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PROSPECTS OF THE APPLICATION OF EUROPEAN PRACTICE ON EFFICIENT AGRICULTURAL LANDS USE IN UKRAINE

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Abstract

One has determined the problem of the effective use of land resources in Ukraine, which requires the application and elaboration of the provisions of methodological approaches and advanced achievements of European practice. The foreign experience of mechanisms application of land resources effective use is considered and the methods of their implementation in Ukraine are offered. One has determined that the productive production of agrarian products, taking into account the specialization of cultivating crops is the strategic vector for land management as based on the European experience. We observe that the price of grain crops compared to the EU countries is the lowest at low yield capacity, reflecting the negative state of the agrarian economy in Ukraine. One has researched the reverse dependence between the sale price and the yield of grain crops in the EU countries in 2018. One has presented a regression model that reflects the dependence between gross production and grain crops yield capacity in the EU countries for the year of 2018. It shows the close connection between them. The obtained results of grain crops analysis are recommended for predicting and planning of agricultural production, economic activity estimation, calculation of planned yield capacity, sales revenue and expenses for its cultivation on diverse lands in Ukraine and the EU countries. One has generalized the conditions for stable economic development, financial support, and coordination of actions aimed at increasing productivity of land resources due to a common agrarian policy between the EU countries and Ukraine.

Key words**:** *effective lands use, agricultural lands, yield capacity,gross production, European experience*

INTRODUCTION

To begin with, the problem of the effective use of land resources in Ukraine requires the application and elaboration of the provisions of methodological approaches and breakthrough achievements of European practice. An analysis of foreign experience will reveal the main ways of forming effective mechanisms for land resources protection. It is of vital importance to consider the experience of developed countries as to the use of economic instruments to study the mechanisms for improving land use. This experience is valuable after its testing and verification, and it gives results due to the implementation of the right to land ownership. Avramenko (2006) [1], Martyn and Kopaihora (2014) [7], Mishenin and Piznik (20120 [8], Stupen *et al*. (2018)[12], Sharyi (2013) [9], and Shvorak (2009) [10] and others studied the experience of ensuring the rational use of lands abroad. The introduction of the best practices on land resources use in the EU countries, in present-day conditions, is one of the priority tasks on improving the economic and legal model of land relations regulation in Ukraine.

MATERIALS AND METHODS

The first thing to remember is that the purpose of our research. So, we consider the foreign experience of applying the ways of land resources efficient use and propose methods for their implementation in Ukraine. Thus, in the process of the research one has used the monographic method in the study of scientific publications on land use issues in the EU countries and Ukraine; the abstract and logical method in improving the land use system; the statistical method in the study of information

on the distribution of land resources, the results of grain crops cultivation; the graphical one – for displaying statistical data; the correlation analysis – in determining the tightness of the connection between the economic indicators of growing grain crops in the EU countries.

RESULTS AND DISCUSSIONS

Ukraine predetermines its special place among other European countries due to its unique land and resource potential [11]. Ukraine occupies 5.7 % of the total land area of Europe, 60.3 % of 60.4 million hectares of land [5] is attributed to agricultural lands with high-quality composition and the level of bio-productivity (Table 1). Land use in Ukraine is less productive than in European countries and does not meet the requirements of rational nature use. The ecologically permissible ratio of arable land, natural forage lands, forest plantations, which negatively affects the stability of the agro-landscape, has been violated [1]. Excessive cultivation of the territory and the huge influence of human activity have led to a violation of the natural process of soil formation and erosion processes. Accordingly, annual environmental and economic losses from soil erosion amount to 2.9 billion Euros [8].

Table 1. The distribution of land fund in the EU countries and Ukraine in 2018, thousand hectares.

The EU countries	Agricultural lands	including			Forests
		Arable lands	Pastures	Perennial plantations	
Belgium	37,340	32,400	31.3	-	410
Bulgaria	244,860	179,650	78.2	138.3	3,870
Czech Republic	25,950	17,540	18.4	0.3	4,380
Denmark	37,380	34530	23.6	-	16,610
Germany	282,160	218,020	229.9	16.8	153,120
Estonia	18,750	10,910	16.0	7.2	13,090
Ireland	139,570	58,080	130.9	0.7	21,230
Greece	703,590	307,970	55.0	166.9	8,320
Spain	944,300	464,570	265.3	56.8	194,430
France	463,710	334,640	274.1	46.3	147,100
Croatia	157,100	125,530	70.3	115.6	60,730
Italy	1,009,440	659,210	247.3	288.5	257,160
Latvia	80,720	57,230	59.7	42.1	49,390
Lithuania	171,730	160,400	111.4	-	25,330
Luxembourg	2,060	1,510	1.7	0.2	1,030
Hungary	453,090	279,870	59.6	323.3	43,450
Netherlands	65,790	45,970	43.4	-	3,040
Austria	139,610	77,230	117.6	19.5	117,050
Poland	1,421,560	1,249,990	977.5	329.9	632,630
Portugal	263,580	179,060	77.8	170.6	134,520
Slovenia	72,280	57,290	62.3	57.9	64,540
Slovakia	22,050	17,410	10.6	7.2	490
Finland	54,230	54,100	7.3	-	49,930
Sweden	66,550	64,600	36.4	-	44,980
United Kingdom	182,180	92,530	16.8	-	57,320
Ukraine	*42,732*	*32,544*	*5,441.0*	*0.9*	*10,630*

Source: Own calculation on the basis of data [5].

Moreover, lands management systems in most European countries are more or less similar and are based on the activities of the relevant authorities. The purpose in the process of land management in the countries of the European Union can be classified into the following groups:

•conducting lands consolidation (creation of a land reserve for exchange);

•support of the land market (an increase of liquidity of land assets);

•purposeful impact on the land market (control of land prices and lease amounts; buying land to prevent speculation and its transfer to non-farmer ownership; preventing excessive concentration of agricultural lands, owned by individuals);

•providing structural reforms due to the implementation of rural development measures (facilitation of early retirement for farmers; support of young farmers in buying land; social assistance due to the purchase of lands in the elderly and the payment of their retirement pension);

•state lands management (transfer of state lands to lease, privatization and restitution (return to previous owners) of state lands);
•state support for rural areas (infrastructure support, flood control projects, water catchment protection, environmental re-naturalization, etc.) [7].

Having considered the European practice of land resources use, economic activity on agricultural production should be carried out in compliance with the ecological requirements of land use. You need to do the following:

- clear state regulation and control over the use of lands and their lease;
- to carry out the assessment of agricultural land according to the yield capacity of crops, taking into account the costs of their cultivation;
- to preserve the conservation of degraded and unproductive land for preservation and reproduction of land resources;
- to attract agricultural lands to the market turnover on condition of the ale of the right of the lease on land trades.

Considering these points, the strategic vector of land management is the effective use of land potential in the production of agrarian products. The major producers of agricultural products are farms in the EU countries. They are characterized by a high level of specialization in agricultural crops production. The possibilities of their cultivation depend on the complex approach to increasing soil fertility, reduction of anthropogenic loading, taking into account agro-biological requirements of plants under modern economic conditions of farming. According to Eurostat statistics for the year of 2017, in the EU countries [2] the largest area of arable land is occupied by grain crops – 32.3 % (57,759.97 thousand hectares), with 59.8 % (106,931.53 thousand hectares) (Fig. 1).

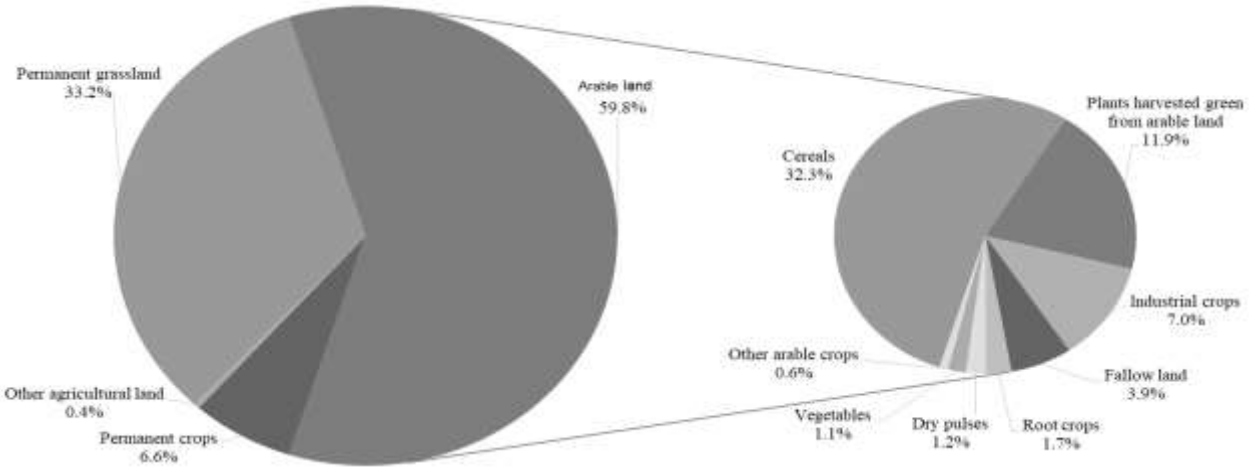

Fig. 1. An area of crops cultivation in the EU countries for the year of 2017, %.
Source: Own calculation on the basis of data [2].

The yield capacity of crops in Belgium, Ireland and the Netherlands in 2017 is quite high and is 96.08 centners/ha, 90.33 centners/ha and 87.24 centners/ha, respectively (Fig. 2). On the other hand, in Ukraine, the yield capacity of grain crops is not the smallest and equates to 33.9 centners/ha at the level with the countries of Spain – 32.51 centners/ha and Greece – 35.69 centners/ha [3], which does not have the proper natural and climatic conditions for their cultivation. The yield capacity of grain crops in Ukraine is on average twice lower than in the EU countries, due to the use of non-qualitative seed material and inefficient agrotechnology. The average sale price of grain crops for most of the EU countries in 2017 is 15.3 Eeuros/100 centners furthermore, it centners is higher in France – 20.1 Euros/100 centners and Greece – 18.8 Euros/100 centners [6] with yield capacity of grain crops of 75.85 centners per hectare and 35.69 centners per hectare respectively (Fig. 2). In Ukraine, the price of grain crops compared to the EU countries is the lowest and stands at 12.36 Euros/100

centners, which negatively affects the state of the agrarian economy in the country at a low yield of 33.9 centners/ha of grain crops if there are fertile soils. However, price growth is possible provided that the quality of grain crops is improved and the costs of their growing increase when they are sold on favorable terms of sales.

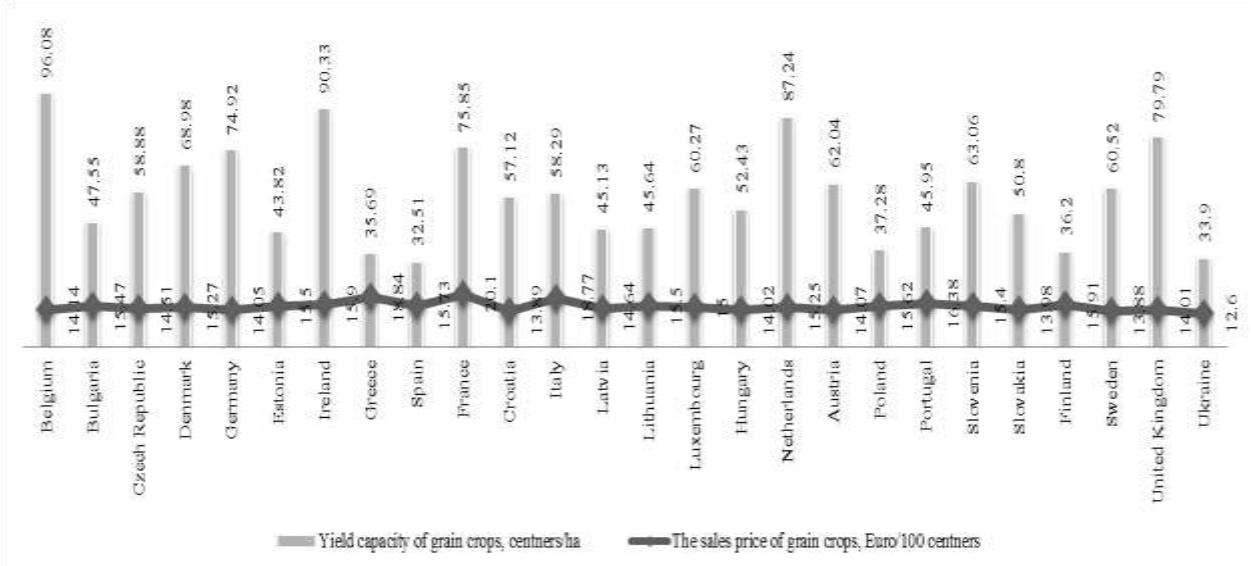

Fig. 2. Results of growing crops in the EU countries, 2018.
Source: Own calculation on the basis of data [3, 6].

We make the conclusion on the reverse dependence between the sale price and the yield capacity of grain crops by agricultural enterprises in the EU countries in 2018, using information from Fig. 3. The value of the correlation coefficient for these factors is – 0.48. The reverse relationship indicates that the decrease in the yield capacity of grain crop will result in an increase in their sale price by 0.2425 per centner, in line with the trend line regression equation, y = 0.2425x.

In accordance with Eurostat [4], we will present the regression model y = 339.84x, which reflects the relationship between gross production and yield capacity of grain crops by agricultural enterprises in the EU countries in 2018 (Fig. 4). The results of the equation show that gross production will grow by 339.84 thousand Eeuros while increasing the yield of grain crops per centner.The value of the correlation coefficient between the productive and the factor is 0.90, which indicates a close connection between them.

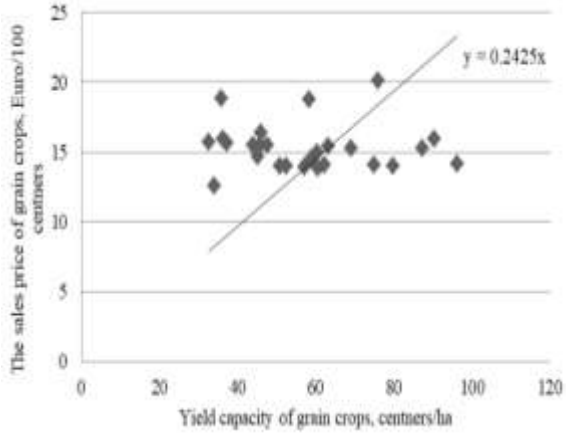

Fig. 3. Dependence between the selling price and yield capacity of grain crops in the EU countries, 2018
Source: Own calculation on the basis of data [3, 6].

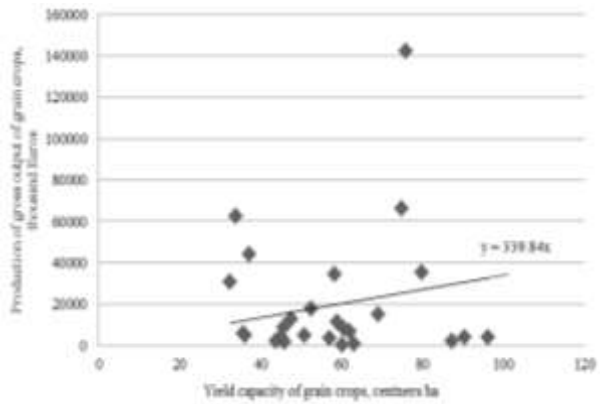

Fig. 4. Dependence between production of gross production and yield capacity of grain crop in the EU countries, 2018
Source: Own calculation on the basis of data [3, 4].

Production of gross output depends on economic factors of agricultural production, which reflects the level of profitability and is extremely low in Ukraine. It is expedient to reduce the cost of production and increase its sales prices in order to increase income. However, price growth is possible provided that the quality of grain crops is improved and the costs of their growing decrease when they are sold on favorable terms of sales. The obtained results of grain crop analysis should be used for prediction and planning of agricultural production, estimation of economic activity, calculation of planned yield, sales volume and costs for its cultivation on different quality lands in the EU countries.

CONCLUSIONS

Taking into consideration approaching the use of land resources to the level of the EU requirements, one can expect an increase in investment flows into Ukrainian agriculture and the development of cooperation in a market economy. Integration of Ukraine into the EU in the field of rational natural resources use should be carried out by creating a normative, methodological and organizational framework that should fulfill the requirements of national and European environmental safety. However, the mechanisms for implementing measures to integrate Ukraine into the EU, in particular, the adaptation of national legislation in the field of creating a rational production system in the agricultural sector to the requirements of international legislation require improvement and significant financing. Obviously, an increase in the productivity of land resources use in agriculture depends on internal transformations in Ukraine, the creation of conditions for stable economic development, financial support and coordination of actions of, in particular, executive bodies in order to ensure the sustainable production of agricultural products.

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