,1	31,8	31,8	32,2	-18,4	0,4
commodity output	27,0	59,2	58,7	59,4	59,1	32,1	0,4
collective and individual gardens	2,1	1,2	1,2	1,2	1,2	-0,9	0,0
collective and individual kitchen gardens	3,5	1,2	1,2	1,1	1,1	-2,4	-0,1
hayfields and pastures	16,7	7,3	7,1	6,5	6,3	-10,4	-0,8

*Source: calculated according to the data [5, p. 640]*

At the same time the agricultural lands of citizens increased by 2.5 times in 2016 compared to 2000 and amounted to 15706,4 thousand hectares. In the structure of agricultural lands of citizens, the largest share belongs to commodity production – 59,1 %, which is by 32,1 % more than in 2000 and indicates significant structural changes in land use of citizens. At the same time, the share of land under private peasant farms and plots for the construction and maintenance of residential buildings increased by 5,2 %, the share of land that is hayfield decreased by 10,4 %, the share of collective and individual gardens – by 0,9 %, of collective and individual cities – by 2,4 % to 1,1 %.

Currently, the most active participants in the process of consolidation of agricultural land are medium-sized agricultural holdings with a land bank size of 20 to 40 thousand hectares. Large companies mainly focus on maintaining control over lands and improving the efficiency of their use. In 2016 there were about 2,9 million hectares of agricultural land in use of the largest agricultural holdings in Ukraine [7].

Against the background of growing agroholding, the number of private peasant farms has a steady tendency to decrease. In our opinion, in the following years this trend may increase in connection with the Government's intentions to introduce private peasant farms in the legal field in order to introduce taxation of the results of their activities. Despite the decrease in the number of peasant farms, the amount of

cultivated land increased due to land for commodity agricultural production (table 1).

Today almost 1,4 million hectares of dismantled land plots are not used. About 1 million people do not cultivate or rent land. As a result, land part (shares) with a total area of 4,8 million hectares or about 12 % of the total area of agricultural land are not used.

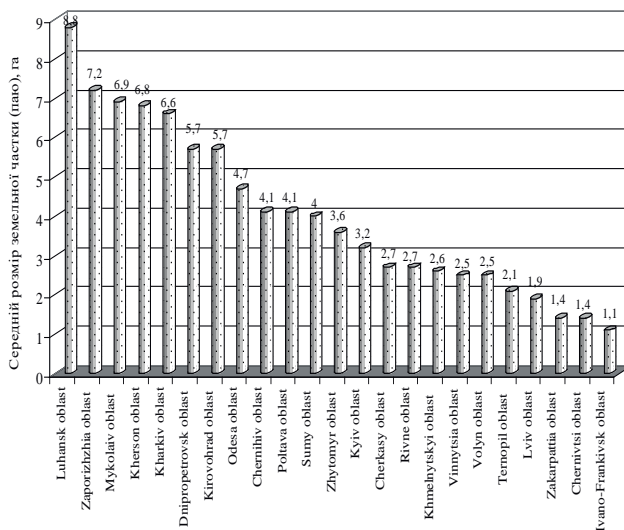


Fig. 3. The average size of a land part (share) in terms of regions

Source: it is built according to [6]

1,2 million citizens joined land plots and land shares with an area of 4,7 million hectares to private farms without a legal entity or 17,3 % of decomposed land. Self-management on land has shown a desire for 1,2 million hectares of land shares owners. 17,1 million hectares, accounting for more than 62 % of the decomposed lands, handed over for rent. The largest proportion of decomposed land not involved in economic cultivation or used without proper documentation is in Zhytomyr, Lviv, Chernihiv, Rivne and Kyiv oblasts [6].

The average land part (share) in Ukraine is 4 hectares.

Table 2

### The structure of crop area of agricultural crops in Ukraine

Indexes	Sown area							Absolute deviation of structure (+,-), %
	1990		2000	2005	2010	2016		
	thousand hectares	%	thousand hectares	thousand hectares	thousand hectares	thousand hectares	%	
Cereals and legumes	14583	45,0	13646	15005	15090	14401	53,3	8,3
including wheat	7577	23,4	5619	6665	6451	6218	23,0	-0,4
barley	2729	8,4	3985	4500	4505	2867	10,6	2,2
corn for grain	1234	3,8	1364	1711	2709	4286	15,9	12,1
Technical cultures	3751	11,6	4187	5260	7296	8852	32,8	21,2
including sugar beet (factory)	1607	5,0	856	652	501	292	1,1	-3,9
sunflower	1636	5,0	2943	3743	4572	6073	22,5	17,4
soybeans	93	0,3	65	438	1076	1869	6,9	6,6
colza	90	0,3	214	207	907	455	1,7	1,4
Potatoes and vegetable-melon cultures	2073	6,4	2277	2041	1967	1841	6,8	0,4
Fodder crops	11999	37,0	7063	3738	2599	1932	7,1	-29,9
Sown area – total	32406	100	27173	26044	26952	27026	100,0	x

Source: calculated according to [4, p. 68; 5, p. 89]

On the basis of private property, as of 1.11.2016, 47697 agroformations of market type were created in Ukraine, where 8700 units are business associations (18,2 %), private enterprises – 3752 units (7,9 %), production cooperatives – 738 units (1,5 %), farms – 33682 units (70,6 %), state enterprises – 222 units (0,5 %), enterprises of other forms of management – 603 units (1,3 %). In 2016, compared to 2002, the share of private enterprises and farms increased [5, p. 171].

Reducing the natural fertility of soils can not be offset by increasing the volume

of mineral fertilizers. On the contrary, today there is an open destructiveness of farming in the agrarian sector. In the context of the reduction of the livestock sector, in particular the reduction of cattle population both in households and in agricultural enterprises, the volume of manure putting has decreased significantly, as well as the practice of straw burning after harvesting, leads to lossless land energy losses.

Particularly threatening in this context is the problem of deteriorating quality of agricultural land. On the basis of agro-chemical data, a decrease of humus content in soils (0,5–0,6 t/ha annually), which increases soil mineralization, leads to a decrease in the fertility of the land. As a result, the annual lack of agricultural products is about 3 million tons of conditional grain. Over the past 20 years, the humus content has decreased by 0,22 %, which is estimated as 453,4 billion UAH in terms of the state [30].

In addition, the decline in the fertility of agricultural land is due to the imperfection of the structure of crops, which has undergone significant changes over the past 25 years in order to increase the share of crops that are in high demand on the market. Thus, for the period from 1990 to 2016 the share of technical crops in the structure of sown area has increased by 21,2 percentage points (table 2).

In particular, over the analyzed period, the sown areas of sunflower increased by 3,7 times, soybeans – by 20,1 times, colza – by 5,1 times. In the group of technical crops only the growth of sugar beets was reduced by 81.8 %. Grain and legume seeds after a slight decline in the late 90's today actually reached the level of 1990. At the same time among the grain crops, the greatest increase occurred in the cultivation of corn for grain, whose area has increased by 3,5 times. The reduction of sown areas is observed only under potatoes, vegetable and melon cultures and fodder crops.

The growth of the share of intensive crops (corn for grain, sunflower, colza) in the structure of the crop area violates the principles of balanced land use. This is due to the fact that the management of agrarian marketing processes is oriented only on the profitability criterion and only on the interests of the private owner in agriculture.

There have been significant changes in the structure of gross agricultural production. Thus, the share of agricultural enterprises in the structure of gross production decreased from 70,4 % in 1990 to 54,0 % in 2016, which indicates an increase in the role of households in agricultural production (Fig. 4).

This is due including to the results of the land reform, which gave peasants access to the possession and disposal of their own land plots, as well as by leasing land for small-scale production as a source of income.

The efficiency of land use in agriculture is still low. In particular, as of 2016, more than 40 % of the land was used by agricultural producers at a fairly low level (the coefficient of land utilization is from 0,35 to 0,5, which corresponds to the yield of grain and legume from 22 to 40 hundredweight per hectare). The lowest level and efficiency of land use is observed in enterprises of the state form of management. In particular, the level of profitability of agricultural production in state enterprises

in 2015 was only 6.4 %, while the profitability of non-state enterprises was 30,5 %.

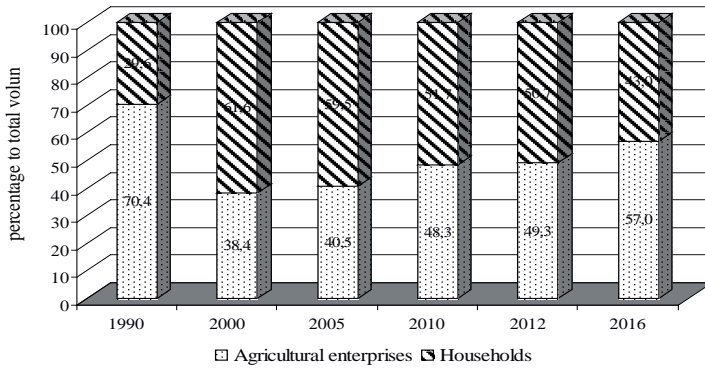


Fig. 4. Structure of production of gross agricultural products in Ukraine, 1990–2016, %

Source: calculated according to data [4, p. 44; 5, p. 460]

Table 3

**Dynamics of agricultural crops in Ukraine, c/ha**

Agricultural crops	Year						2016 in % to	
	1990	2000	2005	2010	2012	2016	1990	2000
Cereals and legumes	35,1	19,4	26,0	26,9	31,2	46,1	131,3	171,4
including wheat	40,2	19,8	28,5	26,8	28,0	42,1	104,7	157,1
barley	33,8	18,6	20,6	19,7	21,1	33,0	97,6	167,5
corn for grain	38,7	30,1	43,2	45,1	47,9	66,0	170,5	146,3
sugar beet (factory)	275,7	176,7	248,2	279,5	410,8	481,5	174,6	172,3
sunflower	15,8	12,2	12,8	15,0	16,5	22,4	141,8	149,3
soybeans	11,3	10,6	14,5	16,2	17,1	23,0	203,5	142,0
winter colza	15,0	10,3	17,0	17,5	22,0	26,5	176,7	151,4
Potato	116,8	121,6	128,4	132,5	161,0	165,8	142,0	125,1
Vegetable crops	149,0	112,3	157,1	173,6	199,2	210,5	141,3	121,3

Source: calculated by the author according to [4, p.74; 5, p.102]

According to the data of the table 3 the yield of crops has increased, which is due to the improvement of breeding work, an increase in fertilization rates and intensification of technologies, but its level is considerably lagging behind the average European. In particular, the yield of grain and leguminous crops in Ukraine in 2016, as compared to 1990, increased by 31,3 % and equals 46,1 hundredweight/

ha due to the increase in the grain yield of corn. The yield of sugar beets increased by 74,6 %, sunflower seeds – by 41,3 %, soybeans – 2 times, winter colza – by 76,7 %.

The conducted research shows that during 2012–2016 agricultural enterprises in the main commodity crops we also observed the tendency of increase of productivity level. In particular, the highest average annual rate of yield growth is recorded in such crops as barley – 11,8 %, wheat – 10,7 %, corn for grain – 8,3 %, sunflower – 7,9 %, and soybeans – 7,7 %. At the same time, low crop rates are characterized by such crops as winter colza and sugar beet.

Thus, land use in Ukraine is characterized by the following features:

- 1) high level of mastering of the territory (more than 92 %);
- 2) increase the area of agricultural land by the use of citizens for the purpose of commodity production, which led to structural changes in gross agricultural output;
- 3) under-utilization of a significant share (about 10 %) of the total area of land as a result of land degradation, since successors do not always want to cultivate the land independently or rent it;
- 4) private enterprises and farms became the main among different forms of farming on the land;
- 5) consolidation of lands by agroholdings;
- 6) the deterioration of the quality of arable land due to the rapid expansion of intensive crops, which can not be compensated by the increasing application of mineral fertilizers;
- 7) low efficiency of the use of land resources in agriculture due to depreciation of material and technical base, violation of technological processes, reduction of livestock sector, low level of use of information technologies and lack of financial resources.

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