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## **Prospects of Free Trade Deeping between Ukraine and the European Union for Agricultural Markets**

**Abstract.** This paper investigates bilateral trade between Ukraine and the European Union in agricultural goods. The possible scenarios of agri-food market development in terms of a free trade area creation (FTA) between Ukraine and the European Union (EU) were analyzed, using a general equilibrium model. This paper also evaluates a possible influence of trade liberalisation in terms of a free trade area creation (FTA) between Ukraine and the European Union (EU) on the main branches of the economy. Changes in production indexes, welfare, costs of production factors for the main commodities were estimated. The suggestions for choosing the optimal format of an FTA between Ukraine and the EU in order to minimize adverse effects on the agri-food sector in the Ukraine and to increase its export potential have been developed.

**Key words:** free trade area, agri-food products, welfare, trade balance, production, costs of inputs.

### **Introduction**

Ukraine officially declared European integration as a strategic objective of its foreign policy. In 2007 negotiations on the Association Agreement with the EU began, a key element of which is a deep and comprehensive free trade area (DCFTA). After lengthy negotiations, in 2012 representatives of the EU and Ukraine initialled the agreement on the establishment of the DCFTA and formulated a common commitment to next technical steps to be taken. The government had set an ambitious goal to sign an Association Agreement in November 2013 at the III Summit of the Eastern Partnership in Vilnius. However, the implementation of the European choice of Ukraine is significantly affected by a number of internal and external factors – the practice of selective justice, imperfect electoral law, the lack of a real anti-corruption policy, efforts of the Customs Union to include Ukraine in this formation etc.

The evaluation of the possible consequences of the FTA between Ukraine and the EU was done by a number of Ukrainian and foreign researches. Indeed, social-economic efficiency of the regional policy of any country depends on its ability to take into account all the peculiarities of the regional development process as well as the right selection of priorities of the development of particular regions, including both national and regional interests. This is why, the importance of this paper is related to defining the main tendencies of foreign trade between Ukraine and the UE-27, as well as modeling possible scenarios of the agricultural market development in terms of the consequences of the development of agricultural markets. The results of economic modeling give the possibility to stipulate necessary measures of the state support with regard to the agricultural market in order to minimize negative outcomes of the FTA creation.

The problem of justifying the possible socio-economic consequences of the FTA between Ukraine and the EU for agri-food market occupies an important place in research. A particular contribution to the study of relations between Ukraine and the EU under the FTA were made by such scholars as Jean-P. Chauffour (Chauffour, Ivanich 2011), M. Ivanich, (Chauffour, Ivanich 2011), M. Emerson (Emerson 2006) and O. Nekhay and T. Fellmann (Nekhay, Fellmann 2011), Sh. von Cramon-Taubadel (Von Cramon-Taubadel 2010). Among Ukrainian scientists, it is worth noting writings of I. Burakovskiy (Burakovskiy 2006), V. Movchan, O. Shumylo I. Hazizullina, V. Pyatnytskyi (Pyatnytskyi 2006) D. Boyarchuk, I. Orlova (Orlova 2010) H. Shamborovskiy (Shamborovskiy, 2008) and other researchers. However, the question of possible development scenarios of the market agro-food products in various formats FTA between Ukraine and the EU is not require in-depth research and study.

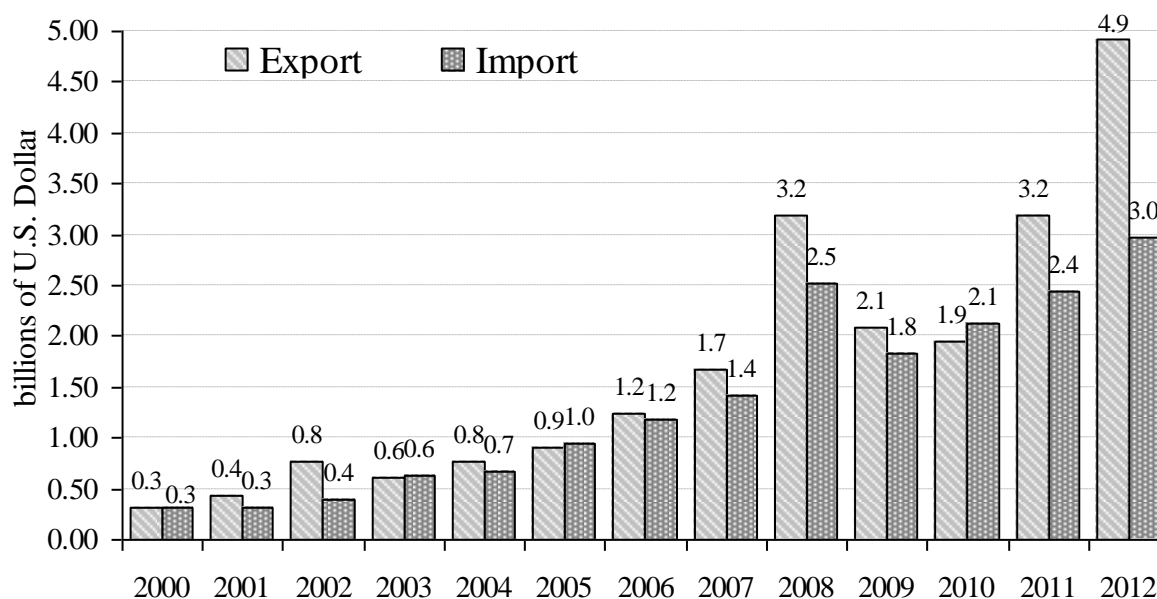
### **Materials and Methods**

The research results and conclusions were obtained by using a systematic approach to socio-economic processes. The methods of comparative analysis and expert evaluations were used for analyzing the dynamics of trade in goods and factors that are affecting. The scenario of Ukrainian agriculture development in terms of FTA creation is build using an extended version of the Global Trade Analysis Project model GTAP which is a computable general equilibrium model of the world economy. GTAP model is a multi-regional, multi-sectoral, static, general equilibrium model based on a neo-classical microeconomic theory. The database contains detailed bilateral trade, transportation and protection data characterizing economic linkages among regions, and consistent individual country input-output databases which account for intersectoral linkages for 2004 (Hertel 1997, Odosii 2013).

### **Research results and discussion**

In recent years agriculture surely leads the way among the fastest developing sectors of the economy. The clear evidence of such are high rates of GDP growth, significant investments, a record revenue from exports, etc. In 2012, revenues from exports of 1-24 UCCFEA exceeded up to 2.5 billion U.S. Dollars the revenues from exports of iron and steel products (which had held leading positions), and reached 17.9 billion U.S. dollars or 26% of total exports. This steady trend indicates a change in the priority of sectors of the economy towards the agricultural sector, that confirmed by the increasing attention to the business of both investors and the state.

As illustrated by Figure 1, the last ten years have been characterized by noticeable increase in foreign trade of commodity of 1-24 groups UCCFEA between Ukraine and the EU, as well as increasing their share in the total turnover, which in the past five years was 24-28%. Grain, oil products and manufactured agricultural goods are dominated in exports of agricultural and food products commodity.



**Fig. 1. Dynamics of foreign trade of Ukraine with the EU-27 (commodities of groups 1-24 UCCFEA)**

Source: constructed according to data of State Statistics Committee of Ukraine

The share of EU exports of domestic products 1-24 groups UCCFEA in 2000-2012 years was 20-32%. In this case, the smallest amount of agri-food products was shipped in 2009-2010. Reducing the export of grain, oilseeds and their products to the EU-27 was due to a significant reduction in grain yield in 2010 (up to 41 million tons) relative to 2008-2009 (53.3 million tonnes and 46; 1 million tons, respectively), and thus reduce the export potential. Another limiting factor was the restriction of exports from August 2010 to July 2011 by the government in the form of export quotas, the introduction of export duties and more.

### 1. The structure of export from Ukraine to the EU-27 (goods groups 1-24 UCCFEA, millions of U.S. Dollars)

Group UCC FEA	Commodity	2000	2008	2009	2010	2011	2012	2012/2000,%
10	Cereals	29	962	454	158	1032	1981	6722
12	Oil seeds and oleaginous fruits	114	1190	757	704	920	1228	981
15	Animal or vegetable fats and oils	53	659	469	632	666	818	1437
23	Residues and waste from the food industry	11	119	170	194	285	520	4546
20	Preparations of vegetables, fruit	15	17	17	31	20	88	477
8	Edible fruits and nuts	15	82	57	75	99	79	410
17	Sugars and sugar confectionery	2	9	15	17	38	44	2209
7	Edible vegetables and certain roots	7	19	23	23	18	34	407
22	Beverages, spirits and vinegar	7	52	46	32	28	24	245
19	Products of the milling industry	1	18	16	14	21	23	2217
	Other products 1-24 groups UCC FEA	64	62	56	53	71	86	34
	<b>Total 1-24 groups UCC FEA</b>	<b>318</b>	<b>3186</b>	<b>2085</b>	<b>1947</b>	<b>3197</b>	<b>4924</b>	<b>1447</b>
	Share of groups 1-24 UCC FEA, %	7	18	22	15	18	29	-
	<b>All product groups</b>	<b>4561</b>	<b>18129</b>	<b>9504</b>	<b>13062</b>	<b>17970</b>	<b>17017</b>	<b>273</b>

Source: constructed according to data of State Statistics Service of Ukraine

The structure of exports of agricultural products in trade between Ukraine and the EU in 2000-2012 was constantly changing depending on market conditions, crops in these countries, etc. The major share of exports in the last five years (2008-2012) took the following commodities: oilseeds (31%), oils and fats (28%), corn (30%), residues and waste from the food industry (21%), edible fruits and nuts (3%), alcoholic and non-alcoholic beverages (1.2%).

At the same time, in recent years there has been a clear tendency of an increase in the value index of imports of food products from the EU-27 in Ukraine (Table 2). The reasons for this phenomenon are the increase in the total value of goods in the world and the growth of the Ukrainian population share of people who are willing to pay more money for better quality, including imported goods are not produced in Ukraine, liberalization of imports in Ukraine (reduced import duty rates), and rebuilding activity of the food industry that for the production of finished goods requires raw materials available in the country.

## **2. The structure of import to Ukraine from the EU-27 (goods groups 1-24 UCCFEA, millions of U.S. Dollars)**

Group UCC FEA	Commodity	2000	2008	2009	2010	2011	2012	2012/2000,%
2	Meat and edible meat offal	5	465	261	239	199	397	8209
21	Miscellaneous edible preparations	29	344	253	262	325	319	1003
8	Edible fruit and nuts	8	133	179	199	167	307	3614
22	Beverages, spirits and vinegar	23	134	73	123	217	260	1024
10	Cereals	48	69	28	76	155	188	290
23	Residues and waste from the food industry	9	167	156	160	161	180	1883
12	Oil seeds and oleaginous fruits	10	148	66	82	140	150	1390
18	Cocoa and cocoa preparations	14	162	132	139	159	127	784
15	Animal or vegetable fats and oils	41	121	101	101	120	125	208
20	Preparations of vegetables, fruit	6	116	81	107	123	121	1882
	Other products 1-24 groups UCC FEA	123	653	501	635	683	794	543
	Total 1-24 groups UCC FEA	<b>317</b>	<b>2512</b>	<b>1832</b>	<b>2122</b>	<b>2449</b>	<b>2968</b>	<b>837</b>
	Share of groups 1-24 UCC FEA, %	<b>8</b>	<b>9</b>	<b>12</b>	<b>11</b>	<b>10</b>	<b>11</b>	<b>-</b>
	All product groups	<b>4039</b>	<b>28867</b>	<b>15393</b>	<b>19099</b>	<b>25751</b>	<b>26156</b>	<b>548</b>

Source: constructed according to data of State Statistics Service of Ukraine

Limiting factor of growth of imports in 2010-2012 was a decrease in sales due to reduced of domestic demand, and other problems, such as: getting loans, customs clearance, obtain permits and other by the importers.

According to achieved agreements, the EU will cancel fees after the entry into force of the FTA agreement and Ukraine will have to reduce tariffs to zero gradually, allowing domestic producers to prepare for increased rivalry in the domestic market. Also provided by the parties entering duty-free tariff quotas for the main types of agricultural products (cereals, pork, beef, poultry, etc.). In addition, the EU refuses to use export subsidies for agrarian products in trade with Ukraine. On the European

side in the agricultural segment abolished tariffs on 83.1% of tariff lines, and Ukrainian - only 35.2%<sup>1</sup>.

To increase the accuracy of modeling and increase the probability of assumptions and taking into account recent agreement on the draft agreement on deep free trade area between Ukraine and the EU provide several options to analyze the situation (Table 3).

### 3. Possible formats of FTA between Ukraine and the EU

Scenario (symbol)	Reduction in import duties		Other restrictions
	Agri-food products (AGRI)	Industrial products and other services (IND)	
A (All commodities -50)	-50%	-50%	not provided
B (IND -100, AGRI -50)	-50%	-100%	not provided
C (IND -100, AGRI -100, no export subs.)	-100%	-100%	abolition of export subsidies by the EU
D (IND -100, AGRI -100, efficiency +10, no export subs.)	-100%	-100%	increase in inputs usage productivity and efficiency in Ukraine by 10%, abolition of export subsidies by the EU

Source: author's compilation.

Building the above scenarios of FTA conducted under the assumptions of the minimum and maximum concessions in the process of its making. As a result, scenario A involves preserving their customs duties at a high level, while scenario D the most liberal and includes not only the complete abolition of customs barriers, but also increase the efficiency of production factors.

The main indicator of the GTAP model to assess changes in economic well-being as a result of the FTA EU - Ukraine for the economy as a whole and its individual sectors (including agriculture and food industry) is equivalent variation, which is the sum of the effects of changes allocation of resources, changes in productivity and efficiency of production factors, changes in terms of trade, changes in the level of investment and savings. According to the data table.2 most significant improvement in economic welfare in Ukraine (about 5.7 billion U.S. dollars), and the EU -25 (about 0.9 billion U.S. dollars) is achieved under conditions of scenario D, is the largest trade liberalization and the rise in Ukraine productivity and efficiency of input use by 10%. Latest in particular, will be achieved by increasing imports of new technologies and modernization of existing equipment due to better access to high in European countries . The deteriorating economic welfare in Ukraine is only provided for 100 % reduction in customs duties on all goods and services, except for agricultural products on which they are to be reduced by 50%. However, in this case are not taken into account the effects of the FTA in the long run term.

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<sup>1</sup> The draft of Association Agreement between Ukraine and the European Union and its Member States / Government portal: a single web portal for the executive power of Ukraine. – Available from: [http://eeas.europa.eu/delegations/ukraine/eu\\_ukraine/political\\_relations/index\\_uk.htm](http://eeas.europa.eu/delegations/ukraine/eu_ukraine/political_relations/index_uk.htm)

#### 4. Impact of the FTA Ukraine – EU on the economic welfare and GDP

Scenarios	Equivalent variation (welfare) millions of USD		GDP, %	
	Ukraine	EU	Ukraine	EU
A (All commodities -50)	22	461	-0.40	0.01
B (IND -100, AGRI -50)	-86	803	-0.97	0.02
C (IND -100, AGRI -100, no export subs.)	195	675	-0.17	0.01
D (IND -100, AGRI -100, efficiency +10, no export subs.)	5716	873	7.82	0.002

Source: calculated according to data base of GTAP 7.0.

It should be noted that in all scenarios of the Ukraine - EU-25 relations under the FTA, welfare in the countries of the Customs Union (RBK) and elsewhere in the world worse - data modeling are in the range from -491,000,000 USD to -171,000,000 USD. First, the revival of trade in goods and services between members of an FTA reduces the supply to third countries. Second, due to increased competition in the market inefficient companies disappear over time leads to better quality of domestic products and thus reduce imports of similar foreign products. Other factors mediated effects on the economies of other countries are: harmonization of the laws of the Member States FTA, improving the investment climate, increasing migration, elimination of phytosanitary and technical barriers.

Usually, GDP per capita is associated with the index of welfare, so it is important to determine the changes in this indicator, depending on the degree of trade liberalization with the EU (Table 5). As a result modelling it was found that GDP, in contrast to the rate of economic prosperity, will grow only in Scenario D – 7.82%. In other embodiments, a decrease in GDP by 0.17-0.97% will be observed, which is a drawback for the national economy. The European Union's GDP will grow under any conditions. After opening of the customs border of Ukraine will trigger increased demand for European goods and high-tech products with high added value, as well as imports of commodities (grain, ore, etc.) in the EU will not be able to reverse this.

The results of the assess of impact of trade liberalization with the EU on change of the balance of trade by major groups of agro-food products is presented in Table. 3. Analysis of the data showed that the most vulnerable sectors are livestock and livestock products (a possible reduction in balance from \$80 million to \$346 million, depending on the format of FTA) , the market for alcoholic beverages and tobacco (the balance can be cut by \$19-107 million), oilseed market (-\$11-51 million). Other industries will also face significant pressure from European suppliers, with the scale of possible consequences defining the format of the FTA . For example, markets for milk and milk products, vegetable fats and oils under conditions of partial tariff reductions (-50 % for scenarios A and B) show a slight increase in balance (within \$1-5 million), and under conditions of full trade liberalization will experience a loss (about \$17-67 million). Scenarios of FTA can withstand higher competition and increasing exports and/or lower imports only producers of cereals (gain balance at \$203-811 million) and sugar (increase in balance \$38-1744). It

should be noted that a significant increase in sugar exports from Ukraine to the EU in terms of complete abolition of customs restrictions is explained with high import duties in the EU to third countries, which, as of September 2013 amounted to €419/mt .

It should be noted that a significant rate reduction for the largest trade surplus of the above scenarios, mainly due to an increase in Ukraine's productivity and efficiency of input use by 10%, is rather arbitrary. After the introduction of new energy-saving technologies and new personnel management system, large capital investments will be required in the early stages; consequently, import of technology (including the EU) will increase. In addition, under the following conditions a great number of domestic products that could be exported will be consumed domestically. At the same time, in the long-term Ukrainian goods would become more competitive both in price and in quality terms.

#### **5. Effect of import tariffs reduction under the FTA Ukraine - EU on the trade balance (by major groups of agro-food products, millions of USD)**

Commodity groups	A (All commodities - 50)		B (IND -100, AGRI -50)		C (IND -100, AGRI -100, no export subs.)		D (IND -100, AGRI -100, efficiency +10, no export subs.)	
	UA	EU	UA	EU	UA	EU	UA	EU
Cereals	204	-214	203	-216	667	-779	811	-871
Oilseeds	-11	6	-11	5	-51	31	-38	31
Milk and milk products	4	-15	4	-22	-67	12	-17	-13
Vegetable fats and oils	1	22	5	15	-50	91	-17	83
sugar	38	-16	39	-17	1687	-1388	1744	-1436
Meat and meat products	-83	157	-80	144	-322	455	-346	485
Low alcohol drinks and tobacco	-20	28	-19	23	-92	103	-107	112
Fruits and Vegetables	-6	8	-5	3	-86	48	-97	51
Other agri-food products	-32	73	-27	41	-248	300	-297	327
Other products	-273	-121	-484	-97	-1864	918	-3268	1336
Total	-177	-72	-375	-119	-425	-211	-1633	105

Source: calculated according to data base of GTAP 7.0.

An important indicator in determining the costs and benefits of the FTA between Ukraine and the EU is growth/decline in production. As seen from Table 4, the impact of trade liberalization on the production dynamics of European countries is much lower than for Ukraine. The main reason is economies of scale, –for example, GDP per capita in the EU27 is ten times higher than the figure in Ukraine. With high competition on the market, Ukrainian agricultural manufacturers and processing enterprises will be forced to reduce the amount of finished products: meat and meat products - by 6.55-17.3%, oilseeds – 3.01-12.6%, vegetables and fruit - by 0.69-0.78%. At the same time, production of the majority of other agro-food products will increase despite the decrease in exports. The main reason, in our opinion, is

higher income and well-being of the population which will result in food consumption growth.

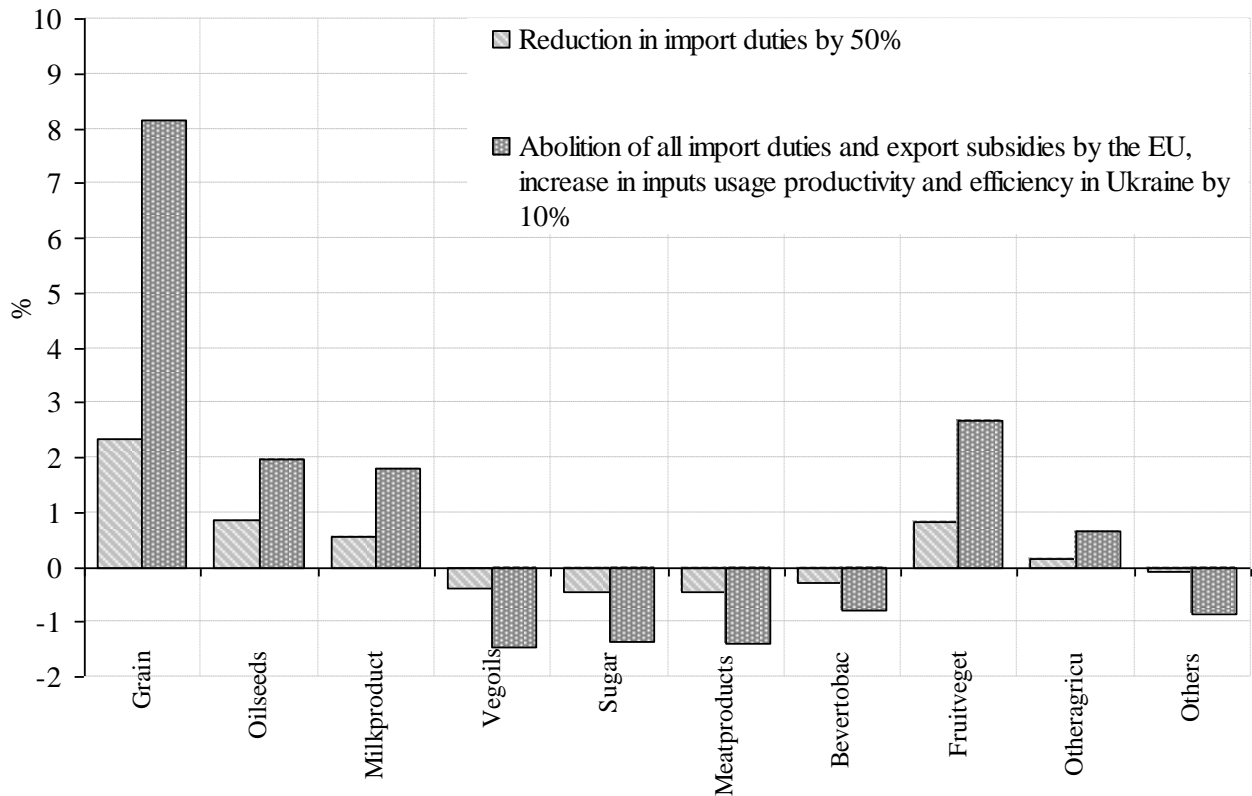
## 6. Influence of the trade tariff abolition within the FTA between Ukraine and the EU on production volumes of the main agri-food products, %

Commodity groups	A (All commodities - 50)		B (IND -100, AGRI -50)		C (IND -100, AGRI -100, no export subs.)		D (IND -100, AGRI -100, efficiency +10, no export subs.)	
	UA	EU	UA	EU	UA	EU	UA	EU
Cereals	7.7	-0.75	7.6	-0.76	25.5	-2.17	38.4	-2.46
Oilseeds	-3.0	0.09	-3.0	0.08	-12.6	0.36	-4.6	0.31
Milk and Milk Products	0.3	0.00	0.2	0.00	1.3	0.02	10.6	0.01
Vegetable Fats and Oils	0.4	0.07	0.8	0.05	0.2	0.25	8.5	0.22
Sugar	11.0	-0.20	11.1	-0.21	482.2	-5.93	512.5	-6.16
Meat and Meat Products	-6.8	0.13	-6.6	0.12	-17.3	0.36	-9.0	0.39
Low-Alcohol Drinks and Tobacco	-1.0	0.02	-1.0	0.02	2.9	0.07	10.3	0.08
Fruit and Vegetables	-0.8	0.01	-0.8	0.01	-0.7	0.07	6.5	0.07
Other Commodities	-0.8	0.02	-0.7	0.02	6.3	0.04	14.9	0.05
Other Goods	-0.2	0.00	-0.2	0.00	-1.2	0.00	8.8	0.00
Total	1.5	0.00	3.3	0.01	3.7	0.01	16.4	0.00

Source: calculated on the basis of GTAP 7.0.

An important indicator of welfare in the agro-food sector is the domestic price of goods and services, because at relatively stable wages the reduction in market prices for goods and services leads to improved socio-economic status of the consumer. However, note that rural residents are one of the poorest, which is why in the world, the state is trying to prevent a significant decrease in the prices of agricultural products to ensure high profitability of the industry.

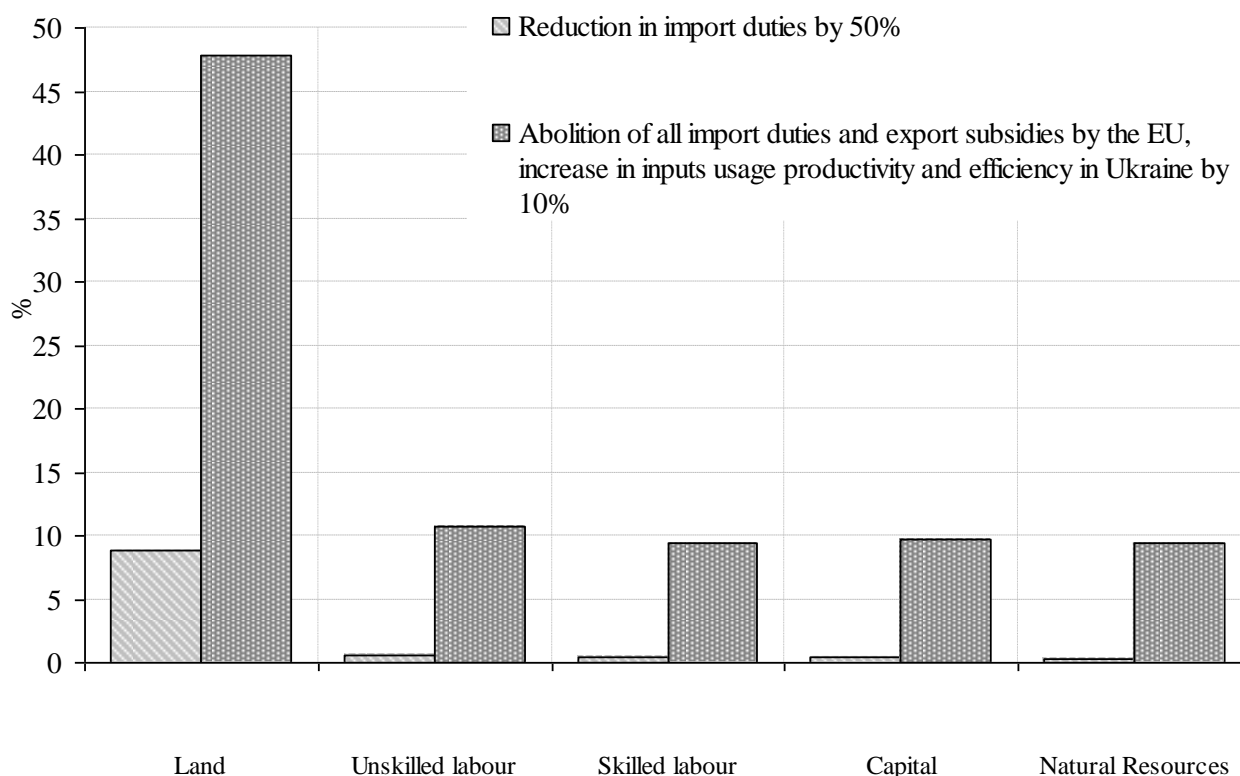
According to the results of modeling (Fig. 2), the market price will change little with limited FTA in Ukraine, whereas under the extended FTA prices of cereals (8.2%), fruits and vegetables (2.7%), oilseeds (2.0%), milk and dairy products (1.8%) will increase significantly, while such goods as sugar (1.4%), meat and meat products (1.4%) will be cheaper.



**Рис.2. Influence of the trade tariff abolition within the FTA between Ukraine and the EU on prices of the main agri-food products, %**

Source: calculated on the basis of GTAP 7.0.

Under full liberalization of trade, factors of production will also rise (Fig. 3). Wages of skilled and unskilled labor, cost of capital and natural resources will increase approximately 10%. Land prices will see a rise of 48%, due to the extremely large difference in prices in the EU and other countries. For example, even after a significant increase in the normative value of arable land in Ukraine to around \$2,500 /ha (UAH20,635/ha as of 01.01.2012 compared to \$11,751/ha as of 01.01.2011), its value is much lower than land prices in European countries. For example, in neighboring Poland, the value of agricultural land is one of the lowest in Europe, but is estimated to be \$7,000-8,000/ha.



**Рис.3. The influence of the trade tariff abolition within the FTA between Ukraine and the EU on production factor prices in Ukraine, %**

Source: calculated on the basis of GTAP 7.0.

### **Conclusions and research prospects.**

Summarising all the above mentioned information, we can conclude with follows:

1) the analysis of different scenarios of trade liberalization between Ukraine and the EU shows that the maximum positive effect (an increase in welfare of the Ukrainian population, improved trade balance, output growth ) is achieved if tariff reductions for agri-food products are 50 % and all other goods –100 %;

2 ) according to calculations done based on a database GTAP 7.0, a rise the surplus for Ukraine in different variants of the situation can be achieved only in two sectors: crop production and the textile industry, while all other sectors of the economy will experience a significant increase in competition from European suppliers, leading to a decrease in production and trade surplus ;

3) as revealed by the simulation results, Ukraine is currently not ready for full liberalization of the market for its agricultural products from the EU. Some sectors (livestock, vegetables, etc.) are uncompetitive compared with European ones, which may bring about the decrease in production and export of domestic products, the disappearance of companies and job losses, particularly in the long run.

Given the backwardness in the development of agriculture, the FTA between Ukraine and the EU could have a negative impact on the national, regional and sectoral level. That is why the introduction of simulation can significantly improve the quality of decision -making in fiscal, trade, the agricultural policy

The results of this study can be used to develop alternative scenarios for the agricultural sector in the FTA based on a selected agricultural policy. The use of such scenarios allows us to analyze the possible effects of various tools and trends of the agricultural policy in the short to medium term (5-10 years) and to determine relative costs and benefits of alternatives as well as to assess the financial capacity of their implementation, and choose the most effective option. It is also advisable to update these models using data for the years 2007-2012 and to take into account the existing tariff after Ukraine's accession to the WTO.

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## **СЦЕНАРИИ РАЗВИТИЯ АГРОПРОДОВОЛЬСТВЕННОГО РЫНКА В УСЛОВИЯХ ФОРМИРОВАНИЯ ЗОНЫ СВОБОДНОЙ ТОРГОВЛИ МЕЖДУ УКРАИНОЙ И ЕВРОПЕЙСКИМ СОЮЗОМ**

**Аннотация.** В работе рассмотрены и проанализированы возможные сценарии развития агропродовольственного рынка в условиях создания зоны свободной торговли (ЗСТ) между Украиной и Европейским союзом (ЕС), используя модель общего равновесия. Определено вероятное влияние либерализации торговли в рамках ЗСТ Украина - ЕС на основные отрасли экономики. Выявлены основные тенденции развития основных отраслей сельского хозяйства и пищевой промышленности в Украине и ЕС в условиях разных форматов соглашения о ЗСТ. Оценено возможные изменения показателей производства, торгового сальдо, благосостояния, стоимости факторов производства и т.д. по ключевым товарным позициям. Обоснованы предложения по выбору оптимального формата соглашения о ЗСТ между Украиной и ЕС с целью минимизации негативных последствий для агропродовольственного сектора в Украине и повышения его экспортного потенциала.

**Ключевые слова:** зона свободной торговли, агропродовольственная продукция, благосостояние, торговое сальдо, производство, стоимость факторов производства.

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**SOME APPROACHES TO REDUCE THE RISK OF AGRARIAN ENTERPRISE**

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*Розглянуті підходи до зменшення ризику аграрних підприємств шляхом диверсифікації.*

***Ключові слова:** диверсифікація, ризик, модель Марковиця, аграрне підприємство.*

The agricultural sector of any country in the world has a degree of risk higher than in other economic sectors. Main cause of it is weather and climate risks presence that significantly affect the profitability indicators of agrarian enterprises [7,8].

As to agrarian sector of Ukrainian economy, the situation is deteriorating due to incompleteness of institutional changes both in economy as a whole and directly in agrarian sector [1,4,5].

So macroeconomic instability (significant inflation) affect the growth of lending rates, a significant budget deficit affects the instability of the funds allocated to support the agricultural sector.

Incomplete institutional reforms in the countryside (no land market, large enterprises monopolization of foreign economic activities) increase the risk of small and medium-sized agricultural enterprises. Consequently, except inherent agrarian production of natural risks, institutional risk and little effective state regulation worsening situation in Ukraine. [3,4].

That's why agrarian enterprises should use approaches which could reduce the risks that are able to be controlled by employer in a measure. One of the reducing risk level methods is well-known in financial mathematics - the method of Markowitz. The main idea of this method is the approach to the calculation of the diversified portfolio income of fixed (expected) risk degree [2,6,8,9].

**Analysis of main research and publications.** A.Peresada, O.Shevchenko, Yu.Kovalenko, T.Ostashko, N.Mashyna and others devoted their research to the problem of enterprises risk reducing. Among foreign scientists: Watssem T. J., Parramow K.K.

The problem of climate change impact on the agrarian sector development is extremely current question in additional to traditional questions. These aspects are highlighted in the research of Adams R.M., Fleming R.A., Chang C. D., Dudek, B J., Glycer J.D. and others.

**Purpose of research** – justification of the effectiveness of economic-mathematical methods using, including using of Markowitz model to reduce the risk of functioning of agrarian enterprises.

**The main material.** . Diversification of crops production of farm "Filchenkov" (region Cherkasy) based on the Markowitz portfolio model (in order to achieve the required level of income with limited degrees of risk) has made it possible to compare the structure of production which is traditional for given farm with calculated on modal basis. The structure of cereal crops production on this model should correspond to specialization of agriculture and evidence-based rotation.

Analysis of profitability of the farm "Filchenkov" during 2006-2011 showed sell trends for growing such crops as peas and soybeans. At the same time oats and buckwheat from 2008 to 2011 have unreasonably high profit margins, caused by minor acreage of crops in the structure of sown areas, and also by the ability of the farm to keep the harvest, until the selling price on the market would be maximized.

Therefore, the task of profitability maximizing with limitation permitting to the risk is extremely important and can be resolved by Markowitz model. Markowitz portfolio with maximum efficiency:

$$R_p \rightarrow \max$$

$$\sigma_p \leq \text{const};$$

$$\sum_{i=1}^n x_i = 1;$$

$$x_i \geq 0.$$

Where  $x_i$  is the share of expenses for cultivation  $i$ -type of crop, UAH;

$\sigma_p$  – crop risk (standard deviation), %;

$R_p$  – expected crop yield, %;

In such notation target function will appear as:

$$R_p = \sum_{i=1}^n x_i m_i ,$$

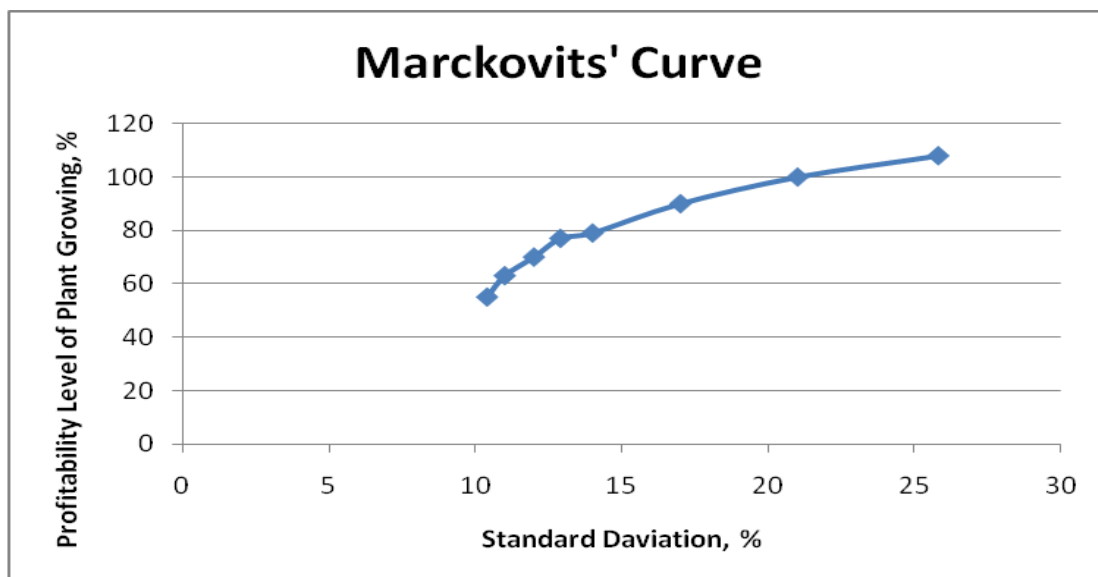
Where  $m_i$  is profitability of individual crops, %.

Maximum of profitability of the plant growing field on the farm in the certain permitting degree according to the objective function and task limitations for 9 versions of finding the optimal plan for permitting degree are presented in Table 1.

### 1. Distribution of profitability and standard deviation for field of plant growing of farm "Filchenkov", %

№ п/п	Profitability	Risk
1	55,61	10,68
2	62,35	11,00
<b>3</b>	<b>69,70</b>	<b>12,00</b>
4	74,81	13,00
5	79,15	14,00
6	82,92	15,00
7	86,27	16,00
8	99,23	21,00
9	107,14	25,00

Basing on the data in Table 1 build Markowitz curve, which set of points is the set of plans for the structure of farm production at different permitting degrees and profitability (Fig. 1).



**Fig. 1. Markowitz curve for the farm «Filchenkov»**

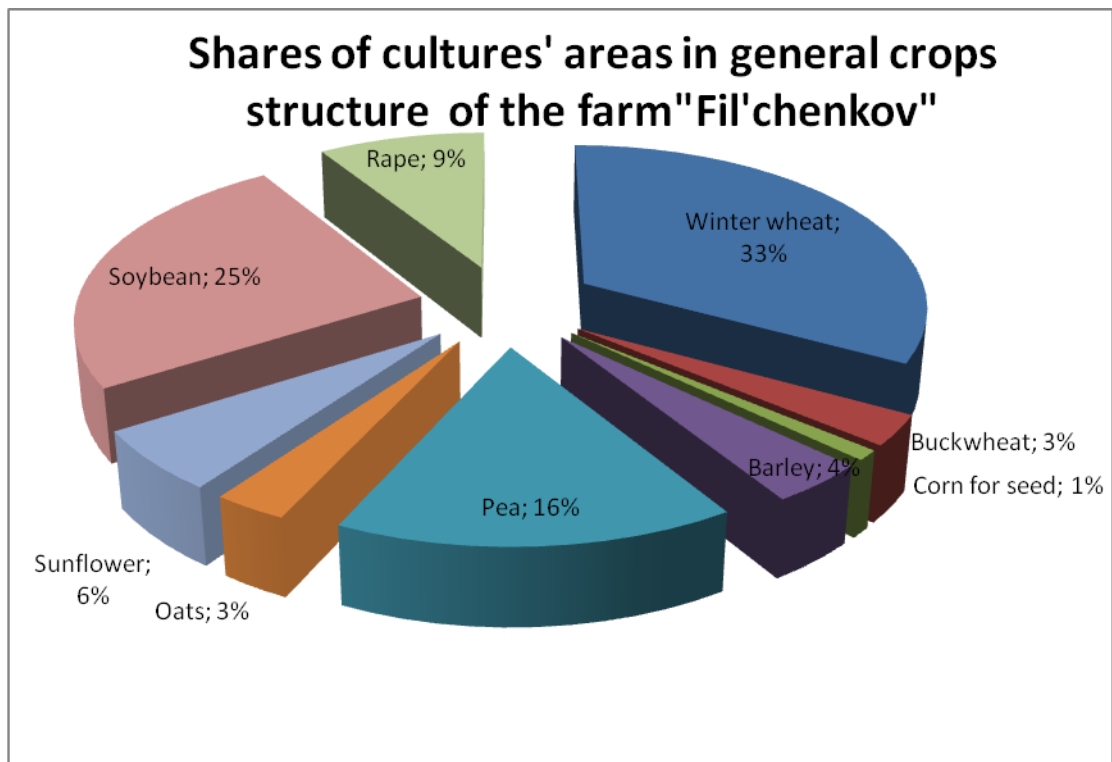
When you select any point on the line with a certain degree of profitability and permitting, particle distribution of expenses for cultivation, corresponding to these data, would be defined. Selection of the optimal value is based on the experience of the manager, domestic and international economic conditions and others.

Diversification of cultivation of grain crops risks involves the calculation of the distribution of areas for crops on the basis of the allocation of shares of expenses for cultivation.

Provided that the enterprise has chosen portfolio №3 with the profitability 69.7% and 12% permission, the distribution of areas under crops would be as Fig.2.

The conducted further calculations made it possible to compare the actual structure of areas for crops on the farm with an estimated (Table 2).

The level of profitability of actual structure is higher (80.1%) than in the model variant more than 10%. However, there is a significantly higher permitting – 32 percent.



**Fig. 2. Distribution of area for crops at a given degree of profitability 69.7%, 12% permitting.**

**2. The structure of the model and the actual distribution of acreage for farm "Filchenkov", %**

Cultures	In fact	According to the model
Winter wheat	34	33,2
Buckwheat	2,8	2,8
Corn for seed	10,5	0,8
Barley	22,2	3,7
Pea	10	16,2
Oats	1,2	2,8
Sunflower	15	6,1
Soybean	4,1	25,1
Rape	0,2	9,3

In addition, the level of crops specialization crops in optimized model is 40%, which is the optimum level for the given farm, and for the actual data the figure is 70%, which is not acceptable, because it does not meet the standards of crop rotation and increases the vulnerability of farm to agricultural risks.

**Conclusion.** Diversification strategy based on the Markowitz model, is an offensive, long-term nature strategy, while respecting economy of this model can increase the effectiveness of economic performance and competitiveness indicators.

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*Рассмотрены подходы к уменьшению риска аграрных предприятий путем диверсификации.*

**Ключевые слова:** *диверсификация, риск, модель Марковица, аграрное предприятие.*

*The article reviews approaches to reduce risk through diversification in farm enterprises.*

**Keywords:** *diversification, risk, Markowitz model, an agricultural enterprise*

ADVANCED INFORMATIONAL TECHNOLOGIES OF MONITORING AND ANALYSIS OF THE AGRARIAN MARKET INFRASTRUCTURE OF UKRAINE

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*Abstract.* The urgency of the advanced information technologies application for the analysis of condition and prospects of agrarian market infrastructure development are shown. A conceptual approach to the creation of a national information-analytical system of agricultural market infrastructure is proposed. The possibilities created by the computer model of information-analytical system of the agrarian market infrastructure and its use for improving management decision-making are considered.

**Keywords:** Information technology, agricultural market, infrastructure, monitoring.

**Problem statement.** Storage providing and sales of agricultural products have the same importance as its production. Therefore, the development of agricultural market infrastructure is always in the focus of government agriculture. However, the infrastructure of the Ukrainian agricultural market consists mainly of privately owned entities. Its development is based on market research and logistics in the best case, but more often it is arbitrary with mainly historical placement of infrastructure objects. Another problem is the effective combination of transportation infrastructure, modern energy-efficient warehouse and processing facilities and commercial areas with sanitary standards compliance and overall security control of production, storage and processing of agricultural products.

An effective solution would be to create a national information-analytical system for monitoring agricultural market infrastructure that develops within the overall strategy for state reforms and information support of management decisions and the general public.

**Analysis of recent research and publications.** The application of information technology in the management of agro-industrial complex at different levels and improving information provision to support management decisions are highlighted in the works of many domestic scientists, including M.F.Kropyvko, S.M.Kvasha, O.M.Borodina, I.M.Kryvoruchko, O.M.Shpychak and others. However, the development of information technologies requires permanent attention to the effective management of their application process.

**The purpose of the study.** During the research the task to develop a conceptual framework for creating a national information-analytical system of agricultural market infrastructure and to build an operating computer model of monitoring system of agricultural market infrastructure based on the use of advanced information technologies was stated.

**Literature review.** Formation of a national information-analytical system of agricultural market infrastructure is able to have a positive impact on the problem of information support of executive bodies, producers and processors of agricultural products, population, to facilitate the product manufacturers and processors in making decisions on the development of its infrastructure, enhancing healthy competition in the consumer market and reduction the cost of food products to the final consumer.

Implementation of the system will make it possible to solve the following tasks:

- Introduction of new technologies for collecting, organizing, processing and dissemination of information to ensure its efficiency, quality, reliability;
- Creating opportunities for collective use of computer software to enhance the efficiency of the information proceedings;
- The effective direction of information flow to service managers and professionals at various levels of the agricultural sector;
- Establishment of centralized structured information resources with mapping interpretation to support decision-making;

- The collection and preparation of economic and statistical data on infrastructure in the time retrospect to analyze the balance and dynamics of production, storage and processing.

Automated monitoring system is created using the latest information technology and it should provide access to consumer services of all categories due to the system rights and regulations for introducing, reviewing and analyzing data. Taking into consideration the objective limitations or technical platforms of system clients and its regulations on the quality of mapping services, the one of the options to access the system focuses on medium speed access to the Internet through any device (computer, tablet, etc.).

Development of a mechanism of information accumulation is built based on the principles of system teamwork. Thus, an administrative content management subsystem was developed, which provides:

- user identification through activation his profile and granted rights;
- opportunity to sample data before inputting and to review it in the context of the administrative-territorial structure of Ukraine and graduation accepted infrastructure groupings;
- entering data on infrastructure and preparing a list of characteristics.

Development of information-analytical model of agricultural market infrastructure is implemented as a Web-based system that integrates database of economic and statistical data with mapping environment for advanced geographic data presentation.

Baselines of geographic data presentation include national, regional and district levels. However, the possibility exists to change the map fragments zooming arbitrary, to display the structure and the real image area using satellite photos.

Presenting of certain objects on the map is made with the graphic identity according to their groupings by activating the appropriate menu items. When selecting an individual object, the user is given the possibility to view its' detailed data.

Due to the proposed conceptual approaches, the development of the system computer model is implemented as software and analytical complex of monitoring objects of the agricultural market, based on the web technologies that allow to conduct the structural analysis of the composition, location of objects and their indicators list. Results are presented to the user using in the most informative way using map service.

Implemented structure of the system database takes into account the whole range of attributes that fully describe individual objects and their general structure. The structure of the system database is generated considering development perspectives of both the number of entities and their attributes with the possibility of integration with other information systems on the databases' level. Mandatory geographic and time identification of all relevant data is implemented. In general, the database provides information about 26 regions and cities of special status, 678 districts and cities with internal administrative division. Infrastructure of the agricultural market is represented in the database as a description of the objects characteristics classified in terms of three groups. 1 ) Processing : sugar factories, milk processing companies, meat processing plants, bakeries factories, canning companies, fish processing companies, distilleries, beer and soft drinks production enterprises, oil companies, confectionery enterprises, 2) Storage: warehouses of fruits and vegetables, grain warehouses, vegetable warehouses, potato warehouses, fruit warehouses, storage facilities; 3) Trade: wholesale markets of agricultural products, farm markets. In total the database contains information about more than 5 thousands of agricultural market infrastructure objects, inputted for model operation.

For the physical placement of the system database a subdomain (<http://monitoring.agroua.net/>) at information-consulting portal "The agricultural sector of Ukraine" was created, using facilities of shared hosting provider and relevant system settings were conducted.

Systematic approach to creating a database implies the use of basic code of regions, districts and municipalities according to the system adopted by the State Statistics of Ukraine, which in turn allows using of statistical data about population

size and composition, the development of infrastructure. This approach will allow conducting quality selection of locations for wholesale markets of agricultural products and servicing infrastructure.

As the mapping environment at this stage of the system realization the service "Yandex. Maps" is used, because it provides the largest list of quality tools for developers and relevant programming interface (in studies (Application Programming Interface) Yandex.Maps V2 was directly applied). With this interface user can program presentation of maps and various labels of geographic coordinates - latitude and longitude. Yandex.Maps is a search-and-information service that provides users with maps of Russia, Ukraine, Belarus, Kazakhstan and other CIS countries with the possibilities of visualization of geographic objects. Users can place Yandex.Maps on their web pages. Yandex.Maps API allows user to manipulate any map, namely the image of area or any objects, with each point corresponded by a particular two-dimensional coordinates.

Interactivity of digital maps implies their reaction to the actions carried out by users, for example, pressing the zoom. When a user performs any action in the active map area, events are generated. Yandex.Maps API allows to track these events and to program responses to their occurrence. Events occur not only in response to user actions, but also when the software addresses to the electronic maps via API, for example, when placing or deleting objects on it. The mechanism of events processing implemented in Yandex.Maps API is a good base for creating interactive web mapping applications.

Thus, current model gets all mapping information from the public service of Yandex. On the obtained maps the objects whose coordinates and additional information are taken from the project database are placed by using the provided API. In the monitoring system operations an accurate pointing of coordinates and the geocoding technology are used to locate tags due to the address in the database.

Several geographic levels of information processing are considered in the system: the national, regional, district and directly with infrastructure objects. The user at each level sees the total capacity for each group of objects that are

automatically generated based on the basic characteristics of objects. Most items can be seen on the maps of different scale or on satellite images, which are available in the system using service Yandex.Maps.

The system offers the following basic services:

- Searching of the agricultural market infrastructure objects at different levels (state, region, district);
- Cartographic identification of the object / objects;
- Viewing detailed information about the infrastructure facility;
- Changing of scale and display mode of the area;
- Content management system with user rights regulations;
- Structural analysis and the balance of production and processing of agricultural products.

**Conclusions and recommendations for further research.** Implementation of the software-analytical complex of agricultural market objects monitoring, based on web technologies, allows to conduct structural analysis of the composition and arrangement of objects and the list of relevant indicators in the most informative way using the map service.

A computer model of the national information-analytical system of agricultural market infrastructure is provided online at [monitoring.agroua.net](http://monitoring.agroua.net).

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## FEATURES AND MECHANISM FOR IMPLEMENTING INTERNET MARKETING ON FARMS

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*Abstract. The advantages of using online marketing for farmers are defined and analyzed. Basic elements of eCommerce are revealed and investigated in details. An algorithm of establishing Internet Marketing on farms is determined, the features of this process are identified. Ukrainian online-resources are offered to agricultural entrepreneurs for creating Internet Marketing system in their business.*

**Keywords:** *Internet Marketing, eCommerce, product promotion, agricultural Internet platform.*

**Problem statement.** Internet becomes a powerful alternative marketing tool for many companies. It helps to use information for promotion and selling products quickly and effectively, it allows to reach customers directly in the supply chain and for much lower costs. Penetration of Internet technologies in agriculture leads to modern services appearing, development of e-business and the emergence of new opportunities, education and training improvements, etc. Internet technology should help the agricultural sector to achieve compliance with the requirements of quality, regulation and efficiency. This can improve agricultural markets and the relationship between the individual elements of the supply chain and market infrastructure, and lead to higher levels of market saturation. Internet provides instant access to markets, expanding rights and opportunities for farmers to negotiate more favorable prices and to establish relations in the value chain. In addition, Internet allows businesses to spend less time on marketing and products promotion, and makes expanding and retaining of customer base much easier.

However, there are potential risks for online marketing development in the

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agricultural sector, mainly because of the low level of informational infrastructure available in rural areas, as well as poor computer literacy and Internet awareness among farmers, etc. So-called market of "electronic commerce" has already got a huge impact among the urban population and businesses. That's why the research on Internet penetration in the agricultural markets is quite important [1].

**Analysis of recent research and publications.** Lately, the world scientists are constantly raising the question of Internet Marketing in agriculture. Emke, Duval [2], Klotz, Orvig, Ralph, Tilman, Freyn and other researchers emphasize in their studies that the promotion of agricultural companies in the Internet contributes to its recognition, products turnover and profitability. In addition, presence of the company in the Internet makes it closer to the progressive clients and opens unlimited opportunities for self-promotion. In Ukraine these scientific research trends are less popular yet, but specialists begin to express their positive views on the agricultural eCommerce more often at professional conferences, in journals and collections of articles.

**Purpose statement.** This study aims to synthesize international experience and benefits, which the use of online marketing gives to agricultural entrepreneur, to justify and to develop recommendations for implementing mechanism of Internet Marketing on farms.

#### **Literature review.**

Overseas business experience shows that agriculture is susceptible to electronic commerce because the market is large and segmented. Farmers receive information about product characteristics, allowing them to compare products in many ways, including price comparison. The use of eCommerce in agriculture increases the possibility of farmers' penetration to new markets both within the country and abroad, as well as improves efficiency of servicing existing markets [1]. Those farmers, who do not take advantage of eCommerce, considering it being too complicated and an unnecessary innovation, actually risk to lose tremendous business opportunities that can dramatically improve the success rates of entrepreneurial activity [3].

Thus, the Internet offers the following benefits to the farmer:

1. Opportunity to use it in marketing research;

An effective marketing plan starts with reliable market research. Internet is the cost-effective and versatile way to get any information for product development, competitive analysis conduction, pricing, and new ideas creation.

2. Effective product promotion;

Internet search engines generate an amazing number of links and information resources. Farmer can increase his chances of getting noticed by the consumer, who is looking for relevant products, improve reputation and raise awareness of his farm by registering name of his company and submitting its detailed description in the maximum number of farmer directories. In addition, Internet Marketing allows you to find the customers that it would be impossible to achieve in other circumstances, for example due to the large difference in geographical location, and maintain relationships with existing customers [3,4].

3. Reducing of operating costs;

4. Significant benefits for small businesses: Internet provides opportunities for various types of individual entrepreneurs to start a business, offers a convenient way of dealing without any time limits, provides higher income [6].

More benefits for entrepreneurs, who use Internet Marketing, are presented in Table. 1 [1]:

**Table 1.** Opportunities of Internet Marketing for entrepreneurs

Activity	Opportunities		Benefits
	Not using Internet	Using Internet	
Searching and finding technical and other information, new customers, suppliers, products and services	Using business directories, library resources and print media	Using specialized search engines in the web space; studying sites with relevant textual content; the ability to participate in and sustain the livelihoods of forum groups (virtual communities) in a specific area of expertise	Several times faster finding of accurate and updated information
Competition research	Visiting fairs, tracking specialized publications	Ability to view the online presentation of competitors, to use online resources that	Expanding the vision globally, getting acquainted with industrial trends

		they offer to potential customers	becomes much easier
Informing existing and potential customers	Narrow circle of information recipients and limited access (due to physical limitations) for those, who want to get it	Sharing large amounts of information at minimal cost, simplified communication with clients (via email)	The immediate response to inquiries and comments, achieving huge number of leads, the real opportunity to enter foreign markets.
Getting feedback from customers and distributors	Usually on paper, with time lag	Electronically, without delay in time and in any format	Ability to maintain a database, which greatly facilitates the preparation of reports, analytical reviews and trends identification
Increasing the "working hours" for leads	Limited possibility of contacting clients and making transactions	Ability to communicate at any time, at the lowest price and 24-hours per day	Almost constant communication with customers

The Internet helps to create online markets where farmers can easily gather information about products, seeds, fertilizers and machinery [2]. The main elements of virtual agricultural markets are: customers; providers; marketing, informational, financial experts and members of traditional markets - producers, sellers, wholesalers, buyers, consumers and logistics professionals. The main types of online markets in agriculture are the following; resource market, market of online services, market of information and facilities management, market of coordination with regulating bodies, and market of production results (output) [1].

The tools of eCommerce include four main elements: email, website, software, Internet, and any combination of them [3]. For effective use of the Internet farmer has to choose a search engine that best suits his needs, saves time and provides truly relevant information. In addition, it is necessary to register inbox and to create a website and/or sign up for electronic catalogues of agricultural producers.

Sites are created for a special purpose, so farmer should start with defining a clear purpose statement of his online activities, such as saving time for receiving orders, training, product promotion, entertainment or all the above. There are various types of websites: a) for sales promotion, b) for providing information about the owner/businessman, c) combined websites to promote sales and to

provide information about the owner [5]. Computer specialists or consultants can help to organize presence in the web space.

Proper site may be used for the following purposes:

- Promotion of products

Most agricultural companies create a website as a part of their marketing and advertising plan. For farmers with a limited marketing budget or lack of time to manage a full website, it is enough to have just a simple one-page site. It's much better than not to have a website at all. In addition, prices for creating web pages are reducing with the development of competition in the sector.

- Providing information

Most customers who purchase products directly from the farm, are no longer satisfied with products from shops and supermarkets. By informing consumers about the realities of industrial traditionally grown and distributed food, farmers give their reasons and motivations for changing consumer habits. Some farmers provide clients with information as an additional service, encouraging consumers to visit their farm and giving tours, also known as green tourism. Education and information become a special bonus to the basic products that farmer sells, and it makes his farm more attractive to customers.

- Sales

Some companies develop online sales through credit card payment programs, such as PayPal, and standard mail delivery services. Others provide sales through a combination of site and email communication, and then personally deliver the goods. The success of online selling depends on the product and naughtiness of the client. Product that is perishable and has no added value, such as tomatoes, is much more difficult to sell via the Internet than, for example, canned tomatoes. It is necessary to adapt products to the needs of Internet users and the ability to deliver orders on time and without damage [3].

After determining the purpose of the site creation method should be chosen. Many organizations offer assistance to farmers in getting acquainted with online marketing and webmarketing plan development. The price of this service can range

from minimal (almost free) to thousands of dollars. Web designer, IT specialist or a friend, well versed in computers, can assist in creating a mailing list and a website, or to do the whole job by himself. Some farmers exchange their agricultural products to the web design services of their technically savvy customers. The disadvantage of hiring specialist and outsourced work is a possibility to become dependent on that person in the performance of any small changes to the site, such as updating the list of products or uploading new photos of products. Therefore it is necessary to weigh the pros and cons of outsourcing and to compare with the amount of time needed for self-education [3].

It is necessary to find out what kind of information should be placed on the site in the context of an overall marketing plan and sales goals. A website must have an attractive and easy to understand design, as well as constant updates, making people come again to look at new and interesting posts. In addition, it must be functional and easy to use. It might be useful to visit many similar sites, identify their strengths and weaknesses and to edit your own website in accordance with the results of the study [7].

Website should stimulate an increase in users attendance (traffic). To ensure this, farmer can use the following web elements: a detailed description of the product, preferably with pictures; contests and competitions; cartoons, jokes, games; consulting column, tips; "What's New?" page; ability to add a page in "Favorites"; calendar of events; blog; coupons, discounts, prizes, special offers and promotions [5]. The site should have viral marketing elements that encourage visitors to recommend specific products or services to others ("Word of mouth" - the ability to tell/send information to a friend, "Pass next" - the ability to forward the email to a friend), and participate in partnerships or associated programs to increase sales. The elements allowing consumers to receive newsletters from the site, notifications of new events, etc. must be included. In addition, the site should encourage the activities of clients by creating a virtual club of permanent members with special offers, discounts, discussion forums [5].

The proper domain name of the site is equally important. Website address must contain company's name to enhance its' reputation [4]. This, again, will facilitate the process of site searching for the user. Website also should be registered in search engines and lists of new sites, otherwise consumers will not be able to find it among the thousands of similar web pages [7].

Website promotion can be implemented by presenting it repeatedly in a few search engines and through linkages with other highly-visited websites, although farmer should not forget about the traditional promotion [6]. Agricultural enterprise should be active in online and offline: to distribute newsletters, press releases, etc.; to encourage Internet users to visit the site, telling about its' activities to the large number of people; to distribute printed leaflets with information about the site; to include web address in all company documents and other materials; to share links with similar online resources. In addition to direct sales promotion, farmer can earn by placing a prepaid online advertising on his site. The more people are visiting the site, the more potential advertisers are attracted and the higher the profit is guaranteed.

For farmers who can't afford or don't want to create their own website, there is always an alternative to post information about their farm in numerous online catalogues of manufacturers [5]. Participation may be free of charge or require a small fee. The main thing is to choose the appropriate directory or several on a number of parameters and provide information about farmer's location, products and contact information.

Email is needed to receive and send newsletters, taking orders and servicing customers. Having email the farmer can carry out the following steps:

- Use customers lists

It is necessary to collect email addresses wherever possible: on agricultural exhibitions, while participating in special events, through the website or in any other place, and obviously to ask potential recipients of their consent to receive the newsletter by email. A letter sent by a familiar person will always have a greater chance of being read than spam, which often causes only an annoyance. Creating a

book of email addresses and using it to organize lists will allow to send large number of emails with a single click. In the future, farmer can use the additional features of lists, such as lists of server software, mail groups or software for Customer Relationship Management strategy (CRM).

- Buy and sell

Consumers may prefer to order goods by email, especially if their schedule differs from the farmer's. By giving customers the ability to place orders by email, the farmer can save time compared with receiving orders by phone (the products can be delivered by mail or personally/by courier). Creating a standard order form will help to streamline the electronic orders and simplify their completion and processing and will store them as sales records to manage future business planning. Email orders are useful for farmers who do not have their own website, but want to serve customers that prefer emails and Internet to make purchases.

- Serve customers

Email provides consumers with an opportunity to send comments, questions, suggestions, thanks, etc. to the farmer 24 hours per day. Farmer should response client's email asap. It is recommended to use electronic answerphone to thank customers for their letter and to indicate the time period eligible for a personal response. Autoresponder is quick and easy device that can actually improve the image of the company. But it is important to perform things promised and to fit within a period specified in the letter, thus gaining a reputation as a fast-reacting, reliable professional [3].

For conducting online agribusiness the basic rules should be remembered:

- Know who your customers are (the traditional rule of marketing is still relevant today);
- Have a clear target of market online presence (attracting new customers, reduce operating costs, providing value-added products, etc.);
- Check the efficiency and accessibility of the site for perception, update information on the site and control the upgrading of the process [4];
- Ensure website security;

- Monitor the expenditures required to maintain the site.

It is also important to remember the following:

- Companies, which are successful on the Internet, often offer unique products or services, they are available to the public and have the image of being important and essential;
- Selling livestock or crop, farmer should remember that products must be certified, licensed and inspected by special bodies, also relevant documents should be submitted on company's website;
- Unique business can succeed online only if customers can easily find it.

Despite the rapid development and application of Internet technologies in Ukraine formation of online marketing on farms is still in its initial stage. Due to the traditional lack of funds, it can be recommended to start implementing Internet Marketing with the use of free services of online platforms, that form virtual agricultural markets in Ukraine. Every day they allow thousands of manufacturers, suppliers and buyers to sign profitable trade deals for agricultural products and production resources. The most developed online platforms are given in Table 2.

**Table 2.** Major agricultural Internet platforms in Ukraine

Resource name	Web address	Type	Number of visits / browsing *
Public bulletin board «AGRO Ukraine»	agro-ukraine.com/	Public bulletin board	307200/1232100
Trade portal Agrotorg	agrotorg.net/	catalogue + Public bulletin board	72700/171900
Web portal «AiC of Ukraine»	ukrapk.com/	catalogue + Public bulletin board	58600/188700
Agricultural web portal «Agrobusiness»	agrobiznes.com.ua/	catalogue + Public bulletin board	38400/140900
Information-analytical web portal "Agricultural market of Khersonshchyna" «APKUA»	agrorynok.com.ua/	Public bulletin board	35400/100800
«APKUA»	apkua.com/	Public bulletin board	25400/55900
Agricultural Ukrainian Internet Exchange	agub.com.ua/	catalogue + Public bulletin board	14700/63100

\* Statistics is taken from Bigmir.net for 07.09.2013

These online platforms do not require mandatory registration of the company and enable advertisement posts in a few clicks. Using software for

automated ad distribution and registration at free message boards (e.g. GrandMan for Russian language boards) will greatly facilitate the process of the simultaneous placement of identical ads on multiple platforms.

If a farmer wants to create a newsletter and spread it automatically within one or multiple customer bases, he can use special Ukrainian sites requiring payment (e.g., Lystonosha.com and Livemail.com.ua), which perform all the work for the client, as well as free software (e.g., Email Spider, Bulk Email mailer, etc.) that he can easily learn how to use by himself. If the number of customers' addresses is still small, he can get regular postal agents (Ukr.net, Meta.ua, Google.com.ua etc.).

When creating a site, free website constructing software that doesn't require special knowledge and helps to develop a web resource of low complexity, but enough for implementing business activities, can be useful (e.g., Nethouse.ua, Ucoz.ua, Webnode.com.ua and many others). Also it is very easy and free of charge to create a website using services of web portal Agrotorg (agrotorg.net).

In general, the stage for the introduction of online marketing at agricultural enterprises in the Ukrainian segment of the World Wide Web has been already set.

**Conclusions and recommendations for further research.** The main advantages of Internet penetration in agricultural markets are: improving of market coverage, convenience, reduction of business transaction costs, market conditions transparency, increasing of productivity, efficiency and supply chain coordination. Foreign business experience shows the need for using Internet Marketing by farms, and that should lead to increased efficiency of domestic agriculture in the case of appropriate technological solutions application. Due to insufficient penetration of Internet technologies in Ukrainian agriculture further research in this area remains highly relevant.

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# LEGISLATIVE IMPROVEMENT OF PRICING IN UKRAINE IN THE PRESENT STAGE

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*We consider the relevance and feasibility of improving the Law of Ukraine "About the price and pricing", presents the results of a new his edition, classification of methods of state pricing regulation, examples of legislative support pricing in the agricultural market.*

*Legislation, price, pricing, government regulation, market.*

**Statement of the problem** . Regulating the economy as a function of the state exists since the beginning of the state.

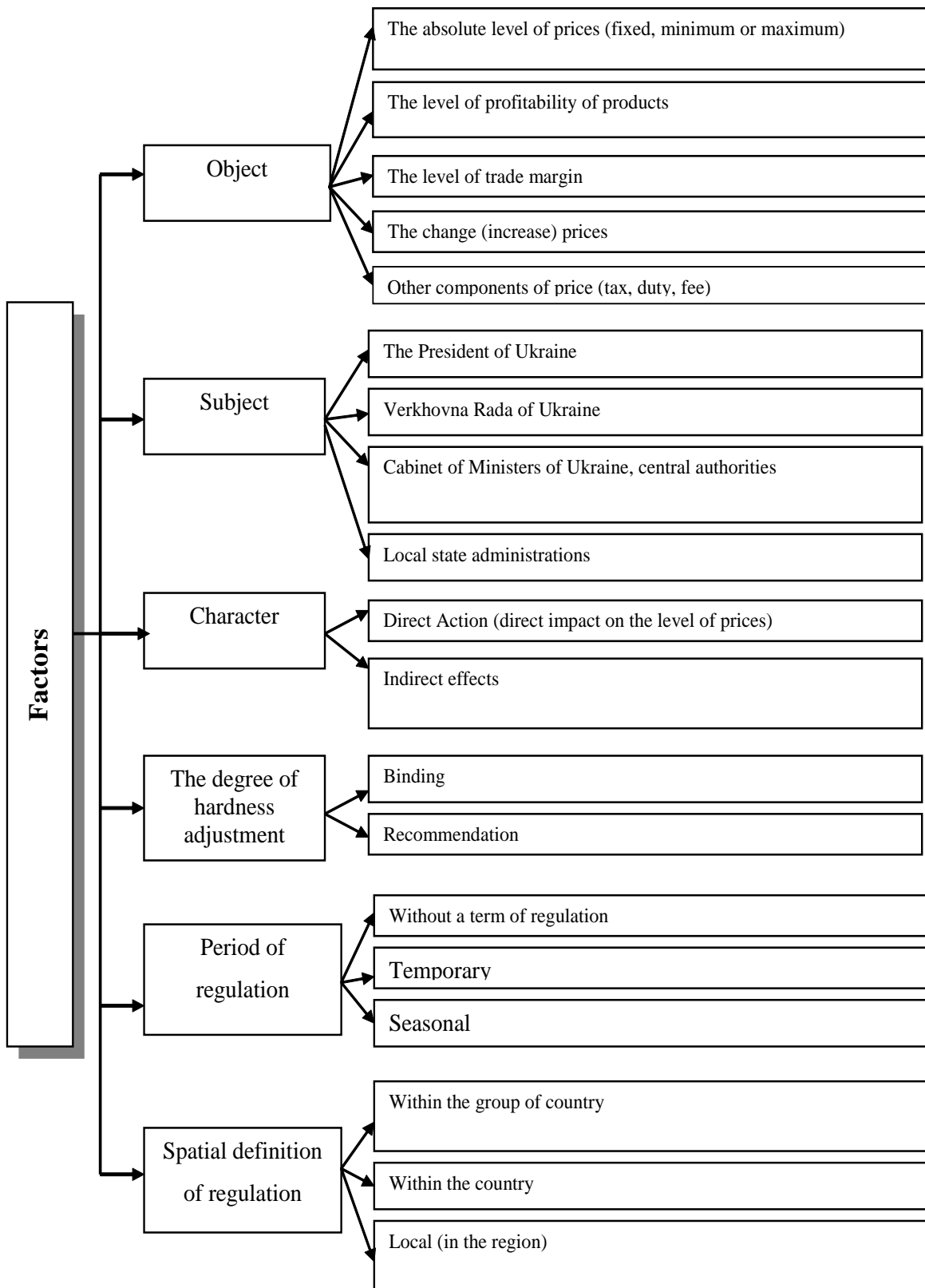
Currently, the legislation of Ukraine on pricing and pricing based on the Constitution of Ukraine and consists of the Commercial Code of Ukraine , the Tax Code of Ukraine , Laws of Ukraine "On Prices and Pricing ", "On Protection of Competition" and a number of other laws and regulations .The Law of Ukraine "On Prices and Pricing" in the first version was adopted in 1990 and remained relatively stable until middle 2012 . Thus, regulated by law mechanisms of price policy were formed over 20 years ago - at the initial stage of reforming the national economy of Ukraine as an independent state and initiating transition from a centralized to a market economy , and therefore have not meet the requirements that apply to present stage of social and economic development.

**Analysis of recent research and publications.** Pricing issues , including legislative support this process in Ukraine , as well as international experience studied and continue explored many famous Ukrainian scientists , in particular A.Shpychak , J. Tormosa , L. Shkvarchuk [1,2]. However, the issue of pricing as always topical, requiring continuous extension studies. **The purpose** of this paper is to highlight the main areas of improvement of the Law of Ukraine " On Prices and Pricing" and related legislation in the regulation of pricing of agri-food products.

**The main material.** The relevance and feasibility of improving the Law "On Prices and Pricing" due to several factors. The discrepancy observed from the

conceptual apparatus that serves the pricing for different aspects : in all phases of pricing , their use and regulation. No legal definition of many terms related to pricing issues , led to ambiguous understanding of certain provisions of the Law and the inefficient use of its provisions into practice. There were situations where the provisions of this Act, contrary to the Commercial Code of Ukraine , is not applicable to all entities. In particular , the scope of the old Law of Ukraine " On Prices and Pricing" did not extend to individual entrepreneurs . However, their activity in some markets is a significant segment of the economy and has a significant impact on the price situation in the consumer market. Thus, according to official statistics , the proportion of individual entrepreneurs engaged in the implementation of food is: in the western regions - 80-90 % of all businesses in other regions - about 60 %. Lack of state regulation of prices in the economy contributed to the abuse in the marketing of products of speculative manifestations unjustified increase in the number of intermediaries, irrational resale and informal circulation of goods , especially food markets .The Law of Ukraine "On Prices and Pricing" as amended in 1990 provided for only some (general ) provisions pricing, the monitoring of their compliance . This law was not settled by the authority of the executive authorities and local governments in the establishment and application of prices , procedures, appropriate management decisions that are not fully ensure the implementation of pricing policy, adherence to the required parity of prices between sectors and types of economic activity , stability and wholesale retail prices. Continuation of amendments to the existing wording of the law was not entirely justified by , as in fact led to a new version of legislation. The Law of Ukraine "On Prices and Pricing" in the new edition adopted June 21, 2012 , № 5007 -VI. The adoption of the new law has helped to solve the urgent task of improving the existing legislation on pricing, ensuring effective use in practice legislation on pricing by determining the revised terms on request of real processes, normalization of relations between entities and regulatory agencies . The result should be provided with a transparent pricing mechanism , supervision and enforcement of legislation on pricing, unambiguous approach to the implementation of price controls and its

compliance with market conditions. This Law shall apply to relations arising in the process of formation, establishment and application of prices by the Cabinet of Ministers of Ukraine , executive authorities , local authorities and all entities that carry out activities in the territory of Ukraine , as well as state control (supervision) and surveillance in pricing .The basic principle of pricing in a market economy is free pricing with elements of state regulation. Degree , forms, methods and scope of government intervention in the pricing depends on the state of economic development , the intensity of inflation , the degree of monopolization and competition, the share of the public sector and other factors. Methods of state regulation of pricing ( almost the size of price ) can be classified according to various factors ( Fig. 1).



**Fig. 1. Classification of methods of state regulation of pricing**

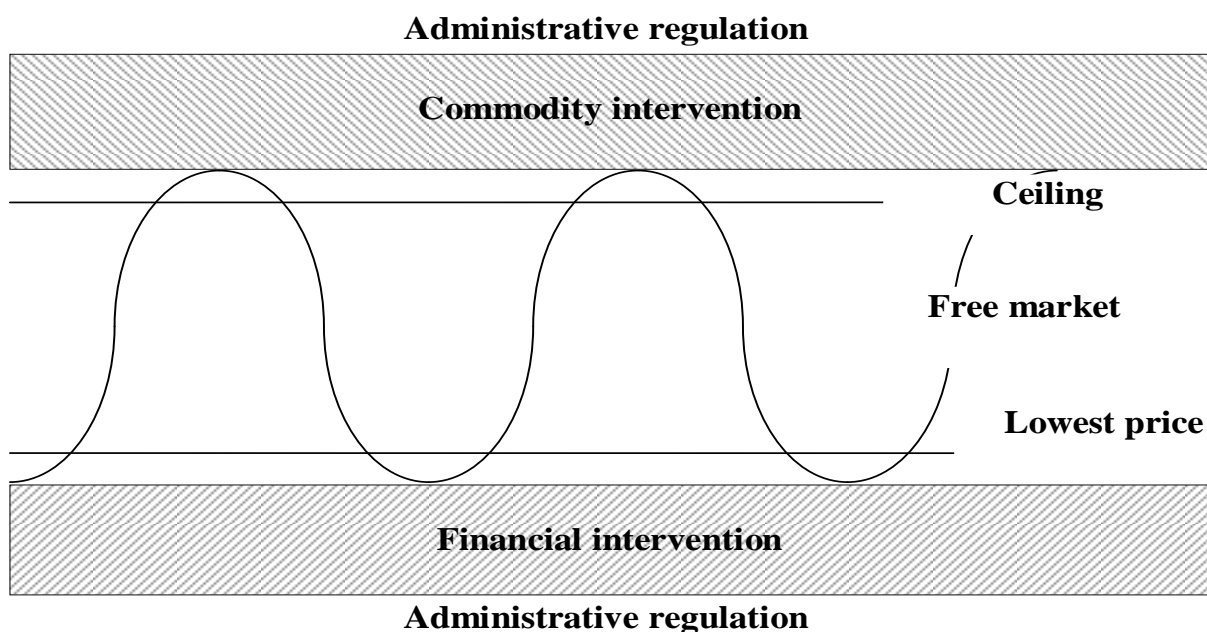
Law of Ukraine "On Prices and Pricing" 1990 decision were provided following prices regarding the degree of influence of the state on their level : open , public fixed and adjustable rates. His edition of 2012 as a separate species called free prices and government regulated prices (Article 10. Species prices). We believe at least entered incorrect term "state regulated prices " ( "price introduced on goods that have a decisive influence on the overall dynamics and prices have significant social importance , as well as goods produced by subjects who have a monopoly (dominant) position in the market ") [ 3].

In our view , to distinguish between the concept of "state " and " regulated " prices: state prices seen as a price the amount of which is set by the state , with the use of the term "fixed " price (Incidentally, Article 13, paragraph 1 , subparagraph 1) of involves setting fixed prices ) [3] considered regulated prices, which limit or regulated components (selection is limited , etc.) state.

Available prices – prices are set freely companies or formed under the influence of market supply and demand for goods (services). Using freely installable company prices independently calculates the price of their products by using the following calculation method that is most appropriate , based on its goals.

For free prices are primarily stock prices . According to Article 1 of the Law of Ukraine "On the Commodity Exchange " on December 10, 1991 № 1956- XII principle of markets is the use of free (market) prices.

In accordance with the Law of Ukraine "On State Support of Agriculture of Ukraine " dated June 24, 2004 № 1877 -IV (Section II) the State shall regulate wholesale prices of certain agro-food products by setting minimum and maximum intervention prices as an indicator for the state agricultural market operator (Agrarian Fund ) government intervention ( by financial and commodity ) at levels that allow you to install fixing (price equilibrium) [4] ( Fig. 2).



**Fig.2. The scheme of price regulation of agri-food products in Ukraine according to the Law of Ukraine " On State Support of Agriculture of Ukraine"**

The objects of state price regulation of this law recognized the following types of agricultural products (goods ): durum wheat, soft wheat, grain mix of wheat and rye, corn, barley, rye, peas, buckwheat, millet, oats, soybeans, sunflower seed, rapeseed, linseed, hops cones, sugar (beet ), wheat flour, rye flour, meat and offal of slaughtered animals and poultry , milk , butter, sunflower oil [4].

According to the Law of Ukraine "On Prices and Pricing" (Article 13. Methods of state regulation of prices) state regulation of prices by the Cabinet of Ministers of Ukraine , bodies of executive power and local self-government under their authority by establishing mandatory for entities applying fixed, price limits , maximum levels of trade mark-ups (mark-up) and supply and marketing allowances (supply fees) marginal profitability ratios, size, supply fees, size of bonuses, discounts (down factors), and establish procedures for the declaration of price changes and / or registration for [3]. These legal provisions are implemented through a regulation as a Cabinet of Ministers of Ukraine dated 25 December 1996 № 1548 "On establishing the powers of the executive and the executive bodies of municipalities to regulate prices (tariffs)".

## **Conclusions and recommendations for further research.**

Analysis of the legal regulation of pricing in Ukraine demonstrated the need to continue research towards modernization and the development of proposals for improving the impact of the state pricing process in order to better take into account the conditions of the transformation of the market environment in general, which is particularly important for agri-food products market .

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# SIMULATION OF ORGANIC AGRI-FOOD PRODUCTS MARKETS LOCATION

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## Summery

In this article features of marketing system forming at the organic agri-food products market were investigated. Based on the mathematical modeling application the optimal geographic structure of distribution channels in the organic agricultural production sphere in Ukraine and, in particular, in Zhytomyr region has been found. It was proved that the implementation of the suggested recommendations will accelerate the development of this market on account of to the growth of financial income.

**Keywords:** market, organic products, agricultural production, the system of distribution channels, modeling.

**Definition of the issue.** At the present stage of economic development of society along with solving the problems of increasing production capacity raises the question of the preservation of the environment, to ensure decent living conditions for current and future generations. The organic method of management meets the requirements, which leads to an increase of its popularity and consequently, an increase of volume of organic products on both the global and domestic market. An important issue now is to build a marketing infrastructure of these products, such as distribution channels in Ukraine as a whole and within regions. The demand of organic food is growing. However, there is a mismatch in demand of proposition. Thus, the product (e.g., wheat, flour) under which the domestic production cannot meet consumers' needs almost fully exported due to underdeveloped marketing system in the domestic market and the price mechanism is not adjusted. There is a need to open the specialized markets, which shall sell products of organic farming and other companies. These provisions led to the relevance of the research topic.

**Analysis of recent researches.** Problems of development of organic agriculture food products is highlighted in the studies of domestic and foreign scholars such as A. Antonets [1] A. Kozlov [2] I. Ovsinsky [3] A. Podolynsky [4] V. Rudnytska [5], M. Fukuoka, etc.. However, the placements of markets for organic agriculture food products are not fully investigated and requires further studying. In order to address these issues within the research there is a developed economic and

mathematical model of allocation of sales points of organic agricultural products in Zhytomyr region and in Ukraine in general.

**Goals and Methods of Research.** *The goal* of research is a definition of optimal geographical structure of allocation of markets of organic agricultural food products. *The object* of research is a process of setting up sales channels of organic agricultural food products. *The subject* of research is a collectivity of theoretical, methodological, and practical aspects of modelling allocations of markets of of organic agricultural food products.

*Theoretical and methodological basis* of research are the scientific works of domestic and foreign scholars. The scientific work is based on a dialectical approach of cognition of processes and phenomena. To study the determined topic we used the general scientific and special methods as analysis and synthesis, abstract-logical and generalization (in the formulation of generalizations, conclusions and propositions).

Furthermore, we used a method of economic and mathematical modeling and formulation of the problem which bases on determining the optimal location of the market of sales of organic farming in Zhytomyr region, which would ensure full accessibility of each settlement area to the nearest market at an acceptable distance and minimum cost of opening and annual maintenance and servicing markets with the following terms of accessibility radius of 70 km; locate new markets, if possible, on the basis of existing markets, limited amount of markets and trading platforms - not more than 6; to design a possible location of food markets for organic products we selected residential locations: Andrushivka, Berdichiv, Baranivka, Korosten Cherniakhiv, Novograd-Volynskyi, Romaniv, Malyn, Volodarsk-Volynskyi, Korostyshiv, Iemilchyno, Ovruch, Irshansk, Olevsk, Popilnia, Radomyshl, Zhytomyr; the cost of placing and open markets (average in the region), depending on their size include wholesale and retail markets - 144 million UAH; farm market - 182.4 million UAH, a small shop - 800 thousand UAH, leasing trade pavilions (100 m<sup>2</sup>) - 120 thousand UAH; we expected to obtain economic benefits from the location in the area of access to the markets of various sizes; the average demand for organic products within the region in districts over the recent three years, ranges from 20% to 37 % of

the total population. Also designed and solved a similar economic and mathematical model of allocation of markets in Ukraine as a whole from a market in regional centers and the city of Sevastopol. The mathematical description of this model looks as follows:

The task is to find the optimal value of variables in which the cost of the location and content of the organic food market is minimized:

$$Z = \sum_{j \in J} c_j x_j \rightarrow \min, \quad (1)$$

and the following conditions shall be met:

1) Limitation in maintaining necessary coverage are

$$\sum_{j \in J} a_{ij} x_j \geq 1, \quad (i \in I), \quad (2)$$

where

$$a_{ij} = \begin{cases} 1, & \text{at } r_{ij} \leq R \\ 0, & \text{at } r_{ij} > R \end{cases} \quad (3)$$

2) Maximum amount of markets and trading sites:

$$\sum_{j \in J} x_j \leq M. \quad (4)$$

3) Limitation by the demand for organic agricultural products, thousand UAH:

$$\sum_{j \in J} d_j x_j \geq D. \quad (5)$$

4) Terms of inalienability variables:

$$x_j \geq 0. \quad (6)$$

5) Conditions of belonging to a logical variables (dual) type:

$$x_j \in [0;1]. \quad (7)$$

The model uses the following values:

$j$  – variable index ;  $i$  – limitation index;  $J$  – set of variables that indicates the number of settlements ( $J = \overline{1, 17}$ );  $I$  – set of constraints belonging to the settlement of coverage ( $I = \overline{1, 17}$ );  $c_j$  – the cost of placing the food market and shopping area in  $j$  location;  $a_{ij}$  – rate indicator, which indicates the identity of  $i$ -location to the coverage point  $j$ ;  $r_{ij}$  – distance from  $i$  and  $j$  locations;  $R$  – radius of coverage area ( $R=70$  km);  $d_j$  – total monthly demand for organic products in the  $j$ -location,

thousand UAH;  $D$  – the average monthly demand for organic products in general in the region, thousand UAH;  $M$  – maximum amount of markets and trading areas on the territory of region.

**Main material.** The main purpose of the study was to construct the optimal location of the territorial structure of wholesale and retail markets in major towns on the basis of the development of economic and mathematical model of placing markets for organic agricultural products. Thus, for the formation of this model within Zhytomyr region a number of conditions have to be carried out, namely, the distance from any district centers with a population of at least 1,500 people to the nearest market should be less than 70 km. The basis for optimizing adopted restrictions on the location of markets and shopping areas in the radius of accessibility.

Based on geospatial analysis we grouped areas by population and the value of the potential demand for organic agricultural products. According to the income and population density the most potential demand for the period 2009-2012 was in Zhytomyr, Korosten and Malyn districts of Zhytomyr region.

Input data for the model building involves pairwise distances between the district centers, which considered to be placed on their territory markets, the cost of accommodation in each of the locations, wholesale or retail farmer markets, as the cost of lease of retail space, the level of average wages, population district center. Compilation and preparation of information are made using geographic information systems and data of the Department of Statistics in the Zhytomyr region, population survey data on the demand for organic products [ 2,7,9 ].

Thus, the model includes 17 variables and 19 constraints. The solution of the problem by computer was obtained using standard spreadsheet of MS Excel 2010 (utility Solver.dll). The model sets recommendation to allocate market places in Zhytomyr region in the following way: wholesale and retail market opened in Zhytomyr city, to arrange small shops in Korosten, Novograd-Volynskyi towns, lease retail pavilions - in Ovruch, Olevsk and Radomyshl towns. Thus, according to a report on the results, the total cost for the construction of the projected system could

reach 145.96 million. The total size of the projected economic impact could reach 261.5 thousand UAH (Table 1).

Table 1

Economic effect of organization of system of markets of agricultural products of organic farming on the territory of Zhytomyr region

№	Type of market and location place	Incorporation cost, thousand UAH	Forecasted average revenue, thousand	Expected economic effect for year, thousand UAH
1	Wholesale-retail market in Zhytomyr city	144000,0	177079,6	1981,0
2	Trade shop in Korosten town	800,0	35766,2	428,4
3	Trade shop in Novograd-Volynskiyi town	800,0	14479,4	173,0
4	Trade pavilion (leased) in Ovruch town	120,0	16109,2	193,2
5	Trade pavilion (leased) in Olevsk town	120,0	9392,3	112,6
6	Trade pavilion (leased) in Radomyshl town	120,0	9299,3	111,5
Total		145960,00	262126,0	2999,6

Source: personal research.

Using the mathematical model described by formulas (1-7) we solved the economic-mathematical model of markets placement in the context of the whole territory of Ukraine with a market in the regional centers and the city of Sevastopol. Input information for building the model was collected from the following sources [5,7,10]. Herewith, it includes conditions such as the limit the number of markets is 15; radius of affordability - 200 km, to design a possible location of food markets for organic products we selected of all administrative centers of Ukraine and Sevastopol, the cost of placing and opening markets of wholesale and retail markets in each center totals 144 million, the average demand for organic products in the areas over the last three years, ranges from 20% to 37% of the total population.

The analysis of statistics of population density and income made it possible to isolate regions of Ukraine with the highest potential level of demand for organic agricultural food products (Figure 1.). These include regions like Kyiv, Donetsk, Kharkiv, Odessa, Dnipropetrovsk and Lviv.

The model includes 26 variables and 28 constraints. The model recommended system of market placements in 13 cities of Ukraine: Dnipropetrovsk, Donetsk, Zhytomyr, Zaporizhzhia, Kyiv, Kirovograd, Lugansk, Mykolaiv, Odesa, Sevastopol, Ternopil, Uzhgorod, Kharkiv. Thus, according to a report on the results, the total cost of construction of the proposed project totals 1729.2 million.

Taking into consideration the specifics of organic agricultural production the vast majority of products are produced by farmers, which makes it difficult to form the large consignments of products to fill the retail space. Currently, the domestic market of organic products has a traditional distribution of production channel (producer - consumer, producer – agent - consumer), which is not always effective. As already mentioned, in terms of organic products through an agent is economically unjustified as the price increases by 5 times or more. This situation considerably slows down the development of the researched market. Avoiding this possible by stimulating the integration process. One of the most common forms of agrarian and industrial integration is to create a vertical marketing system, including marketing cooperatives.

Producers within marketing cooperatives will unite on a corporate basis. The main objective of the formation of such cooperatives - improving the effectiveness of each member of the cooperative by combining their efforts (Figure 2). Achieving such a result in the field of organic agricultural production on the first place will be possible to establish mutually beneficial price for both the producer and the consumer, thereby enhancing the competitiveness of organic products compared with traditional.

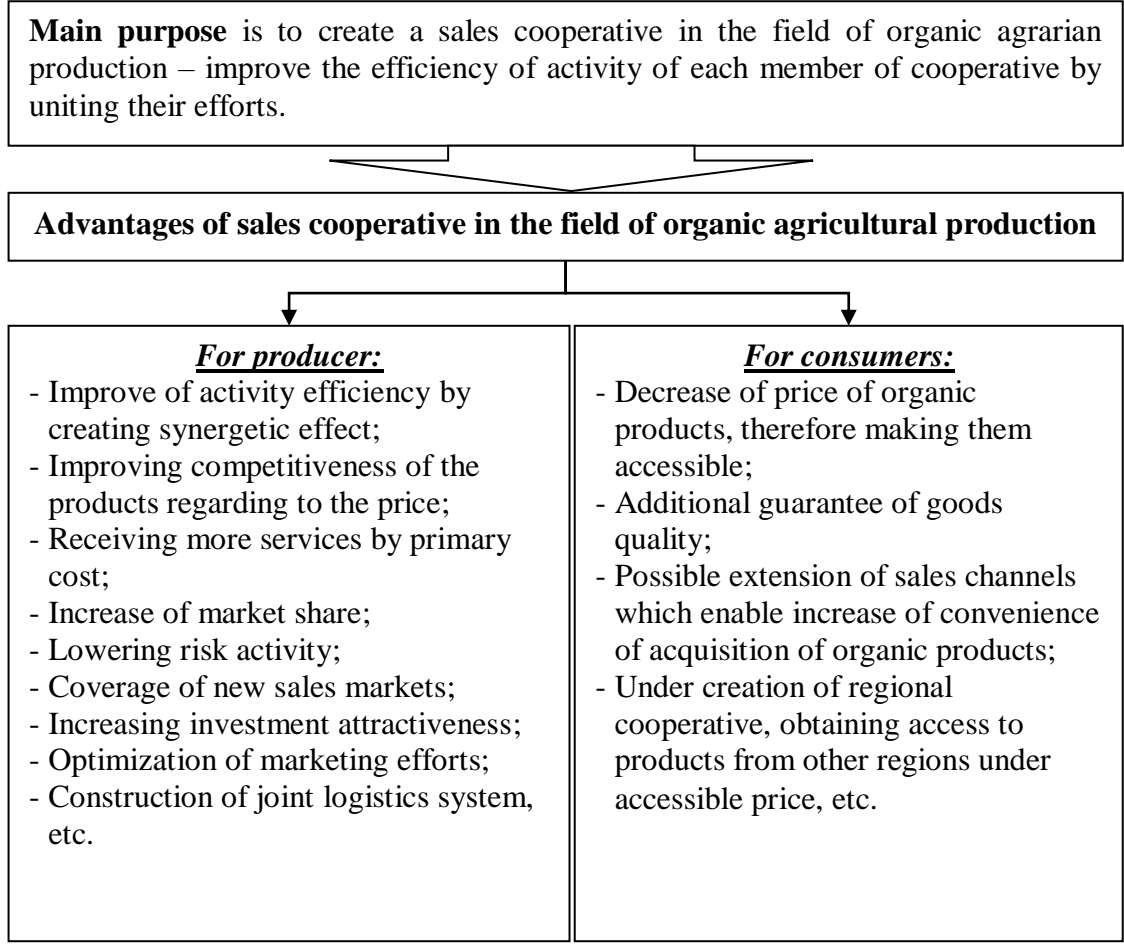


Figure 2. Advantages of sales cooperative over traditional channels of products in the field of organic agrarian production

Source: personal research.

Herewith, the relevant and appropriate is a development of cooperatives that will include local, regional and inter-regional cooperatives. Creating such systems will simplify the exit of domestic producers both domestic and foreign markets, and will serve as a factor for stimulating market development of organic agricultural products.

**Conclusions and proposition.** The domestic market of organic agricultural products is developing very rapidly, as evidenced by the steady increase in demand in this area. However, the development of market infrastructure is slow and does not meet current needs. There is an urgent need to establish an effective distribution system.

Optimal location of sales markets of organic production will enable the existing balance supply and demand with further increase of their volume. The most

effective in this system will open sales outlets in Zhytomyr region in locations like Zhytomyr, Korosten, Novograd-Volynskiy, Ovruch, Olevsk and Radomyshl (the size of the projected economic benefits of the project reaches 261.5 mln.UAH/year) . At the same time, the results of modeling in the context of the entire territory of Ukraine recommended to place wholesale and retail markets of organic agricultural products in 13 regional centers in conjunction with other sales channels. In other regional centers, the available demand may be met by limiting sales of products through specialized stores and leasing trade pavilions.

Assisting the process of formation of large consignments of organic products and filling shopping facilities proposed distribution system is possible due to the development of agro-food integration processes. To address the problematic aspects of products within the internal market facilitating the exit of domestic producers to international markets will be the most appropriate establishment of marketing cooperatives to be formed from local, regional and interregional cooperatives.

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## **Mechanism of state forward purchases of grain**

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*The mechanism of forward public procurement. The order of their conduct, conditions limiting access to trading, legislative support, the objects of state price regulation.*

*Keywords: state forward purchases, forward contracts, the objects of state price regulation, the intervention price, government regulation, intervention fund.*

**Statement of the problem.** One of the main tasks of government is to stabilize the country's market food products. The most important part of it is the grain industry, which provides a basis for the development of economic and food security, export capacity of the country. In the process of regulation of grain market the most important element is state price regulation, which is to implement the Agrarian Fund interventions at levels that allow you to set the equilibrium price at a level not less than the minimum but not above the maximum intervention rates.

**Analysis of recent research and publications.** The issue of state regulation of market food products are dedicated the scientific work of many national scientists and economists, among which stands out P.T. Sabluk, S.M. Kvasha, O.N. Shpichak, M.O. Solodkiy, A.D. Dibrova and others.

**The purpose of the study.** To investigate the mechanism of state forward purchases of grain in the context of the exercise, amount of purchase and the size of price intervention.

**The main material.** Forward purchases are one of the programs of state support for agriculture and only agricultural producers can take part. This process involves a purchase on a regulated of agrarian market for the needs of the state intervention fund at a certain time and in certain conditions of supply in the future.

State Intervention Fund is a fund that is formed by the Agrarian Fund by means of financial interventions, mortgages, futures and forward purchases and used for trade interventions in order to ensure price stability. Agrarian Fund is a

specialized state institution authorized by the Cabinet of Ministers of Ukraine to pursue pricing policies in the agricultural sector of the economy of Ukraine [1].

Carrying forward procurement is regulated by the Cabinet of Ministers of Ukraine "On Introduction of state forward purchases of grain," Civil Code of Ukraine and laws of Ukraine "On State Support of Agriculture of Ukraine" and "On Grain and Grain Market in Ukraine " [ 1,2,4 ].

List of government price control is determined by the results of monitoring agricultural market and subordinate to official publication no later than 30 calendar days before the beginning of the marketing period [1]. For example the object of procurement in 2013 is wheat of 2-4 class, rye of 1-3 class and barley of 3 class. Total value of purchases for forward contracts is planned at 1.3 million tones of grain.

Agricultural Fund carries forward purchases with funds provided by the State Budget of Ukraine for the year by signing on Agrarian Exchange between the Agrarian Fund and commodity producer contract. The volume of forward purchases is determined based on the total formation of the Agrarian Fund of the state intervention fund as required by law.

There are some restrictions on participation in the government of forward purchases of grain:

- only agricultural producers have the right to participate;
- minimum value of grain is offered for:
  - wheat - not less than 2 000 tones,
  - rye - not less than 500 tones,
  - barley - not less than 1 000 tones;
- farmers must be the payer of VAT;
- delivery of grain to be carried out on the certified grain warehouses are included in the list recommended by the Ukraine Ministry of Agriculture and Agrarian Fund contracted storage;
- no negative history of meeting commitments under state programs, conducted by the Agrarian Fund in previous years [3].

To participate in the state program of forward purchases of grain must be submitted to the Agrarian Fund following documents: application of a defined form, certificate about absence of payment of taxes and duties (mandatory payments ), except for the amounts the payment of which is postponed or delayed by law, certificate about absence debt on any type of budget loans, other loans, except for the amounts the payment of which is postponed or delayed by law, information about cultivation area of government price control in the last five years and help yield of government price control in the last five years, published by department of agricultural Development respective district administration under the form of agriculture 4 and 29; copy of the charter entity and in the case where the statute provides for the need for approval supreme governing body of the legal person making the executive body for the conclusion of contracts by a certain amount is the original decision of the highest governing body to approve (approval) contract and pledge agreement [4].

Contract is issued in five copies. After contracting producer of goods sends to the Agrarian Fund notarized contract of pledge of future crops between the seller and buyer or a notarized contract of pledge of grain owned producers or double warehouse certificate for grain be posted.

After the conclusion of a forward exchange contract producers not later than the day must provide the Agrarian Fund notarized contract of pledge of future crops for Agrarian Fund.

Purchases occurring on the mechanism of payment in two stages, namely:

- Stage 1 - advance payment - at 50% of the value calculated on the basis of minimum intervention price for the culture that is defined for the current marketing period;
- Stage 2 - produced by the weighted average prices of balance (fixing) at the time of delivery of grain, less the weighted average percentage on loans of banks, designed by the National Bank. In 2013 it set at 13.6%, which is calculated from the amount of advanced payment.

Minimal intervention prices in the 2012-2013 marketing period: - wheat class 2 - 1909 UAH/t; – wheat class 3- 1800 UAH/t; - wheat class 4 - 1729 UAH/t; - rye class 1- 1725 UAH/t; - rye class 2 - 1643 UAH/t; - rye class 3 - 1565 UAH/t; - barley class 3 - 1567 UAH/t [5].

The volumes of purchases of cereals, which are assigned to the objects of state price regulation in recent years, are shown in Table 1.

In 2011, the volume of grain supplies from the information procurement of government price control was 1014.7 thousand tones with payment of \$ 2746.3 million UAH, In 2012 - the volume of supply decreased to 772.4 thousand tons of pay 1,818.3 million UAH. In 2013 contracted through forward agreement 774.6 thousand tons of grain and advances 492.5 million UAH [5].

Table 1

The volume of the Agrarian Fund purchases grain to the state intervention fund 2010-2012 bienniums

OSPR*	2010		2011		2012	Total
	Purchases on Agricultural Exchange on a spot, t	Purchases through open competitive bidding procedures, t	Purchases on Agricultural Exchange on a spot, t	Purchases through open competitive bidding procedures, t	Forward purchases	
rye			21599,8	3399,5	57686,1	82685,4
wheat	365353,5	407091,3	825642,4	40339,6	624336,8	2262763,7
barley	1000,0					1000,0
corn		207324,9			11882,4	219207,3
buckwheat				9889,5	1389,4	11278,8
Total:	366353,5	614416,2	847242,2	53628,5	695294,6	2576935,1

Source: Agricultural Fund - [www.af.gov.ua](http://www.af.gov.ua) [5].

Note: \* The objects of state price regulation.

To make advance payment Agricultural Fund for 3 bank days after the conclusion of all agreements sends documents to the State Treasury of Ukraine. On

the day of receipt of advance payment producers must provide the Agrarian Fund tax invoice for the appropriate amount, registered in the respective registered.

Delivery of grain carried to term as defined in the forward exchange contract and a fixed grain composition at the expense of agricultural producers. Delivery of grain is accomplished with the signing of the act of transmission and acceptance. Delivery of grain to the storage entity funded by producers.

Final payment of the producers on the basis of the Commission's Agricultural Fund will be made not later than the time limit specified in the forward exchange contract by the weighted average price balance (fixing) that emerged in the last three trading sessions on Agrarian Exchange accredited and certified its commodity exchanges at the time of delivery [5].

Final payment of the producers for the conditions of the contract fully performed by the Agrarian Fund on the basis of documents submitted to it: the grain warehouse receipts, issued the Agrarian Fund, the act of transmission and acceptance of the entire volume of grain, grain analysis card or certificate of quality is issued State Agriculture Inspectorate, tax bills for the balance of the cost of grain, are not paid under the contract.

Failure to supply grain commodity producer under a contract of settlement only after introducing relevant amendments to the contract.

For the final payment under the contract Agricultural Fund Treasury takes the original contract under which an advance is paid to producers, and the act of acceptance and transfer of grain in full. Treasury on the basis of these documents lists of current commodity funds in the period specified by the contract.

Drafting and submission of financial reports on the use of budgetary funds and monitoring their target and effective expenditure carried out in accordance with legislation. Agricultural Fund Agriculture Ministry submits monthly reports on the amount of forward purchases.

**Conclusions and suggestions.** Implementation of state forward purchases of grain is an effective direction of economic policy. The government actively monitors the price situation in the grain market, plans to advance the settlement

prices for certain products by the use of forward purchases to balance the interests of market participants. For that, the studied mechanism was most effective measures to strengthen the country to monitor the implementation of forward contracts, inform all market players who wish to participate in this program.

# **Trends of development of grain market in Ukraine**

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**Resume:** A marketing research on potential grain production in the context of achieving food security in Ukraine has been conducted. The grade of current state of the grain market of Ukraine has been determined and its main development trends. The ways of the grain's sector development in Ukraine have been offered for achieve the highest yield and profitability of agricultural enterprises.

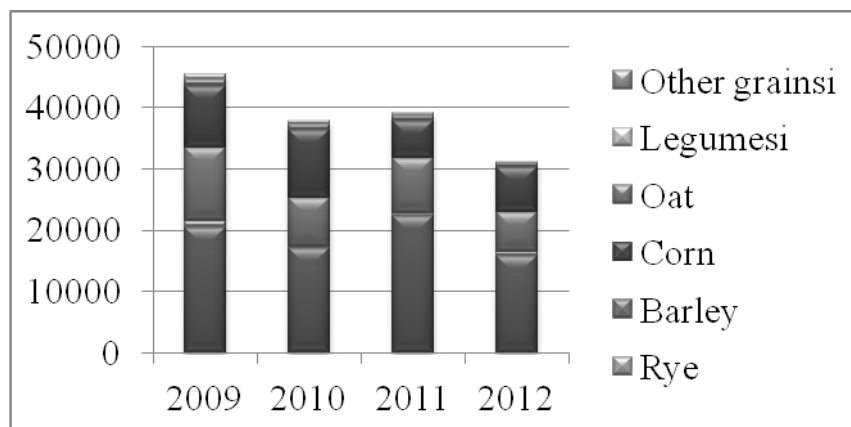
**Key words:** competitiveness, profitability, food safety, agricultural business, marketing tools.

**Introduction.** The current stage of development of the grain market of Ukraine is characterized by increasing competition among entrepreneurs in the region, the country and internationally. In such conditions the key to success is the market orientation of agri-food products based on marketing. From this perspective, the relevance of the work is to investigate and assess the current state of the grain market of Ukraine and identifying its key trends in 2008-2012. It do not only allows for entrepreneurs be knowledgeable enough in the field of agriculture, but also rely on measures designed to improve the efficiency of production and marketing of grain.

**Analysis of recent research and publications.** Problem dynamics and development of the grain market of Ukraine boasts versatility of its constituent aspects and multi-character. Evidence of these are scientific publications V. Andrijchuka, P. Sabluk, A. Bilyk, V.Halushko and more. Proceedings of the researchers allowed summarize theoretical, methodological and applied principles of formation and development of the agri-food market of Ukraine. However, in today's economic development trends in the grain market of Ukraine quickly changed as necessitated this study.

**The aim of the study** is to analyze the current state of economic activity on the production of grain farms in Ukraine and determination of grain crops, taking into account the need to ensure food security.

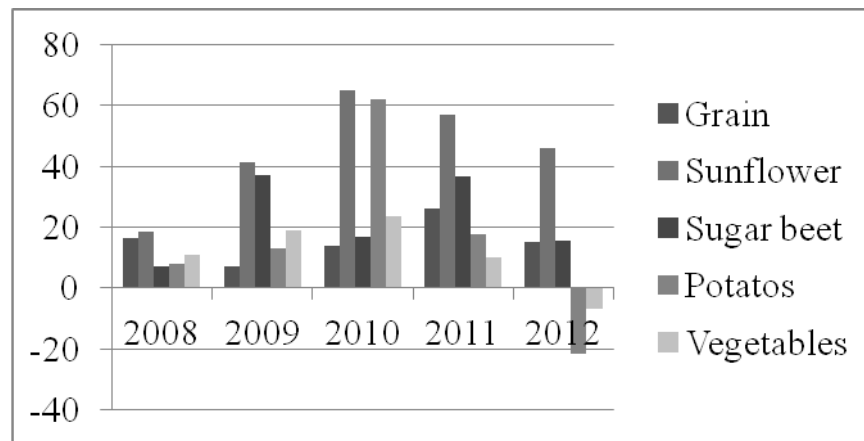
**The main material of the study.** The economic crisis of recent years greatly excelled in almost all sectors in Ukraine than agribusiness. Ukraine has large areas of arable farmland with high fertile properties, which cover more than half of the country. Scope of Agribusiness covers three quarters of the territory of Ukraine, which is home to one-third of the population and generates nearly 60% of the consumption fund , producing 17% of GDP [3 , p. 22-24 ]. Clarification of the nature and problems of economic security has added even more weight this problem . Therefore, government regulation is one of the most important factors in the development of agribusiness in Ukraine . Despite it had declared a few years ago the transition to an innovative way of development, business activity remains low. Lack of progress in the development and implementation of new technologies prevented improve industrial competitiveness, to some extent led to profound structural crisis and the drop in agricultural production. The degree of wear of fixed assets exceeded 60 %, transport - 84 %, which is a major factor in the depressed state of the economy. [6] Agriculture is one of the most promising activities in Ukraine , with except of the high risks of agribusiness. The basis of crop industries Ukraine formed crops , crops which in 2010 occupied 57 % of the total cultivated area of the country [ 3, p. 22-24 ]. In recent years, the average volume of grain production in Ukraine reached 50 million tons, which in value is about 80 billion.



**Figure . 1. The gross yield of grain crops in Ukraine in 2009-2012.**

**Source: Statistical Yearbook of Ukraine for 2009-2012 years data of the State Statistics Service of Ukraine [5].**

The volume of grain development was a record year for Ukraine in 2011. In particular, they collected 56.7 million tonnes, which is significantly higher than in previous years. First of all, such a high rate for the production of cereals has been achieved by increasing corn production to 22.8 million tonnes, which is almost two times more than in 2010. From the above graph ( Figure 1 ) shows that wheat production reached 22.3 million tonnes, which is also higher than the average of previous years. Growing barley decreased due to the decrease in the area, due to the low yield of this crop. Each year, Ukraine's domestic market consumes about 26 million tonnes of grain: 12 million tonnes - wheat, 6 million tonnes - of barley, 6 million tonnes - corn and 2 million tonnes - of other cereals. Therefore, emerging export potential, which reaches 25 million tonnes [ 4, p. 52-54 ]. Despite a record harvest of grain in the 2011/2012 marketing years, to fully realize the export potential in that period failed because the existing export duties significantly affected the rate of shipment of the products at the beginning of the season. Agriculture, including crop production are raw materials for the industry, which in turn provide people with food. Among the areas of agriculture crops is the leader in over-breeding, and in turn has a higher rate of return that varies in the range of 10-30%. The main factors of competitiveness plant in Ukraine is fertile soils, temperate continental climate, low wages, the availability of commercial sea ports. Considering the efficiency of cultivation of certain agricultural crops, we can say that Ukraine increased production of grains and oilseeds, and holds leading positions in the list of major exporters of grain, rapeseed, sunflower oil and sunflower seeds (Fig. 2).



**Fig.2. Profitability crop production in agricultural enterprises of Ukraine ,%**  
**Source: Statistical Yearbook of Ukraine for 2008-2012 data of the State Statistics Service of Ukraine [5].**

Analyzing the profitability of crop production, we need to note that the record levels of profitability in recent years demonstrates the sunflower. Profitability of rape are also quite high and more stable compared to it. The profitability of grain somewhat lower than oil, but the average profitability of grain is sufficient to stimulate an increase in their production. Research economists farmers agree that in Ukraine there are a significant increase in productivity in the production of grain. In particular, the yield of corn in the last seven years has increased by an average of 3.2 kg / ha ( or 7% ) [4 , p. 52-54 ]. This is primarily due to the widespread use of high performance hybrids , improving fertilizer and improved weed control . For wheat and barley productivity growth was lower - about 3 % annually. Recently, the somewhat increased the total capacity of the grain market by increasing external use , but this trend is unclear . In general, low power grain market countries indicates shortage of domestic consumption, exports and attract the necessary financial resources in order to improve productivity and increase gross fees. Relatively low population of Ukraine and the present tendency to reduce it limits the amount of domestic consumption of grain for food and depriving farmers of economic stimulus increase production. The current development of domestic agricultural markets of Ukraine depends on many factors that determine its potential capacity , based on rational norms nutrition. According to scientists, the capacity of the domestic agricultural markets in 2009 is estimated

to be within 302-303 billion, and potentially limit its capacity could reach 450-460 billion [3]. The limited capacity of the domestic market due primarily to the low purchasing power of the population and high costs domestic agricultural production, which is the root cause of the existing imbalances in the structure of certain types of agri-food products , the price disproportions of considerable social problems in rural areas , etc. .. Ways of solving these problems may be more active use of marketing tools on both domestic and foreign markets. Elements of marketing activities, which are useful in the grain sector is market research, identification of strategies as grain production , marketing pricing, sales management based marketing . This market research is both a channel of communication between businesses and the agricultural environment of the market.

**Conclusions and recommendations for further research.** So, for the development of the grain sector of the country and ensure its competitiveness to increase the volume of grain exports that do not depend on the population . Analysis of balances of grains indicates that the amount of grain fully satisfy the needs of the domestic market of Ukraine. During the last ten years the domestic demand for grains needed about 75 % of total production, with the exception of a very lean 2003 , when domestic production was unable to meet the needs of the country in the grain . After these events Ukraine gradually embarked on an export-oriented country and of 2005 - 2006 exported almost 33% of all grain produced . Neither of significant changes in the balance of food grains during the 2008-2012 period happened , except for increasing the share of foreign consumption. In 2008 Ukraine put into foreign markets record amount of grain that allowed her to enter the world's three largest grain exporter after the United States and the European Union's global market share in excess of 10%. The greatest demand in foreign markets was Ukrainian wheat export supply of which 12.6 million tons were in second place - barley (6.3 million tons ), the third - corn (5.5 million tons). Market research in the agricultural sector is the channel of communication between businesses and the agricultural environment of the market. In this aspect of

marketing research presented research activities aimed at meeting the information and analytical needs of the agricultural marketing.

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## PECULIARITIES OF PRICING OF AN AGRICULTURAL PRODUCE

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### **Annotation**

*Factors, which influence the processes of pricing in agrarian sphere, are discussed in the article. Problems and peculiarities of price forming, that agricultural producers face to are described.*

**Key words:** *Price, pricing, agricultural produce.*

**Raising of problem.** On the modern stage of development of agrarian enterprises of Ukraine one of basic tasks is a decision of problem of pricing in agriculture. It is known that a price has a substantial influence on efficiency of enterprise activity. However, for today, a price mechanism that exists in agriculture is unable to provide proceeding in productive potential of industry in sufficient for the extended recreation volumes, and this impedes the increase of efficiency. Thus, there is a necessity for the analysis of peculiarities of pricing process of industry and their influence on efficiency of agricultural production.

**Analysis of the last researches and publications.** The problems of forming of price mechanism in an agrarian sphere are investigated by many domestic scientists, in particular: Voskobiynyk Y. [1], Mesel-Veselyak V. [2], Moldavan L. [3], Paskhaver B. [4], Shpychak O. [5] and other. However, to our opinion, the issues of features of price forming in agriculture and its influence on the participants of distribution process require a further study.

**Raising of task.** The aim of the article is a determination of problems and peculiarities of pricing in agriculture.

**Exposition of basic material of research.** As known, a price is a category of conjuncture, so its forming depends on correlation of demand and supply at the market. Therefore in the conditions of market economy the price should be dictated by a market. However, it is necessary to notice that, except demand and supply, in agriculture there are a number of factors that have an impact on the process of pricing and the level of prices.

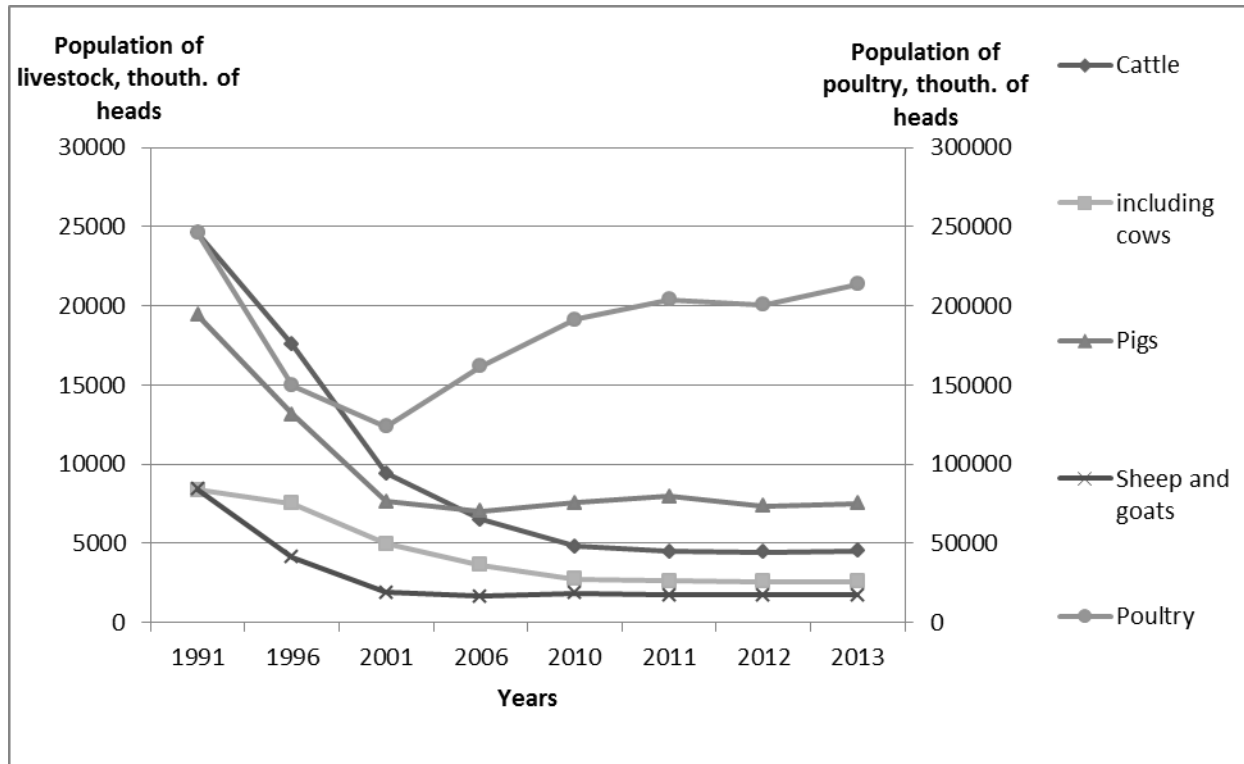
First of all, we should note the nature of price, and thus of forming of income by an agricultural producer. It is connected with existence of the so-called differential land rent. It means that a price on an agricultural produce is formed by the expenditures on worst fertile soil, and, accordingly, there is a superprofit - rent on the best areas. However, in connection with complication of evaluation of prices on an agricultural produce on worst earth, they did not get spread on practice in a pure form, but formed mostly by average costs [5, p. 5]. It, in turn, sharpens the problem of disparity of prices of an agricultural produce and material and technical resources that is used in the process of its production.

The problem of disparity of prices arose up as a result of reformation of property and transition to the market economic relations and deregulation of this process. As a result, the disparity of prices of agricultural production and prices of the consumable resources of industrial origin grew considerably. By this time we can talk about a sevenfold difference in a price index [5, p. 7].

Annual lag of increase of prices of an agricultural produce resulted in a considerable decline in its production. Especially it applies to stock-raising products. Thus, during the last twenty years the cattle stock has decreased more than by 80% (including cows almost by 70%), pigs - by 60%, sheep and goats - by 80% (rice.1)[6, p. 18].

This situation occurred because in modern conditions it is unprofitable for the agricultural commodity producers to be engaged in such finance- and resource-demanding industry. Changes of economic relations between the producers of agrarian sphere and processing enterprises, imperfect system of pricing and distribution of stock-raising products, incongruous mechanisms of supply of forage

and providing by them and by other necessary resources, absence of purposeful state support resulted in a considerable exceeding of cost of produce in this sphere over its realization price. As a result collective agricultural enterprises were forced to reduce the livestock population [7, p. 93].



Rice.1. A dynamics of population of livestock and poultry is for 1991-2013.

As a result, on this time approximately 60% of gross products of stock-raising are produced by the households. Thus they produce 43% of meat of all kinds and 80% of milk. From the position of pricing this situation looks a little illogical, in fact purchase prices of the products of these households are considerably lower, than for agricultural enterprises, except that, they, unlike the last, do not get a special purpose grants from a budget for stimulation of increase of population. However, a feature of production of commodity output in the households should be taking into account - as a rule, it is surpluses of manufactured products. In fact the primary purpose of production is providing the members of own family with foodstuffs. Except that, a cost of manufactured products is not calculated here and there is also a psychological factor, which allows the households to be nowadays the basic producers of stock-raising products (except eggs), and also potatoes, vegetables, garden-stuffs and berries [8, p. 306].

Worsening of the state of agricultural commodity producers became a consequence not only of the disparity of prices, but the change of structure of distribution of agricultural produce, and decline of the share of commodity producer in the retail price also influenced it. On this time more than 70% of profit yields from manufactured products in agriculture are passing into ownership of numerous trade mediators and in processing industry. For an example we can consider the pattern of prices of realization of 2,5 % fat contents milk: 46,9 % from it gets a processing enterprise, 21,9 % is a share of trade, and only 31,2 % is a share of agricultural commodity producer [1, p. 186]. A situation with the households looks far more unfavorable, in fact they sell off the products mainly to the mediators at price sometimes half the height of the price of agricultural enterprises.

Such advantageous position of enterprises of processing sphere can be explained by a feature of their market structure. On the essence it is oligopoly. It means that enterprises have certain possibilities in relation to influence on prices. The agricultural commodity producers do not have such influence on pricing, in fact markets of agricultural produce are maximally close to the markets of perfect (clean) competition, except that, a price on the products of agriculture largely depends on various mediators, traders and processing enterprises.

Forming of price on an agricultural produce requires also the consideration of factor of price elasticity. As known, demand on the products of agriculture is relatively inelastic at price, it means that the increase of price by 1% results in considerably a less adequate decline (by 0,1-0,5%). It means that in the period of price advance the population relatively stable consumes foodstuffs, sacrificing durables, such as clothes and others like that. However it follows to take into account that different foodstuffs have different elasticity of demand. So, more elastic is demand on meat and manufactured meats, fish, milk products, fruit, less elastic - on the commodities of daily consumption (bread, milk, pastas, cereals, potatoes). We should also consider the fact that in the budget of average Ukrainian family expenses on foodstuffs amount about 53 % (for comparison, in the USA - 11, in Germany - 10, in Poland - 20%). That is why the demand is relatively more elastic at a profit, than at

a price - the 0,5-0,9% increase of profit per capita causes the 1% increase of consumption of meat and manufactured meats, milk and milk products, vegetables and fruit [5, p. 5].

Other feature that largely influences on pricing on an agricultural produce is a seasonal price-wave. In particular, in the case of grain-growing, sunflower, vegetables, the water-melon cultures prices considerably go down in a period at a time and at once after harvesting, and their most substantial increase is observed before the next collective season. In the case of the separate types of stock-raising products a seasonal price-wave is related to the change of production and suggestion of products volumes during a year. In the case of milk and eggs prices grow in autumn, when the milk yield diminishes and the laying of chickens goes down. The highest prices on pork is observed in a period of Easter and Christmas holidays, at the same time in summer and in a period of the chief fasts prices go down.

It should be noticed that prices on food stuffs largely depend on weather conditions. That is, if a year was productive - prices go down (it is related to the increase of suggestion), and vice versa - in the years of poor harvest prices, as a rule, rise (it is related to diminishing to suggestion of this commodity). Therefore realization of manufactured products exactly in the years of poor harvest (in conditions of satisfactory harvest for a producer) often more advantageous for a commodity producer.

The choice of channel and place of realization of manufactured products also influences the level of price. Prices at to the sale of products «from the field» (directly in place of production) are the lowest. In this case a commodity producer does not carry charges on storage and transporting of products to the place of sale. Having regard to it, sometimes it is more expedient to sell off the grown products to the processing enterprise in full, even without regard to a considerable difference in prices (see table). It concerns vegetables foremost, 44,4% of that goes on processing, and also grapes (43,8%), garden-stuffs and berries (27,9%).

Table

Average costs of realization of plant-growing products on separate directions in  
2011, hrn./t

Names of products	Average costs of realization		Including on directions of realization				
	2011	2011 in % to 2010	To the processing enterprises	To people on account of labor payment	to the shareholders on account of rent for earth and property shares	at the market, through own shops, stands, tents	after other the directions
Grain-crops	1374,2	122,6	1453,4	989,9	951,6	1272,3	1421,6
Oil-bearing cultures	3312,0	112,6	3127,8	1678,3	1947,8	3151,8	3339,6
Sugar beets	516,0	107,8	521,8	291,5	350,0	437,6	474,5
Potato	2032,8	95,4	1423,5	1802,0	1881,9	2153,8	2082,9
Vegetables	2139,1	83,8	650,3	1313,3	1345,4	3349,7	3343,6
Garden-stuffs and berries	3175,9	131,2	1647,1	2108,0	3025,2	3655,4	3825,2
Grapes	3571,1	98,2	3407,3	2040,0	2710,0	4315,0	3607,1
Water-melon cultures	555,4	178,4	-	400,3	336,1	416,5	601,4

Source: [9].

The analysis of price and volumes of realization of grain-growing on separate channels gives an opportunity to draw a conclusion, that, in spite of the fact that an average cost of their selling to the processing enterprises (including elevators) is the greatest, share of this channel in the structure of realization folds only 3,6%, the bulk of grain is realized on other directions - 82,7% (the greatest is a volume of realization of corn - 89,6%). A similar situation is observed for to the oil-bearing cultures - only 5,2% from all volume of realization of oil-bearing cultures is realized to processing enterprises.

Analyzing the volumes of realization of other types of products of plant-growing we can mark, that bulk (87,9%) of sugar beets goes on processing. Comparatively high price (521,8 hrn./t) is also in favor of it. In the same time 87,5 % of potatoes and 75,9% of water-melon cultures is realized on other directions.

**Conclusions.** Thus, the basic factors that influence the process of pricing on an agricultural produce are following: presence of differential land rent, disparity of prices of an agricultural produce and material and technical resources, costly production of agricultural goods, production of the considerable part of stock-raising

(60%) by households, decline of the share of commodity producer in the retail price, low elasticity of demand on an agricultural produce, seasonal price-wave, dependence on weather conditions, considerable differentiation of prices depending on a channel and place of realization, poor purchasing power of population, impossibility of exact prognostication of unit cost and prices on it to the moment of its actual production. The presence of these and other factors requires both their consideration in the price policy of enterprises and obligatory adjusting of the process of pricing of an agricultural produce by the state.

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#### **Annotation**

*The analysis of factors that influence on the processes of pricing in an agrarian sphere is carried out in the article. Problems and features into that agricultural commodity producers run during forming of price are certain.*

**Keywords:** price, pricing, agriculture.

#### Аннотация

*In статье проанализированы факторы, которые влияют на процессы ценообразования в аграрной сфере. Определены проблемы и особенности, с которыми сталкиваются сельскохозяйственные товаропроизводители во время формирования цены.*

**Ключевые of word :** цена, ценообразование, сельское хозяйство.

#### Annotation

Factors, which influence the processes of pricing in agrarian sphere, are described in the article. *Problems and features into that agricultural commodity producers run during forming of price are certain.*

**Key of words :** price, pricing, agriculture.

**K.V.BEREGOVIIY, postgraduate \***

### **Problems of provision of Beef to Ukraine's population**

*Production of Beef was analyzed and provision of it to Ukraine's population. The problem of increasing of number of cattle in all forms of farms was revised. Also outlined ways to increase the efficiency of beef production to ensure the rational norms of consumption of meat the country's population.*

*Keywords: meat, beef, cattle, consumption, price, cost, profitability.*

**Formulation of the problem.** Food production in all historical times was and remains an important and vital human needs. Most acute for Humanity is a food problem. Scientists attribute it to the most complex and long-term, not only in Ukraine but also in the global economy. From its solution depends realization of the genetic potential of the population, the harmonious development of physical strength and spiritual abilities. Any society cannot function properly if problem was not solved and food security is not highly developed. This is confirmed by the current state of Ukraine's economy, which is largely a result of lack of government attention to agricultural production and other sectors of agriculture, including complex of beef cattle.

**Analysis of recent research and publications.** Problems of development and operation of businesses, farms which produce beef in Ukraine studied mostly by Ukrainian scientists - breeders and technologists.

Insufficient implementation in practice of research of conceptual approaches to beef cattle industry development and improvement of organizational and economic relations and relations between the structures and elements of the food sector has led to disruption of the reproductive process, termination of connections and relationships between producers, processors and trade in livestock products.

This situation makes it impossible to bring the industry out of the crisis, improve competitiveness, and on this basis to provide the population with the necessary quantity of livestock products.

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Research in certain aspects of the problem devoted to the development of domestic breeds of beef cattle productivity of resource potential in the industry, improve the quality of beef, technology improvement and maintenance of animal reproduction, management selection process sufficiently and deeply highlighted in the works of V.P. Burkat, D.T. Vinnychuka, V.I. Vlasov, G.A. Gumeniuk, N.V. Gladiy, E.M. Dorotyuka, F.F. Eisner, M.V Zybsja, M.A. Kravchenko, P.L. Pogrebnyak, V.Ya. Mesel-Veselyak, V.V. Radchenko, P.T.Sablaka, V.S .Yarmak and other scientists who greatly expanded the boundaries of breeding, biotechnology, research in this specific field of animal husbandry than contributed to the establishment and development of cattle productivity.

However solving of the problem of further development of competitive beef cattle requires complex systems research in field of features of the intensification of market conditions and research of using of limited productive resources. We should point to an insufficient study of organizational - economic basis of the formation and effective functioning of businesses, farms beef cattle producers, which is important in the organization of balanced nutrition Ukraine.

**The purpose of the article** – to analyze the state and opportunities of beef cattle industry in forming a competitive production of high quality products at a level that would provide not only the recommended rate of consumption per capita, but also strong export resources that will strengthen the economy.

**The presentation of the main results of the study.**

The value of beef cattle – leader in livestock industry in all natural zones of Ukraine - is not limited to the production of beef. It is a major supplier of raw hides for light industry and organic fertilizers for field crops. Livestock developed everywhere. Livestock of Ukraine, depending on the nature of economic conditions, characterized by certain regional differences in industrial specialization. In “Polissi” and “Lisostep” developed dairy and meat and beef and dairy cattle livestock. In “Polissi” dominates meat and meat and milk livestock. In suburban areas, particularly the largest and most major cities - cattle livestock is most developed. The main problem of beef cattle is a decrease in number of animals and their productivity that occurs in farms of all types of ownership.

In the early 90-ies in the agricultural sector of Ukraine began sweeping economic reforms - the state the centralized management system was eliminated and there was a liberalized of prices, which led to a sharp disparity in the prices of agricultural and industrial products, effectively and state support of village was ended. Livestock has become a loss-making industry, which became unprofitable to deal. Destabilizing

processes took sweeping character, in consequence of what, business in all types of livestock farms worsened.

Over the 22 years 1991 - 2013 (data from 1.03) in Ukraine has decreased the number of cattle to 19,705.7 thousand heads or by 5 times, on 100 hectares of agricultural land remained 11.8 heads, it is less in relation to the 1991 by 31.3 heads. In 2013 in Ukraine there are 4917.7 thousand of heads of cattle.

There was an increase of cattle per year in 2012 there were 4425.8 thousand heads, and in 2013 they numbered 4917.7 thousand heads increased by 491.9 thousand heads. Particularly sharply decreased cattle in farms for 22 years - 92.7%. For 2012 and January - February 2013 agricultural enterprises increased cattle by 19.4 thousand units, or 1.3%. Share cattle farms to their total number is 31.1%.

In farms with cattle per 100 hectares of agricultural land, the ground was in 1991, 54.5 in 2012, heads this number decreased to 7.4 heads or decreased by 86.4%

As of 01.03.2013, in households were kept cattle 3387.7 thousand heads increase over 2012 and two months of 2013 was at 472.5 thousand heads. Worked law on the promotion of farmers to preserve young cattle. Share of households to the total number of cattle is 68.9%. Significantly decreased in cattle farms of 100 hectares of agricultural land in 1991 they numbered 132.6 heads and already in 2013 they were only 21.3 heads. It is necessary to take into account the time that the reform period with increased area. g land in farms.

The total number of cattle on January 1, 2013 increased in 20 regions. The most significant increase in the number of cattle farms observed in Ivano-Frankivsk (6%), Kiev (5%), Rivne and Zaporizhia, Cherkasy (4%) regions.

The largest reduction in the number of cattle registered in Donetsk region (6%) and the Autonomous Republic of Crimea (4%);

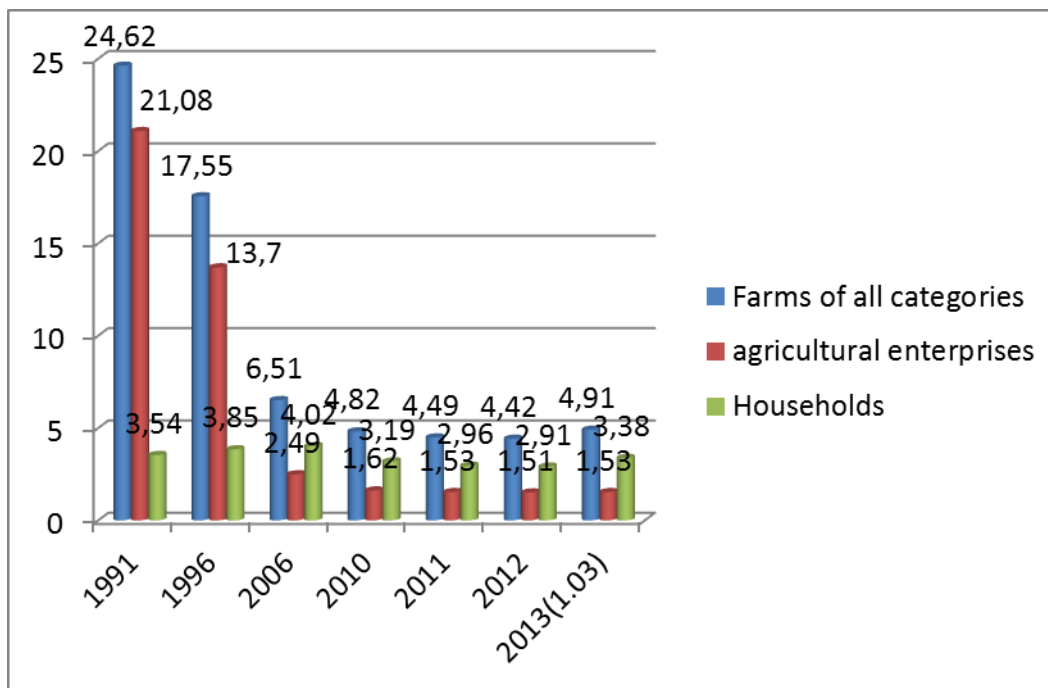


Figure. 1. Changes in the number of cattle (millions. Heads)

In Figure 1, we see that all indicators of the number of cattle a year by year continually reduced. In 1991, the main cattle herd contained in agricultural production as early as 2006, more cattle was kept in households and this trend continued until 2013. In 2012 and on 01.03.2013 the year increased the number of cattle in farms of all categories (blue column). Also, the number of cattle went up column in farms and households.

In Ukraine, 403 industrial structures of different legal forms of business as of January 1, 2012 there were 86.5 thousand head of cattle beef productivity, 14 breeds and types of cattle beef productivity in including 36.3 thousand beef cows. (Fig. 2). The share of area Polessye the total number of specialized beef cattle accounted for 55.3%, forest - steppe and 30.1% - 14.6%. In Ukraine in 1000 dairy cows and cattle breeds accounted for 15 cows specialized meat breeds, and in the area Polessye - 29, particularly in Volyn oblast - 57 cows, whereas in the U.S., Canada and France - the 200-300. If the share of world beef obtained from beef cattle 54%, in Ukraine - 3.5%. Despite the relatively small number of beef cattle, its population over the last 6 years has decreased by 39.9 thousand, head (31.6%), including cows - 20.2 thousand units (35.8% .) (1). Beef cattle industry in Ukraine in the process of forming.

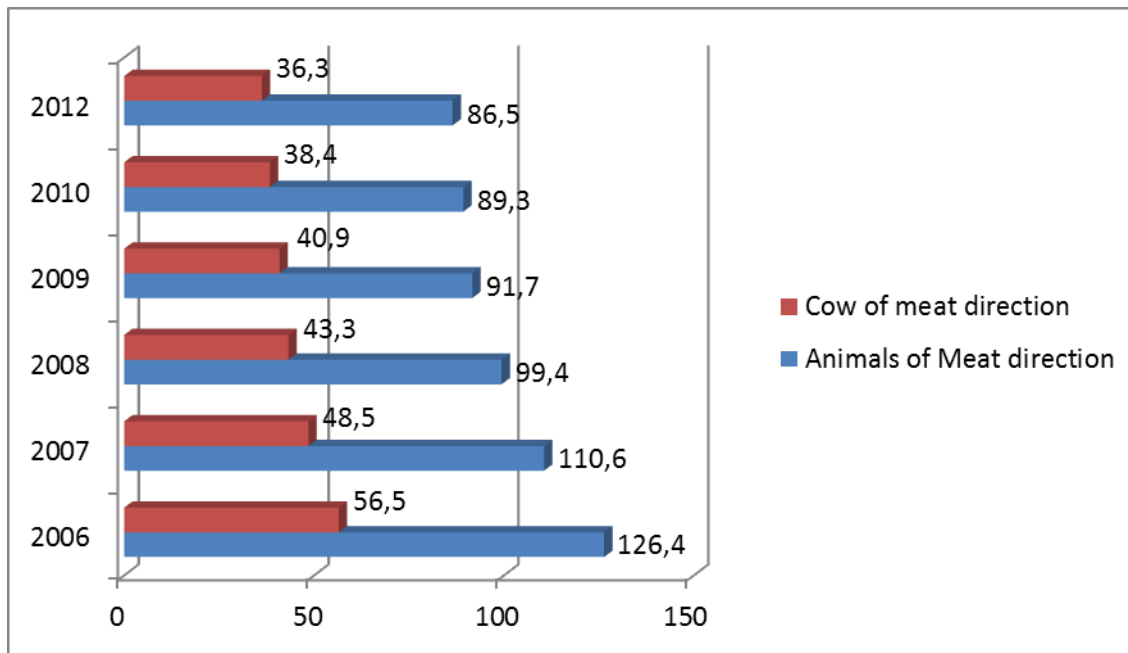


Fig.2. Dynamics of livestock and number of beef cows. (Thousand units)

In Fig. 2 shows that since 2006 the number of meat cattle productivity to 2008 and then decreased sharply decrease occurred, but at a slower pace. Stopped traffic index number of meat cattle performance in 2012 at around 86.5 thousand heads. Index number of beef cows performance, as seen in Figure 2 constantly decreasing.

Solve the problem of increasing meat production in cattle is possible by rapid development of large specialized beef cattle, which the rational organization of production requires considerable energy and labor costs, and capital investment.

Mainly by increasing the number of cattle beef cows to intensify their reproduction. First and foremost, an increase in the release of calves per 100 cows and heifers and 90 chapters, the introduction of the firstborn of the flock of 25-27 months., Extend the productive use to 5-6 calvings, the level of culling cows over the next 10 years to 15-17% in future - 20%. (2).

The sharp decline in cattle caused by several factors. One of the most significant of these is economic disinterest in growing cattle producers, because of the low purchase prices and reduced demand for these products.

As a result of objective and subjective reasons were adverse change in the development of beef cattle, reducing the number of cattle, caused a general decrease in production potential, led to a reduction in the volume of meat production in cattle.

In particular there was a decrease in beef production agricultural enterprises. So beef agricultural enterprises in 1995 produced 68.8% and households in the same year to

produce the basic amount only 15%. In 2011 its role changed, agricultural enterprises produced only 11.9% and households have additions to the basic tonnage of 302 tons, and they are a major commodity producer of beef, their share in the production of beef is 75.7% total beef produced by all categories of farms. Households increased beef production for 16 years by 69.7%. It should be noted that agricultural enterprises are gaining momentum of meat production in 2011, their share in total meat production was 56.7%, and the proportion of households was 43.3%.

It is understood that broke agricultural enterprises forward not by beef.

Figure 3 shows that the column of beef in all categories of sharply goes to the bottom followed by an indicator of meat beef farms. It should be noted that the column in the production of beef farms in 2005 took some direction to the top, but my main motion it continues to decrease.

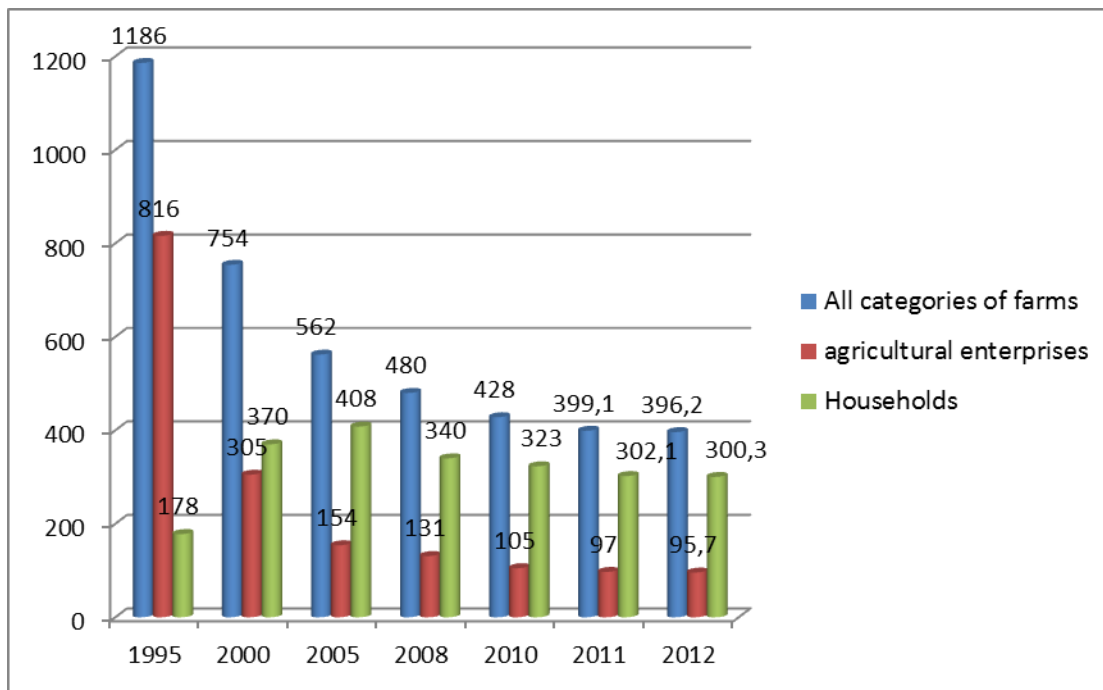


Fig.3. Dynamics of production of beef in different categories of farms (thousand tons)

Index beef production in households rose to the top by 2005 then slowly until 2008 he went to the bottom, and this year continues to move slowly in the same directed.

Households reduced in 2011, the production of beef in relation to 2010 to almost 21 tons in 2012 decreased beef production relative to 2011 by 1.8 thousand tons. The trend towards a decrease in the production of beef in households observed in 2006. That said however, that a necessary measure to maintain their own profitability by producing meat in households no longer such activities become unprofitable. Although meat production population is not the best alternative world technologies of its

production, and loss of this manufacturer in the circumstances, threatens virtually transition to imported products. [1].

Negative changes in the development of beef cattle were accompanied by an increase in cost per unit of production in the industry. The pace of increase in the cost of beef production significantly exceeded growth in prices for its implementation. Thus, during the 1990-2011 biennium realizable price of 1 kg of beef (with subsidies) increased by 3.8 times, and its cost increased 5.9 times. As a result, beef production in agricultural enterprises over the years (except 1990 with grants) was unprofitable.

Cost of 1 kg of beef each year increases, which in turn leads to an increase in the price of beef.

During the period that we analyze the implementation of reduced beef in agricultural companies at 93.5%.

In 2011 also decreased sale of beef relative to 2010 to 164.3 thousand t, or 8.7%. The cost of this year increased by 2%, the price of 19.6% is allowed to reduce unprofitable production of beef by 11.1%.

Profitability of beef is considerable variation in individual years. Figure 4. shows that the profitability of meat production from 2000 to 2012rik was subzero. Meat has been unprofitable every year just with different levels of loss. The highest loss ratio of beef was in 2000 (-42.3%) and in 2007 (-41%). The lowest level of loss seen in 2008 (-24.1%) accounted for the remaining years of losses from -24.8% to -38.4%.

The optimal level of profitability of agricultural production, which is 25-45%, provides advanced production and growth funds financial incentives, cost-effectiveness and describes the basis for the justification of the most efficient industry structure of the economy and getting the required number of profit as the main regulator of production under market conditions [2].

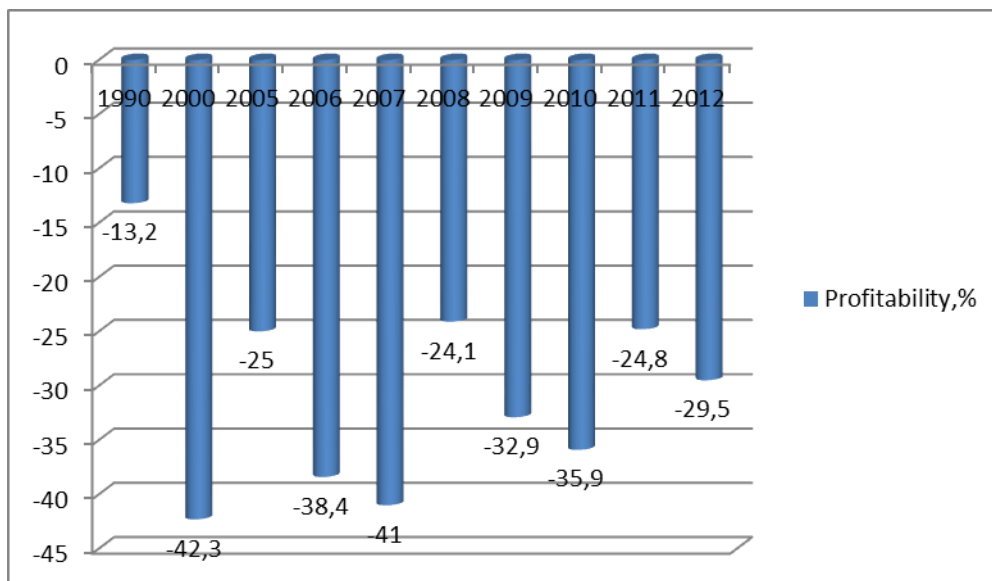


Figure. 4. Trends in profitability of beef

Analyzing the balance of beef and veal for the years 2008-2012 (Table 1) might argue that total supply over the years it decreased by 16.2%. In 2011, the total supply of beef decreased by 5.3% compared to 2010 due to a decrease in its production and imports. Production of beef and veal in 2011 amounted to 399 thousand tons is less compared to 2008 by 81 thousand tons in 2012 also reduced the production of beef and veal to 10 tons compared to 2011. Imports of beef and veal in 4 years have decreased by almost 58%. The total demand in 2012 fell by 1 thousand tons compared to 2011 due to reduced personal consumption of beef and veal population.

Domestic demand for beef and veal in 2011 - 2012 years ranges from 414-415 tons, depending on the effective demand of the population. It should be noted that the characteristic Ukraine decreasing trend in population means fewer available on the market in beef and veal end buyers, and thus leads to reduced capacity of the market. Changes in inventories of beef at the end of the year we go into the red to the required standards. But supplies of meat are a guarantee of the state in ensuring food security.

Table 1

## The balance of beef and veal, tons

	2008	2009	2010	2011	2012	2012/2008
The total supply	539	500	488	462	440	83,8
Beginning stocks	21	33	35	40	35	166,6
production	480	453	428	399	389	81,0
imports	38	14	25	23	16	42,1
The total demand	506	465	461	427	426	84,2
Domestic demand	488	445	448	414	415	85
Private household consumption	487	444	447	413	396	81,3
Expenses for non-food purposes (for food, expenses, etc.).	1	1	1	1	1	100
export	18	20	13	13	17	94,4
Ending stocks	33	35	40	35	26	78,8
Consumption of 1 person per year, kg	10,5	9,6	9,8	9,04	8,5	80,9

Source: State Statistical and own calculations [6].

Over the years we analyze the decreased production of beef per capita kg per year of all types of farms. So in 1990, agricultural enterprises produced 38.3 kg of beef per person per year, and in 2012 only 2.09 kg. Farms producing beef in 1990 per capita per year 3.4 kg in 2012 produced 6.58 kg per person.

Due to reduction of beef per capita kg per year deficits are the norm of consumption by the norms (Table 2).

Table 2

## Actual and necessary production and consumption of beef (2012)

Indicators	production total tons	Requirements of Ministry of Health	lack	Consumption of 1 person per year, kg			
				rules Ministry of Health	fact	to normal	
						+/-	%
beef	389	1440	-1044	31,3	8,5	-22,8	27,2

Source: State Statistics Committee [6] and own calculations

Beef produced in 2012 389 tons, and the need for normal Ministry of Health 1440 tons, the deficit - 1044 tons. Accordingly, the consumption of beef per person per year are 8.5 kg, which is less than - 22.8 kg to normal MOH. To normal consumption is only 27.2%.

Every person in the world according to the Food and Agriculture Organization (FAO) to obtain 20 g of animal protein per day, or 7.3 kg per year in order to prevent malnutrition or malnutrition. This amount of protein contained 33 kg of lean meat, fish or 45 kg or 60 kg of eggs, or 230 kg of milk, respectively. These sources are usually combined in the daily food intake. But in regions where not all of them are readily available, is necessary to increase consumption of other products. [5].

## **Conclusions: To speed up the development of beef cattle we need:**

- \* Rational use of available resources potential area (grasslands, fixed assets, including the herd of cattle, working material assets, human resources);
- \* Introduction into the herd of beef cattle breeds with high genetic potential;
- \* conduct balanced feeding of livestock feeds, feeding the introduction of resource-saving technologies, maintenance and reproduction;
- \* increase the yield of total solids, protein from the use-of the meat;
- \* Use advanced forms, methods and techniques of work and production to produce more products:
- \* increase the level of social workers farms;
- \* increase the purchasing power of the population of Ukraine.

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*Проанализировано состояние производства мяса говядины и обеспечения им населения Украины. Рассмотрена проблема увеличения поголовья крупного рогатого скота во всех формах хозяйствования. Также намечены пути к повышению эффективности производства мяса говядины с целью обеспечения рациональной нормы потребления мяса населением страны.*

*Ключевые слова: мясо, говядина, крупный рогатый скот, потребление, цена, себестоимость, рентабельность.*

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**УДК 332.3**

## **CLARIFICATION OF METHODOLOGICAL APPROACHES TO THE EVALUATION OF NON-AGRICULTURAL LAND COST**

The accelerated development of market relations in the non-agricultural field in Ukraine revealed many problems and defects. In particular, today the majority of real estate transactions and, above all, transactions with the non-agricultural land, are, at least, subjective, if not speculative.

Presently existing approaches to a normative and expert money estimation of non-agricultural land also need a definite improvement. In the majority of cases, these methodical approaches do not take into account all the factors of formation of objective or normative value of land of different purpose. In turn, all this inhibits the processes of the effective usage and management of non-agricultural land.

**Analysis of the last researches and publications.** At present, the majority of scientists investigate expense and profit methodical approaches to the estimation of non-agricultural land value. Only a few scientists dedicate their labors to the rental approach to this evaluation.

Instead, the methodical approaches that would successfully combine different methods of normative and expert money estimation of non-agricultural land remain neglected. Thus in one case it refers to the approaches that would facilitate the development of non-agricultural land market [1], and in another one - to the approaches that would conduce the accelerated economic cycle of such land [2, 3].

**The purpose of research** - to determine the most appropriate directions and approaches to the pecuniary valuation of non-agricultural land.

**Exposition of basic material.** Two basic methodical approaches underlie the normative money estimation of non-agricultural land. The first approach refers to the rental income from the targeted use of such types of land as industrial land, transport, communications, energy, defense and so on.

The second approach encompasses the remaining non-agricultural land, namely the of the natural-reserve, natural-protective, recreational, historical and cultural, health-improving, forestry and water management purpose, and it is based on the determination of the relevant economic effects from the intended use of these lands. To wit, the first approach is connected with the profit method in estimation of land value, and the second is connected with mixed profitable-expense method.

Since it is all about the normative money estimation, the standard indicators are determined in accordance with it. The rental or normative income is the standard indicator for the first case. The second case refers to the normative economic effect from land usage. Herewith, their annual average magnitude is taken into consideration in both cases.

Besides, an income from establishment of appropriate land improvements is taken into consideration in the first case as well as the intended land usage, so the total income consists of two main parts [4]. The determination of the economic effect should be done analogously. However, today it is calculated only in case of the intended land usage and practically does not include the effect from mentioned land improvements of the existing circumstances of land usage.

The first component of income, namely the targeted or functional land usage, first of all, must consider the income from the level of land suitability for the corresponding non-agricultural usage and its location.

Thereafter, it is necessary to calculate the long-term size of net income (loss) of certain industrial enterprises as well as the profitability of their work for the CLARIFICATION OF normative rental income (table 1).

## **1. The major indicators of work of non-agricultural enterprises of Ukraine on the state on 1.01.2011\***

Areas of activity	The main means of production, million, UAH and UAH/m <sup>2</sup>	Introduction of new major means of production, UAH and UAH/m <sup>2</sup>	Operational expenses of products sold (work and services), UAH and UAH/m <sup>2</sup>	The total area of land, thousands of hectares
Industry	1101199/191	42053/7,3	1022768,9/177,7	575,4
Transport and communication	3816055/594,2	17475/2,7	184641,2/28,8	642,2
Health Care and social sphere	62377/12,64	3619/0,7	6849,8/1,4	493,3
Provision of communal and personal services	270216/37,89	1788/0,3	21888,5/3,1	713,2

\*Source: compiled and calculated according to the data [7, p. 83, 88, 91, 94].

Such calculations should be conducted on both national and regional level, at least, for the last 5-10 years with the appropriate adjustment for the socio-economic situation of each region. Data concerning the normative pecuniary evaluation of land must be properly recorded in the State Land Cadastre and taken into account in the implementation of measures on the development of land management system in the country.

The clarification of the term of non-agricultural land capitalization still remains an important issue in the normative monetary evaluation of land. Today this term is set for forestry land (forest fund lands) at 50 years, and for the rest of non-agricultural land at 33 years. [5].

The minimum land cost for rental income can be defined if to take into account the term of non-agricultural land capitalization and the average annual rental income of the land (table 2). Herewith, the maximum cost of the land plot can be defined, establishing the maximum total value of the coefficient taking into account the location of land plot and the coefficient taking into account its functional purpose.

The issue of the non-agricultural land account for the financial and economic purposes is still important. Three main aspects should be considered from this position: actually plot of land, rights to land and the cost of land improvements.

Herewith, land plot itself must be a component of the fixed assets of enterprises. Its joining the fixed assets can be done in several ways: free transfer, acquisition and exchange.

In the examination of land plot through its original cost, the additional expenses on land, such as the cost of acquisition of the land, should be considered [6]. Since the cost of land amortization is not included in cost of land, the tax and the residual value of land plot will be the same. The taxation should not be conducted during the transfer of land plot with improvements.

## **2. Assessed value of non-agricultural land enterprises of Ukraine on the state on 01.01.2011\***

Areas of activity	Number of enterprises	The minimum cost of 1 m <sup>2</sup> for rental income, UAH/m <sup>2</sup>	The maximum cost of 1 m <sup>2</sup> for rental income, UAH/m <sup>2</sup>	The actual average selling price of land plot, UAH/m <sup>2</sup> **
Industry	129313	240,9	939,5	24
Transport and communication	45776	89,1	347,5	27,5
Health Care				

and social sphere	35822	23,1	90,1	-
Provision of communal and personal services	186422	9,9	38,6	25

\* Source: compiled and calculated according to the data [7, p.81].

\*\* Data for Dnipropetrovs'k Oblast for 2006

In general, certain market and economic characteristics should be taken into account in determining the monetary value of agricultural land.

Firstly, only land plots which satisfy or can satisfy the various interests of their owners and users should be evaluated. In other words, land plots must be useful.

Secondly, land plots, which usefulness is difficult or impossible to detect must be evaluated according to their social or natural value. Herewith, the most valuable land areas should be given a special attention, namely, the most valuable lands must have the highest price and prudent methods of usage.

Thirdly, the price of land (land plots) of non-agricultural usage cannot be lower than the amount of money that was invested in it: in other words, the cost of non-agricultural land should not be below zero. Only the directions of non-agricultural land use can be unprofitable.

Fourthly, the cost of non-agricultural land of any category cannot be lower than the cost of the analogous, equivalent and equally useful land of the same category, namely, minimum (minimum permissible) cost of land must be established in each category.

Fifthly, the cost of non-agricultural land should be determined taking into account external factors including supply and demand for this plot of land or similar land. Herewith, it is necessary to take into account the mutual influence of different factors, such as their mutually complementary or mutually constrain effects, or synergistic and not synergistic effects.

Sixthly, the cost of non-agricultural land should change both in time and space and at the same time take into account most probable directions and ways of land usage in the future. It is necessary to determine the most probable risks of different ways of agricultural land usage and the value of their probable (positive and / or negative) impact.

Seventhly, the cost of land should take into account the actual change of its functional usage types and ways to improve the economic efficiency of land usage, as well as the introduction of ways of environmentally safe land tenure. Herewith, these ways of tenure should be evaluated only within the primary intended usage, namely, intended usage must be taken into account even at different functional usage. Otherwise, in the case of an actual non-agricultural land misuse, the cost of such land will be distorted, or, more precisely, undervalued.

The determination of non-agricultural land cost can be implemented with a help of both normative and expert pecuniary evaluation. Herewith, the expert pecuniary evaluation is mainly used to determine the value of a separate land plots, and the normative pecuniary evaluation is also used to determine the cost of group of lands with similar qualitative and quantitative characteristics.

For the purposes of taxing of land users, not only the cost of non-agricultural land, but the price of land, or the capitalized land rent must be determined. The value of the expected additional, unrelated to the business activity income is the basis of capitalized land rent.

The determination of these values will allow the establishing of an objective and equitable size of the land tax and size of other mandatory payments which arise during the various transactions related to land.

Moreover, it will be possible to clarify the value of losses caused by inefficient usage of non-agricultural land.

Generally, the most objective result in the determination of the cost of non-agricultural land can be obtained by making calculations on different methods and comparing the results of these methods. In such a way it will be possible to determine the minimum and maximum cost of non-agricultural land.

It is necessary to clarify the actual value of monetary evaluation of non-agricultural land every 5-7 years according to the current day methods of the normative pecuniary evaluation of land. Thus, it is necessary to consider the value of the obtained net income or loss of the enterprises as well as the level of profitability of these enterprises.

The hierarchic system of this evaluation should also be preserved through its implementation firstly at the national, and then at the regional and local levels. Besides, this evaluation must also take into consideration both general economic characteristics and the level of socio-economic development of the territories, such as regions or localities.

**Conclusions and perspectives for further research.** Thus, the phasicness of the evaluation must be preserved and the completeness and inclusiveness of its realization must be achieved. The evaluation in compliance with at least the basic regulations and procedures can be an example of such completeness. These should include: the preparation of technical documentation of the normative non-agricultural land evaluation; the determination of sources of financing of the evaluation activities; the selection of methods and terms of evaluation; the determination of the entities interested in the objective conduction of the evaluation and all the other entities to use the results of the non-agricultural land evaluation in future; the development of forms and methods of control over the accuracy and objectivity of land evaluation; the determination of ways to disseminate the information about the normative non-agricultural land evaluation; documenting and legal registration of the results of the evaluation etc.

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## THE ECONOMIC MECHANISM OF ECOLOGICALLY SAFE LAND USE IN UKRAINE

O. Budzyak

At the end of XX century the land was state owned and land plots were provided for use free of charge. However, the legislation did not abolish taxes and fees to cover the costs on the maintenance and improvement of land. The principle of free land usage, attached to a latent form of payment through the taxation system, prevented the formation of the efficient economic mechanism of the land relations regulation and was a contributing factor to inefficient land usage.

The existing economic mechanism has been formed in such a way that in relation to land resources it mostly functions with negative ecological results, because of containing such economic regulators that not always limit the destruction of land.

Fiscal payments, which contribute to the accumulation of financial resources, are the example of such regulators. Herewith, for the subjects of land tenure it is more profitable to pay these payments than to spend money on land protection or the implementation of ecologically safe methods of land usage. As a result, government expenditures on land protection and rational land use are insufficient, while the income from land usage increases and becomes a considerable part of national economy income.

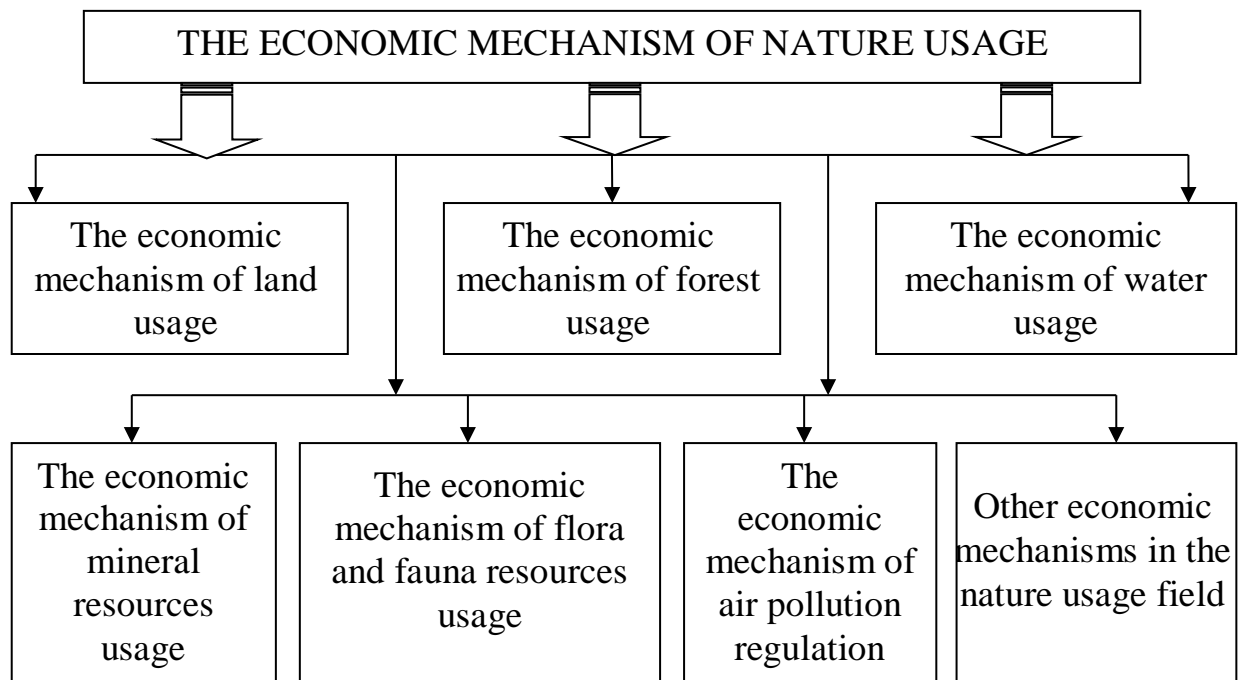
**Analysis of the last researches and publications.** The term ‘mechanism’ is widely used in scientific turnover, but there is still no unambiguous definition of its essence. The ambiguity of ‘economic mechanism’ term interpretation in general and the interpretation of ‘economic mechanism of land usage’ in particular remains the main methodological problem. The analytical overview of the different interpretations of the term has been realized, and it leads to the conclusion: nowadays the unambiguous interpretation is impossible, since the definition of economic

mechanism essence depends on a goal that scientists set for themselves during the research.

Several researches were engaged in the development and formation of economic mechanism of nature usage: S. M. Bobylyev, O. O. Veklych, M. O. Kadatsky, I. Karahodov, P. I. Korenyuk, V. A. Luk'yanihin, L. Melnyk, O. O. Nyesvetov, K. V. Papenov, O. L. Popova, A. S. Khodzhaev, L. B. Shostak; in particular, the issue of economic mechanism of land usage was investigated by O. Mordvinov, O. M. Tsarenko, O. O. Shkolnyy, N. V. Hrebeniuk, D. S. Dobryak, A. Tikhonov etc. However, it should be noted that the issue of economic mechanism of ecologically safe land usage in Ukraine is still given an insufficient attention, in particular, the main components of such a mechanism have not been elaborated and substantiated yet.

**The purpose of research** is to substantiate the notion of economic mechanism of the ecologically safe land use and to determine its main components.

**Exposition of basic material.** Mechanism is mostly understood as a certain totality of processes which acquire a systemic character. On this basis, we propose to interpret the notion 'the economic mechanism of land usage' as the subsystem of the economic system, which structural units are economically interrelated and regulate the land tenure subjects relations in market conditions in the direction of ecological-safety land use (fig. 1).



**Fig. 1. Economic mechanism as a component of nature usage system**

Source: developed by the author.

The reasoning for the economic instruments usage is based on the concept of double dividends [1, p. 215], which means that their establishment and usage in the ecologically safe land tenure not only allows to solve the ecological problems of land tenure, in particular, soften the negative external influences, contribute to reducing of environmental damage caused to the quality of land at the expense of funds accumulated from various fees and permits, but makes getting an economic income from land usage possible as well.

In general, the efficiency of economic instruments in the economic mechanism of ecologically safe land usage depends on the optimal combination of state and market regulators.

In international practice, more than 150 economic instruments are used, and about 80 of them are taxes and charges [1, p. 216]. That's why we consider it necessary to highlight, of the entire amount of economic instruments, those which must be a base for the solving of ecological problems in land usage. On our opinion,

the basis of the economic mechanism of ecologically safe land use must be formed considering:

- responsibility for the environmental safety of land usage;
- stimulation of the ecologically safe land usage;
- financial provision of the ecologically safe land usage;
- insurance of land for the implementation of the ecologically safe land usage.

The economical responsibility for the environmental safety of land usage comes when land usage subjects start violating the ecological restrictions and not following: standardization, certification, rationing, limitation, the requirements of environmental assessment, land quality monitoring, quality and environmental safety of agricultural products control, the implementation of regional programs of soil fertility improvement, as well as national programs of land protection.

Subjects of land usage (individuals and legal entities) bear the economic responsibility (financial compensation for damage caused to land resources in its entirety) as well as legal (civil, criminal) responsibility [2, article 56], depending on the degree of violation of the requirements established by law. Herewith, today such responsibility has a compensatory, but not a non-renewable character.

Thus, today the amount of compensation for environmental damage caused to land is not clearly established and includes only the current loss. Herewith, the inpayment of fine by a subject of land usage does not oblige him to return the land in a condition that existed before the pollution or other damage.

That's why nowadays it is advisable to strengthen civil responsibility for environmental violations concerning land usage. Such responsibility must include both financial and criminal components. Herewith, the material responsibility should not only be limited to imposition of fines, deprivation of tax benefits, subsidies, loans, but it should include the withdrawal of licenses, permits, namely the right on realization of a certain activity in general, as well.

Nowadays financial responsibility is a more effective way of dealing with a non-compliance with environmental requirements for land usage than criminal responsibility. This kind of sanctions may become catastrophic for the subject of land

usage, unlike the criminal responsibility, which is difficult to apply without following of certain procedures. Besides, it is a long and financially costly process, which is often replaced with another kind of responsibility.

Financial responsibility should envisage the amount of compensation for environmental violations in land usage, which must be determined on the basis of total income, liquidity (correlation between the assets and liabilities of the enterprise) of the land usage subject and include damages inflicted by loss of fertility, costs on restoration of soil fertility and loss from the foregone products for the entire period of withdrawal of land from circulation until the restoration of their properties, and the obligation to return the land to a condition environmentally suitable for usage.

Certainly, land restoration will be conditional, since it will be fulfilled as far as possible. In the case of engulfing the surrounding land plots by ecological damage caused to the land a compensation to the affected land owners and land users must be envisaged as well. The subject of land usage must not be in an advantageous position after payment of fines in any case [3].

Stimulation of the ecologically safe land use must include both encouraging and coercive mechanisms. The basis of the encouraging mechanisms should be formed by tax benefits, preferential loans, none-monetary incentives, subsidies, subventions, grants, payment of compensation for losses not caused by the land user etc.

The legislation of Ukraine provides stimulating measures such as:

- providing tax and credit incentives to subjects of land usage which take measures to protect the land from erosion, improve soil fertility at their own expense;
- exemption from payment for land for the subjects of land usage that carry out the work of reclamation, recultivation, conservation, etc. on their land plots;
- compensation for the profit lost because of conservation of degraded, unproductive and technologically contaminated land;
- use of accelerated amortization of the capital assets of land protection purpose [2].

Compensation of expenses to subjects of land use is conducted at the expense of the State Budget of Ukraine.

In the case of uselessness of the mechanisms encouraging the ecologically safe land usage it is appropriate to use coercive stimulating mechanisms, such as additional taxes, limits, quotas, sanctions, fines, etc.

Transferts are often used in the practice of stimulating. Nowadays transferts are paid at the expense of local budgets. Thereafter, the size of payments are different in the regions, and the allocation of subsidies is not always scientifically justified.

In order to make transferts fulfill a stimulating role in the development and establishment of the economic mechanism of the ecologically safe land usage, it is necessary to provide subventions, subsidies, grants exceptionally to those subjects of land usage which need the money for change of the traditional system of agriculture into such a one (organic, contour-reclamative), which will guarantee the ecologically safe land usage, or to those which seek to acquire a novelty or strive to implement technologies of the biofertilizers production, new progressive agricultural machinery production and to implement the advanced production lines of melioration systems and so on.

Financial support of the ecologically safe land usage is carried out under the financial mechanism which contains two components: the financial support, namely filling the funding sources, and the financial regulation, which functions are distribution, redistribution and use of funds.

The financial support of land usage is to establish the sources of funding and characterizes the passive impact of financial support. Financial regulation fulfills the regulatory function, which means establishing certain proportions in the distribution of income in order to the realization economic interests.

Financial instruments are the main regulators of financial support in land usage area. Some of them fill the funding sources (taxes, fees, insurance contributions, fees for leasing, loans, etc.), others distribute and redistribute money from funding sources (budget allocations, transferts), and the rest of them adjust the process of filling and using of funding sources (tax and credit benefits, limits, quotas, etc.). [1, p. 214].

Currently, funding of land and soil protection measures is conducted at the expense of the State Budget of Ukraine and local budgets, which are formed from the revenues of the payment for land, compensations for production losses and other sources not prohibited by law [2, Article 55].

Measures, provided at the expense of the State Budget of Ukraine, are: eliminating the causes and consequences of the negative impact on land resources and soil as a result of a natural disaster or in case of impossibility to find the perpetrators; construction and reconstruction of protective afforestations, erosion and landslide protection constructions, waterworks, melioration systems; neutralization of unusable chemical drugs, conducting systematic surveys of land and soil and so on.

Measures, provided at the expense of local budgets, include development and restoration (if the deterioration occurred not as a fault of subject of land use) of land for national economic needs, regional programs of land use and protection, improvement of agricultural and forestry lands; possible building of constructions against erosion and of melioration systems according to the law and other measures. The financial support of subjects of land usage, which take such measures as land protection, conservation, soil fertility improvement, anti erosion measures, projects of land conservation, restoration of degraded lands and others, is also possible.

It is advisable to carry out the financial providing from various sources for a more effective implementation of the components of the economic mechanism of the ecologically safe land usage, and among the main of them must be: government funding, the funds of subjects of land usage (ecological rent, lease of land), borrowed funds in the form of bank loans and loans of other financial and credit institutions, funds raised from various environmental and international funds, associations, corporate associations and etc.

Taxes, fees and charges imposed for the use of land are an important source of financial provision of the State Budget. Among the taxes there is a land tax, which is set according to the intended use of land, in particular, for arable land, meadows, pastures it is set as 0.10% of the normative monetary evaluation of land, for perennial

plantings - 0.03%, for non-agricultural land - 1.00%, and for non-agricultural land, which monetary evaluation hasn't been done - 5.00%.

A significant drawback of the legally established land tax is that it doesn't include the ecological component. Including the extreme importance of this component, it must obligatory be reflected in the size of payments.

Besides taxes, payment for land plot and lease payments, there are other no less important sources of financial provision: ecological payments, presented in a form of pollution charges, in particular, charges for damage caused to land, pollution fees (discharges, waste disposal) within the limits and fees for pollution above the established limits. Each of the three types of fees has its own peculiarities in accrual of funds. Yes, the law stipulates that at the payment for damage caused to land (nature) and payments for land contamination by subjects of land usage above the established limits it is necessary to make deductions from the value of net income. Such a system of payment collection is economically justified and appropriate. However, fees for pollution within limits are still carried out not out of land users' income, but at the expense of consumers, because the source for these fees is a prime price of produced goods and services. This violates the basic principle of ecologically safe land use - "the polluter pays" principle, eliminates the catalytic function of pollution charges and works concealed for the replenishment of land users income [5].

The appearance of the fourth unit - "insurance of land" - is an important component of the economic mechanism. Today, about 99% of Ukraine title insurance is developing in the direction of cooperation of insurers with banks. Of course, this insurance provides insurance payments in case of the termination of land ownership, but the existing insurance contracts do not guarantee to subjects of land usage the protection against all possible risks of land loss. Currently, the most common types of risks in the protection of property rights of subjects of land usage are: the risk of loss of an acquired property rights on land for a subject of land usage (insurer, owner) (documents accompanying the agreement were composed improperly, the seller has not reached the age of majority, forged documents were used in processing the

transactions, etc.), including at the renewal of rights on a land plot in the secondary market, and the risk of limitation of rights of the subject of land usage (land privatization process violations, errors in the processing of land plot boundaries or registration of ownership, etc.)

The environmental risks begin to acquire a special urgency. In market conditions, the empowerment of subjects of land usage (tenants and landlords) in the possession, use and disposal of land will intensify a consumer attitude to land. However, the subjects of land usage are not always able to bear the financial responsibility for damage caused to land and its properties. Herewith, the increasing number of environmental risks will only cause a growth of economic losses.

Land plot is considered to be insured, if its location is mentioned in the insurance contract with an assigned cadastral number [6]. In case of insurance of land from the environmental risks by the subjects of land usage, the responsibility for caused damage is transferred to the company. But insurance companies often use the rule of regress as well (when the perpetrators are known) – compensation for damages at the expense of perpetrators.

Obtaining of insurance policies is a reliable way to avoid economic losses related to environmental risks. Yes, some points in the compulsory and voluntary insurance of citizens and their property (land) in case of damage caused to the environment are defined in the Laws of Ukraine "About Environmental Protection" and "About insurance", but the procedure of the ecological insurance still remains undetermined. Insuring the ecological risks of land usage, the subject of land tenure will be interested in increasing of ecological safety of land usage, as in such a case the stakes of insurance payments will not rise and the subject itself can expect certain benefits or preventive measures.

**Conclusions and perspectives for further research.** Consequently, the economic mechanism of ecologically safe land usage should be fundamentally streamlined and modernized according to market conditions, basing on international, European environmental standards, regulations and requirements, providing the common conditions of land tenure for all subjects of land usage, including owners

and investors. It is necessary to give the financial instruments of environmental charges more stimulating functions and contribute to the formation of differentiated fees sizes depending on environmental conditions of land usage, as well as to give the financial encouragement to subjects of land usage to implement the ecological farming systems.

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## **Conditionality AGRICULTURAL ECONOMIC SYSTEMS FOR INNOVATION DEVELOPMENT**

**Abstract.** Reveals the principles and methods of creating an enabling environment for the implementation of science, technology and innovation in the agricultural economic system.

**Keywords :** agriculture , scientific and technical products ; innovation.

**Analysis of the main research and publications.** Similar questions considered : A. Vytvytsky , P.Haydutsky , M.Kropyvko , M.Lobas , Yu.Lupenko , P.Muzyka , P.Sabluk. The purpose of the given publication is a need to provide such innovative models of farms that would provide a flexible system reform.

**Introduction.** Agriculture today is characterized by processes related to globalization of economic relations, the interdependence of countries and regions , deepening international division of labor and cooperation . The actual integration of the country into the global political and economic environment requires adaptation of the national economy to the most important trends in the external environment.

One of the important tasks of reforming Ukraine's economy is the transformation of agriculture. In the international community recognize Ukraine as a potential leader in the production of agricultural products and basic food products : grain, sugar, oil , meat, dairy products and so on. The agricultural sector of Ukraine has great potential, but a lack of economic and institutional environment can not use it.

The main material. Farms in the formation and development of innovative processes is determined by a number of specific factors, including : a variety of

agricultural products and processed products , a significant difference in the technologies of production significant differentiation of various regions in terms of production, the strong dependence of technologies in agriculture from natural and weather conditions , the difference in the period of production in certain types of agricultural products and processed products , a high degree of territorial fragmentation of agricultural production , isolation agricultural producers ( at all levels) of the organizations that make scientific and technical products ; different social level of agricultural workers ; multiplicity of different forms and relations of agricultural producers with innovative formations , the lack of clear and scientifically sound organizational and economic mechanism of transfer of science to agricultural producers and, consequently , a significant lag in the development of the field of innovation.

In the economic literature, the term "innovation" is interpreted as the transformation potential of scientific and technological progress in the real, which is embodied in new products and technologies. Innovative product characterized by higher technological level , new consumer qualities of the goods or services compared to the previous product.

In the literature there are many definitions of innovation. For example , the content or internal structure distinguish innovation , technical, economic, organizational , management and others. Distinguish such features as scale innovation ( global and local ) parameters of the life cycle patterns of the implementation process .

Scientists have different interpretations depending on the concept of the subject and the object of his study . For example , B. Twiss defines innovation as a process in which an invention or idea to acquire economic content. F. Nixon believes that innovation - a combination of technical, industrial and commercial activities that lead to a market of new products, improved industrial processes and equipment.

According to international standards , innovation is defined as the outcome of innovation that took incarnation in the form of new or improved product introduced on the market a new or improved process that has found application in practice.

As for the content of this concept from the experts , there are two approaches: broad and narrow. A classic wide approach consider the foregoing Austrian economist Schumpeter back in 1913. in his work "The Theory of Economic Development " understanding of the process itself, which consists of five main options:

- the introduction of new products (goods , which are not familiar consumer goods or new species );
- introduction of a new method of production ( method not previously used in the art industry) ;
- opening new market in which this industry of this country has been submitted;
- gain new sources of raw materials and semi-finished products ;
- Implementation of a new organizational structure in any industry.

Similar view is held and La Hyerre that defines innovation as any change in the internal structure of the economic organism. However, most economists are in positions of narrow approach. They limit the field of scientific and technological innovation technology matters. Thus , according to one view, innovation - the process of applying new technologies , products, according to another - as a result of new methods of production and technological processes. So , a Hungarian economist B.

Santo identified innovation as a socio- economic and technological process, through the use of practical ideas and inventions helps create the best performance in its products and technologies. Just interpreted this concept in most modern dictionaries and reference books , such as " Innovation - is the process by which an invention or discovery is brought to the stage of practical application and begins to economic benefits , the new impetus of scientific and technical knowledge to ensure market success " or: "Innovation - a process aimed at the creation , production, development and qualitative improvement of new products , technologies and organizational forms." P. Lemerl characterizes innovation as a new product or service , method of production, innovation in organizational , financial , research and other areas , any improvement that provides cost savings and creates conditions for this

economy. " To close the position to determine this concept are the authors of the dictionary market economy. According to them, primarily characterized by innovation efficiency investment, the development of inventions and rationalization.

The term "innovation" was adopted in the Soviet literature later than abroad. Its contents are disclosed , including dictionaries. In editions before 1990 . the term "innovation" yet. However, overseas the concept emerged in the early XX century. and had received further development and analysis in the 30s . Most intensive problem of innovation and evaluation began to develop in the 60- ies of XX century. due to the sharp increase in the scale and complexity of research and development activity , particularly in the aerospace , nuclear and electronic industry , the development of biotechnology.

In centralized economic management to describe the relevant processes are often applied the term " introduction of science and technology", " management of scientific and technical progress " and so on .

The most acceptable for application use is narrower approach to the definition of innovation that takes into account scientific, technical and economic aspects. This is defining the role of scientific and technological challenges in addressing the socio-economic and economic problems as the business and in the economy as a whole.

The most important factor at this stage is a rapid and large-scale economic performance in carrying out innovative projects. In addition, these range of problems studied in comparison with deeper organizational and social aspects of innovation.

The creators of innovations guided by criteria such as life cycle and economic efficiency of the product. their strategy aimed at gaining advantage over competitors by creating innovations that will be unique to a particular industry. Innovation is an essential characteristic of scientific and technological innovation and practical application in the workplace. Possibility of commercial design acts as a potential feature to achieve that requires some effort.

The notion of innovation (innovation ) is often identified : first , innovative research and development , and secondly , changes in the style of the organization in order to create favorable conditions for the clients ( administrative innovation) , and

thirdly , the development of new products or services conditions more favorable than those of the present. All these areas are most successfully implemented with sufficient innovation potential. With the last link the ability to create high technology products that meet the requirements of the global market. Innovation capacity is research, design and design development, experimental work relating to new production, making the necessary tools and equipment, means of technical control. Most of the innovation process identifies the full range of work - from a new theoretical knowledge to the consumer use it materialized implementation of product ( service ).

The product innovation relates primarily new goods (services). The innovative product - the result of material production, the cost of which a significant proportion (at least 30%) of the costs of intellectual research. Innovative services are generally intangible in nature and are mostly related to scientific and technical information . Other causes inseparability of services from primary sources, intangibility and variability of their quality over time. The purpose of mediation marketing product innovation depends on the nature and purpose of the goods. Its main results are most probable prediction of sales of the product in real terms , and determine optimal prices.

Innovative products may be new to the market as a whole and for the company. Market innovation - are products that more effectively solve the problem of traditional consumer ( instead of adding machine calculator ) or meet new market needs (VCR , mobile communications ). Products that are new to the company, different from existing in the market or in appearance or features. Developing new products is most often associated with greater risk and expense. Empirical studies show that an average of 100 new products ideas only 4-5 new products have commercial success in the market. Therefore, the marketing of innovative products should prevail strategic approach.

**Conclusions and recommendations for further research.** Compliance with certain tactical principles introducing innovation reduces the risk that accompanies this activity. These principles are as following:

- Innovation should be based on long-term targets and strategic planning ;
- Power structure and financial enterprises have opportunities make it possible to implement innovative processes;
- The company must have an ample supply of "know -how" appropriate technologies to target markets ;
- Requires a constant exchange of information with consumers and experts for timely identification of new needs;
- New products for the company to be different from competitive analogues;
- Innovation, market sources have had to have more success than those that arose as a result of scientific and technological research .

Therefore, the interaction of the manufacturer's existing or prospective customer must first create competitive products.

Thus, the transition of agricultural economic development of innovative systems to help improve the efficiency of agricultural production in general.

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**FIXED ASSETS AS CONSTITUENT OF RESOURCE POTENTIAL OF  
AGRICULTURAL ENTERPRISES OF REGION**

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*In the article investigational material well-being and grounded directions of increase of their effective use the fixed assets of agricultural enterprises.*

***Keywords: fixed assets, resource potential, efficiency, use, agricultural enterprises***

Active work of research workers of Ukraine in direction of forming of market strategy of recreation of resource potential of APK allowed to produce separate theoretical positions of adjusting of process of recreation of the fixed assets in agriculture. However much deep structural changes in the economic mechanism of manage, claim of peculiar, on capital and creation of new organizational forms of manage goods in agriculture require subsequent scientific researches of features of motion of the fixed assets as advanced cost and decision of complex of methodological and methodical aspects of adjusting of process of their recreation in agrarian enterprises.

**Analysis of the last researches and publications.** The problems of the effective use and recreation of resource potential in the agrarian sector of economy doslidzhuvali such scientists-economists, as: I.F. Balanyuk, V.A. Borisova, O.A.Buguckiy, V.S. Diesperov, V.Ya. Mesel'-Veselyak, L.D. Pavlovska, G.M. Pidliseckiy, P.T. Sabluk, A.M. Tretyak, M.M. Fedorov, A.G. Fonotov, V.Y. Shiyan, V.V. Yurchishin and much other. At the same time separate questions of increase of efficiency of the use, and also creations of the optimum, resource potential of agroformuvan' balanced after a structure at the level of separate region taking into account his features need deep researches.

**Research purpose.** A research purpose consists in development of methodical principles of forming of mechanism of recreation of the fixed assets of

agrarian enterprises, directed on providing of resource potential of agricultural enterprises.

**Exposition of basic material.** Providing of high rates of development of agricultural enterprises and increase of efficiency of production is possible on condition of intensive recreation and rational use of the fixed assets. The indexes of recreation of the fixed assets are characterized by the process of his motion and technical state which directly influences on efficiency of the use of facilities of labour. Development of enterprise, rates of growth of production of agricultural goods and increase of the labour productivity, depend on equipped of enterprise the fixed assets. Estimation of level of material well-being of agricultural enterprises of the Vasil'kivskogo district of the Kievan area by the fixed assets and efficiency of their use after 2007-2011 is resulted in a table. 1.

An increase of level of equipped the fixed assets is by basis of improvement of material and technical base of agricultural enterprises. Kapitalozabezpechenist' of agricultural lands and kapitaloozbroenist' labour in an agrarian sphere characterizes intensity of industry, provides an economy and growth of the labour productivity and as a result are production of goods volumes [1]. Analysing information of the resulted table. 1 it follows to draw conclusion, that kapitalozabezpechenist' of agricultural enterprises of the Vasil'kivskogo district of the Kievan area in 2011 rose on 68,9%, by comparison to information in 2007 and made 6,36 thousands of Uah Effectiveness of agrarian production is to a great extent determined the level of kapitaloozbroenosti of agricultural labor which represents possibilities of socio-economic changes in its character and maintenance. The level of kapitaloozbroenosti labour substantially rose and in 2011 made 326,2 thousands of Uah on one working, that on 241,3 thousands of Uah more than in 2007.

Table 1

**Efficiency of the use of the fixed assets is in the agricultural enterprises of  
the Vasil'kivskogo district the Kievan area**

Index	Years					2011 year to 2007 year, %
	2007	2008	2009	2010	2011	
Fixed assets of all, millions of Uah	239,3	250,6	402,4	432,0	440,3	184,0
Production of gross goods, million Uah	500,7	547,9	591,8	530,6	570,1	113,9
Area of agricultural lands, thousands of hectare	63,6	67,8	65,9	65,5	69,2	108,9
Seredneoblikova quantity of workers, persons	2820	2377	2300	2138	1350	47,9
Kapitalozabezpechenist', thousand of Uah	3,77	3,70	6,11	6,60	6,36	168,9
Kapitaloozbroenist', thousand of Uah	84,9	105,4	174,9	202,1	326,2	384,3
Kapitaloviddacha, Uah	2,09	2,19	1,47	1,23	1,29	61,9
Kapitalomistkist', Uah	0,48	0,46	0,68	0,81	0,77	161,6
Norm of income, %	4,5	-	16,9	24,8	29,5	x

It is expected an author from data of accounting of agricultural enterprises of the Vasil'kivskogo district of the Kievan area after 2007-2011 (F50-sg the «Basic economic indicators of work of agricultural enterprises») [2].

Researches show that with the increase of this index grows the labour productivity. The level of kapitaloozbroenosti labour in 2011 grew not due to the increase of cost of the fixed assets, but diminishing of quantity of workers which are busy in an agricultural economy. It is necessary to notice that instrumental in higher kapitaloozbroenist' labour to the increase of production of agricultural goods at the expenses of labour of less of workers.

During the probed period, the index of kapitaloviddachi in 2011 diminished on 38,1%, by comparison to information in 2007 and made 1,29 Uah In relation to kapitalomistkosti products, it is necessary to notice that it in 2011 was increased on 61,6%, than in 2007 and made 0,77 Uah Kapitalomistkist' determines size, necessary an enterprise under the conditions for the production of gross goods by a cost 1 Uah the fixed assets. Substantial growth of kapitaloviddachi can be attained due to perfection of structure of the fixed assets. Application of progressive

technologies is instrumental in the improvement of the use of the fixed assets and increase of efficiency of production of plant-grower and stock-raising goods. A norm of income in 2011 was 29,5%, that on 25% more than in 2007.

During the last years in agricultural enterprises there is reduction of mashinno-traktornogo park, amount of trucks and decline of transport possibilities of economies. A quantity and high-quality composition of autopark does not provide the necessities of production, causes diminishing of volumes of transportations of loads in agrarian enterprises. Development and features of material and technical base of agrarian enterprise determine him possibility in relation to a production and realization of products volume. Growth and improvement of capital goods is provided by the increases of technical equipped of enterprise and make financial basis him production capacity.

In the probed region the presence of the fixed assets in agricultural enterprises in 2011 made 440 million Uah, that on 201 million Uah anymore by comparison to 2007 During the last years there is a low level of reproductive processes of the fixed assets and efficiency of their use in most agricultural enterprises of Ukraine. In an agrarian production the park of operating tractors and combines is contained by more than two third of the worked and technically ramshackle units. Exactly the exigent task of acceleration of recreation of the fixed assets is foremost stipulated these the increase of efficiency of their use.

An acceleration of update of material and technical base of enterprise, increase of scales of exception, from the production of technically ramshackle and economic ineffective machines and equipment is basis of increase of efficiency of the use of production facilities. Thus intensification of reproductive processes in an agrarian production needs mobilization of large financial means. In full it is possible on condition of state support, and also wide bringing in of internal and external investments.

One of effective directions, that provides the rational use of production facilities there is introduction of complex mechanization and agricultural computer-aided, resursozberigayuchikh and zero-emission technologies

manufacturing. Yes, due to the removal of losses at all stages of agricultural production, improvement of storage and realization of mine-out products, the food fund of country can be increased on 20-25% [3].

Ponderable increase of efficiency of the use of the fixed assets on enterprises it is possible to get due to the use of front-rank forms of public organization of production (concentrations, specializations, co-operations and combining, and others like that). Important direction of increase of efficiency of the use of the fixed assets is an improvement and development of the system of financial stimulation of workers of enterprises for the effective and rational use of agricultural technique and equipment.

The effective use of the fixed assets is closely related to introduction of new economic mechanism of manage, which will interest a proprietor and producer in the rational use of production resources, induces them widely to apply achievement of scitech. Will be instrumental in introduction of new economic mechanism of manage: improvement of the system of taxation; construction of the system of payment of labour depending on end-point of production; state support of investment projects and entrepreneurial activity of the agrarian formings.

Presently as a result of the uncomplex forming of the fixed assets there are the created powers which take into account the necessities of production incomplete. It stipulated that one groups of the fixed assets of nedovikoristovuyut'sya, and a production is provided with other not enough. In particular, there are 25-30% powers of stock-raising apartments in the economies of Ukraine of nedovikoristovuyut'sya. Next to it material well-being capital loft-rooms is 23%, sinoskhovischami – 68%, by compositions for storage of mineral fertilizers and pesticides – 62% [4].

The main sign of increase of efficiency of the use of the fixed assets of agricultural enterprise is growth of production and realization of products volume. The important condition of the effective use of the fixed assets in an agrarian production is an improvement of structure of the fixed assets of enterprise. It is necessary considerably to promote specific gravity of those types of facilities,

which play the most active role in the increase of the productivity of cultures, productivity of zoons, quality and maintainance of products.

On the modern stage a requirement in the objective estimation of the fixed assets of agricultural commodity producers grew both on makro- and microlevels. In the macroeconomic measuring the estimation of the of a particular branch fixed assets is needed for making of effective public agrarian policy in part of the technical retooling of agrarian production. The objective estimation of requirement in investments will become informative basis for a ground and realization of depreciation, investment, credit and technical policy in the state, which provide the terms of recreation and update of the fixed assets in an agrarian sector.

One of directions of decision of problem of the technical providing the commodity producers of agricultural produce, as convincingly leads to V.L. Valentinov [5], there is development of forms of mizhgaluzevikh relations in APK, in particular vertical co-ordination within the limits of agroindustrial cycles, which is characterized contract relations between commodity producers and nonfarm subjects. Agricultural producers provide processing enterprises the products of the set quality and booked volume. In same queue the subjects of nonfarm business give the complex of services commodity producers, softening XOR of mizhgaluzevikh relations here. An author selects five basic forms of services commodity producers: support of the resource providing is through the purchase of material and technical resources which are then resold commodity producers on the best terms; support of investing is through realization of investments in the proper agricultural enterprises; direct crediting of commodity producers of agricultural produce which provides avoidance of high transakciynikh charges; an assistance the receipt of bank credits is through implementation of functions of guaranteing of these credits; grant of consultative services.

Efficiency of production in agricultural enterprises to a great extent depends on the degree of intensification of agricultural production and important its component part – level of technical equipped. Realization of technological processes in optimum terms is the mortgage of receipt of high harvests and

income. To the hardwares productions of agricultural cultures, which provide implementation of technological processes in optimum terms, a collective technique, sowing machines and instruments, which provide sowing, carry out a fight against illnesses, wreckers and weeds, belong. Basic technological operations in agriculture is till of soil, bringing of mineral and organic fertilizers, preparation of soil to sowing, protecting of the ground cover from influence of wind and water erosion and others like that. These et al tekhniko-technological the types of works are foreseen by the uses mechanically of powerful power machines which there are tractors in agriculture, and an important value has material well-being by them. In every virobniche-gospodarskiy structure it is necessary to provide the proportional set of hauling machines, workings machines and instruments.

It costs to mark that already presently insufficient technical material well-being of agricultural production is accompanied incomplete or ill-timed implementation of technological processes of production, especially collection of agricultural cultures. Hereupon agriculture of Ukraine annually has shortage almost third of gross collection of products which is estimated almost in 15-18 milliards of Uah, and the losses of the grown harvest of grain-crops to want of collective technique make 8-10 milliards of Uah [6-7].

Yes, on the basis of the calculations (table. 2) conducted by us, it should be noted that in 2011 year of loading on one tractor increased on the average on 5,3%, here the amount of tractors in middle for a year diminished on 2%, and the area of plough-land was increased on 3,4%. An analogical situation is observed on combine harvesters. In relation to combine harvesters, it follows notices, that main reason of increase of loading on one combine on 6% was reduction of presence of combines on 1% and increase of area under grain-growing on 5,4%. Consequently, principal reason of increase of loading is an increase of sowing areas, but not reduction of present agricultural technique.

A low level of the technical providing of agricultural enterprises is principal reason of technological backwardness of agriculture. Systems of agriculture, which are today used in the agrarian production of Ukraine, after the methods of the use

of earth, its productivity and facilities of recreation of fertility of soils, it is possible to divide into primitive, extensive, transitional and intensive. The technical state of swingeing majority of agrarian enterprises is not instrumental in the wideuse of intensive technologies, from what the production of agricultural goods to a great extent depends on prirodno-klimatichnikh terms which are folded in the period of development of plants.

With the purpose of improvement of situation it is expedient to create machine-technical association with the optimum manned composition of production facilities, which will enable rationally to use the resources of enterprise, and also will provide an effective production on the whole.

The results of researches specify on that economic to the powerful economies with the large volumes of works completing a mashinno-traktorniy park is necessary coming from own possibilities, and economic to the weak economies with the small volumes of works – it is expedient kooperuvati a money for the purchase of technique and use it on mizhgospodarskiy basis [8]. It will enable to form the rational park of machines and more intensive to use him at less capital investments. In to technically in good condition the state of machine supported due to vidnovlyuval'nikh repairs. However much possibilities of such repairs annually grow short, as will nurse the base components of constructions of machines from a line-up.

At the present level of the technical providing of agricultural enterprises and unsatisfactory age-dependent structure of mashinno-traktornogo park of maintenance of present technical potential in the capable of working state purchased an especially actual value. A modern technical level today must provide not only high readiness of mashinno-traktornogo park in the period of the field works, but also considerably to prolong the life cycle of machines and to slow the rates of reduction of quantity of present in an agrarian sector technique these as a result of writing.

Table 2

**A dynamics of area of plough-land is calculating on one hardware in the agricultural enterprises of the Vasil'kivskogo district of the Kievan area**

Year	Tractors, all	Loading of plough-land is on a 1 tractor, hectare	Chain index	Combines											
				zernozbiral'ni			kukurudzozbiral'ni			kartoplezbiral'ni			beet-lifting		
				all	loading on a 1 combine of area of grain-growing, hectare	chain index	all	loading on a 1 combine of area of corn, hectare	chain index	all	loading on a 1 combine of area of potato, hectare	chain index	all	loading on a 1 combine of area of sugar beets, hectares	chain index
2007	468	127	-	38	941	-	4	1755	-	1	22	-	18	468	-
2008	458	143	1,123	40	1131	1,202	5	3376	1,924	1	14	0,636	20	374	0,800
2009	430	149	1,038	43	1005	0,889	4	2638	0,781	2	6,5	0,464	21	463	1,237
2010	428	150	1,007	41	1060	1,054	4	3642	1,381	2	6,5	1,000	22	506	1,093
2011	435	156	1,045	37	1186	1,119	4	4724	1,297	3	37	5,692	22	540	1,067
2011 year to 2007 year, %	92,9	122,8	x	97,4	126,0	x	100,0	269,2	x	300,0	168,2	x	122,2	115,4	x

It is expected an author from data of accounting of agricultural enterprises of the Vasil'kivskogo district of the Kievan area after 2007-2011 (F50-sg the «Basic economic indicators of work of agricultural enterprises») [2].

As an analysis of the modern state of the tekhservisnogo providing of agrarian sector testifies, it is in a critical condition. There is a fade of sphere of their activity, technologies and equipments become antiquated, the highly skilled shots of repairers are lost. For providing of the capable of working state of mashinno-traktornogo park it is necessary to conduct the native re-erecting of the system of technical service taking into account market relations.

**Conclusions and prospects of subsequent researches.** Consequently, to our opinion, the basic sources of piling up of the fixed assets of industry can be: own money of agricultural enterprises, in particular depreciation decrees and income; state grants are on building of modern stock-raising complexes and acquisition of technique by indemnification of part of their cost; long-term credits of banks on acquisition of the fixed assets with partial indemnification of percents for credits from budgets; investments are from other industries of national economy on forming of agroindustrial associations; a money of foreign investors is as a result of creation of joint ventures.

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**Velichko O.V.**

## **MODERN CONDITIONS OF DEVELOPMENT OF FARM ENTERPRISES OF UKRAINE**

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The evaluation of modern conditions of the development of farm enterprises and directions of their development in Ukraine was carried out.

**Key words: farm enterprise, conditions of development, production.**

**Problem statement.** According to a complex of features farm enterprises in Ukraine are similar to large farm organizations though they differ from the latter by comparatively smaller amounts of economic activity. Their specific features of agricultural production are caused by the complexity, diversity, unpredictability and certain risk in the process of production, processing and distribution of output.

The evaluation of modern conditions of the development of farm enterprises makes it possible to define those of them that hold farm enterprises development back or facilitate its speeding up if their aggregate or individual impact increases. As the conditions of economic activity of farm enterprises constantly change with their environment, it is necessary to research them and substantiate the corresponding conclusions and suggestions. At present Ukrainian farm enterprises have not achieved the level of economically developed countries yet which proves the actuality of the article.

**Analysis of the latest researches and publications.** Theoretical and practical aspects of establishment and development of farming in Ukraine were studied by scientists-economists specializing in agriculture V.P.Horiovyi, O.V.Hryshchenko, V.O.Ivanchenko, I.V.Kolokolchikov, P.M.Makarenko, V.P.Makarenko, V.Ya.Mesel-Vesliak, M.M.Kropyvko, P.T.Sabluk and many others.

**Purpose of the research.** The purpose is to research the modern state and conditions of the development of farm enterprises of Ukraine and substantiate the main directions of ensuring their stable development.

**Description of the main material.** According to the results of the conducted research it was established that the development of farm enterprises of Ukraine has four stages.

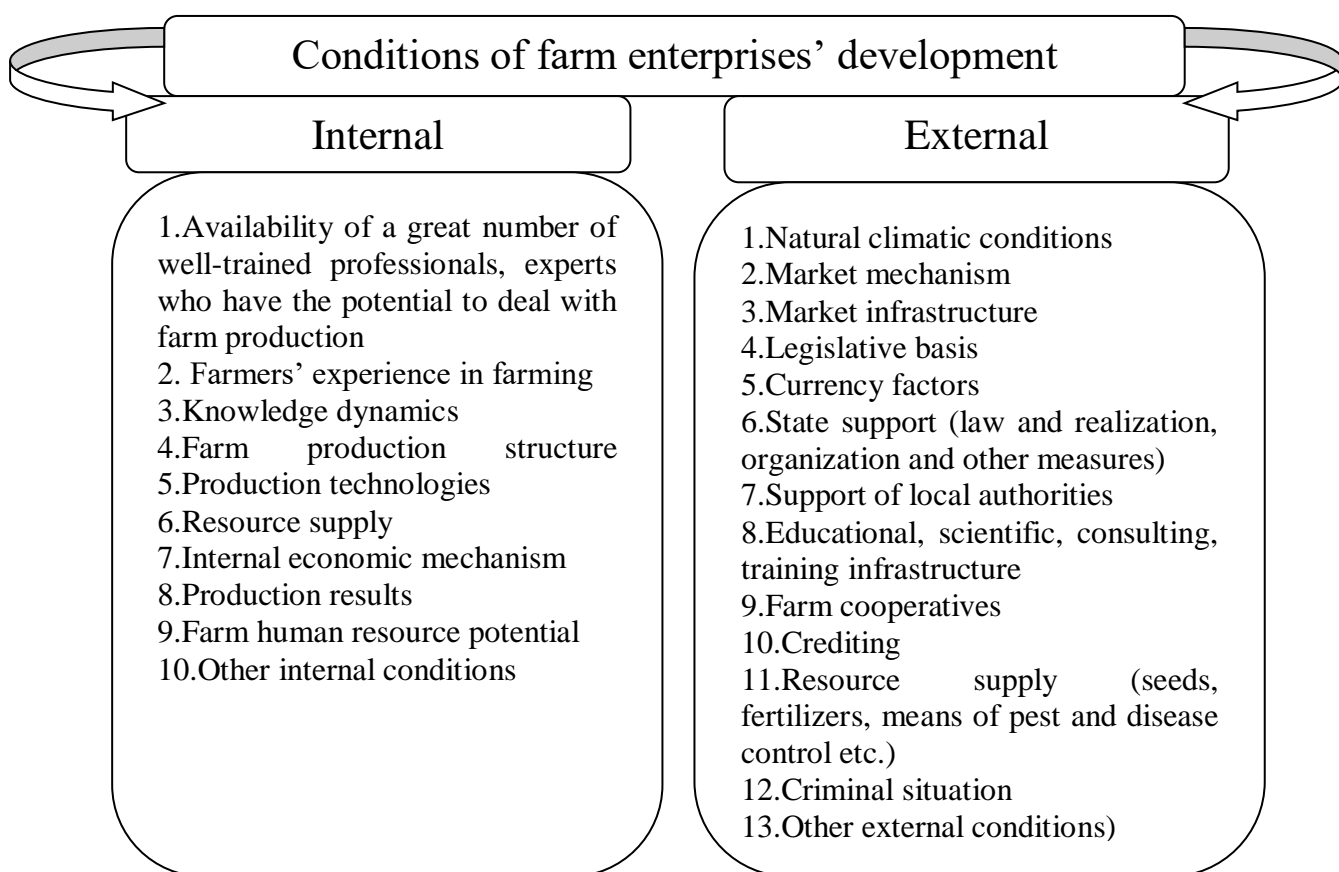
The first stage of “setting up of farm enterprises” covers the period from 1992 till 1995. It started with passing the Laws of Ukraine “On Farm Enterprise”, “On Ownership”, “On Priority of Social Development of Rural Areas and Agro-Industrial Complex in National Economy”, “On Entrepreneurship”, “On Collective Farm Enterprise” and includes mass formation of farm enterprises, parcellation to farm enterprises from land reserves, measures to support the creation of farm enterprises and their functioning. It is reasonable to describe this stage of development of farm enterprises as giving rise to development.

The second stage of “establishing the style of farm life” covers the period from 1996 till 2000. On this stage the process of increasing the number of farm enterprises stops, new enterprises are not formed, the reason for such situation was the land resources’ coming to an end. Farm enterprises which had existed before developed strategies for the development of farms, mastered new crop rotations, gained new professional knowledge, bought machinery and other resources.

The third stage of “additional impact to the development of farm enterprises” (2001-2008). From 2001 till 2003 the number of farm enterprises began to grow which was the result of reorganization of collective farm enterprises and availability of additional land plots for renting. This period is characterized by the growth of farm enterprises’ potential and concentration of machinery, material base, capital, lands which were the property of former reorganized collective farms. From 2004 till 2008 the process of capital concentration stops, partial transformation of farm enterprises into individual farm enterprises with the purpose of reducing the tax load takes place, the size of farm enterprises grows thanks to additional rent of land plots and assets of collective minor property.

The fourth stage of “quality changes in the potential of farm enterprise” covers the period from 2009 till present. On this stage the reduction of the number of farm enterprises and increase of land area in use are observed. Villagers expect from farmers better conditions of renting their plots of land.

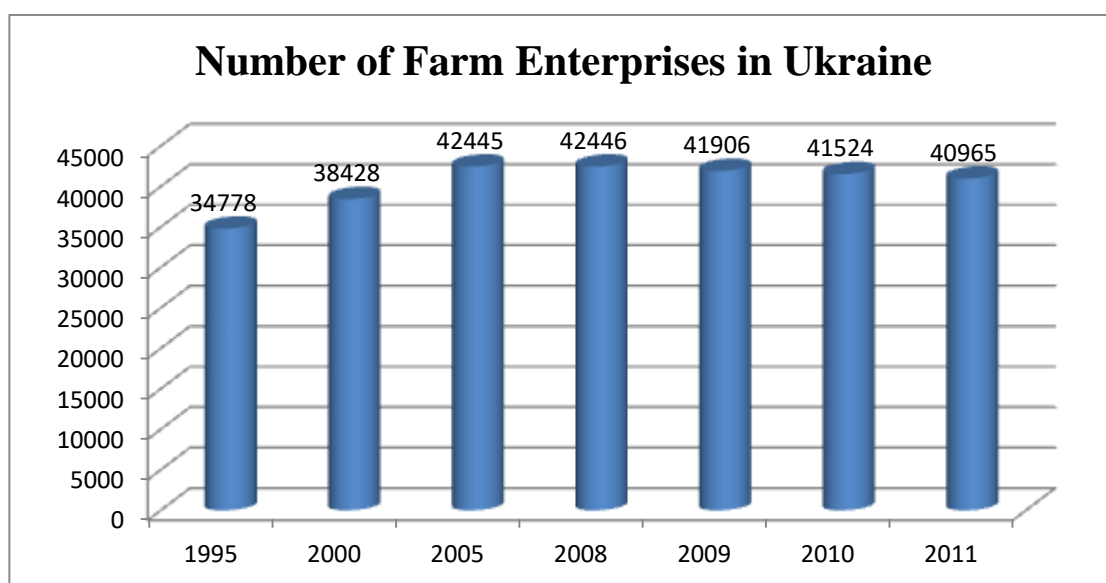
Internal and external conditions greatly influence the efficient functioning and development of farm enterprises (fig.1).



**Fig.1 Conditions of farm enterprises development**

Joint action of internal and external factors, shown in fig.1 influenced the trends in the development of farm enterprises. Thus, at the beginning of formation of farmers' way of life the state influenced considerably and due to this influence the farms were formed. Later, in the process of development, quantity indices gave way to quality ones.

The dynamics of the quantity of farm enterprises during the analyzed period was not steady. High rates of growth of number of farm enterprises were observed till 2008. Later this growth was slowed down (fig.2).



**Fig. 2 Dynamics of quantity of farm enterprises in Ukraine in the period from 1995 till 2011**

The amount of land use is of great significance in the production activity of both farm enterprises and other agricultural organizations. With regard to the land area each farmer determines the direction of production, its efficiency and opportunities of selling surpluses. Farm enterprises of Ukraine have different area of land in use (table 1).

### 1. Division of farm enterprises of Ukraine according to the size of arable land area in 2010 – 2011

Index	Quantity of farms				Arable land area			
	units		% of total number		thousand ha.		% of total arable land area	
	2010	2011	2010	2011	2010	2011	2010	2011
Farms which had arable lands	37220	36624	89,6	89,4	4290,8	4345,9	100	100
Including area, ha								
Less than 0,1 ha	341	404	0,8	1,0	0,3	0,4	0,0	0,0
1,1 – 3,0	2375	2199	5,7	5,4	5,4	5,2	0,1	0,1
3,1 – 5,0	2743	2569	6,6	6,3	11,6	10,9	0,3	0,3
5,1 – 10,0	3774	3678	9,1	9,0	29,7	29,1	0,7	0,7
10,1 – 20,1	4561	4438	11,1	10,8	70,5	68,6	1,6	1,6
20,1 – 50,0	12973	12711	31,3	31,1	493,1	483,2	11,5	11,1
50,1 – 100,0	4074	4090	9,8	10,0	289,5	290,1	6,8	6,7
100,1 – 500,0	4542	4700	10,9	11,5	1042,0	1086,4	24,3	25,0

Continuation of table 1

501,0 – 1000,0	1013	997	2,4	2,4	706,0	700,8	16,5	16,1
1000,1 – 2000,0	584	582	1,4	1,4	802,6	802,7	18,7	18,5
2001,1 – 3000,0	128	135	0,3	0,3	309,8	328,0	7,2	7,5
3000,1 – 4000,0	54	54	0,1	0,1	186,3	186,8	4,3	4,3
More than 4000,0	58	58	0,1	0,1	344,0	353,7	8,0	8,1
Farms which did not have arable lands	4304	4341	10,4	10,6	x	x	x	x

\* Data of State Statistics Service of Ukraine

The fluctuation rate of numerical data of indices of farm enterprises size is rather high and the difference between extreme indices is 3880 ha. That is, both newly-formed farm enterprises with the minimum land area of 2,6 ha. and big entities with the area of more than 4000 ha. are presented at the agrarian market of Ukraine. However, small farms still comprise a greater number of Ukrainian farm enterprises.

Farm enterprises are more successful in the development if they have well-trained staff, who professionally apply their knowledge and skills in agricultural production. The number of workers involved in farm production of Ukraine is shown in table 2.

## 2. Number of workers of farm enterprises of Ukraine

Index	Year					
	2000	2005	2008	2009	2010	2011
Number of workers - total	71504	133534	111659	102795	98400	99858
Women	25294	44727	32536	28326	26894	26581
Number of women in total number of workers, %	35,4	33,5	29,1	27,6	27,3	26,6
Number of workers per 100 ha arable farms	3	4	3	2	2	2

\* Data of State Statistics Service of Ukraine

The data of table 2 prove that from 2000 till 2005 the number of workers at farm enterprises was increasing notably. In 2000 there were 71504 people, and in 2005 their number was 133534 people, but beginning with the year 2008 due to the financial crisis the number of workers began to reduce and by the end of 2011 there had been 99858 people involved in farm production.

During the period under research the ratio of women in the total number of workers dropped, thus, in 2000 it was 35,4% and by the end of 2011 it had been 26,6%. The number of average annual workers per 100 ha of arable lands has the tendency to decrease, in 2000 their average number comprised 3 and by the end of 2011 – 2 persons per hectare.

Farm enterprises of Ukraine prefer to deal with crop production. In the conditions of high competition they focus on producing the products which are in great demand and are most profitable. Gross agricultural output is natural and valuable result of interaction of factors of production received in crop and livestock production during a year. At farm enterprises it includes the cost of the main, collateral and accompanying produce, growth of goods-in-process and the cost of growing young plantations (table 3).

### 3. Production of Gross Agricultural Produce by Farm Enterprises of Ukraine

Index	Year						
	1995	2000	2005	2008	2009	2010	2011
In fixed prices 2010 p, million UAH							
Gross Produce - total	1392,4	3125,2	8177,5	14141,3	12119,1	11965,8	16192,5
Including:							
Crop products	1189,8	2903,3	7719,2	13194,4	11125,2	10840,9	14997,7
Livestock products	202,6	221,9	458,9	946,9	993,9	1124,9	1194,8
% to total							
Gross Produce - total	100,0	100,0	100,0	100,0	100,0	100,0	100,0
Including:							
Crop products	85,4	92,9	94,4	93,3	91,8	90,6	92,6
Livestock products	14,6	7,1	5,6	6,7	8,2	9,4	7,4
% to the total amount of agricultural production							
Gross Produce - total	0,8	2,1	4,6	7,0	6,1	6,1	6,9
Including:							
Crop products	1,1	3,1	6,7	9,7	8,6	8,7	9,2
Livestock products	0,3	0,4	0,7	1,5	1,5	1,6	1,7

\* Data of State Statistics Service of Ukraine

The analysis of the data of table 3 proves that the majority of farm enterprises of Ukraine are involved in crop production and this tendency is becoming stronger. Thus, the share of crop products in 1995 was 85,4%, livestock products comprised 14,6%, in 2011 these indices changed comprising 92,6% and 7,4% correspondingly.

In the total amount of gross plant produce the share of farm enterprises in 1995 was 1,1% and in 2011 it was 9,2%. The corresponding indices in livestock production were 0,3 and 1,7%.

The percentage of gross crop produce in the total amount of agricultural production was 1,1% in 1995 and in 2011 it was 9,2% while livestock products comprised 0,3% and 1,7% in 2011 correspondingly.

The most urgent problem of the development of farm enterprises is their technical support. This means the sufficient amount of agricultural machinery and equipment on which the keeping of the existing and introduction of new up-to-date technologies greatly depend. The insufficient amount of technical equipment and their worn-out state is one of the main obstacles on the way to stable development of farms. The researches prove that supply of Ukrainian farmers with agricultural machinery is gradually improving (table 4.).

#### 4. Provision of farm enterprises of Ukraine with agricultural machinery

*(by the end of the year; items)*

Index	Year					2011	
	2000	2005	2008	2009	2010	Items	% to available quantity by the beginning of year
Tractors- total	22118	30773	32576	32029	29254	31981	101,8
Per 100 ha	1,11	0,88	0,78	0,77	0,70	0,76	x
Combine harvesters							
Grain combine harvesters	4585	7688	8734	8662	7743	8492	104,1
Maize combine harvesters	165	429	402	371	344	331	97,4
forage combine harvesters	422	641	571	551	558	560	95,4
Potato combine harvesters	126	209	226	238	365	469	111,9
Beet combine harvesters	617	984	929	853	766	728	92,5
Seeding machines	9982	15115	16157	15990	15453	16984	104,2
Been windrowers	975	2639	2825	2848	2824	3068	105,6

\* Data of State Statistics Service of Ukraine

The analysis of the provision of farm enterprises with agricultural machinery proves the general tendency to a greater number of its main kinds. Thus, in 2008 farmers owned 22118 tractors, in 2011 the quantity of tractors increased by 9863 items. The quantity of grain combine harvesters was increasing to 2009.

State support is very important for the development of farm enterprises. At present its amount is insufficient and the mechanisms are ineffective and do not meet the needs of farm enterprises (table 5).

### 5. State support of farm enterprises of Ukraine

(million UAH)

Index	Year			
	2008	2009	2010	2011
Received finances from the state – total	692,3	658,8	448,2	626,3
Including				
Budget grants	469,5	111,3	93,4	67,3
Of which				
For crop production support	265,4	46,4	50,1	22,1
For livestock production development	78,2	17,9	7,8	14,4
For measures to reproduce water resources	0,0	0,0	0,1	0,0
Other kinds (directions) of state support	125,9	47,0	35,0	30,8
From value-added tax	222,8	547,2	354,8	559,0
Of which				
For crop production support	151,3	517,3	302,5	531,9
For livestock production development	71,5	29,9	52,3	27,1

\* Data of State Statistics Service of Ukraine

During the period from 2008 till 2011 the state support of farm enterprises decreased from 692,3 to 626,3 million UAH. Especially this support reduced from budget grants. Thus, in 2011 the amount of state support decreased by 7 times in comparison with 2008. The situation with state support from value-added tax is much better. In 2008 its amount was 222,8 million UAH and in 2011 it was 559,0 million UAH.

The results of the activity of farm enterprises are influenced by gender differences of their managers. The main characteristics of performance of farm enterprises headed by women and men in 2011 are shown in table 6.

### 6. Main characteristics of farm enterprises in 2011

Index	All farm enterprises	Including farms headed by	
		Women	Men
Quantity of farms	40965	7639	33326
Land area in use th.ha.	4369,1	661,4	3707,7
Including arable lands	4345,9	657,5	3688,4
Among them tillage з них ріллі	4221,9	639,4	3582,5
Number of employees, people	59596	8608	50988
Net income from selling agricultural produce, mln.hr.	13644,3	1854,9	11789,4
Including у тому числі:			
Crop products	12592,2	1696,6	10895,5
Livestock products	1052,1	158,2	893,9
Profitability of farming operation, %	33,4	30,2	33,9
Including			
Crop products	36,8	34,1	37,2
Livestock products	2,9	-0,5	3,5
For one farm enterprise			
Land area in use, hectares	106,1	86,6	111,3
Including arable land	106,1	86,1	110,7
Among them tillage	103,1	83,7	107,5
Number of workers, people	2,4	x	x
Among them employees	1,6	1,1	1,5
Net income from selling agricultural produce, mln.hr.	333,1	242,8	353,8

\* Data of State Statistics Service of Ukraine

The analysis of the data of table 6 shows that at present farm enterprises are profitable. The level of profitability of farm enterprises headed by women is 30,2% and of those headed by men is 33,9%. Farm enterprises headed by men are bigger in terms of land use, the average number of employees and indices of cash income per farm and per 1 hectare of arable land.

Fluctuations of prices for agricultural produce result in unstable income of farmers and price risks. To avoid such situation farmers should know which crop will be profitable to grow and which will be not, plan their farm's profitability a year

ahead and be sure that it will not be loss making. To achieve this, there are certain tools for price risk management. They are futures, futures options, swaps (tools, which used to be considered the domain of only financial sector, are now intensively used in agriculture). Thus, for example, the advantage of futures market in comparison with physical market is that all contracts on the market are standardized and correspond to the established terms of delivery. Such standardization guarantees high market liquidity that is sellers and buyers of similar contracts are found easily and the only thing which is negotiated is the price. However, such tools are not applied by farmers in full yet.

**Conclusions and perspectives of further researches.** Farm enterprises of Ukraine passed four stages of development: the first one is setting up (impact), the second one is establishment, the third one is of additional impact and the fourth one is qualitative changes in the potential of farm enterprises. External and internal conditions influence farm enterprises significantly; their joint action predetermined tendencies of their development. Natural conditions of Ukraine are favorable for farming and the availability of great number of well-educated professionals and experts able to deal with farming operations, resource provision and modern technologies will facilitate its success. To avoid price risks and stay profitable it is reasonable for farmers to use such tools of price risk management as futures, futures options and swaps.

**Scientific advisor Ksil Mykola Ivanovuch, candidate of economic sciences.**

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**THE THEORETICAL ASPECTS OF BUSINESS EFFICIENCY IN  
AGRICULTURAL FORMATIONS**

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*Abstract.* The paper describes the main types of efficiency and made generalization of their characteristics in transformation economy.

*Keywords:* efficiency, entrepreneurship, agricultural formation, transformation economy.

**Statement of the problem.** The transformation of economic relations in society, the development of a market economy requires clarification of methodological approaches in determining the economic, social and environmental performance.

**Analysis of recent research and publications.** Outlined aspects of the economic efficiency of enterprises are reflected in the works of local and foreign authors. In particular, this authors: V.H. Andriychuk, I.V. Bakum, V.I. Zaharchenko, M.M. Ilchuk, A.I. Makarenko, H.A. Ohanyan, A.M. Turyl, V.I. Homyakov, etc.

**The purpose of the study** - to summarize the theoretical aspects of the formation efficiency in enterprises at the way of transformation economy.

**The main material.** The concept of efficiency is an important issue in economic theory and practice. As you know, distinguish industrial, social, technical, economic and environmental efficiency. Technical efficiency determines the effectiveness of actions aimed at improving engineering and technology, social - to improve working conditions and psychological climate in the workplace, etc., cost - to improve the profitability of the whole business, industrial - to minimize costs and maximize profits, environmental - reflects compliance costs and environmental outcomes interests of the state and society.

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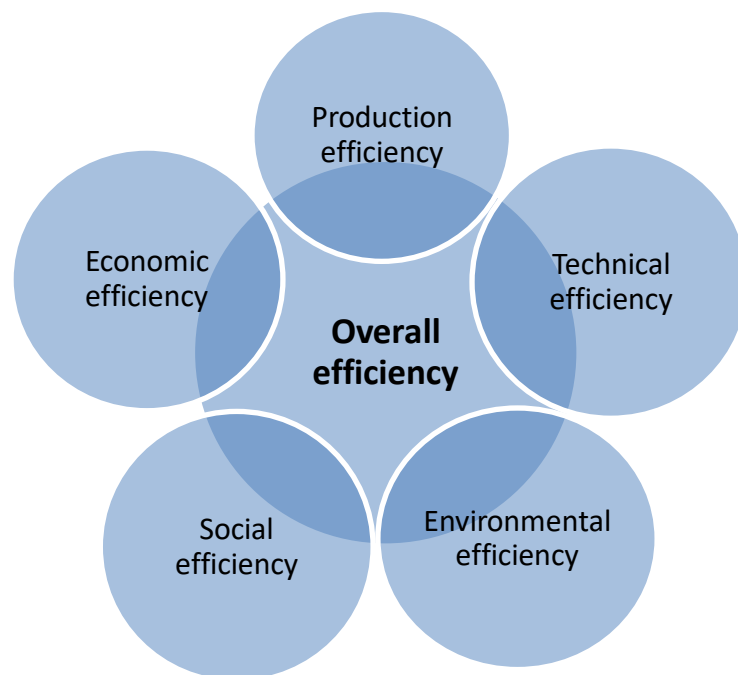
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Efficiency - is an economic category that reflects the relationship between the obtained results and wasted resources to achieve them, and the measurement of efficiency resources can be represented either in a certain amount of their historical (revalued) cost (resources used), or part of their value in the form of production costs. If to take into account the results of production are not only diverse, but also can be presented in different forms: cost, natural, social, it becomes apparent need to identify categories of performance according to those aspects of the enterprise that are important to analyze and evaluate. Given the specificity of agricultural production, it is advisable to distinguish between these types of performance: industrial, technological, economic, environmental and social.

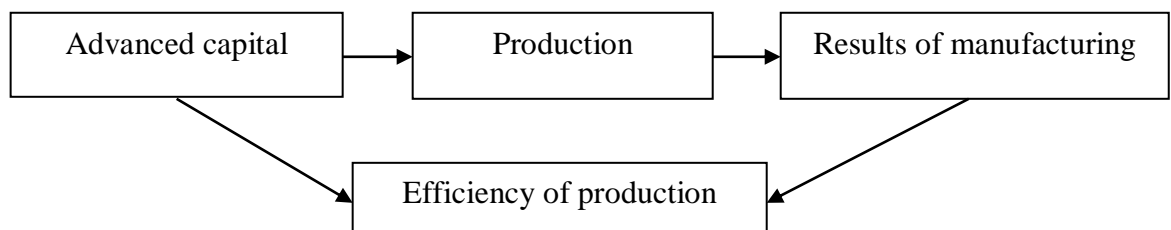
All types of efficiency are closely interrelated, interdependent and together determine the efficiency of the economic system as a whole (Fig.1.1.).



**Figure. 1.1. The main components forming the overall efficiency of agricultural units (Source: own study)**

The economy of the modern period is the improvement of existing socio-economic relations. In the system of these relations is always operating companies with different levels of economic development. Objective laws of market economy forced them to continually find effective forms and methods of farming.

Production efficiency - is a complex and multifaceted phenomenon. Agriculture requires organic combination and interaction of four factors - labor, plant and equipment, household labor and land. In the process of production is consumption of these resources in order to get some use value, able to satisfy the needs of the people. Therefore, any production involves consumption of resources and to obtain the certain results. But the same amount of resources spent businesses can not get the same results in magnitude. In this case, we can assume that companies are producing with varying efficiency. In general, this process can display the following scheme (Fig. 1.2).



**Figure. 1.2. Formation of efficiency (Source: own study)**

Technological efficiency – it's a result of the interaction of factors of production that characterizes the achieved performance of live organisms used in agriculture as a means of production. In terms of technological efficiency of crop yields is a unit of cultivated area and the main quality parameters of crop production (sugar content in sugar beet, oil - in sunflower seeds, protein - in the grain, etc.). According to the result of the gross production tax is levied certain type of product, and this result is compared with the resource - acreage crops. To account for the quality of products, we can determine the biological output of sugar, oil, protein, etc. per hectare cultivated area by multiplying the yields per hectare corresponding to the percentage of organic matter (coefficient).

The effectiveness of the company analyzed the following indicators: income, profit margins, profitability, and utilization of human resources (labor productivity), fixed assets (capital productivity, capital intensity), material resources and others.

The achieved level of technological efficiency significantly affects economic efficiency, mainly due to the existence of fixed costs, which are known producers in

the short term is not impact. It is also important that the rate of technological efficiency and reflect the characteristics of agriculture -related operation in the field of the main means of production - land and living organisms as a means of production. They make it possible to carry out a comparative assessment of the impact of the dynamics in the territorial aspect of the individual businesses and regions.

Economic efficiency - it is a relationship between resources and results of production, which are cost parameters efficiency. Thus, there are three options specified value: 1) the resources and the results are expressed in financial form, 2) resources - in terms of value and results - in kind, 3) resources - in kind, and the results - in financial form. Measuring system of economic efficiency of agricultural production should be built so that it was able to fully reveal two interrelated and complementary aspects of the productive farms - rational use of their land through indicators of general effect, reduced to unit area of agricultural land, and cost of production figures which would disclose what the price obtained this effect. Considering the above to assess the effectiveness of agricultural enterprises should be widely used indicators of the efficiency of capital advanced, indicators of production costs and labor productivity, capital assets.

However, a full assessment of the efficiency of production and its in-depth analysis must also widely used traditional indicators of profitability. They accumulated impact of all factors - natural, economic, organizational and economic. However, they significantly affect the action of the environment, especially those parts of it to which farmers have any effect.

The importance of the profitability for the evaluation and analysis of economic efficiency requires them special consideration.

Social performance - a concept that reflects the improvement of social conditions of life (improving working and living conditions , increased employment, security of life and human labor, etc.). Social efficiency is, in fact, derives from economic efficiency. It is under the same other conditions will be the higher, the higher level of economic efficiency achieved.

Social performance can not always be quantified. However, a thoroughly social efficiency achieved can be measured by such indicators as defined in the dynamics, the share of profit aimed at social events, with a total weight of net profit, the value of profit per average employee company.

Environmental performance - displays various indicators of intermediate and final results of the company (in a business combination). These indicators include volume commodity, clean or sales, the value of profit, saving certain types of inputs or the total savings from reducing production costs and so on.

Environmental effectiveness associated with the use of the resource potential of the industry that does not harm the environment and produces environmentally friendly products. Equally important is to ensure the environmental effectiveness of economic reproduction of soil fertility, increased content in the humus. All types of efficiency should be considered not in isolation but in close connection and interdependence.

However, in a market economy, where the foreground is the economic social and environmental performance must be paid no less attention. Thus, effective from an economic standpoint entity can be ineffective in social or environmental point of view.

Today for cost recovery and profit for the continuation or expansion not only of price regulation that would provide these results. As in the highly competitive even a slight excess of the price of the products the company over the price of a similar product quality competition may lead to loss of customers and market share. Therefore, it is important to note that producing, the company should predict that net income it will receive from the sale of products and then balance the costs of the, so they do not exceed the income.

In Ukraine, the priority of the overall performance is considered productive efficiency. To determine the complex index of efficiency of management of enterprise ( $E_{yv}$ ) recommended the formula payback.

$$E_{yv} = \frac{D_v}{V_{zp}}, \quad (1)$$

where  $D_v$ - net income from sales, hr.;  $V_{zp}$  - total costs of the company (excluding capital and financial investments), USD.

This formula can be transformed into a factor model:

$$E_{yv} = \frac{D_v}{O_v} * \frac{O_v}{O_s} * \frac{O_s}{Z_{vr}} * \frac{Z_{vr}}{V_{pv}} * \frac{V_{pv}}{V_{pr}} * \frac{V_{pr}}{V_{zp}}, \quad (2)$$

where  $O_v$ - value of output at ex-factory prices (excluding VAT ), € .;  $O_s$  - the cost of production , hr .;  $Z_{vr}$  - wages of workers employed directly in manufacturing, hr .;  $V_{pv}$  - productive costs of production ( production and total production costs ), hr .;  $V_{pr}$  - the total value of production costs (production and overhead costs ), hr.

**Conclusions and recommendations for further research.** Thus, the effectiveness on any enterprise is not only important for the study, but deserves primary attention of managers of companies and their leaders, because this issue requires multi- system approach to monitoring key performance indicators to achieve competitive advantage in a transforming economy.

The main ways of improving the efficiency can be: both internal (to ensure effective recruitment, motivation, training, improving the forms and methods of work, etc.) and external (to improve the state of economic and social policy, ensuring sufficient development of industrial and economic infrastructure, etc.) However, only using the whole system factors together, we can achieve the high growth of the economy and efficiency of the enterprise.

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*«Теоретичні аспекти формування ефективності підприємницької діяльності аграрних формувань»*

*Даценко І.М.*

*Анотація. В статті розглянуті основні види ефективності та зроблені узагальнення їх особливостей в трансформаційній економіці.*

**Ключові слова:** *ефективність, підприємницька діяльність, аграрні формування, трансформаційна економіка.*

*«Теоретические аспекты формирования эффективности предпринимательской деятельности аграрных формирований»*

*Даценко И.М.*

*Аннотация. В статье рассмотрены основные виды эффективности и сделаны обобщения их особенностей в условиях трансформационной экономики.*

**Ключевые слова:** *эффективность, предпринимательская деятельность, аграрные формирования, трансформационная экономика.*

## **BRAZILIAN EXPERIENCE OF FINANCING UNDER FUTURE CROPS**

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### **ABSTRACT**

*The article highlights the Brazil's experience as to the functioning of financial instrument in the form of notes-agreements of CPR (Cedula de Produto Rural) that itself represent the promise to supply agricultural produce in future in exchange to receive the inputs (financial or tradable) already today for the conduction of agricultural activity.*

**KEY WORDS:** CPR (Cedula de Produto Rural), financial instrument, agricultural producers, future harvest

### **INTRODUCTION**

In the last years the agricultural enterprises, especially medium and small size, practically have no access to loans of commercial banks, even upon a condition of the existence of state program as to partial compensation of banking interest rates. Besides that the new norms of VAT management for agricultural enterprises, in the accordance with the Tax Code of Ukraine, also do not favor the acceleration of conclusion of agreements between input suppliers and agricultural enterprises due to the fact that VAT is accrued only during their first transaction and suppliers are forced to reduce the price on agricultural production, or lose their incomes on the amount of VAT. As a rule, the companies that supply mineral fertilizers, plant protection means and other inputs are not involved in sales of agricultural produce that they are obliged to receive in exchange for inputs delivered, and then, they have to conclude forward agreements with companies that are involved in export or sales at the domestic market, but today it became impossible due to insufficient VAT management.

With the overview of these problematic issues the agricultural producers should have alternative options of crediting, namely, one of such options may be the crediting under the collateral of future harvest that successfully functions in Brazil.

The study highlights the Brazil's experience as to the functioning of financial instrument in the form of notes-agreements of CPR (Cedula de Produto Rural) that itself represent the promise to supply agricultural produce in future in exchange to receive the inputs (financial or tradable) already today for the conduction of agricultural activity.

## **METHODOLOGY**

The authors was using a combination of different research tools, such as desk research, statistical and legal analysis based on different data sources.

## **MATERIALS**

Agrarian sector of Brazil produces more than 33% of GDP. Agrarian sector traditionally is taking a leading place in the economy of this country and it concentrates more than 40% of the able-bodied population, which is more than in industry.

Naturally, a lot is explained by the climate but not all of it. One may suggest, as an example, many countries, where there are same favorable climate and the fertile lands but they are not efficient in the use of its resources. Many Brazilian successes are the result of attraction of investments, and also a duly financing of agrarian sector (by strict rules).

Indisputable advantage of the country on the background of the increasing of the world's demand on food products is an availability of 90 mn of hectares of uncultivated lands suitable for agriculture.

Brazil in the 80-s and 90-s of the last century had gone through a few financial crises. The specific weight of the agriculture in gross production has been decreasing to the mid 90-s. State financing of agriculture was about 80% from the needs, meanwhile, through a constant increase of the cost of material and technical resources, relevantly the costs for production were increasing as well, so the allocations from the state budget were increasing eventually as well. At the same

time, regardless a constant increase of financing of farmers from the state's budget, the harvest was not becoming bigger. Annual needs of agriculture of Brazil in financial terms are about 149 bn of USD, 40% out of them is provided by the National System of Crediting of Agrarian Sector (SNCR).

In the period from 1986 to 1996 (as it is called in Brazil the period of «crisis»), the volumes of bank financing were considerably decreased. The production of agrarian produce was directly dependent upon the market, and a sharp fluctuation of production of agrarian products is observed yearly wise.

The lack of financial loan resources (the absence of banking institutions in rural area, high rates, and the absence of alternative sources of financing also) negatively impacted on agrarian activity. Then, the agrarian enterprises together with the Government of Brazil reached the agreement about introduction of the new financial instrument initiated by the Bank of Brazil. The essence of the idea was to create a loan that would be capable to substitute the contract with the terms that were used by the trading companies in order to purchase the goods in advance.

Starting from 1996 Brazil faced the «market» phase, when the new instruments (CPR) of financing of agrarian farmers were introduced, and also some special loan programs for the agricultural sector were implemented. A considerable increase of production of agrarian products was observed on the background of rational crediting by the commercial banks with the attraction of the new loan instruments.

Before the introduction of CPR, the financing of agrarian sector was limited by the loans provided by the banks and credit institutions or by direct financing by agro - industrial companies, traders by the way of advance payments for inputs, seeds, pesticides, etc. provided in exchange to farmer's liabilities to supply the produce to the creditor.

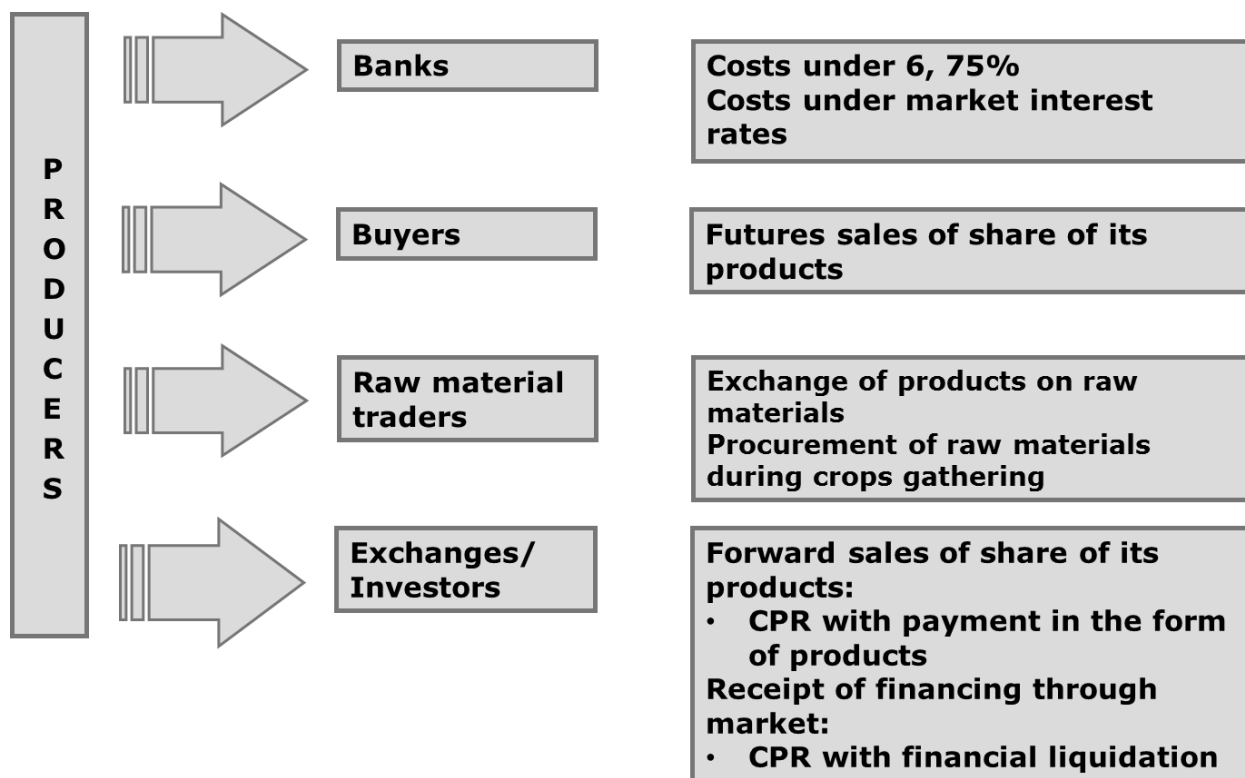
After adoption of the relevant law draft in 1994, a financing mechanism was created that was an attempt of the power to find some alternative sources to support the agricultural production with the inputs. CPR as one of the mechanisms of crediting was introduced and was successfully implemented by joint efforts of the

Government of Brazil, the Bank of Brazil and with the immediate participation of the main agrarian enterprises.

It should be noted that in the period at the end of 1994 (when CPRs were implemented) and to 1996 the result was not as the expected one, because of the fact that the campaign on implementation of the new mechanism of lending was not very active, and because other programs of support from the state to agrarian sector were not implemented.

Starting from 1994 Brazil had a successful financial instrument in the form of CPR contracts (Cedula de Produto Rural) that represent itself the promise to supply agricultural produce in future in exchange for the resources (financial or commodities) already today for the performance of agricultural activity.

**Chart 1. Options of possible financial provision of agricultural producers of Brazil, the year of 2010**



*Source: Banco do Brasil and Agribusiness, 2011*

At the Chart 1, it is shown that today the agricultural enterprises of Brazil have the opportunity to obtain bank loans both at the market interest rates (13%) and also at the discounted interest rates – 6.75%. Also the part of agricultural produce is sold

by forward contracts (delivery of produce in the term defined by the agreement by the price at the moment of conclusion of the agreement); part of them is sold in exchange for the supplied inputs. A large list of produce that is considered in our study is sold by agricultural producers with the application of CPR contracts.

CPR contracts may also contain a pledge that is provided to a creditor.

In Brazil there are two types of CPR contracts: **tradable (commodity)** and **financial**. It means that the owner of CPR can obtain its funds in the form of commodity or money dependently the type of CPR owned.

**Tradable CPRs** were introduced at the legislative level in Brazil in 1994. After the issuance and sales of such document, a producer obtains financing in exchange for the liability to supply goods in previously agreed place and time. In tradable CPR the general quantity of goods, its quality, place of delivery and date are clearly defined.

**Financial CPRs** were introduced in 2001 in order to attract investors who are not comfortable to deal with agrarian products. For instance, if an enterprise is involved in supply of fertilizers or means of production and is not specialized in sales of agro products, then it has the right to conclude an additional agreement with traders or with agro export companies in order to sell its agro products. Same happened to investment funds that did not want to deal with agro produce. Namely, the financial contracts were the liabilities introduced for such cases. The essence of financial CPR is that a producer is obliged to repay the funds in some period of time. Such CPRs envision either current price of products or the price on products as of the date of settlement by CPR.

Contracts-liabilities may be registered in CPR register at Brazilian Commodity and Futures Exchange (BM&F). Such CPRs in Brazil are equalized to securities, they are quoted at the exchange, and also they are exempt from tax on financial transactions for legal entities or income tax for individuals. The issuance of contracts-liabilities can take place with the immediate participation of a bank that adopts the issuance and purchase of CPR.

Limit of loan that is received by the issuer-enterprise is within the range of 30-70% from the calculated quantity (cost) of future harvest and is dependent on a type of produce, and also the phase of production (preparation, sowing, cultivation, collection, storage).

As to the accruals, then, all the fees are paid by the buyer, and the producer is freed from a payment.

After the time when a farmer's enterprise submits the bids to issue CPR, the credit analysis of this enterprise is being started. The registration of data, history, production capacities, resources, assets, etc. are checked and the upper limit that defines the level of credit risk for the customer is determined.

CPR is similar to forward contract and is considered as an instrument that include two components:

1) As a debt liability that envision the delivery of certain quantity and quality of products (tradable CPR) or money (financial CPR);

2) serves as a guarantee of the existence of an issuer, since the holder of CPR has the right for the next year's harvest, in case, when the settlements were not done in the current year due to different reasons (first of all, destruction of harvest).

**Thus, through the mechanism of a CPR agreement the agricultural producers (or their associations, namely, cooperatives) sell agricultural crops before the harvesting (under a future harvest collateral), receiving funds or commodities inputs that are necessary for the production of this produce and take the responsibility to supply certain amount in specified time and place by the determined price.**

Due to the use of such instrument in Brazil the volumes of agrarian sector crediting annually reached 5 bn of USD, and agricultural commodity producers managed to increase the gross production and harvest.

The key factor of success of CPR in Brazil is a simple system of enforcement: the decision about enforcement is taken during 24–48 hours; one more important factor is the impossibility of application of force-majeure conditions to CPR. Thus, a

borrower has very limited opportunities of denial/claim against such a decision on enforcement.

Also the farmers may not mandatory insure the future harvest because, if due to some reason the produced commodities shall not be sufficient to cover a debt obligation, then the collateral is valid for the next marketing year, so is left in force until the moment of full debt reimbursement.

CPR is considered as an acknowledgment (agreement) that confirms the liability of a debtor for the benefit of a creditor. For instance, the farmer cultivates soybeans, so in accordance with an agreement he has to sell it in October (forward agreement) with the delivery after harvesting (in April). Meanwhile, the means of production for the cultivation of soybeans are paid in local currency, and the prices for agricultural products are mentioned in USD. The loan is provided for the term from 60 to 360 days, but in practice, as a rule, the most popular is the term of 150-180 days. So the price of collateral may be substantially different from the market price. It is dependent on the status of a field and a situation in the market. As a rule, the Brazilian farmers get lesser price than the forecasted market price.

The payment for the future harvest is done in two phases: 1- first, when a part of the forecasted sum is paid and a pledge grain tonnage is fixed, 2-second full settlement after the harvest of grain crops. At the final payment for the grain the market prices are accounted that exist at the settlement date.

The experience of Brazil shows that without a state support the introduction of such instrument is not possible. Bank of Brazil in Brazil is the most active in working with CPR; the Government through it stimulates the use of CPR and, in its turn, it analyzes the credit capacity of a producer and defines the amount of a loan to be allocated. Meanwhile, the creditor performs the inspection having full access to the field, where the future harvest is cultivated. In case of necessity, the evaluation of regional risks is done that is reasoned by the natural conditions.

## **RESULT**

At the present day, in Brazil, the agrarian producers have an opportunity to finance their activity for the account of their own resources and bank loans that

compose relevantly 30%, and also by the contracts - CPR (40 % from the general volume of financing).

The application of CPR stimulated the export of agricultural produce in Brazil. Today Brazil is the biggest world exporter of soybeans, sugar, beef meat, coffee, orange juice and tobacco. Besides that it is the second country running by the volume of export of soybean meal, chicken, soybean oil, and it runs 4<sup>th</sup> place by the export of pork meat, corn and cotton.

The experience certifies that the basic fundamental for CPR introduction is a strong support from the side of a state, in part of legally established clear rules. Only then:

- CPR shall help to all chain participants in the increase of financial opportunities for their activity.
- CPR gives large guarantee/pledge for traders, than the usual types of agreements.
- Farmers and other small producers shall be able to receive an additional loan by the way of the use of its agricultural produce as a payment guarantee.
- CPR increases the trust to agribusiness sector.
- CPR favors a steady growth even at the markets with a high level of risk.

## **CONCLUSIONS**

Brazilian experience of implementation of CPR (Cedula de Produto Rural) shows that there is an opportunity to implement such financial instrument for agrarian commodity producers in Ukraine with the goal to obtain additional loans under the pledge of future harvest.

To a large extent the success of the work of this system in Brazil was depending upon a simplified system of enforcement in case of failure to execute the concluded agreements by CPR contract: ruling on enforcement is taken during 24–48 hours. Another important factor is the impossibility of applying force- majeure conditions to CPR. The borrower has a very limited opportunity to claim such an enforcement ruling.

The main advantages of CPR for different market participants of agrarian production:

1. For agrarian producers
  - Previous sale of produce
  - decrease of dependency on loans
  - better process of long-term planning
2. For middlemen and processors
  - Expected and planned procurement of produce
  - reduction of risks related to delivery
  - better conditions of financing
3. For the enterprises-input suppliers
  - Reduction of risk of non-payment
  - opportunity of performance of different types of transactions (barter)
    - better conditions of financing

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**MODERN GOING IS NEAR MANAGEMENT OF ENTERPRISES  
COMPETITIVENESS ON PRODUCTION OF ORGANIC GOODS OF  
STOCK-RAISING**

**M.O. Zhukovskyi**

*In the article the modern going is considered near the management of enterprises that engage in the production of goods of stock-raising a competitiveness. System-innovative approach is reflected, namely, due to introduction of production of organic goods and ecologization of production.*

**Keywords: competitiveness, management by the competitiveness of enterprise, innovation, organic products, ecologization.**

Issues of food safety and quality is a problem in many countries of the world. In modern conditions of quality, including environmental safety of products produced by the agricultural sector, is becoming a major factor in its internal and external competitiveness. In conditions of increasing anthropogenic pressure on навколишнє environment, on the one hand, and the growing globalization of the economy with simultaneous increasing level of competition on agricultural markets, on the other, the pre-eminent importance for ensuring the food security of Ukraine acquires strategy for organic agriculture and the output of our state on the world market for organic (organic products. Today considerably expands the field of competition and the number of competitive relations, accordingly, changing and tasks and approaches to the issue of governance competitiveness.

**Analysis of the last researches and публікацій.** Питанням конкурентоспроможності economically developed countries, and recently in Ukraine, the subject of many publications. The main approaches covered in the works of foreign and domestic scientists, The Birman, D. bright, P. Drucker, D. porter, Treci, F. Wirsema, Cantera, Hemela, Aso'eva, Fatkhutdinova, N. Lifhiza, A. Gradova, O. Gudzynskogo, Galely'ka, HP Balabanova, I. Poddubny, S. Klimenko and others.

**Unresolved previously part of the overall problem.** On today in the national and foreign literature aspects of the process of management of enterprise

competitiveness and innovation place in this process is poorly understood. Today the Ukrainian products competitive at the world market only at the expense of cheap labour and the relatively low cost of energy resources, i.e. benefits that may soon disappear altogether. In the livestock industry practically limit the possibilities of increasing the intensity of growth of animals and birds and reduction in the unit cost of feed, pollution taxes annually grow, that will affect the cost of production, so we need to search for additional reserves of increase of competitiveness of the enterprises of the livestock industry. The aim of this article is: a study of the existing methods of management of enterprise competitiveness, lighting system-an innovative approach, namely through the introduction of the organic production and ecologization of production.

**Summary of the basic material.** In the last decade increased interest to the quality of products supplied to the consumer. Presence of the supplier's quality system is becoming an important factor for enhancing the competitiveness of its products, and a necessary condition for entering the world market. However, awareness of humanity, environmental deterioration, intensification of agricultural production caused interest to organic production, which guarantees the required qualitative level and security of supply, and does not harm the environment.

At the end of 2010 by order of Association of «Biolan Ukraine» supported by FiBL company GfkUkraine study was conducted, which showed that in all regions of Ukraine already have a full understanding of what organic products and the desire to consume such products[5].

In large cities of Ukraine there is a category of people (близько35% of the population), who are motivated to use organic products and are ready to pay even higher (40-50%) price. This group of consumers creates the initial niche for organic products in Ukraine, and hence for the development of the domestic market for such products in the future.

By definition of the International Federation of organic agricultural movements (International Federation of Organic Agriculture Movements -

movements (IFOAM), organic production unites all agricultural systems that support environmentally, socially and economically viable production. Such systems use natural capacity of plants, animals, soils, and are aimed at the harmonization of agricultural production and the environment [6].

Despite the significant negative impact of the international financial crisis on the world market for organic products, it continued to grow and in 2009-2011 According to estimates of the famous international analytical center OrganicMonitor [7], in 2010 the volume of sales of organic products in the world amounted to almost \$ 60 billion. The United States, demonstrating stable growth compared with previous years. In Ukraine for the last year of the internal market for certified organic products has doubled: from 1.2 to 2.4 million Euros. The greatest demand both in Kyiv and in other regions of Ukraine, shall enjoy the fresh high-quality dairy products, pork, beef, fruits, vegetables, juices, cereals, flour, etc. Today, the Ukrainian consumer wants to see on his table, not only cereals, with which it all began, and meat products-dairy, vegetables, fruits, herbs. Moreover, it is time to move on to another, more qualitative level - provide the consumer already processed foods - cereals, canned food, sausages, etc. Of course, it is a challenge to producers and processors, as the production of organic food - it is not easy, because every stage of production shall conform to the requirements and pass rigorous certification. However, given the trends and demand, such efforts would be justified.

Organic farming is based on harmonious relations between the earth, plants and animals, guided by the physiological and psychological needs of the animals and feeding quality organically grown fodder.

Methods of organic management improve the health and well-being of animals through a balanced organic feeding deprived from the stress of living conditions and the choice of breeds resistant to diseases, parasites and інфекцій. Заборонено substance use synthetic origin to promote виробництва продукції and for increased growth of body weight.

That is why realities create objective conditions for approaches to management of enterprise competitiveness (PSC). Therefore, we examined the main approaches to the management of the PSC and the proposed new. According to M.Galelyaka, management of enterprise competitiveness (PSC) is a specific management function, which is implemented through the exercise of public functions to maintain and increase the PSC, the company and its products, which are a part of a unified system [2]. L.Balabanova in the management of the PSC sees a set of management actions aimed at the study of active and potential competitors, their strengths and weaknesses, as well as the development of competitive strategies, ensuring the formation and maintenance of long-term competitive advantages [1]. I.Piddubnyi management PSC defines as the direction of the management directed on formation, development and realization of competitive advantages and life maintenance of the subject of economic activity [4]. According to S.Klimenko, management of enterprise competitiveness is a certain aspect of the management of the enterprise, directed on formation, development and realization of competitive advantages and ensure the viability of the enterprise as a subject of economic competition [3].

Having analyzed the existing definition of «management of the enterprise competitiveness, we can conclude that the process is an function management that has a purposeful influence on the current and future level of the PSC compared with other companies of the industry.

There are three main classical approaches to the management of competitiveness of the system, process and situation, as well as produce specific approaches: innovative, ecological, service, marketing, logical, global integration, functional, structural and other.

Most often, the management of enterprise competitiveness in a systematic approach, according to which comprehensively assesses the management system as a whole and at the level of specific competitive advantages to analyze any situation within a particular system; is the nature of the problems, taking into account all the

necessary relations and interaction in the system of management of activities of the enterprise.

The most effective in a particular situation is the approach that best fits this on our opinion, to achieve a high level of competitiveness of the enterprise is possible when using system-an innovative approach to the management of the PSC taking into account ecological component. This approach gives the possibility to consider all the necessary interrelation and interaction management system, allows the objectives thoroughly weigh the factors and guide management mechanisms competitiveness to achieve the set goals. Orient the development of the enterprise on the intensification of innovative activity. Implement advances in basic production and management processes. Adhere to the principles of a resource-saving and energy saving. Apply technologies that do not harm the environment. Use natural reserves of an organism of animals, producing high quality, safe and unique animal products on the market.

**Conclusions.** Despite the high probability of signature at the 3rd summit of the Eastern Partnership in Vilnius on November 28 and 29 of this year the Association agreement between Ukraine and the European Union, the creation of a comprehensive and deep free trade area with large-scale regulatory approximation of Ukrainian legislation to EU standards, the gradual integration of Ukraine to the EU's internal market and the opportunities for creating additional customs barriers with the neighbouring countries of the enterprises specializing in the production of livestock products must find its market niche in the new conditions, to offer new and unique products on the market. In our opinion, the proposed management system of the PSC is based on the system-an innovative approach, is quite capable of supporting the main objectives and allows to react to changes in the external and internal environment by constant introduction of innovations, renewal of technology, and the greening of livestock, construction of new rations on the basis of natural components of plant origin, production of improved organic products and the transition to full waste reduction.

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*В статье рассмотрено современные подходы к управлению конкурентоспособностью предприятия которые занимаются производством продукции животноводства, отражен системно-инновационный подход, а именно, за счет внедрения производства органической продукции и экологизации производства.*

*Ключевые слова: конкурентоспособность, управление конкурентоспособностью предприятия, инновации, органическая продукция, экологизация.*

MODERN GOING IS NEAR MANAGEMENT OF ENTERPRISES  
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## CONCEPT AND CATEGORY OF GLOBAL FOOD SECURITY

Researcher\*: Yulia Zabarna

Конкретизовано поняття і сутність глобальної продовольчої безпеки як категорійної системи.

Уточнены понятие и сущность глобальной продовольственной безопасности как категориальной системы.

There is a determination of concept and category of global food security as a system.

*Globalization, security, global security, food security, global food security.*

At the beginning of the 21<sup>st</sup> century there was discovered a fundamental tendency of political and socio-economic development of mankind, known as globalization. The objects of globalization are the processes different in their origins, expression areas, mechanisms and results. That's why globalization is considered as an independent complex system of phenomena and concerns with new challenges and backgrounds for global issues development. Food security had become an urgent issue with a birth of civilization but people understood its global nature much later. Nowadays many scientists and international agencies continue working very hard widening a consideration of food security as a category of global food security. Thus, actualization of global security is directly related to increased pressure of global issues on global community, one of which is global food issue. Today food security is an urgent issue which is to be researched on a new global level of mankind.

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\* Scientific supervisor: Doctor of Science, Economics; Professor G.M. Chorny

Below there is an analysis of main researches and sources. Analyzing a subject the approaches of Ukrainian and foreign scientists in international economics and international economic relations is to be considered. Such scientists as: O.V. Akimov, V.S. Balabanov, O.G. Bilorus, V.I. Vlasov, V.P. Galushko, O. I. Goichuk, O.Ya. Kvasha, V.P. Kurbatov, E. Maxwell, R. Osborn, B.Yo. Paskhaver, P.T. Sabluk, A. Sen, R. Foster, L.S. Cheshynskyi, etc., were researching food security issue under globalization.

The purpose of a research is determination of concept and category of global food security.

Below there are main items of a work. Historical world progress which people witnessed radically changed a security perception, and most importantly it led to a radical rethinking of security place in present-day world. Discovering new opportunities, globalization not just extends existing system of threats to national and international security, but also creates a new environment of macro-economic and macro-social relationships that requires security of a new type. Security of expanded functioning, purposes, methods, means, and results on global community. It is proved, in particular, by many discussions and different approaches to “global security” research. In recent years, this issue is under particular attention of scientific community and is researched in many special studies.

In general, term “global security” covers security of human development, human civilization and ecosystem “human being-world”. American researchers consider global security concept as a form of security for all mankind, that protect against the dangers of universal proportions that threaten the existence of “humanity” or can lead to a deterioration of living conditions in the world [10, p.16]. As French scientist K. Divelye said, “....global security is possible when there is a single global political and economic space....The system of global security is general and planetary in nature and created at national, regional and global levels.... Under present global cooperation and mutual dependence, with non-state actors along with states, global security is meant to secure vital interests

of humanity as a whole – countries, country groups, non-state actors including individuals”. [Ibid, p.17]. English scientist A. Ashworth said that “...global security is a unity of international agreements and institutional bodies. Each member country of international community has a right to choose freely and pursue development strategy in accordance with the principles of democratic globalization”. [Ibid]. Thus, taking into account above-mentioned thoughts and with some assumptions, *global security can be defined as a set of threats and actions against them, concerning members of global cooperation relations, first of all countries, and similar internal processes which can stand at interstate level and affect the security of other states.*

Secretary-General of UN Ben Ki-moon recently said that “...today food security as a social phenomenon, touches lives of many million of people”. [10, p.7]. As Ukrainian scientist O. Goichuk noted, term “food security” comes from English “food security”, which is translated as “food security” or “food support”. The author believes this term has a double meaning, and considers economic category “food security” wider and deeper than as “security” or “support” (in this case, “food support”). [4, p.19]. German scientist K. Klannert said, in recent years food security has been defined as a food demand-supply matching at national, international and even global levels or food shortage. However with control of food supplying to certain population clusters the term more and more is used at level of towns, settlements, households and individuals, said Australian researcher R. Foster. In addition food security concept with food supply includes access entry to it (due to the right to receive food, A. Sen, 1981), vulnerability (J. Watts and C. Bohle, 1993) and stability (P. Chambers, 1989, E. Maxwell, 1995). At the same time food security concept was changed. Its most common definitions are based on the one of the World Bank (1986) formulated by E. Maxwell and H. Frankenberger as “the access to enough food at any time for a healthy life” (1992). According to current definition (FAO, 2000), food security is achieved when “... all people at any time have physical, social and economic access to enough food for a healthy and active life”[5]. Thus, food security is not an absolute economic category.

Along with economic conditions, it includes factors of physical access to food and human health security (quality of food, diet structure, environmentally friendly food).

O. Goichuk also said there are different levels of food security, which differ in their purposes and covered population clusters. Food security as a system has different features at each level. These features have their own structures and development strategies. There is a certain relation between different levels of food security. International community represented by UN and other international organizations (FAO, WTO Committee on Food Security, etc.) helps certain regions and countries of the world to struggle against hunger. Each country at national level contribute to *global food security* [4, p.18-19] developing its own food production system and enforcing effective economic and social policies in supplying lower structures in food security hierarchy. Academician O. Bilorus said: “International experience of the second half of the 20 century has shown that no specific conditions, features of national development, crisis and internal changes have no force to cancel or postpone globalization affect”. [2, p.31]. Clearly, food security issue is under this law as well, both at state level by its own agricultural production system, and global food market; food and technical assistance provided by planetary international institutions and developed countries.

American researcher W. Schanbacher said global food issue is so many-sided and multifaceted that it is actually a complex of issues that are connected and mutually affected. Hunger is not just a problem of agricultural sector of world economy, but also an issue of whole world economic body and all its components. Hunger happens under conditions of statistically full supply and even food overproduction, when people simply have no means to buy food, or suffer from poor supplying to some destinations. [12, p.39]. Therefore, because of spacious, many-subjective and many-objective nature term “global food security”<sup>†</sup> differs even in controversial way.

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<sup>†</sup> Note term “global food safety” is often used in different sources but in our opinion it has a slightly different meaning.

Scientists from University of Iowa (USA) consider global food security as economy state, when “all people at any time and place of the world have an access to enough food for a healthy and active life”. [9, p.70]. According to V. Shandbakher global food security is characterized by the balance between world production and world consumption, world demand and world supply of agricultural products, provided by world market. [12, p.45]. South African scientist L. Masters said “...food security category is to be considered at macro, meso- and microlevels....Global food security at macrolevel is determined by the stocks of grain and volume of its production per capita....Global food security is a complex issue that involves world food production, food demand and supply as a derivative of population and standards of living in the world, food export / import to secure necessary level of consumption, international regulation and long-term strategy that is based on mutual connection between these factors”. [11, p.26-27].

Summarizing and synthesizing modern definition of global food security, taking into account ways of globalization, is reasonable to give the following definition to it: *“Global food security is a state of population of all countries of world community which secures political, social and economic rights to have quality food and drinking water, as well as physical possibility to access it at any time and place of planet, in an amount sufficient for a healthy, active life and personality development”*.

Below there are conclusions and aspects for future research. Such urgent issues as: aggravation influenced by globalization, socio-economic differences between developed and developing countries, other global challenges, increase of anthropogenic pressure on environment, climate change, shortage of resources, population growth, etc., keep an interest to food security category. Food security under such controversial socio-economic process as globalization, regularly obtains new specific features and forms, which complicate its structure and place it at other general planetary level. Therefore, issues of theoretical and methodological basis of global food security concept, ways and mechanisms of global regulatory policy of food security should be analyzed and researched in the future.

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**INNOVATIVE DEVELOPMENT OF SOCIO-ECONOMIC  
SYSTEMS: MANAGEMENT ASPECT.**

**Zorgach A., NUBiP Ukraine.**

*The socio-economic system is relatively continually function form that mean introduction of various modifications of activity optimization which provides enterprise development. In the period of high standards and increased requirements for product quality and services, conditions of production and their safety; the rapid development of scientific and technological revolution and rapid obsolescence of knowledge and skills, the enterprise development management tool is a necessary condition for the competitiveness of their existence.*

**Innovation, development, socio-economic systems.**

**Analysis of the main research and publications.** For a long time economical scientists were interested in studying issues of social and economic systems development. As well as questions of impact on their effective development of various factors which influence from external and internal environment of the existence of socio-economic systems. Prominent scientists Nelson, R., and S. Uynter in their work of evolutionary theory economic change [6] examined impact of process changes on the development of socio-economic system as a whole. The work of John Maynard Keynes [4] studies economic growth as a result of the development and updating of production capacities of the company.

Domestic scholars as A.D. Hudzynskyy, S.M. Sudomyr, N.M. Syrenko, T.A. Hurenko devoted many works of studying enterprise development, revealing conceptual basis of the formation of local functional systems management: innovation development, effectiveness, competitiveness [3].

**Purpose of the study.** Post-industrial economy, which is based on knowledge, meaning transformation of knowledge into productive force effects agriculture as well. Agricultural companies have adapted to the new rules. At

present time it is impossible to imagine agricultural production without the use of fertilizers, pesticides and large variety of equipment, systems that facilitate the work of agricultural workers. For example the State Register of varieties and hybrids of plants includes 7`110 entries which are allowed to be grown in Ukraine, including 53% of Ukrainian breeding.

It is the development of techniques and technologies has provided the ability to obtain high yields of crops. Return back to "manual processing" of agricultural land is no longer possible, because the population of the earth has increased by almost 4.4 times in the last 100 years, from 1.6 billion people in 1900 to 7 billion people in 2012, in the same moment the period of time in which earth population is increased by 1 billion declined from 100 years to 12 years [2]. Therefore, to provide people with sufficient food without the use of technical and scientific achievements in agricultural production is not longer possible. In our opinion quite relevant is the research of innovative development of socio-economic systems in Ukraine.

**The main material.** The main principle of the enterprise operation from production planning, analyzing life cycles of production, management development strategy, etc. is definitely the development of organizational structures, business development component, and the development potential of the company, as a whole. Development itself, rather than movement in front on a straight line, means the transition to a qualitatively different state of production. What guarantees the competitiveness, sustainability and adaptation to dynamic changes in the environment, and at best, and the ability to anticipate and foresee unfavorable conditions of production.

O.D. Korshunova explores the development of socio-economic systems, such as the formation, accumulation and use of strategic ability to provide external adaptation and internal integration on labor markets, capital and goods according to the interests of different groups of market participants. [5] Agreeing on this point of view, we believe that the company is to gain and maintain market

leadership possible through a process of formation and use of innovation in a variety of forms of existence.

Examination of innovation using European CIS methodology was introduced to monitor innovation in Europe and for a better innovation processes understanding and the analysis of the innovation impact on the economy, including competitiveness, employment, economic growth and trade structure.

According to the third edition of the Oslo Manual from CIS survey 2008, introduced a new comprehensive definition of innovation, which includes organizational and marketing innovation. It is these manual different kinds of innovations receive more weight. Thus, in order to preserve the continuity of time series, the question of the cost of innovation is still limited to the costs of product and process innovation. For the purpose of consistency with the data of previous surveys distinction was made between enterprises with technological and non-technological innovation related to product and process innovation. [1]

According to the research, to innovate in Ukraine for the period 2008-2010, 4.5% have implemented a technological innovation, with the total number of surveyed 11.2% - only organizational and marketing innovations (non-technological innovation). The level of innovation activity of enterprises of all economic activity has grown significantly: the share of innovative enterprises in the field of information increased from 21.7% to 31.8% in the financial sector - from 19.7% to 25.6%, other services - 16 0% to 19.9%. [1]

In Table 1 we consider the dynamics of innovation and investment activity in Ukraine during 2010 to 2011., And the percentage of 2011 and 2005.

**TABLE 1. The dynamics of innovation and investment activities in Ukraine**

Indexes	Year			2011 y % до 2005
	2005	2010	2011	
Expenditures for innovations in Ukraine, total, mln. UAH	5751,6	8045,5	14333,9	249
of which: domestic research	-	818,5	833,3	-
external research	-	177,9	246,6	-
Machinery, equipment and software acquisition	3149,6	5051,7	10489,1	333

Other external knowledge acquisition	243,4	141,6	324,7	133
The cost of the scientific and technical work, mln.UAH	5160,4	8995,9	9591,3	185
of which: them from the state budget	1711,2	3704,3	3859,7	225
at their own expense	338,5	872,0	841,8	248
Number of organizations performing research and development (units)	1510	1303	1255	83
Number of Employees scientific organizations, individuals	170600	141100	134700	79
of which: Professors in economics, people	4200	4500	4400	105
PhD in economics, people	17000	17000	16100	95

\* Compiled by the State Statistics Committee of Ukraine [1]

Analyzing innovation in 2010 we see that more than a third of their expenditure on innovation activities of enterprises have invested in the purchase of machinery , equipment and software to produce new or significantly improved products and services. Enterprises preferred domestic investment research works, which is three times higher than the costs and external research.

One of the conditions of creation and innovation is research and development in the company or purchase their results in other organizations. So every tenth company which is innovational active was involved in the execution of internal R & D , 5.0 % - the results acquired from other companies .

Although the cost of innovation and increased compared to 2005, to an incredible 200-300 percent , but should take into account the depreciation rate during this period and the inclusion of organizational and marketing innovation to innovation.

**Table 2. Quantity of new high-tech in 2011. and organizational and legal forms in Ukraine**

Indexes	Total	of which: state owned enterprises	Private owned enterpris es	Institutio ns	Agricultural and forest economies
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Organizations that have created high-tech	172	X	X	X	X
Quantity of new high-tech Total	447	56	160	208	5
The degree of novelty: new to Ukraine	380	46	139	173	5
Brand new	67	10	21	35	-
According to state. contract	81	1	2	75	1
Number of protection documents in established technologies, including					
Invention	274	36	86	139	6
Utility model	560	31	96	427	7
Industrial design	165	1	36	-	2
Novelty	31	6	24	-	-

\* Compiled by the State Statistics Committee of Ukraine [ 1 ]

Of the total number of created high-tech Ukraine only about 15% of the technologies are fundamentally new and 85 % new for Ukraine . 18 % of the established high technology created under state contract , indicating a positive trend and interest to the state of innovation in the country.

We believe that in order to achieve efficient production of socio- economic systems need to be more actively introducing innovative technologies and techniques in the production process and work on long-term basis with organizations that perform research and development.

Certainly innovative development of the state and social economic systems and in particular a process that requires bulk of funding for a long time, and the agricultural sector especially .

In recent years there has been a tendency to increase agricultural exports in 2012 reached a volume of 18.2 billion U.S. dollars is almost a quarter of the total exports of the country. This dynamic development of the industry has a positive characteristic that increases the interest of creditors and investors for the agricultural sector.

**Conclusions and recommendations for further research.** In Ukraine in 2010 - 2012. 24% innovational active companies cooperated with other companies and organizations ( universities, public research institutes , etc.). Establishing relationships, sharing information , knowledge about business developments in the field of scientific activity are important components of innovation. The state itself , using its leverage management has to become the "bridge" which strengthen the relationship between the business sector and higher education sector .

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УДК 631.155 (477)

## SCIENTIFIC PRINCIPLES OF STATE REGULATION OF AGRICULTURAL SECTOR UNDER HIGH RISKS

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The components of the mechanism of state regulation of the agricultural sector of Ukraine under high risks are investigated.

***Keywords: government regulation, agriculture, principles, functions, methods, and instruments of state regulation, risks.***

Formation of the desired level and conditions for the development of agriculture in Ukraine is implemented by state economic policy. The latter is considered as a system of specially designed and implemented interventions in the economic processes taking place in the national economy, to provide them with a certain direction of development. Economic policy is implemented through appropriate tools, which are aimed at achieving certain objectives by the economic system of society, and also at providing the required mode of functioning of the economic system [6].

**Analysis of the main research and publications.** State regulation of the agricultural sector under high risks was studied in the works of such foreign scholars as U. Beck, Y. Brigham, J. Galbraith, P. Drucker, N. Luhmann, N. Meskon, H. Mintzberg, F.Knight, M . Porter, H. Simon, S. Young. Many domestic scholars, including N.I. Berezanska, R.R. Gumerova, A.D. Dibrova, A.B. Kamenskyi, M.J. Malik, K.L. Polozhentseva, P.T. Sabluk, M.A Latynin, V.V. Yurchyshyn, O.G. Shpykulyak and others devoted their research to the issue of state regulation of risks in agricultural enterprises. However, the issue of strengthening of antirisk focus of government regulation of agricultural business still has not been studied enough.

Development of innovative scientific principles of state regulation under high risks is required to substantiate further directions of development of

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\* Studies are made under supervision of Dr. of Economic Science A.D. Dibrova.

agriculture in Ukraine. That would enable management and regulation in the sphere of state support of agricultural production in the future, since current support of agriculture is not perfect.

**The purpose of this study is** to summarize the theoretical aspects of state regulation of the agricultural sector in terms of high risks.

**The main part.** Ukraine is developing through the radical market reforms. Therefore, all state measures to reform the agricultural sector should be implemented in accordance with the basic principles of a market economy: "The market is one of the greatest achievements of human civilization. He passed the test of time and proved to be of an enormous vitality, this is confirmed by the international experience. There is reason to believe that recent history does not know any examples of highly developed, flexible, well-functioning economy without a market" [5, p. 237-238]. It should be noted that the market in its pure form has never functioned in any country. In this case, it is necessary to consider the necessity of state intervention in economic processes. During the process of regulation of socio-economic processes, the state uses the system of methods, forms and tools that vary according to economic objectives, financial capabilities of the state and accumulated experience of regulation. Historical experience shows that the range of the applied instruments and methods of state regulation of the economy is constantly expanding.

The mission of agriculture since ancient times is satisfying the most important of the human needs – the need of food. Elimination of the food risks is historically recognized by the states as their first function. Agriculture was a sector from where the scientific and technological progress had begun. Therefore, an official recognition in Ukraine of significance and indispensability of agricultural products in the life of society, and priority of the social development of rural areas and agricultural sector, is quite objective.

Critical situation with food supply to the population occupies an important place in the current list of threats to national interests and national security in the economic sector. Therefore, the Government has identified food security as its

strategic priority. According to the market economy status of Ukraine, the Government declares a leading role of business in the implementation of its policy in general and agricultural policy in particular. Such attention to business is objectively caused by its potential to attract investment resources and innovations. However, it is ignored in many cases, that agricultural entrepreneurship is burdened with a double risk, which consists of the risky nature of both agricultural production and business (activities at own risk). Historical experience and current practice of the developed countries have shown that overcoming this double risk of agricultural business is virtually impossible without comprehensive measures of state regulation.

Managing economic systems under uncertainty and risk is an integral part of the economic mechanism. A common approach to the management of the system under these conditions is:

- detection of possible consequences of the business activity in the risk situation;
- developing measures that help to avoid, prevent or reduce the damage from exposure to risk factors and contingencies;
- the development of such economic system through which accumulation of profits is possible.

Accidents, independent of the will of man, increase or decrease the risk. They are determined by weather and climatic conditions, socio-demographic situation in the region, socio-political factors and others.

Therewith, the economic risk associated with the possibility of losses due to accidental display of objective reasons and subjective decisions and actions.

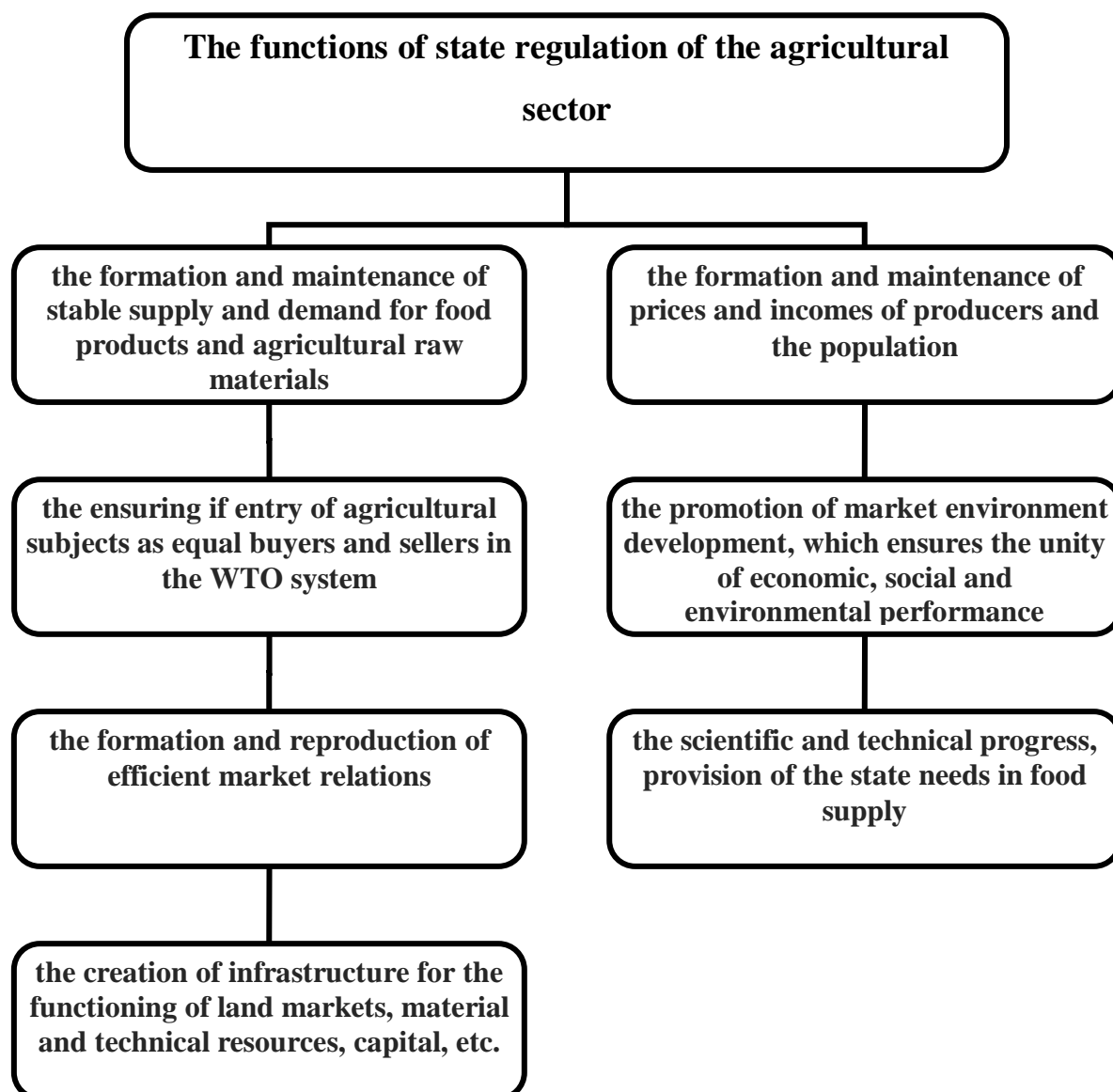
Important theoretical principle of state regulation is a method of learning objects of future regulation, studying of their inner nature, relationships and internal contradictions.

To directions of state regulation of agriculture should be included the use and application of the concept of state regulation of agriculture based on methods of institutional and legal framework regarding its further processing. Otherwise it

is impossible to work out approaches to the organization of agricultural markets and develop effective pricing, taxation, credit, investment and other policies. And as known, food security and functioning of the domestic food market, provision of rural jobs and social stability in society depend on the development of the agricultural sector [4, p. 123].

The principles of state regulation are manifested in implementation mechanisms of various state functions.

Summarizing the main functions of the state regulation of agricultural sector, we have proposed this scheme (Fig. 1):



**Figure 1. The main functions of government regulation and support of the agricultural sector**

**Developed by the author and based on:** 1) Гумеров Р. Р. Продовольственная безопасность страны: к развитию правовых основ и экономических механизмов обеспечения / Р.Р.Гумеров // Российский экономический журнал. – 2006. – №11-12. – С. 41–56. 2) Діброва А. Д. Державне регулювання сільськогосподарського виробництва: теорія, методологія, практика. – К.: ВПД " Формат ", 2008. – С. 48–49.

An important role in the system of state regulation of the economy play instruments by means of which the subjects of economic relations are influenced.

The main instruments of state regulation of the agricultural sector include [3, 7]:

- 1) establishment of special tax regimes for agricultural producers;
- 2) procurement, storage, processing and selling of agricultural products, raw materials and food for public use;
- 3) establishment the minimum and maximum prices for certain agricultural products, raw materials and food;
- 4) tariff and non-tariff import and export regulation of agricultural products, raw materials and food, support of agricultural products, raw materials and food export;
- 5) provision of subsidies, subventions, guarantees and compensations to agricultural producers and other subjects of agrifood sector ;other forms of funding, including subsidies to the budgets of subjects of the Russian Federation on the state of regulatory harmonization of rural roads, followed by handover them to the network of public roads;
- 6) state investment;
- 7) technical regulations, licenses and other restrictions;
- 8) antitrust regulation agrifood sector, measures to eliminate administrative and technical barriers in the agrifood sector;
- 9) programs of sustainable rural development and conservation of natural resources;
- 10) direct budget financing, co-financing, subsidizing human, scientific and information services and business consulting services of agrifood sector;

11) promotion of scientific and technological progress and innovation in the agrifood sector;

12) other instruments of state regulation stipulated by the current legislation of Ukraine.

The need for government regulation of the agricultural sector is also conditioned by the constant risk increase. In this area entrepreneurship is facing a double risk – agricultural, due to climatic factors and entrepreneurial, due to the uncertainty of the socio-economic and other circumstances. To minimize these double risks, the system of state regulation should include the creation of anti-risk measures.

The anti-risk basis of state regulation of agricultural can be considered as a combination of strategic and tactical activities of the state to ensure the level of acceptability of the risks of agricultural entrepreneurship in terms of different types and coordination of all participants in economic relations.

**Conclusions and recommendations for further scientific research.** We have conducted a research and concluded, that the basis of state regulation mechanism of the agricultural sector of Ukraine in the current economic conditions should be the basic principles and functions as well as the forms, methods and means of regulation mentioned earlier.

The current state of functioning of state regulation mechanism of the agricultural sector shows that it is based on many different layers perspective. The Law of Ukraine "On State Support of Agriculture of Ukraine", which was adopted June 24, 2004, No 1877-IV, has determined the basis of public policy in the budget, credit, price, insurance, regulatory and other areas of government to stimulate agricultural production and agricultural market development and food security of the population.

Further studies of the forms and methods of state regulation of the Ukrainian agricultural sector development will be used to identify different areas of improvement of state influence mechanisms and increase their effectiveness to stabilize further industry development.

The system of state regulation of agricultural entrepreneurship should gradually increase its anti-risk potential through appropriate policies, programs and standards. This raises the need to develop not separate anti-risk state measures in the agricultural sector, but a system of measures, consistent with a set of effective policies, programs and standards.

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## **Development of long-term bank crediting of the agricultural enterprises**

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*The state of long-term bank loans agrarian enterprises*

*and the ways of its development*

### ***Long-term bank lending, farmers, impacts***

Improving resource as long-term bank loans in the agricultural sector is a problem that requires a comprehensive scientific study. Research the topic opens opportunities to deepen analytical research, to build an effective mechanism for financing investment projects farms. In this regard, it is important to note that this long-term bank loans as a source of investment resources, able to appropriately influence the stimulation of activity of agricultural enterprises and accelerate their growth.

**Analysis of the main research and publications.** We studied the long-term financing of agricultural enterprises S. Kruchok , Y. Ljashenko et al. However, in practice this question needs further investigation.

**The purpose of the study.** Based on the analysis of bank lending agrarian enterprises in Ukraine , identify the problems of long-term financing the agricultural sector and to propose solutions. The main material. Agricultural sector of Ukraine is one of the most important areas of industrial and economic activity in the country. Since its development depends on the viability of rural and food security of the population. This sector of the economy Ukraine compared to others most in need of real, complex state and banking support. Ukraine , as a manufacturer and exporter of agricultural products to Ukrainian agricultural companies to provide the necessary support and assistance to improve the conditions of production and improve competitiveness in domestic and foreign markets. The key to this is the long-term bank lending to agricultural enterprises with the right use of credit results in the necessary development.

Development of long-term bank lending to the agricultural sector tended to Ukraine from 1996 to 2008, in 2010 - to improve in 2009 - a significant reduction in

lending from 2011 to 2013 - an increase of total lending, but the share of long-term loans decreased significantly, please. (Table) (Fig. 1, 2).

*Table*

**The volume of agricultural loans, million UAN**

Years	Total	<i>Long-term loans</i>		
		In UAN	In foreign currency	share, %
1996	169	30	-	17,8
1997	268	25	-	9,3
1998	329	31	62	28,3
1999	390	43	119	41,5
2000	745	58	98	20,9
2001	1676	111	139	14,9
2002	2593	338	239	22,2
2003	4561	1540	525	45,3
2004	5218	1768	668	46,7
2005	8192	3090	105	50,5
2006	11878	5026	1867	58,0
2007	16508	7136	3077	61,9
2008	28812	12296	5665	62,3
2009	26026	10821	4960	60,6
2010	26545	13211	4703	67,4
2011	34143	14822	5985	60,9
2012	36488	13375	6603	54,8
2013	39158	14253	5097	49,4

\* Source: Calculated based on data [1]

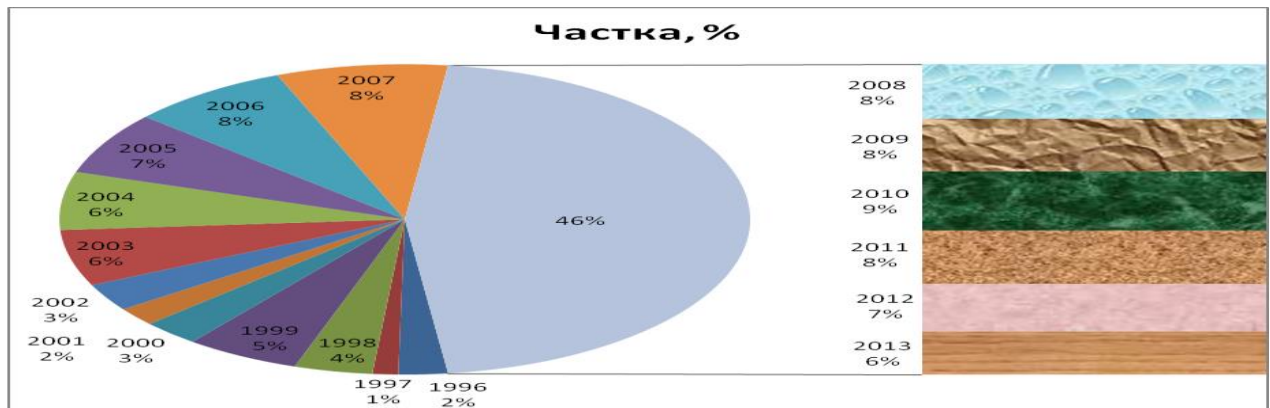
The trend of increasing lending to agricultural enterprises was due to government measures to support them and the provision of soft loans. However, the dynamics of the decline in the share of long-term loans, consistent with crises, financial and economic situation in the country and proves distrust of banks to borrowers agriculture caused: industry risk, solvency level and volatility of agriculture, which is due to: seasonal, cyclical, dependent from natural weather conditions and difficult predictability and yield pricing for domestic and international agricultural markets.



\* Source: Calculated based on data [1]

**Figure 1. Volumes of lending farms**

The development of agricultural enterprises require long-term bank loans. Investments are needed in the expansion and modernization of fixed assets (physical infrastructure). Banks provide long-term loans if the borrower liquid assets that can be used as collateral. The main pledge of agricultural enterprises may be agricultural land. In Ukraine agricultural land private enterprises have a low cost, in addition there maratoriy for sale.



Source: Calculated based on data [1]

**Figure 2. The share of long-term loans granted to agricultural enterprises**

To address the issue of financial development farms needed to solve the problem of liquid material and valuable collateral, which might enable banks freely , reducing credit risks , invest the money in the long term the main objects of agricultural enterprises. But still no government support , which provides preferential subsidies from the state budget allocations , grants , current government programs in support of the village , tax breaks , development of agrarian sector of economy of Ukraine is impossible. One way to implement this is higher than investments , which

are based on sources : the state budget, state funds , investments, and long-term commercial bank loans. Effective lender will perform a special state agricultural bank. Based on the analysis , we can identify the factors influencing long-term lending to agricultural enterprises. The external factors include: agricultural policy (development and agricultural reform ) laws and legislation ( drafting and adoption by the supreme Council of Ukraine governing laws regarding: mortgage , mortgages, land fund guarantees, the development of the agricultural market , adequate support domestic producers , etc.) , state budget ( government revenues and expenditures relative to agriculture ), government financial support for agriculture (budgeted : spending , subsidies , compensation , subsidies , benefits ) stock market ( stock market development with the participation of Ukraine agriculture: an opportunity profitable sales agricultural products, mortgage bonds as an alternative to long-term loans ) designation pricing for agricultural products ( regulation and corridor level of prices of agricultural products ), land markets ( market development of agricultural land ) , guarantees and sureties (state, property surety , etc.) ( reliability guarantee, other ways of calculating credit obligations in the event of unforeseen circumstances) .The internal factors include: the creditworthiness of the borrower(to the full , and at the appropriate time to pay with their obligations, the borrower's rating , which is determined depending on the financial situation of the company , reputation, risk of loan default by the borrower , project - plan , provision (mortgage , etc.) , the liquidity provided by the property as collateral and its estimated value in the period ), which is defined by: 1. Reputation. 2. Credit history. 3. Financial condition. 4. Project Quality Plan. 5. The presence of collateral. We consider lending to investment projects farms as focusing resources on investment measures aimed at expanded reproduction of capital, according to the principles of bank lending and government support.

Conclusions and recommendations for further research. Solving the problem of long-term loans will: stabilization of the financial and economic situation in the country, the establishment of mortgage banks including state, which primarily will bring social benefits, long-term source of credit banks, an adequate analysis of the

creditworthiness of agrarian enterprises (taking into account the financial condition, seasonality); create high-quality regulatory framework, the network credit bureau system of registration of property (land registry adoption and creation of state registration of rights to immovable property, etc.), government guarantees (such as reallocation of risks), government financial support, an increase in non-repayable assistance to enterprises of the agricultural sector of the economy, compensatory and preferential loans from the state, the effective regulation of money market National bank of Ukraine development of insurance.

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*Проаналізовано стан довгострокового банківського кредитування  
аграрних підприємств та запропоновано шляхи його розвитку*

***Довгострокове банківське кредитування,  
аграрні підприємства, фактори впливу***

*Проанализировано состояние долгосрочного банковского кредитования  
аграрных предприятий и предложено пути его развития*

***Долгосрочное кредитование, аграрные предприятия, факторы влияния***

UDC 619:616.9: 636.571.1

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### **Features of marketing for biotech products**

**Abstract.** The article deals with the essence and principles of marketing for biotech products. It displays the relationship between the marketing of biotech products and commodity innovative enterprise policy. Approaches to the forming of marketing strategy of companies which produce biotech products are suggested.

**Keywords:** innovation, product innovation, marketing, marketing biotech products, marketing strategy.

**Statement of the problem.** In the modern economy there is need for innovative activities due to three reasons: firstly, it is based on the transition to the knowledge economy, the rapid development of science and improvement of production technologies; secondly, the adaptation of consumers to new products, development of communication and distribution systems that ultimately cause the reduction of product life cycle; and thirdly, the increasing competition in the markets. That's why for gaining competitive advantage it is necessary to offer new products for consumers, and to survive in the competition battle it is necessary to improve them constantly. In countries with transition economy, especially in those which do not have final model of development, the importance of strengthening the innovative activity is undoubted, as it will help to improve the competitiveness of certain products, industries and countries as a whole.

In recent years, the economic situation in the countries with transitive economies confirms the prospects of innovative development of enterprises. To implement these provisions marketing services of companies constantly have to research the following three areas: tracking of scientific and technical

achievements within the development of an industry and allied, learning new consumer needs and behavior of competitors (their successes or failures). Among these scientific and technological achievements the production of biotech products has a special place because firstly, there is a tendency to increase its production (in particular, 170.3 million hectares of biotech crops were grown worldwide in 2012, representing year on year increase of 6 %, by 10.3 million hectares, compared to 2011) [1], and secondly, there are important positive social and environmental impacts of these processes. These trends lead to the need for innovation as in creating new products and improving production as in the application of new marketing methods of sales and promotion.

**Analysis of recent research and publications.** Marketing support of innovative activity is an object of research in marketing and innovation management. An important contribution to the study of this problem was made by L. Antonjuk , A. Poruchnyk, V. Svyatnenko , V. Snigireva and others. Among foreign researchers we can identify Ph. Kotler, C. Keller, P. Harrison. Problems of organization of production and marketing of biotechnology products were studied by foreign scientists H. Garcia, A. Golichenko, R. Lipsey, M. Tatsero and Ukrainian V. Heyets, M. Goncharov, B. Danilishin, R. Kostyuk, O. Kuzmin, V. Seminozhenko, A. Chukhno. In actual economic literature there are different opinions on the marketing of innovation but there are no publications on a systematic approach to marketing activities in the production and marketing of biotech products.

**The purpose of the article.** The aim is to justify the features of marketing of biotech products.

**The main material.** Biotechnology companies in Ukraine belong to industries such as forestry, pulp and paper, food processing, agriculture (the international classification of so -called green economy), there are also pharmaceutical companies (red sector), as well as producers of biofuels and conducting biological treatment of soils (white sector). [3] According to these sectors groups of biotechnology products are forming. The priority of marketing is

to inform consumers about the quality, safety, price and other competitive advantages of these products, as well as correct positioning. It should be noted that some part of biotech products does not cause a positive reaction of consumers. Because of biotech products are not traditional products, their promotion often requires alternative (innovative) marketing approaches.

The instability of the environment causes the effect when traditional marketing plays out, and traditional marketing strategies reach the limits of its development. Under these conditions, innovations in marketing or its smart reorganization become necessary. Often unsuccessful innovation projects are associated with either large-scale investment in marketing activities that do not live up to expectations, or unreasonable and ultimately unsupported desire to make a profit through advertising. In difficult economic conditions, when the degree of resource utilization is very high, the use of traditional marketing techniques does not give any decisive advantage. In addition, the use of marketing tools on biotech products markets is specific induced the features of this product. Thus, it is necessary to apply innovative marketing concept to the biotech products.

Innovative marketing concept is a philosophy of marketing management based on the principles of taking into account specific market segments, which are consumers of biotechnology products.

Taking into account the wide innovative marketing principles [2], it can be argued that the essential principles of marketing biotech products are:

- Compliance with applicable legislation of the innovation processes;
- High standard of customer service of biotechnological products;
- Optimal business decisions entering the market of biotech products;
- The yield and profitability of biotechnology products;
- The competitiveness of biotechnology products to analogue goods in the domestic and foreign markets;
- Completion of contractual obligations with high quality and on time.

There are specific requirements to commercialization and market development of biotech products that must be followed through the introduction of innovative marketing concepts.

The need to improve and / or change the content of marketing activity is caused by various reasons, including the fact that the demand for biotech products is much more selective. There is a task to unleash the full potential of enterprises through radically transforming marketing, increasing efficiency and agility of work, reducing its complexity and expensiveness.

As we know, the basic tool of marketing activity is the marketing mix. However, taking into account the characteristics of biotechnology products it is subject to confirmation.

Undoubtedly, the most important part of the marketing complex for biotech products is the product policy, especially the quality policy and reducing the life cycle. Principles of commodity component of the marketing of biotech products are as follows:

- Correction of "marketing myopia ", that means focusing on the needs that are met ahead;
- Synergies as a result of the principles of integrity and consistency in the creation of biotechnology products;
- Compliance of social and ethical norms in the formation of commodity policy, taking into account environmental requirements for products;
- Creating competitive advantage of innovative product, which gives it priority in the competitive high-tech market;
- Formation of core competencies in corporate micro environment to implement established competitive advantages;
- Ensuring the competitiveness of innovative products through economic, environmental, social and ethical options.

Pricing of biotech products should be built based on the following principles: optimizing the costs of the total cycle of creation, development and introduction to the market, breakeven and payback for the innovation process,

profitability, competitiveness of biotech products by introducing competitive prices.

The principles of rational organization of biotechnology products sales include:

- Optimizing logistics costs;
- Selecting the optimal shape and promotion of products with wide application in centralized delivery distribution network;
- Choice of rational business processes during transport and storage;
- Improvement and optimization of the technological chain of goods movement.

When developing marketing communication intended for the biotech products market we must comply with the principles of:

- Creativity of advertising messages and other communications;
- Adaptation of communication activities to the products;
- Target orientation of marketing communications, which is realized through the process of segmentation and product positioning;
- Rationalization and comparability of innovative marketing budget with the results of communication campaigns;
- The principles of marketing interaction and ethical standards.

Innovative marketing mechanism can be represented as a set of related procedures that are integrated into the process model of commercializing high technology business, based on the value chain of M. Porter [6] and the design and development of new technology [3]. The cycle of creation and development of new technology in the traditional form consists of the following stages: R & D funding, description of know-how, ideas, conducting research and specific expression of the invention or idea in some form, developmental work, pilot production, sale of products, warranty obligations to the product. In the traditional interpretation this cycle is linked with the life cycle of the product. The main disadvantage of the traditional model is the absence of stages associated with commercial operations of the company, which is unacceptable in a market economy. In this context, we

propose a model associated with a complete cycle of creation and market development of new products. It includes all stages of the business of promoting products to consumers, demand creation and sales promotion, procurement processes, supply and control of raw materials, equipment and contractual relationships with suppliers and customers. During biotechnology production there is the transformation of material, information or other flows as the input of the process to the customer value as the output of the business system.

When forming a marketing strategy we should take into account the fundamental characteristics of business and enterprise development, the specific requirements of management, marketing and logistics. It is advisable to allocate group of companies for which we can use similar marketing strategies that take into account trends in demand and consumer preferences. Therefore, we should separate group of companies that produce biotechnological products. Currently, these enterprises face similar problems in marketing [4, p. 29 ]:

- The need to quickly obtain detailed and accurate information about the needs of the customers, their requirements for innovative products for precise positioning of products in the market;

- Determining the price at which it will be possible to implement new products;

- The urgent need to highlight the most important functional characteristics and properties of the product to consumers;

- Significant pricing during the promotion of products to new markets.

When developing a marketing strategy in such enterprises in terms of modern concepts of innovation, it is advisable to use some elements of marketing interaction, the principle of priority of the consumer, which forms the participants of value chains "affiliate consciousness." They need to make changes to the current business model of the "value chain" with producer's priority.

Marketing strategy for biotechnology products should be based on the dominance of consumers in decision making. Changes should mainly cover the aspects of marketing activities like structure formation of product range,

identifying sales channels, the choice of the pricing system, and defining the principles of communication methods to promote products. Marketing strategies that target consumers will be most effective in promoting innovative products. Possibilities of using many different sources of information will enable consumers to reduce costs and spent time, and will develop more efficient operations for producers.

In recent times it is possible to use for innovative products the scheme shareware distribution of goods or services. Customer oriented marketing strategy allows convenient shopping for customers at a convenient time, and the decisions about prices and places of purchase will not be accepted by manufacturers, but by consumers. This expands the geography of operations and the time range for both consumers and producers, and reduced costs of sales locations.

According to experts, marketing will play an important role such as "from mouth to mouth", and scoring system as a method of sales promotion and so on. Estimates that products receive online have effect on the corporate brand image and further on sales of goods. Marketing interaction can increase the effectiveness of marketing management, using the possibility of "passing hiring."

Often the high cost for innovation is not associated with a large volume of sales of new products. From this perspective, it seems to be effective to use marketing interaction as an additional source of ideas for innovation. Information obtained by exchanging experience from production use references to the shortcomings of the goods, and the goods of competitors will actually develop innovation demanded by consumers.

From the standpoint of a systematic approach in marketing, a prerequisite of marketing innovative products is the need to change the pricing system. To solve this problem it is expedient to use the concept of «price down - cost down», based on advanced methods of strategic cost management target (target costing). Pricing "target-costing" is especially important in the production of innovative products, when we produce innovative quality and affordable products. Price of products in

this case should not exceed market price, thus it'll be changing the traditional sequence of pricing for goods.

Firstly, the market price of goods should be detected, margin profit desired and then the maximum amount of cost determined. Undoubtedly, the quality characteristics of products have to meet market requirements. The market price of goods is detected through market research, including positioning of products in the market test sales. This pricing in the market generally brings active participation of consumers in this process.

If target costing is combined with elements of relationship marketing, companies wishing to sell their products, we get ample opportunity to communicate with buyers of their products online, including demands for quality products, its prices by promoting the product by consumers. Using Target costing leads to lower costs in time and money, as in traditional systems, marketing costs and product prices are determined only at the final stage of product development and if the price goes above the market, the design process have to start from scratch.

Reducing budgets for promotion, due to lack of working capital crisis makes marketing service more professional approach to the choice of communication channels, counting their effectiveness.

Marketing strategy to promote biotechnology products should include the use of new channels of promotion like social media. Sales promotion in social media is cheaper and more efficient. If another marketing opportunity is used – promotion through mobile advertising – it is able to focus the attention of consumers to the information that they are interested in. The marketing strategy will include not only new solutions in the field of advertising goods, but also a shift of focus to reduce advertising costs and increase its efficiency.

Reorganization of marketing strategy should ensure passage of innovative products through all stages of production and sales as quickly as possible, which will also reduce costs. This is particularly important for biotechnology products that are sure to face competition.

An important condition for implementing the proposed marketing strategy, in our view, is the consideration of changing demonstrative consumption on global responsible consumption, resulting in a shift in demand towards the presence of significant product characteristics to consumers, lower selling prices and lower costs of consumption goods. Application of marketing interaction, method of pricing Target costing , new channels of promotion and advertising cost reduction of consumption goods will increase the competitiveness of organizations by reducing costs and thus prices of products.

Studies have shown that if the company in developing new products does not change the processes, structure and marketing system, there is a trend of lower profits from innovation. If you change the marketing strategy, you must take into account that each enterprise has its own specific sub-curve of innovation. Marketing strategy is to promote the growth curve of innovation that will accelerate the development of new products at lower costs. This involves planning the marketing department of the curve of innovation for the enterprise as a whole, and perhaps for each business unit.

**Conclusions.** The research allowed to organize the aspects that are useful in the marketing strategies of companies that derive the market biotech products : the use of relationship marketing elements ; chain management creating value of biotech products , the application of the method "Target - costing" in marketing pricing , development of rapid methods of evaluation costs of product promotion, advertising, communication methods , the choice of new sales promotion channels (Internet, "social media") , the use of mobile advertising , shifting its meaning from the image to sales, customers choose the method of distribution that it is more appropriate, taking into account in planning and marketing of the innovation curve the enterprise and its business units, implementation of ideas for innovation that come from customers , the implementation of marketing staff through a network of corporate culture change towards openness.

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## **Basic trends in property insurance in agriculture**

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The conditions, characteristics and functioning of the main trends of property insurance are branched. The prospects of property insurance in Ukraine are defined.

***Keywords: insurance, property insurance, the insurance market***

**Statement of the problem.** Objective necessity of the existence and development of property insurance in Ukraine due to the fact that it is effective, efficient, economical and affordable way to protect the property interests of producers of goods and services as well as citizens. Perfect system protection insurance is the foundations of a higher level of national economic stability of the reproductive process, the achievement of social cohesion, guarantee a high standard of living. Providing insurance protection of property is a priority in the system of insurance relations.

Relevance of the development of property insurance in Ukraine necessitates the development of effective policy of insurance. Analysis of the current status, problems and trends of domestic property insurance market shows some achievements and many disadvantages. Based on the need for Ukraine's entry into the system of international economic relations, problems of the insurance market is closely linked to the socio-economic situation in the country, financial and credit policy, legislative and organizational support economic reforms in Ukraine.

**Analysis of recent research and publications.** A significant contribution to the development of theoretical foundations of property insurance did Western scholars such as A. Manes, J. Dixon, B. Heylman, D. Farnham. Property Insurance Issues explored in the works of local scientists: V. Bazilevich, K. roach, A. Lupus, N. grandchildren, W. Grushka, A. Zaruba, V. Malko, S. Osadtsya, A. Tarkutsyaka, J. Shumeldy, but this question in the present conditions requires further study and

research. The study aims to study ways to improve the development of property insurance in Ukraine in the current market conditions.

**The main material.** The development of the domestic insurance market should be seen as a step to strengthen the national security of Ukraine [1].

Economic dependency property insurance is based on the accumulation of funds for damages, both individuals and legal entities, which creates favorable conditions for the smooth process of social reproduction. With insurance can minimize the negative impact of various phenomena in social life, prevent or eliminate their adverse effects. In general, property insurance – a complex mechanism, organization and development of which are determined by certain types of insurance, economic opportunities sides, size of insurance coverage, tariff and so forth.

Under the influence of internal and external factors of Ukraine's insurance market undergoes quantitative and qualitative changes. The share of insurance services in the domestic financial market is growing steadily, indicating the development of the insurance market. Considering Ukraine's insurance market, we can say that the biggest share in the structure property insurance covers 70% [2]. At the present stage of development is property insurance shall lead the pace of growth of insurance premiums. This type of insurance is one of the most promising. Services for the property insurance provided according to the Law of Ukraine "On Insurance" in the form of voluntary insurance in accordance with the rules developed by the insurers [3].

Insurance companies forcing lower prices for insurance policies because of competition in the property insurance market in Ukraine. Thus, property insurance rates in 2012 decreased by 30-40% [4]. In 2011, more than 80% of the contracts with individuals' insurance companies stacked in cooperation with the creditor banks; in 2012 this figure dropped to 60-70% and continues to decline. In this regard, a number of insurance companies will decline, and the emergence of new players in the property insurance market is unlikely due to the low attractiveness of the insurance sector for investors in 2012.

Development of the insurance market is characterized as a number of insurance companies working on it, and its capacity, which is reflected in the amount of insurance premiums and compensation. Main indicators of the insurance market are presented in Table 1.

Table 1

Performance of the insurance market of Ukraine  
for the period 2010 - 2012 years

Indicators	Years			Growth rate 2012/10, %
	2010	2011	2012	
The number of insurance companies, units.	451	445	448	-0,67
including IC «life»,	70	65	64	-8,57
Number of insurance contracts, thousand units	19193,1	21033,8	25336,1	32,01
Gross insurance premiums, million USD	15434,7	16430,3	15801,3	2,38
Gross insurance premiums, million USD	3953,5	3482,2	3982,5	0,73
Assets by Art. 31 Law of Ukraine "On Insurance" for submission of insurance reserves	25502,5	27187,3	45808,6	79,62
Premiums received from legal persons, million USD	6654,7	8219,5	8326,8	25,13
Premiums received from individuals, million USD	4348,3	5244,8	6443,6	48,19

As a result in 2012 the main indicators of insurance at the stage of stabilization in comparison to 2010 showed the dynamics of positive trends: 32% increase in the number of concluded contracts, increased by 2,4% gross receipts of premiums, however, only 0 7% increase in gross insurance premiums, increased by 79,6% assets by law for the submission of insurance reserves, the total number of insurance companies continues to decline.

Table 2 shows the share of property insurance in the insurance market of Ukraine.

Table 2

The share of property insurance in gross premiums written in the insurance market of Ukraine in the period 2010 - 2012 years

Indicators	Gross premiums, million USD			Structure of gross premiums,%		
	Years					
	2010	2011	2012	2010	2011	2012

Total insurance premiums	15434,7	16430,3	15801,3	100,0	100,0	100,0
life Insurance	609,6	900,4	1219,2	3,9	5,5	7,7
Types of insurance other than life assurance	14825,1	15530,0	14582,1	96,1	94,5	92,3
voluntary personal insurance	1222,9	1612,1	1748,7	7,9	9,8	11,1
voluntary property insurance	10844,8	10591,0	9338,9	70,3	64,5	59,1
voluntary liability insurance	809,0	867,6	793,8	5,2	5,3	5,0
Non-State compulsory insurance	1945,5	2459,1	2700,3	12,6	15,0	17,1
State compulsory insurance	2,9	0,1	0,4	0,02	0,001	0,003

Property insurance covers the largest portion of gross premiums, despite the steady downward trend, namely, in 2010 – 70,3%, 2011 – 64,5%, 2012 – 59,1%.

There is a difference between insurance businesses and individuals in property insurance. It is associated with significant differences in the practice of insurance entities and individuals. Thus, the amount of risk in property insurance individual, usually much smaller than the size of the risk of a legal entity, and therefore the premium received from entities greater than the premium received from individuals, namely 6278,0 thousand USD from legal entities in 2012 and 2426,5 thousand USD from individuals in 2012.

Using Table 3 analyzes and determines the share of property insurance in gross claims paid.

Table 3

The share of property insurance in gross claims paid in the insurance market of Ukraine in the period 2010 - 2012 years

Indicators	Gross insurance premiums, million USD			Structure of gross insurance premiums,%		
	Years					
	2010	2011	2012	2010	2011	2012
Total insurance payments	3953,5	3482,2	3982,5	100,0	100,0	100,0
life Insurance	38,8	54,4	57,1	1,0	1,2	1,4
Types of insurance other than life assurance	3914,7	3427,8	3925,4	99,0	98,8	98,6
voluntary personal insurance	575,8	661,0	805,9	14,6	19,4	20,2
voluntary property insurance	2723,2	1999,1	2280,6	68,9	57,2	57,3

voluntary liability insurance	18,5	25,1	35,7	0,5	1,0	0,9
Non-State compulsory insurance	594,5	742,4	802,8	15,0	21,2	20,2
State compulsory insurance	2,7	0,1	0,4	0,07	0,003	0,01

The data in Table 3 indicate that the total amount of gross claims paid in 2012 is not significantly increased, but may be seen as a positive sign. However, the observed increase in property insurance for 14,1% of the insurance premiums, but this figure has not yet reached the level of claims in 2010.

According to the data given gross premiums and gross insurance premiums can be traced dynamics of insurance premiums for property insurance by Table 4.

Table 4

Trends in insurance premiums by type of insurance the insurance market of Ukraine in the period 2010 - 2012 years

Indicators	The level of claims,%			Growth, %	
	Years			2011/ 2010	2012/ 2011
	2010	2011	2012		
The average level of claims	25,6	21,2	25,2	82,81	118,87
life Insurance	6,4	6,0	4,7	93,75	78,33
Types of insurance other than life assurance	26,4	22,1	26,9	83,71	121,72
voluntary personal insurance	47,1	41,0	40,2	87,05	98,05
voluntary property insurance	25,1	18,9	25,1	75,30	132,80
voluntary liability insurance	2,3	2,9	4,5	126,09	155,17
Non-State compulsory insurance	30,6	30,2	29,7	98,69	98,34

High deductible insurance payments (20%) was observed together in the following types of insurance as a voluntary personal insurance – 40,2% (in 2011 – 41,0%), voluntary property insurance – 25,1% (in 2011 – 18,9%). Voluntary insurance took responsibility fraction of insurance payments – 4,5% of the total insurance payments. The level of insurance premiums for property insurance is not stable for the period. Thus, in 2010 it was 25,1%, in 2011 – 18,9%, in 2012 – reached the level of 2010 and amounted to 25,1%. This is due primarily to the instability of the economy, with the adoption of the new Tax Code, which worsened the situation of the insurance company in the field of taxation. However, the increase in insurance

premiums indicates the ability of insurance companies to adapt quickly to environmental factors.

Analyze property insurance policyholders by type (Table 5).

Table 5

Structure of gross premiums written by type of property insurance in Ukraine in 2012, by the persons and entities

Україні у 2012 році у розрізі фізичних та юридичних осіб

Types property insurance	Gross premiums					
	Total		Individuals		Entities	
	thous. USD	%	thous. USD	%	thous. USD	%
Voluntary insurance:	9338,90	100,00	2426,50	100,00	6278,00	100,00
insurance railway	67,44	0,72	0,01	0,00	32,76	0,52
motor insurance	2615,50	28,01	1727,25	71,18	809,37	12,89
air transport insurance	6,00	0,06	0,16	0,01	4,01	0,06
water transport insurance	26,72	0,29	1,97	0,08	15,60	0,25
cargo and luggage	770,59	8,25	0,61	0,03	658,84	10,49
insurance against fire hazards and risks of natural disasters	1425,17	15,26	178,13	7,34	1131,34	18,02
investment insurance	0,00	0,00	0,00	0,00	0,00	0,00
insurance of financial risks	1602,31	17,16	116,10	4,78	1388,17	22,11
insurance issued guarantees (sureties) and received assurances	19,80	0,21	0,03	0,00	0,15	0,00
Insurance of personal property	2805,37	30,04	402,25	16,58	2237,76	35,64
Compulsory insurance	0,00	0,00	0,00	0,00	0,00	0,00
Total insurance premiums	9338,90	100,00	2426,50	100,00	6278,00	100,00

The largest share of property insurance in Ukraine is voluntary personal insurance (private) property of individuals and legal entities. Compulsory insurance of property are not yet in its development.

**Further research conclusions and recommendations.** Despite the negative factors that impede the development of property insurance, this segment of the domestic insurance market has great potential for further development. Equally important is the further integration of Ukraine into global structures that determine foreign policy in the field of property insurance. Public policy should also be improved by promoting the optimization of the mandatory and voluntary insurance. Today in Ukraine the introduction of new types of compulsory insurance is only by

amending the law "On insurance", e.s. the possibility of introducing such insurance is very limited and the procedure is quite complicated.

Investment policy by insurers needs to strengthen the state's influence on the conduct. Introduction of international standards for property insurance in Ukraine - one of the most important challenges and possible ways of entering the insurance market of the state in the international insurance community, but this is only possible when accounting for economic and political situation. Depending on the economic situation of the state and the financial stability of insurers will form the concept of the insurance market.

Thus, for the further development of property insurance in Ukraine to finalize and adopt the concept of the national insurance system, improve the welfare of citizens and improve corporate and public finance, improve the capitalization of insurance companies, their financial stability, competitiveness and investment attractiveness, to develop modern infrastructure property insurance.

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FORMATION AND DEVELOPMENT OF UKRAINIAN MARKET  
CORPORATE INFORMATION SYSTEMS

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The article describes the main trends and directions of development of corporate information systems in Ukraine. Analyzed the evolution of corporate information systems and requirements to them. Comparison of control systems in Ukraine and abroad.

Keywords: corporate information systems, MRP II standard, strategy, ERP-system.

The corporate information systems began to emerge in the early 90 - ies, when the country began the liberalization of economic relations. Then the market the first commercial development of local companies engaged in software solutions and foreign companies, designed to provide a comprehensive resource management companies. At that time, such systems are called corporate information systems.

Currently on the market for corporate information systems Ukraine among the main trends are: the integration of domestic and foreign systems, the intensity of competition Ukrainian developer of corporate information systems, the intensity of competition in the segment of medium-sized enterprises , following global trends in the development of the corporate information systems , the transition Ukrainian development of the standard MRP II.

In the late 90s the compatibility standard MRP II for Ukrainian corporate information systems was very important, because such compliance allows them to compete with Western systems developers at conventional standard. Some Ukrainian company claimed that within 2-3 years they plan to complete their system meets the standard MRP P. However, due to the fact that the concept of ERP is gradually losing its relevance , compliance with foreign standards no longer

provide a significant competitive advantage Ukrainian suppliers and competition struggle will shift toward such areas as:

- integration with foreign systems;
- meet the specific needs of the customer;
- flexibility and scalability of the system , etc.

Today, companies that implement Western enterprise systems to address specific business problems and successfully integrate them with previously established national systems. Now, most developers of information systems have focused on the quality system, the level of support, professional development and long-term cooperation with the customer.

Competition with foreign competitors is using such advantages as more full functionality of financial and human resources modules, more favorable ratio of "price/quality", the ability to integrate applications with foreign developers creating mixed corporate information systems that combine the advantages of domestic and foreign corporate information systems.

Following global trends manifested primarily in the field of e-commerce and application of customer relationship management. Currently these functions implement a large part of Ukrainian developers, but in their functional characteristics Ukrainian program of e-business and CRM significantly lower than foreign. In addition, the demand for these applications from customers is not high.

In general, the Ukrainian market of corporate information systems today is divided between foreign and Ukrainian corporate information systems is not an industry basis, and the largest enterprises. Most people major Western corporate information systems - a large domestic oil and gas and chemical industries, heavy industry, engineering, agro-industrial corporations and others. Only a small number of Ukrainian suppliers have similar contracts. Soon the main competition will take place between corporate information systems for midsize businesses. The Ukrainian market is more western developers of ERP-systems which are focused on supplying solutions for midsize businesses. At the same time, many Ukrainian developers have increased the functional structure of their corporate information systems, which also allowed them to enter the market of medium-sized businesses.

Another player in corporate information systems for medium-sized businesses have large foreign developers (SAP, Oracle, Baan), which have a "light" version of its ERP-systems which can be implemented much faster than the original version, and the cost is much lower.

To date, the main reasons for the introduction of an integrated corporate system of the company are as follows (in order of mention users):

- lack of real integration of data;
- lack of functionality of existing information systems;
- increase in business operations ;
- international reporting requirements ;
- the need for analytical data ;
- non-compliance with MRP / ERP;
- Individual labor intensive technology support own information system.

Among the main causes of failed implementations corporate information systems solution providers primarily marked by (in descending order of mentions):

- unwillingness of companies to change;
- lack of managerial expertise in customer management professionals ;
- lack of real need in the system by the customer;
- implementation deals only with their own IT department;
- blur project goals and objectives , unclear wording needs of the customer;
- lack of or weak support for the project management of the company;
- budget cuts during implementation.

Most of these causes of failed implementations issues related to management of the enterprise and commitment to fundamental changes not only at the level of the use of information systems, but also at the level of the organizational structure and business processes.

The practice of implementing enterprise systems for Ukrainian companies over the past 10-15 years has identified a number of general factors to consider when choosing a supplier.

Primarily, these include:

- completeness of functionality;

- the level of implementation of functional modules;
- the cost and time of implementation;
- the impact of the business and business processes;
- efficiency of the enterprise.

The main criteria for selecting foreign corporate information systems , according to vendors, is the popularity and functionality of the system, and the cost and hardware requirements as a significant supplier selection factors are not considered. When choosing a corporate system of this magnitude customers (typically large holdings) are more interested in performance optimization of business functions and are usually ready for the high cost of licenses and implementation. Furthermore, the fact that the introduction of corporate management of large foreign developer can increase the market value attractiveness of venture for investors.

The main criteria when choosing a Ukrainian corporate information systems users find functionality, cost and flexibility. The least important factors - hardware requirements, and scalability. As for the timing of selection of corporate information system, according to Market-Visio/EDC, average time choosing foreign corporate information system is 11.1 months, while median time of local elections - 5.4 months. Thus, the duration of the decision to implement a corporate information system before the implementation process can range from 11 to 15 months or more to Ukrainian and from 23 to 33 months or more for overseas.

As we know from classical textbooks on marketing since the mid 50 's to mid 70's most of the foreign companies using economic strategy known as Strategy focus on sales , ie making profit from the planned sales. The essence of strategy in the planning of a product for a certain period of time, requiring the planning of all production processes. In this technological revolution and the process of product differentiation in multinational corporations demanded strict accounting and material management, which led to the creation of the 60 years of software for managing material requirements. Further material management concept called MRP (Material Resource Planning), and systems that implement this concept, called MRP- system. This methodology MRP for material resources, which

consists in determining the ultimate resource requirements according to the three-schedule production. The key concept of the methodology is to bring tree-product of a linear list (Bill of Materials), which will need to order and made components. In the late 70's focus on the concept of selling has changed the concept of targeted marketing or customer. MRP class system no longer fully meet the requirements of the market. In this regard, a new concept of manufacturing Enterprise Resource Management - MRP II (Manufacturing Resource Planning), which contained an expanded feature set. The main idea of the concept of MRP II was production management at all stages - from supply of raw materials to shipment of finished products to the consumer. This integrated methodology, including MRP / CRP and usually, MPS and FRP. Joint planning of material flow and production capacity can raise the whole planning system to a new level, as can very accurately determine the income generated production plan, which is impossible with partial planning. Using this methodology necessarily mean an analysis of financial results of the production plan.

Further development of the business of multinational corporations has led to the need for revision of the concept of MRP II. Late 80 's - early 90's marked the emergence of a new competitive- oriented economic strategy for global companies. The main efforts of the organization are to achieve sustainable competitive advantage through more effective management and improve product quality. Response to changing market trends is the new concept of building information systems enterprise ERP (Enterprise Resource Planning; term ERP was introduced by Gartner Group). Under the ERP means "integrated" system that performs the functions provided concepts MPS-MRP/CRP-FRP. An important difference from the methodology MRP II is the ability to "dynamic analysis" and "dynamic change of plan" for the entire chain planning. Specific features ERP methodology essentially depend on program implementation. The concept of ERP is more general than the MRP II. If MRP II has a pronounced focus on manufacturing companies, the ERP methodology is applicable to trade in services, and finance. Systems that implement this concept can plan and manage all internal resources are

intended for businesses and large corporations with a network of affiliated organizations.

The last 10 years the concept of ERP is actually the standard for automation in most countries. To date, more than 100 companies in the world engaged in the development of ERP-systems.

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CREATING COMPETITIVE ENVIRONMENT OF WHEAT AND BARLEY  
IN UKRAINE

**Annotation.** *The competitive landscape of wheat and barley domestic producers at the present stage is investigated, quantitative structure of agricultural enterprises engaged in growing wheat and barley is characterized, the dynamics of qualitative analyzes of these grains*

**Keywords:** *competitive landscape, wheat, barley, cost, price, quality.*

**Statement of the problem .** In recent years, Ukraine has taken a leading position among suppliers of grain on the world market . Each 11- ton grain was selling during 2012 and on the world market was domestic production. The volume of wheat exports this country occupies 8th place , barley , 4th place in the world [ 1]. These achievements due to the formation of Ukraine's competitive advantages in the global market allows effectively conduct foreign policy. However, a major factor in the formation of these benefits are competitive landscape functioning of grain markets , including agricultural producers.

**Analysis of recent research and publications.** Economists are dedicated of research on the competitive environment functioning commodity crops : S. Bakay, O. Bodnar , S Kvasha , I Kobouta , V Kompaniets , I. Lukinov, Z. Nikolaeva, L. Khudoliy , A. Spychak and others. However, the current conditions of the industry grain this question requires a detailed study in terms of crops based on the specific functioning of these crops.

**The purpose of the article.** Explore the competitive environment functioning domestic producers of wheat and barley today.

**Statement of the main results of the study.** Creating conditions for effective development of competitive environment is an integral part of every developed country. In the scientific literature as the competitive environment refers to the result, and the interaction of a large number of market participants, determining the

appropriate level of economic competition and the ability to influence individual economic agents on situation [2]. We see that the notion of the competitive environment is closely related to the category "market". Because each type of grain has its own specifics, the research conducted by the context cultures. There the basic directions of forming supply of wheat and barley are considered. Since an import of grain in Ukraine is insignificant, the proposal is formed by domestic production. The structure's analysis shows that 80% of the gross harvest of wheat and 59% barley formed by farms (Table 1). Fewer than 20 and 41% of these crops produced in private households and is mainly used for forage purposes. There is a decrease in the production of barley in all categories of farms, but to a greater extent in large-scale farms.

TABLE 1. Dynamics and structure of grain production in Ukraine by categories of farms

	2010		2011		2012	
	Agricultural farms	Private households	Agricultural farms	Private households	Agricultural farms	Private households
1000 t						
Grain	29779,3	9491,6	44129,3	12527,5	36075,0	10141,2
wheat	13314,8	3536,5	17657,4	4666,2	12586,1	3176,5
barley	5513,9	2971,0	5447,2	3650,5	4117,2	2819,2
Structure, %						
Grain	100		100		100	
	75,8	24,2	77,9	22,1	78,1	21,9
wheat	79,0	21,0	79,1	20,9	79,8	20,2
barley	65,0	35,0	59,9	40,1	59,4	40,6

There to study the functioning of the competitive environment of agricultural enterprises are considered the results of their group by yield. Quantitative analysis of the structure of wheat producers in 2012 shows that 83% of households provide 63% of the crop production with yields of 40 h per 1 ha (Fig. 1).

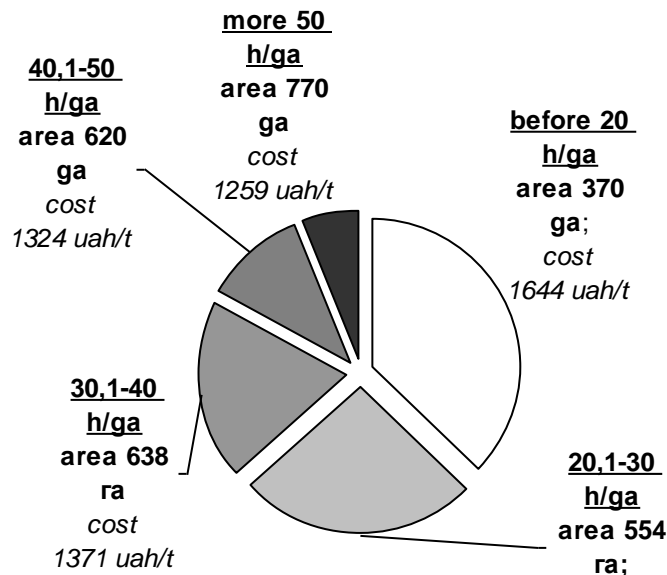


Figure 1. Characterization of quantitative structure of wheat producers, according to the group by their yield in 2012 in Ukraine.

Only 17% of large-scale farms with an area of over 620 hectares are providing a third of gross harvest of wheat. There is a higher level of competitiveness of the farms, including unit costs there are 1259 - 1324 UAH, from 8 to 23% lower than previous groups of farms. This enabled us to obtain the profitability of over 15%, while the average in Ukraine 11.7%. A similar situation is in the production of barley (Fig. 2).

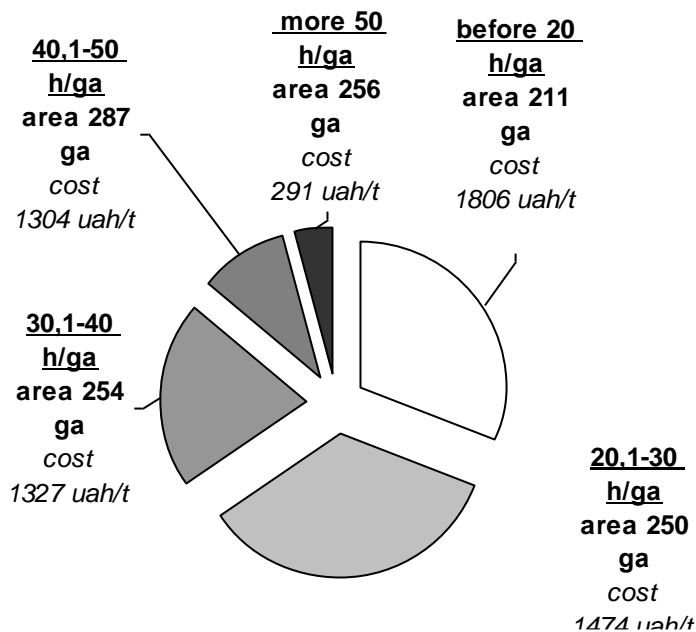


Figure 2 Characterization of quantitative structure of barley producers, the results of grouping by yield in 2012 in Ukraine.

According to the group see that 70% of the barley's yield provided 86 % of farms with a yield of 40 h per 1 hectare. Almost one-third of the harvest provided 14% of farms with yield over 40%. Greater competitiveness of these enterprises provided lower cost per unit of production - 1304-1291 UAH, compared to the average in Ukraine 1427 UAH.

Also factor shaping the characteristics of the competitive environment functioning commodity grain, including wheat and barley are seasonal offers. The bulk of producers sell products from July to January of this coming year. According to market rules in this period the mass of grain producers for the domestic market significantly reduced compared with the previous month. Grain producers sell to traders most of its products, share in the total amount of grain sold in the market ranges from 50 to 78 percent [3]. As traders monopolized promote grain to processors, for export and control the price situation in the domestic markets. That is the bulk of the gains concentrated in the traders and grain producers can not get enough funds to ensure the reproduction of intensive production.

Since one of the main indicators of competitiveness is the quality of the product, we will analyze the trends that are shaping the proposals for markets wheat and barley. Today, there is greater proportion of food grain in qualitative structure of wheat. According to the companies engaged in the storage and processing of grain, if at the beginning of 2011 the share of food grains was 62 %, the beginning of 2013, the figure is 78% ( Fig. 3).

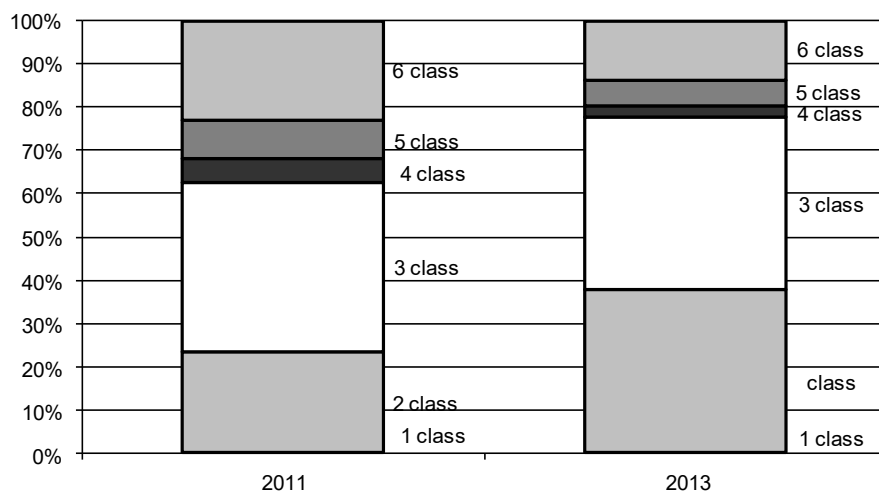


Figure. 3 Dynamics qualitative structure of wheat in companies engaged in the storage and processing in Ukraine

For qualitative structure of barley, there are some changes in the direction of increasing the volume of malting barley. Over the past two years, its share rose to 19% answering the growing needs of the brewing industry. Something has changed the qualitative structure of product barley, whose share is 81%, in particular there has been a growth product class 1 (Fig. 4).

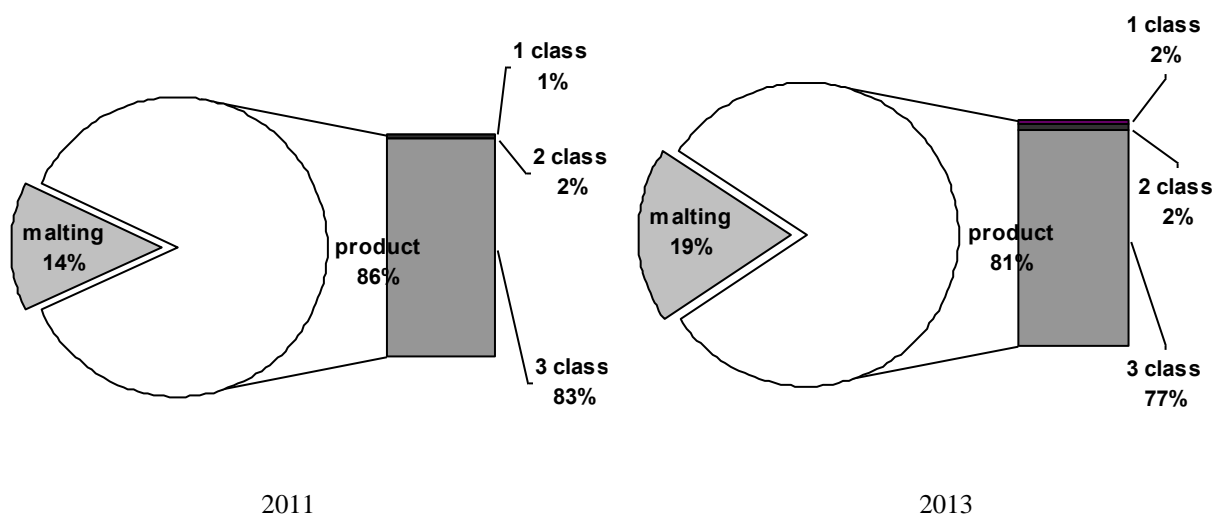


Figure. 4 Dynamics qualitative structure of barley in companies engaged in the storage and processing in Ukraine

As we see in general outlines tendency to increase the quality of grain grown, but unfortunately, in Ukraine there is no effective system of quality grain products. This has to be one of the priority areas of grain production in the context of the conquest of the leading positions on the world market.

**Conclusions:** For creating a favorable competitive environment to solve several problems: building an effective quality control system parameters through a function of price leverage, improving the efficiency of state regulation in the field of competition, develop grain logistics and support at the state level funding of transport infrastructure, effectively respond to the situation on world prices wheat and barley on the world market.

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## EXPENSES FORMATION IN THE PROCESS OF SOYBEANS EXPORT BY RAILWAY TRANSPORT

**Annotation.** *Formation of cost of soybeans at export by railway transport is studied, quantitative expression of expenses at export at the present stage is characterized, and possible risks at execution of export transactions are analyzed.*

**Keywords:** *export, soybeans, price, cost, expenses, VAT refund, risks, profitability.*

**Statement of the problem.** Within recent years, Ukraine has a tendency to increase the production of soybeans, soybean market and products of processing is developing dynamically. It is caused by the growing demand, both from the domestic soybean processors, and from the exporters. Ukrainian farming producers and trading companies - exporters of grain and oilseed crops expand the geography of supplies of domestic cultivation products. At organization of export deliveries they face the necessity to evaluate expenses and risks, which arise at execution of contracts, to plan financial flows, and to determine the profitability of such transactions.

**Analysis of recent researches and publications.** The works of the following academic economists are dedicated to the research of issues concerning expenses formation at exporting of grain and oilseed crops of Ukrainian production: S.S. Bakay, O.V. Bodnar, S.M. Kvasha, I.V. Kobuta, V.O. Kompaniyets, O.M. Shpychak, etc. However, the said issue requires a detailed research based on the specifics of implementation of such export operations in the context of Ukraine's aspirations to join the FTZ of EU.

**Purpose of this article.** To research expenses at export of soybeans of Ukrainian origin by railway transport to the countries of the Eastern Europe,

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determine the profitability of such operations; analyze possible risks, which arise for the exporter at the time of implementation of export deliveries.

**Statement of the main results of the research.** The main way of export of the oilseeds crop of Ukrainian origin is the marine way through the Ukrainian ports of Black Sea and the Sea of Azov, from which the Ukrainian soybeans reach the markets of such countries as Italy, Egypt, Turkey, Spain and Greece. In addition to the said way, the Ukrainian soybeans are in demand of the European producers of oils and feedstuffs, in particular, in Hungary, Slovakia, Romania and Poland. In the present article we are going to consider the expenses, which arise at export of soybeans from Ukraine to the stated countries of the Eastern Europe by railway transport. Such a way of export is the most relevant for the agricultural producers of the Western Ukraine from the logistics point of view.

In order to estimate the composition of costs, we will consider a real example from practice of soybeans exports from Ternopil region to Hungary by railway transport on the conditions DAP-border crossing point of Ukraine-Hungary Batyevo station - station Eperjeske.

Trading soybeans must be delivered to a linear certified grain elevator, brought to the contractual basis of quality parameters, which are generally as follows for deliveries to Hungary:

- Protein content “tel quel” not less than 32%
- Oil content not less than 18%
- Moisture not more than 12%
- Foreign matter not more than 2%

Table 1. Tariffs for grain silo services.

<i>Type of service</i>	<i>Cost, UAH / lot, VAT included</i>	<i>Cost, UAH / railcar (62.5 mt), VAT included</i>	<i>Cost, UAH / mt, VAT included</i>
Storage (15 days)	6900.00	862.50	13.80
Dispatch to the railway transport	23100.00	2887.50	46.20
Shunting	16500.00	2062.50	33.00

locomotive works			
Weighing of the railcar	2328.00	291.00	4.65
Laboratory analysis	84.00	10.50	0.17
GMO content analysis	750.00	93.75	1.50
GMO quantitative composition analysis	2100.00	262.50	4.20
Total:	51762.00	6470.25	103.52

In order to carry out customs clearance of lot of the cargo for export at dispatch to the railway transport, it is necessary to execute the number of certificates. Costs of the certification at customs clearance of such lot amounts to:

Table 2. Costs of certification at export of soybeans by railway transport.

<i>Type of certificate</i>	<i>Cost, UAH / lot, VAT included</i>	<i>Cost, UAH / railcar (62.5 mt), VAT included</i>	<i>Cost, UAH / mt, VAT included</i>
Certificate of quality issued by SIAU	1600.00	200.00	3.20
Certificate of origin	1500.00	187.50	3.00
Phytosanitary certificate	1600.00	200.00	3.20
Veterinary certificate of Form F-2, and stamp of border post	3200.00	400.00	6.40
Total:	7900.00	987.50	15.80

The table illustrates the official tariffs for issuance of the certificates, however, from the information of market operators, there often arise cases on practice, when such tariffs may be composed of the official and unofficial part and exceed the data stated here by several times.

Custom clearance of the cargo for export (including the cost of services of the customs broker and issuance of the cargo customs declaration) amounts to 700.00 UAH/lot (VAT excluded), or 1.40 UAH/mt. Export railway tariff – 8700.00

UAH/railcar (VAT excluded). Costs of services of the forwarding agent in average amount to 30.00 UAH/mt.

Besides, according to the terms and conditions of the foreign economic contract, the determination of weight and quality of the goods by an independent surveyor organization may be necessary. Services of surveyor are determined in accordance with the agreement on provision of services and amount to \$1.00 to \$2.00 per mt of the goods.

Therefore, when considering the delivery of soybeans, which meet the basic requirement of quality parameters, by railway transport from the grain elevator from Ternopil region, the structure of expense is as follows:

Table 3. Structure of expenses and formation of cost of the goods when exporting of soybeans by the railway transport.

	UAH/mt
Price of the goods on EXW-warehouse of producer	3700.00
Expenses of transportation to the grain silo, losses during transportation, cost of acceptance by the grain silo	100.00
Price of the goods on EXW- grain silo	3800.00
Services of the grain silo	103.52
Certification	15.80
Customs clearance	1.40
Services of forwarding agent	30.00
Services of surveyor	16.00
Railway tariff	139.20
Total expenses	305.92
Including VAT (on expenses)	24.88
Cost on conditions DAP – border of Ukraine/Hungary	4105.92
Including VAT	$24.88 + 3800.00 / 6 = 658.21$
Selling price (VAT excluded)	3744.40 (\$460)

Selling price on conditions DAP – border of Ukraine/Hungary is 460 USD/mt, or 3744.40 UAH/mt (VAT excluded) (current exchange rate USD/UAH at interbank is 1/8.14). Considering the VAT refunding at export, we have the following economic effect from the export operation amounting to:

$$P = SP - C$$

Where SP – Selling Price

C – Cost (VAT excluded)

P – Profit

In the present case:  $3744.40 \text{ UAH/mt} - 3447.71 \text{ UAH/mt} = 296.69 \text{ UAH/mt}$

Or

$P = SP - FC + \text{VAT}$

Where SP – Selling Price

FC - “Full” cost – including VAT

VAT – sum of VAT refundable

In the present case:  $3744.40 \text{ UAH/mt} - 4105.92 \text{ UAH/mt} + 658.21 \text{ UAH/mt} = 296.69 \text{ UAH/mt}$

Therefore, the profitability of export operation amounts to:

$296.69 / 4105.92 * 100\% = 7.22\%$

As we see, profitability of export operation is a lot less than the profitability of cultivation of soybeans, which in average amounts to 30-35% throughout Ukraine. However considering that the circulating assets at the execution of export operation are drawn for a short period (in the example shown above, the circulation amounts to 15 calendar days), theoretically the profitability of such an operation can be calculated as  $7.22\% * 24 = 173.28\%$  annual.

Despite the high profitability and attractiveness of export operations, they may contain many risks. For example, in real life, not all exporting enterprises can reimburse VAT on export operations, given that the fiscal authorities treat audits of such circulating assets very carefully and enterprises are frequently denied in VAT refund due to objective or subjective causes. Therefore, some exporters use commission schemes of export, in which the loss amounts to 30-40% of the VAT. It is necessary to take into account the above-mentioned financial risks when planning export transactions, including paying particular attention to the seller of the goods - ideally this should be a producer of commodity, who has all necessary statutory documents as well as documents confirming origin of the goods at his disposal, and

tax and other statements comply with requirements of current legislation and fiscal authorities.

Besides, there are risks connected with the impossibility to foresee such logistic problems as lack of railcars, queue for dispatch at the grain silo, unfavorable weather conditions, congestion at border crossing station, etc., which lead to an increase in the terms of contract execution and, consequently, to reduction of the profitability of usage of working capital.

**Conclusion:** Export of soybeans by railway transport is profitable for commodity producers and exporting companies; export operations of soybeans have quite good profitability and a small term of circulation of funds used. In order to create an enabling environment and reduce the costs and risks when exporting, it is necessary to solve a number of problems, namely: establish an effective system of certification of goods, which would have made it impossible to be abused by officials; increase efficiency of usage and increase the quantity and quality of the railcars for transportation of grain cargoes; increase effectiveness of the mechanism of VAT refund when conducting export transactions.

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*А.Л. Педорченко*

ФОРМУВАННЯ ВИТРАТ В ПРОЦЕСІ ЕКСПОРТУ СОЇ ЗАЛІЗНИЧНИМ  
ТРАНСПОРТОМ

*Анотація.* Досліджено формування собівартості сої при експорті залізничним шляхом, охарактеризовано кількісний вираз витрат при експорті на сучасному етапі, проаналізовано можливі ризики при здійсненні експортних операцій.

**Ключові слова:** експорт, соя, ціна, собівартість, витрати, відшкодування ПДВ, ризики, рентабельність.

*А.Л. Педорченко*

ФОРМИРОВАНИЕ ЗАТРАТ В ПРОЦЕССЕ ЭКСПОРТА СОИ  
ЖЕЛЕЗНОДОРОЖНЫМ ТРАНСПОРТОМ

*Аннотация.* Исследовано формирование себестоимости сои при экспорте железнодорожным транспортом, охарактеризовано количественное выражение затрат при экспорте на современном этапе, проанализированы возможные риски при осуществлении экспортных операций.

**Ключевые слова:** экспорт, соя, цена, себестоимость, затраты, возмещение НДС, риски, рентабельность.

*A.L. Pedorchenko*

EXPENSES FORMATION IN PROCESS OF SOYBEANS EXPORT BY  
RAILWAY TRANSPORT

*Annotation.* Formation of cost of soybeans at export by railway transport is studied, quantitative expression of expenses at export at the present stage is characterized, possible risks at execution of export transactions are analyzed.

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# **RURAL TOURISM AS AN OPPORTUNITY OF EXPANDING THE SCOPE OF EMPLOYMENT IN RURAL AREAS**

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**Osokina O.M. - Bachelor, Department of Agrarian Management (Management of Foreign Economic Activity)**

*The role of rural tourism in solving of socio-economic problems of the village. Green tourism as an opportunity to expand the scope of employment in rural areas.*

**Rural tourism, rural territories, employment, rural population.**

Incipience of Ukrainian rural tourism will assist rising of internal tourism and also getting up of life level of rural population, harmonization of social and public life, revival of the home country interest, solving of questions of maintenance of historical and cultural heritage and protection of the environment.

The analysis of the last researches and publications about development of rural green tourism in Ukraine is represented in scientific works of home and foreign scientists, experience of creation and functioning of tourist activity is reflected. Among researchers it is necessary to highlight: A.A. Beydik, Y.A. Vyedyenin, E.A. Kotlyarov, V.P.Vasylyev, T.P. Kalna-Dubinyuk, V.V. Trylis and other scholars and practitioners.

**Research aim.** To find out the general condition of rural green tourism in Ukraine as an innovative method of life standards' increasing and profits of rural population, the improvement of socio-economic climate, addition of the regional and local budgets.

**Exposition of basic material.** In recent years not only in our country but in the West the tendencies of revival of interest appear in an original folk culture. Therefore at development of rural green tourism cultural and folk-ethnographic aspects can be fixed in this basis. Development of rural or "green" tourism that is examined as a form of rest of urban population and as a form of activity of

peasants that gives to the holiday-makers accommodation and food is very important for the state.

An expansion of market abilities of products of the personal peasant economy, thus realization then and there is especially important factor of development of rural tourism. Thus, rural tourism is inalienable component part of complex of social, economic development of village, one of facilities decisions of many rural problems, among that there is a shortage of workplaces, growing surplus of labour force and etc.

Rural tourism unlike mass does not render harmful influence on the natural and cultural environments and in the same time does a substantial contribution to regional development. This is one of the methods of transition of tourist industry to a withstand development and rethinking of natural and cultural values of the modern world. It allows using of an existent housing fund abbreviates investment charges and prevents the excessive use of forest and grass areas. The subzero closeness of tourist streams in rural regions gives an opportunity to distribute tourist objects on territory more evenly, that not only on a benefit of the environment, but also brings additional profits to the local population.

As rest in rural locality rural tourism, not only contribution to the fashion but also necessity, as a result of contamination of municipal environment, dynamic and tense rhythm of life in cities, that, naturally, wakes in people the desire of calmness and loneliness in the middle of clean natural environment. It gives an opportunity to appeal to the sources of people, to the ancient natural environment and cultural heritage, that became its cradle, and in addition, allows to satisfy such specific fascinations, as a study of historical, cultural, ethnographic and also architectural inheritance, customs and handicrafts that characteristic for this region, acquaintance with a local folk clothing, collection of folklore, study of local language or dialect, amateur photo, collection of herbs and minerals. Participating in agricultural works such as vegetable-growing, beekeeping, vintage, fruit, herbs and mushrooms' picking, floriculture are especially characteristic for rural tourism. Acquaintance with a local kitchen is also characteristically.

An owner plays a leading role in rural tourism. He gives the greatest part of services, provides a domestic meal, and executes the functions of peasant. Exactly from him tourists cognize folk-crafts, folklore, way of life and spiritual world of locals. The degree of tourists` satisfaction by the rest on a village depends on ability, culture goodwill of owner. It follows to marks also, that the specialized activity in rural tourism can be divided into basic (residence and feed) and auxiliary (all other that fills the stay of tourists).

Interest in rural tourism is worldwide. At the same time, every country aims to create the own national model of development of rural tourism. It should be noted that rural tourism can be developed not everywhere, but only in the regions, that are not overcome by environment contaminates` activity. In addition, for the development of rural tourism in a certain region it is necessary to combine three elements: primary are natural and agricultural components in a region (these elements, actually, attract tourists (for example, lakes suitable for bathing); secondary - all, that it is necessary for the residence of tourists in this region (camping, homesteads, shops); additional is all, that does the residence of tourists more comfortable and comfort. In addition, it should be noted that the cultural values of rural environment (way of life, spiritual world, folklore and etc) attract tourists no less than natural environment.

**Conclusions and prospects of further researches.** Taking into account that in the conditions of general economic crisis the economic and social problems of village extraordinarily became sharp, wide distribution and development of rural green tourism in Ukraine are especially desirable, because, rural green tourism is an effective instrument of stable socio-economic development of village. Rural tourism opens possibilities either for the improvement of local organs of self-government budget`s filling or rapprochement of municipal and rural habitants. It extends the sphere of employment of rural population, positively influences on an economy and ecology of districts of Ukraine, assists a revival, maintenance and development of native folk customs, trades, and sights of historical and cultural heritage.

However the modern state of rural green tourism in Ukraine is characterized by next problems: imperfect legislative base; low level of development of infrastructure; insufficient level of popularization of rural green tourism in Ukraine both on internal and external markets; absent system of estimation of quality of services; insufficient attention from the side of organs of local self-government to the development of rural green tourism.

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## CORPORATE INFORMATION SYSTEMS AND THEIR ROLE IN MARKETING

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The article discusses trends and key areas of corporate marketing information systems in Ukraine. The conditions there is need for them, requirements, examples and suggestions for their development.

Keywords: corporate information systems, marketing activities, CRM-systems, marketing information system.

Convert undertaken in Ukraine, a new pose questions about the forms and methods of economic activities of enterprises, determine the need for specific and effective measures to intensify their development. Growth of domestic companies is largely dependent on the quality of management functions and performance technology business providing competitive products and market stability. At the same time, the success of market requirements related to the whole objective assessment and prediction of changes taking place, which, in turn, dictate the need for proper system of marketing activity.

During the structural transformation of the agricultural sector, which has a high scientific and resource capacity, as never actualized task based integration of business entities with their production and marketing capabilities, creating such forms of business organization that would more fully and adequately to meet contemporary processes of globalization. Marketing acquires exceptional importance not only in terms of focusing on the needs, the use of a large arsenal of effects on consumers, but also from the perspective of assessing the possibilities of forming integrated businesses effectively use any possible market development.

New economic conditions triggered the emergence and development of various forms of business organization, focused on the possibility of early goals growth. Practice shows that economic agents have become increasingly interested

not only in ensuring the continuity of their activities by forming a single integrated production chains, but also to establish long-term relationships with business partners and end users. In many cases scale business involves combining marketing efforts, creating powerful market- oriented structures. The need to gain leading market positions causes an acute need for coordination of marketing strategies, marketing information flows centralization, eventually forming a unified system of marketing in the corporate governance process. Actualized the issue of systemic solution set of complex management tasks that determine the fundamental characteristics of marketing functions, among which the most prominent is to provide strategic market stability, the development of core competencies, customer value formation, the achievement of strategic competitive advantage.

Theoretical and methodological aspects of marketing and market- oriented management contained in the works of such renowned scientists: D.Aaker, I. Ansoff, B.Berman, D.Blahoev, H.Bolt, P.Hembl, J. Gordon, P. Drucker, P. Doyle, Kotler, Zh.Zh.Lamben, H.Meffert, M. Porter, S. Stone, D.Han, H.Hershhen, Dzh.Evans.

However, the existing theoretical framework is not always clearly describes the content and sequence solving marketing challenges of integrated structures do not fully characterize the function of marketing in the corporate governance process. And if the object structuring process integration industry has adequate lighting in scientific publications, the subject area related to joint market power, providing a wide range for research. Remain unresolved and issues such as, for example, the strategic importance of marketing that takes into account industry specifics, the priority of functional marketing objectives through collaboration of businesses. Currently, to create competitive advantage, business development management company must make a huge number of solutions, which is compared and evaluated a wealth of information, completeness and accuracy of which often leave much to be desired. Without accurate information, managers tend to make decisions intuitively.

To avoid this situation, the business is being practiced by the introduction of modern enterprise information systems (EIS), it is assumed that they will contain all the necessary information for effective work. Now Ukrainian market presents many different corporate information systems for various industries, banks, insurance companies, etc. All systems vary in price, functionality, performance time, but every developer tries to present your product as a unique and most effective to use. It is clear that implementation of CIS in the company and in the organization of investment is an investment, and there is a risk that this implementation does not lead to a significant increase in performance. This can occur if outside the goals of the organization, and capabilities implemented CIS. Therefore the choice of CIS - it is responsible and requires special attention from management and technical support organization, but ideally it is desirable to participate in the group implementing staff functional departments - accounting, planning , production and other economic department, purchases and sales of financial analysis and marketing. In practice, however, recent interest in the construction and implementation of the CIS or overlooked or pushed into the background, it is because the majority of Ukrainian managers are not aware of the role of marketing companies to survive in the marketplace.

In today's marketing solution to most problems is impossible without the use of modern information technology. Most of the CIS on the market include CRM-subsystem designed to automate and support the marketing activities of the organization and the enterprise. The value of these systems to large marketing activities. Such systems make available to marketers of complex information to accurately assess the potential of each client and focus mainly on the most promising relations today and in the future. Long-term and mutually beneficial relationship with clients is the foundation of a successful enterprise.

In addition, modern CRM-system provide opportunities for forming contacts and market segmentation based on different criteria , which required the company focused on the customer. The system is designed to assist organizations in building long-term relationships with all business partners (customers, suppliers, potential clients, etc.), providing customized communication and providing a personal

approach. Features of CRM-systems allow firms to keep all contact information in one place and therefore directly monitor business relationships with customers.

These features improve the quality of business relationships , helping to make the best marketer relations of contacts to ensure the success of marketing and commercial actions and campaigns , to achieve a higher degree of satisfaction of employees and customers.

Commercial management and marketing capabilities lets you control the volume of future sales , generate job opportunities within and create quotas and order directly from the module designed for this purpose, closed, or "freeze" interoperability with some clients , with reasons , to obtain statistics on commercial and marketing opportunities. Also, CIS track the history of client and sales , so that creates a clear picture of expected sales. This allows marketers to support sales plans in line with the current status. It should also be noted an important role of CRM-systems for marketing in e-commerce. Companies working in the field of e-commerce, special eCRM system. The use of these systems occurs throughout the customer relationship and company: finding potential clients to deliver the goods. Ease eCRM systems for e-commerce is that they are fully integrated with the company's website: all information about visitors to the site enters the system. eCRM system logs and analyzes all contacts between the buyer and the seller made through the site or via email . Such systems can also be aimed at the development and analysis of online marketing. In addition, if a company other than its core business, anyway does business on the Internet, eCRM system may be a separate module integrated into the main CRM system.

As mentioned earlier, you can see some analogy between the definition of marketing information system and principles of CRM-systems for the marketing of the company. Flowsheet solving marketing conventionally involves the following steps:

1. Collecting data on the competitors, their products and pricing. With the information obtained by filling the information files. Registration also provides contacts , offers, and potential customers and information about them. This phase corresponds to the concept of marketing intelligence system. Marketing

intelligence system provides information about the dynamics of the environment. Daily receives information allows marketing managers constantly monitor marketing. Are fixed primarily phenomena that are important for the development of marketing in the future as well as present a potential danger. Marketing intelligence system draws information from a variety of sources - from employees, customers, competitors, suppliers and intermediaries, inventors and innovators, as well as various publications and advertising. Recently, the role of such sources as the Internet. An integral feature of modern CIS was the use of Internet technologies.

2. Data Analysis. Analytical work carried out by means of analytical CRM, tools , providing unite disparate data sets and their joint analysis to develop the most effective strategies for marketing, sales , customer service , etc. For example, analysis of data on sales, recorded sales department ( the commodities market segments, sales channels ) to find the most profitable strategy implementation. This facilitates the timely replenishment of goods , obtaining information about consumer preferences and efficiency channels. Failure to use the same analytical methods deprive the company of many profit opportunities. It should be noted that the market for CRM-systems are present as products containing analytical modules and products in which the module is missing. In the latter case the analytical third-party tools.

Currently existing in the domestic market software of this kind can be divided into three groups:

1. Program class CRM (Custom relationship management), driven by the needs of corporate services sales (customer management) and marketing. The most famous of them - «Sales Expert». These products are highly effective tools of planning and corporate sales. They allow to consider contacts with customers, customer appeal, deals and receive the corresponding analytical reports. The strength of these programs is effectively constructed system of automatic communication with customers (mailing list, redial, etc.). Very well thought out system of data protection and sharing permissions that restrict access to business information. At the same time, it appears that the scope of application class CRM

is fundamentally limited companies, market-oriented large corporate customers, these programs are ill-suited for organizations companies working with small and retail customers. The latter is more important to keep track of each individual client, and aggregated analysis of large customer and product groups , the study of exposure to advertising and feedback ( the decision of such problems This product is not intended ). Functions as import shipment data from the accounting system in existing CRM applications market is very limited. Furthermore, the absence of these programs, an analysis of the external environment (advertising agencies, actions of competitors, developments in the market) significantly limits their use outside of the Sales and Marketing.

2. Software "for marketers" ("Best Marketing", "Marketing Expert", "marketing mix") with additional modules (Marketing Geo, Marketing Analytic). Of these products a Marketing Expert can be classified as analytical programs designed to support decision -making of marketing. Analytical capabilities Marketing Expert wide enough. Suffice it to say about the function of optimizing pricing, GAP- analysis, forecasting functions. You can say that to date the program is the only professional marketing analysis tool, known in the domestic market. At the same time, the developers themselves acknowledge that the program can operate efficiently only very skilled users. Also, keep in mind the huge amount of data to be entered in the program before it will give any adequate result. Here again there is a problem of communication with the real data about sales company. Designed for the Marketing Analytic module is also available in a highly skilled user. Others are programs or educational character, or intended for the preparation of accounting documents of marketing. Features presentation of marketing information in these systems is severely limited.

Research current proposal software "for marketing" leads to a rather obvious conclusion: corporate marketing information system to build their own, based on the characteristics of administrative procedures of the enterprise.

Summarizing all the above, it is necessary to pay attention to the basic requirements for the marketing information system. They can be summarized as follows:

- connection to the existing accounting system, the analysis of both existing (available in the accounting system ) and potential customers (not yet made a purchase);
- complete solution of analytical problems that arise in services marketing and sales: an analysis of its own sales organization, planning and evaluation of the effectiveness of customer service, assess the impact of indirect actions on the market (advertising, promotion actions);
- possibility of access rights at the level of program functions, as well as for individual clients and their groups;
- possibility of arbitrary grouping of products, customers, managers and analysts conduct sales in different sections.

The key stages of the task to build a marketing information system are:

1. Determination of required reports necessary for decision-making by managers at different levels. At this stage, each prospective user creates their own requests for information to the system (what information and in what format, and how frequently they would like). Report form must be adopted;

2. Choosing software environment and the formation of basic reports in electronic form;

3. Determination of the main streams of input data (which should be entered into the program ) and their primary processing algorithms . At this stage determines which output information is required to obtain the requested records (all stages obviously will wear iterative nature. Example, it may be that demand by any manager of information simply can not be obtained. In this case, you query reformulation).

4. Determining appropriate sources of information and methods to obtain it (eg market research to the report in the specified format, data monitoring competitors' prices, fixing customer complaints ). In the case of requests to the accounting system (internal marketing information (sales, selling prices, customers, managers) to better accounting system of the company) must consider data conversion scheme (of which the fields of accounting and information systems

to which they bring, how to react flexibly to change the accounting system and accounting policies).

5. Create a sketch reports and aligning them with the users;

6. The final formation of the technical specification for development (improvement) of software;

7. Adoption of technologies for marketing information, definitions, budgets and responsible for receiving information.

Thus, properly designed corporate information system that meets the goals and needs of the organization, established in accordance with the accepted concept in the organization management can not only store, process and export information units that need it, it can become an effective tool for managing and analyzing business which will create a distinct competitive advantage for the company in the future.

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## **SOME ASPECTS OF ALTERNATIVE RENEWABLE AND ALTERNATIVE FUEL AND ENERGY RESOURCES**

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**Abstract.** In this paper, the necessity of the introduction of alternative renewable and alternative energy resources in Ukraine and proposed measures to increase energy security.

**Keywords:** alternative fuels , fuel and energy resources , world energy markets, energy consumption.

**Analysis of the main research and publications.** Among the many problems that require immediate intervention , are important prospects for the development of alternative fuels in Ukraine , namely the creation of an effective and transparent mechanism to encourage production and use of alternative fuels by the state. Similar questions examined : E. Buzovskyy , V. Dzhedzhula, M.Lobas , A. Rozhko , G. Pidlisetsky , G. Ratushnyak.

**The purpose of the study.** This publication discusses some issues of alternative fuels , it can be seen as an attempt to analyze aspects of the production of alternative fuels in the Ukraine, highlight the main factors that hinder market development of alternative fuels and justify real solutions.

**The main material.** At present, the share of non-conventional renewable energy ( ARES ) in energy production in the world is not yet significant, but their potential is several orders higher than the global consumption of energy resources . Growth in output power ARES significantly higher than those for traditional forms of energy. Thus, in the next 10 years is projected to increase annual global electricity production by traditional power at 2.8 % and electricity ARES - 9.2 % [ 5].

One way to reduce primary energy consumption is the development of

alternative and renewable energy sources. At present, their share in the energy balance does not exceed 0.5%. The electricity production of alternative and renewable sources is expected to increase to 2 billion kilowatt-hours in 2030, ie 20 times.

One of the promising areas is bioenergy. At present, the use of biomass as fuel in Ukraine is 988 thousand tce . Year representing 0.5% of primary energy consumption . A substantial amount of biomass suitable for energy production is destroyed or removed to the landfill. [4].

Biofuels or biofuels - organic materials such as wood , waste and alcohol used to produce energy. This - a renewable energy source , unlike other natural resources such as oil, coal and nuclear fuel , a form of stored solar energy. The advantage of biofuel in comparison to other fuels - is that it is completely biodegradable , and so relatively safe for the environment. Agricultural products that are grown for use as biofuels include corn and soybeans (primarily in the U.S.) , flax and rapeseed (especially in Europe) , sugar cane in Brazil and palm oil in Southeast Asia. Microorganisms disrupted industrial production , agriculture, forestry and waste can also be used to produce bioenergy. For example straw, timber , manure, rice husks, sewage and food residues are converted into biogas through anaerobic digestion. Biomass as fuel vykorystovuvayetsya often consists of nedovykorystovuvanoyi products such as straw and animal waste .

Ukraine already long overdue problem creating energy plantations, which is one of the most efficient storage of solar energy in the form of biomass and allows such ri have the energy equivalent about 15 tons of conventional fuel . r from 1 ha. Can also be used a hundred ing to challenge canola and other crops . From 1 ton of rapeseed can get about 300 kg (30 %), canola oil , and with it - 270 kg of biodiesel . In 2005, rape was sown on 234 hectares. South Ukraine - exactly the area where corn and rapeseed give the best yields. [4]

The development of renewable energy - especially wind, water, solar energy and biomass - should be the main objective of energy policy of Ukraine. Thus, in order to encourage the production and use of biofuels , development of Ukraine in the

national fuel market by attracting biomass as a renewable raw material for the manufacture of biofuels. Verkhovna Rada of Ukraine adopted the Law " On Amendments and Additions to Certain Legislative Acts of Ukraine on the promotion of and use of biofuels . " This law appears definition of alternative fuels, biofuels , namely:

*alternative fuels* - solid , liquid or gaseous fuel that is an alternative to traditional fuels relevant and what is produced ( extracted ) from unconventional sources and types of energy resources ;

*biological fuels (biofuels )* - solid, liquid or gaseous fuel produced from renewable biological raw material ( biomass ) which can be used as fuel or as a component of other fuels;

*ethanol* - ethyl znevodzhenyy made from biomass or ethanol raw to be used as biofuel ;

*biodiesel (biodiesel )* - methyl and / or ethyl ethers of higher organic acids derived from vegetable oils or animal fats , used as biofuel or bio-components .

The Act also defines the main principles of the state policy in the field of alternative fuels , the use of an established gradual increase in the share of production and use of biofuels and blended motor fuel , more clearly defined Alternative Liquid palyvata , added an article on alternative solid fuels .

In order to encourage the production and use of biofuels in Ukraine in the period from 1 January 2010 to 1 January 2019 shall be exempt from tax , machinery and equipment used for the reconstruction of existing and construction of new enterprises for the production of biofuels for making and reconstruction technical and vehicles to use biofuels if such goods are not produced and have no analogues in Ukraine , as well as technical and vehicles including self-propelled agricultural machines running on biofuel , if such goods are not produced in Ukraine , as well as , for 10 years , starting from January 1, 2010 , shall be exempt from tax revenue producers of biofuels derived from the sale of biofuels.

Environmental factors exhaustion major fossil fuels (oil and gas) are forced to look for alternative non-conventional and renewable energy. According to forecasts,

renewable energy in the global energy mix over the next fifty years will reach 50%. Among the renewable energy development will become more biological energy .

In the case of Ukraine's necessary to create a favorable legal and regulatory framework for the development of the biofuels market , attracting foreign and domestic investment in a new segment of the national economy, certification and standardization of biofuel promotion of domestic and foreign markets finished products; scientific support for the production and use of biofuels. In agriculture hospodarsti to comprehensively promote the creation of agro-industries in which farmers will ensure the production of biofuels. Should be used to produce biofuels existing alcohol plants and other enterprises that remain state-owned, as well as refineries .

Experts estimate the potential of our country can provide up to 2020 Production year: ethanol - about 4.5-5 million tons of biodiesel - about 6 million tons of biogas - about 10 billion cubic meters. , Heat from the boiler to the biomass - nearly 8 million tons of mind. fuel. With the increase in world market prices for oil to 70-80 dollars. U.S. per barrel, and natural gas - up to 230-250 dollars. 1000 m<sup>3</sup> for all types of biofuels will be competitive . While the cost of bioethanol and biodiesel are expected lower than the corresponding equivalents of traditional petrol and diesel consumption by 10-15% , the cost of energy generated from biogas - by 20-25 % , and the resulting combustion of biomass in special boilers - 2-3 times for the same when using natural gas. [3].

In Ukraine the development and production of renewable energy constrained and falls from both domestic needs and international dynamics of development that should facilitate immediate development of biomass and biofuels market , the emergence of a new segment of the national economy.

Using renewable energy is a strategic issue of Ukraine's economy , its agriculture. Implementing renewable energy market will help ensure energy security, sustainable development of agricultural production, create new jobs in rural areas , increase financial revenues in agricultural economics and environmental improvement of the environment.

For efektyvnoho renewable energy to make large-scale organizational and technological measures to expand production and processing of biomass for biofuels. According to preliminary data need to biofuels in Ukraine in 2006 amounted to 200 thousand tons, and by 2010 more than 500 tons In the U.S., 80 % of the produced ethanol used as fuel. The leader for the production of biofuels is Germany. Volume of biofuel production in 2010 was about 1.2 ml. t or 3.5% of the total consumption of diesel fuel in the country. Forecasts of biodiesel shows that in 2020 the volume of production may be about 6 million tons. For this purpose it is necessary to increase the area under cultivation of rapeseed and soybean.

**Conclusions and recommendations for further research.** In general, the introduction of alternative energy ( ARES ) has the potential to provide for Ukraine to reduce dependence on imported energy , improve its energy security of energy supply by using local renewable resources, the creation of a significant number of new jobs (mainly in rural areas ), a significant contribution the improvement of ecological situation in Ukraine and increased efficiency.

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**ANALYSIS OF THE SPECIAL REGIME DIRECT TAXATION  
AGRICULTURAL ENTERPRISES IN UKRAINE**

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*Studied a special regime of direct taxation in agriculture, identify its shortcomings and ways of improving the fixed agricultural tax.*

*Taxes, tax policy, a special regime of direct taxation, the fixed agricultural tax.*

**Statement of the problem.** During the year of formation of the market economy in Ukraine tax policy on agriculture and mechanisms of its realization gained prominence. Specificity of field, which has an objective character, needs a corresponding mapping of features of the tax agricultural producers in tax legislation. Insufficient of its consideration in the formation of tax mechanism leads to a distortion of their impact on economic processes, failure to ensure proper use of the functions of taxes.

**Analysis of recent research and publications.** Certain aspects of the tax system in agriculture explored in the writings of Ukrainian scientists: B. Kanter, O. Vasylyk, T. Yefymenko, Y. Ivanov, A. Kirilenko, A. Krysovatoho, W. Miller, M. Miller, A. Sokolowski, in . Sutorminoyi, L. Tarangul, Fedosov, S. George. An important contribution to the development of theoretical and applied principles have Borisova, P. Haidutsky, M. Dem'yanenko, D. Dema, P. abuse, P. Sabluk, L. Tulush et al. Thanks to the ideas of Agricultural Economists could change the perception of the tax system in agriculture and highlight new directions in her study.

The aim of the article is to study the special regime of direct taxation in agriculture, identify its shortcomings and study ways of improving the fixed agricultural tax.

**The main material.** Special tax regime for agricultural producers in the form of fixed agricultural tax ( FAT) was an experiment in 1998 in three regions of Ukraine : Hlobynskyy district , Poltava region , Starobeshevsky near Donetsk and Uzhhorod region Transcarpathian region, and from 1 January 1999 it was spread throughout the country .

Since its introduction FAT performed virtually the only form of relations between agricultural producers and the state (excluding indirect taxes ), but since 2005 the number of tax payments, which are part of FAK significantly decreased (from twelve to five) . Consequently, the present tax regime has lost its original ideology which it laid down in its implementation [4].

Analyzing the tax burden on the farms for 2000 - 2011 years ( Table 1), it should be noted that during 2000 - 2003 there was a gradual increase in the tax burden due to worsening financial state farms , and since 2005 traced a clear downward trend tax burden. In 2011 it was only 0.5 % , while the financial result before tax increased by almost 15 times, and FAT decreased almost 3 times compared to 2000.

In dealing with major issues - reducing the crushing tax burden on farmers - this tax has other positive features: with the release of payroll accrual of social security contributions were prerequisites for increasing salaries and benefits of regular , fixed tax rate , on the one hand, require effective and efficient management, and on the other - has provided manufacturers confidence in their work, encouraged to increase production , increase its level of profitability, caused a reduction of costs for accounting and tax reporting .

Liberation of fixed agricultural tax on contributions to state funds provided farmers significant tax savings , but because of its limited participation in the formation of social funds of costs , especially pension , turned lower levels of social protection of workers employed in the industry .

Table 1

Dynamics of the tax burden on agricultural enterprises in Ukraine in 2000 - 2011 years.

	Financial result before taxation million**	Charge the fixed agricultural tax, mln. *	The tax burden,%
2000	1752,4	338,8	19,3
2001	899,1	420,4	46,8
2002	-254,6	475,4	-186,7
2003	769,5	454,9	59,1
2004	2768,0	419,9	15,2
2005	3702,4	157,7	4,3
2006	2731,8	140,2	5,1
2007	2713,7	138,4	5,1
2008	6041,8	124,5	2,1
2009	7647,4	122,9	1,6
2010	17391,1	124,9	0,7
2011	26244,0	121,9	0,5

\* According to DPS Ukraine

\*\* According to the State Statistics Service of Ukraine

Available disadvantages of this system required its revision and build a more perfect mechanism of taxing farmers and the state was limited to only the current adjustment mechanism for levying fixed agricultural tax, and therefore in 2011 the tax burden of taxpayers FAK increased compared to the baseline in 2004 almost 10 times (Table 2).

Table 2

Evaluation of changes in taxation for FAT 2004 - 2011 years.

Indicators per 1 ha of arable land	2004	2008	2009	2010	2011
Payroll, USD. *	192	321	379	389	486
The load on the payroll, %	0,2	19,92	26,56	36,4	37,19
Contributions to social insurance funds, USD.	0,38	63,94	100,66	141,6	180,74
Fixed Agricultural Tax ** USD.	19,3	5,79	5,79	5,79	5,79
Total statutory fees, USD.	19,68	69,73	106,45	147,39	186,53

\* Calculated on the basis of average nominal wages of employees and their numbers.

\*\* Calculated based on the average monetary value of one hectare of arable land was on 07/01/1995

On January 1, 2010 payment grace period ends farms - FAT payers of contributions to the pension fund. Providing preferential order of payment of pension contribution positively affected the financial position of farmers , because the size of the special contribution rate was in 2005-2006 - 6.46% , in 2007 - 12.92 % , in 2008 -

19.92 %, in 2009 - 26,56 % of the cost of salaries of workers by roughly 20, 40 , 60 and 80 % of standard size pension contribution rates for enterprises of national economy . [3]

The importance of direct taxation preferential agricultural emphasized by the fact that its presence contributes around 50% of agricultural yield , and in some sectors of agriculture (eg, livestock ) maintaining positive economic performance is completely dependent on the availability of tax incentives .

In support profitability for agricultural producers preferential taxation regime play an important role in terms of alignment of economic incentives in various sectors of agricultural production (Table 3).

Table 3

The level of profitability in crop and livestock, %\*

Years	Crop	Stockbreeding
2000	-1,0	-33,8
2001	18,3	-6,6
2002	4,9	-19,8
2003	12,6	-18,8
2004	8,1	-11,3
2005	6,8	5,0
2006	2,8	-11,0
2007	15,6	-13,4
2008	13,4	0,1
2009	13,8	5,5
2010	21,1	7,8
2011	27,0	13,0
2012	21,9	14,2

\* Source: State Statistics Service of Ukraine

For example, the fixed agricultural tax base when calculating what is normative monetary land valuation which are in cultivation businesses are more profitable for breeding. However, even taking into account its application , the average profitability of livestock during the last 12 years is lower than the profitability of crop production. Thus, the presence of FAK partially eliminate disparities in yield of crops and livestock .

At the time of introduction of the FAT , the tax rate provided burden comparable to the existing 1999 tax payments ( income tax, land tax , etc. . ) And taxes (pension fund and others). Today sum payment FAT is almost constant at about 6 USD. per 1

ha of agricultural land. It is more than 2 times lower than the rates of land tax , which is part of it.

Thus, FAT does not provide implementation of regulatory and catalytic functions taxes. Especially on holding agricultural enterprises . For holding this special regime of taxation is an attractive instrument of "legitimate" tax evasion schemes much of the taxes. Purchase agriculture raw at higher than market prices is the most common phenomenon in controlled agricultural farm holdings . Last has a negative impact on the distortion of statistical reporting profitability of agricultural activities.

Problematic today is, and the registration of the entity as a taxpayer special regime. Raising the share of sales of agricultural products (services) to 75 percent of all revenue ( income) does not stimulate the diversification of business of small and medium enterprises. The latter, still remain such enterprises which help in village development, but fail to develop because FAT rural green tourism , industry and arts and crafts, use cooperative schemes cultivation and marketing of agricultural products, as it was in Soviet times.

Tax Code of Ukraine ( CLE ) [2] is not fully resolved the problem of seasonality payment FAT ( according to Art. 306.2 - in the I quarter - 10%, II - 10% , III - 50%, IV - 30%). In this division , especially medium and small businesses are forced to resort to premature and therefore cheaper of early crops [1].

**Conclusions and recommendations for further research.** Thus, the introduction of FAK as a major in the taxation system of agricultural producers at a certain stage of development of economy of Ukraine was reasonable and possible to take into account the specificity of agriculture in determining the tax object and terms of payment of the tax, which, in turn, made it possible to simplify the tax system and tax accounting to lower the tax burden for enterprises of the agricultural sector, encourage sustainable land use.

However, the greatest effect of the application of FSP currently provides a large, integrated agricultural farm. Maybe some appropriate extension of the use of the FAT, but certainly not justified for rural development is its unurgently application.

Thus, there is urgent need for legislative change in the mechanism of direct taxation of agricultural enterprises.

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**METHODOLOGICAL APPROACHES TO DETERMINING THE ESTIMATION OF TAX BURDEN OF ENTERPRISES**

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*Features of formation of the companies tax field and methodological approaches to the estimation of the tax burden.*

*The tax burden, tax base, tax planning, tax item, the taxpayer, income, cash flows.*

Nowadays in Ukraine there is no single definition that can describe the impact of the tax system on the financial and economic situation in the companies . The definition can be substituted by the next concepts “tax burden”, "tax burden", "aggregate extraction tax", "taxes", "burden of taxation", which are essentially synonymous phrases with similar meaning in content but with different lexical interpretation.

Currently there are no general accepted methodology for determining not only absolute, but also relative size of the tax burden of enterprises. There are some known methods for determining the tax potential, the level of the tax burden of the population, effective tax rates, the share of taxes in GDP, which are calculated from the basic parameters characterizing the economy and the tax burden at the macro level . But there is no consensus on the calculation methodology for this indicator at the micro level, as well as at the enterprise level. In the scientific literature there are methods for determining the tax burden on economic entities that differ in the use of a different numbers of taxes that included in the calculation and determination of the baseline indicator of the company activities, which relates to the total amount of taxes.

**Analyse of the recent research and publications.** Theoretical approaches to the identification and assessment of the tax burden in Ukraine , the causes and the consequences of its uneven distribution among the entities incorporated in the works of local economists B. Kanter, V. Vishnevsky , J. Lunin, A. Sokolowski,

Fedosov et al.. But, in Ukraine there is still no any existed special research on the question of tax burden planning in the enterprises.

**The aim of the paper** is to develop methodological approaches for planning of the tax burden on the level of the enterprises, based on the determination of the tax field.

Literature review. A. Sokolovska defined “tax burden” like the effects of influence of the taxes on the economy in general and its individual payers associated with economic constraints that rose up as the result of the paid taxes and diversion of funds from other possible ways of usage. [3] For research purposes , we will use the term " tax burden " which will defined as a generalized quantitative and qualitative characterization of the impact of mandatory payments to the budget on the financial situation of enterprises which are paying taxes. V.S.Zanadvorov defined mentioned above mandatory payments as a mandatory payments of regular benefits of economic agents in state funds [1], which are considered as a set of instruments of the state, allowing it to specify the overall budgetary decisions in the aggregate amount of income that provide the necessary costs of the public sector.

The complexity of creating a unified approach increases due to the fact that within each of the tax system there are several options (modes) of the taxation depending from the conditions and nature of the company, particularly from the various industrial branches, scope of activity, legal forms , etc.

The tax burden of enterprises depends on many factors, among them: economic activities and forms of its implementation, tax regime, legal form of the enterprise, special features of the taxation and accounting system which are signed up in the accounting policy of the companies. Each factor has a variant value, the choice of which depends on the statutory limits. Each version of the taxation is characterized by the appropriate list of obligatory payments to the budget system, which can be defined by the term «tax field.»

Methodology of calculation of the tax burden involves determining the total amount of tax liability (PZnarah) arising in the process of doing business during

the calendar year, and calculated like total sum of the required payments in the tax field for one year, which has to pay company in the budget. According to the tax legislation the enterprise can have two types of tax obligations: the obligation of the taxpayer and the tax liability of the agent.

According to the Tax Code of Ukraine (TCU), person that has a duty to pay a particular tax, is defined like taxpayer (Article 15.1 CLE) [2].

In accordance with Art. 18 CLE tax agent is the person in which fulfils the obligation from the calculation of payments, maintenance of accrued income (paid, delivered) of the payer, and transferring taxes to the appropriate budget on behalf of the taxpayer and as the expense of the taxpayer. Tax agents have the same rights as taxpayers.

The enterprise performing the functions of the tax agent assigned to it by the legislation must calculate, make the deductions and pay to the budget the sum of the tax from the personal income of the company.

The obligation of the enterprise in the amount of income tax to the individuals moving in the category of the companies budget obligations. The personal income tax is divided by the enterprise – tax agent between the individual agent and budget.

The total liabilities to the budget that arose during the year (PZnarah) includes the obligation of the taxpayer (PZ1 , PZ2 , ... PZn) and liabilities arising from the enterprise performance as a tax agent (PZA1 , PZA2 , .. PZAn ..). This composite index is a quantitative characteristic of the tax field, and it can be represented in the next formula: (1).

$$PZnarah = ( PZ1 , PZ2 , ... PZn ) : + ( PZA1 , PZA2 ... PZAn ) (1)$$

where PZ1, PZ2, ... PZn – accrued annual mandatory payments, the payer of which a company according to its tax field that arise in the process of the running up of its economic activity ;

PZA1, PZA2, ...PZAn – accrued statutory fees which need to be paid during the year, by the company on behalf of functions of the tax agent.

Tax liabilities that accrued during the reporting period must be repaid within the terms established by the tax legislation. These periodic payments are included in the budget like the component of the cash flow from operating activities according to the classification in the statement of cash flow. The financial condition of the enterprise depends on its ability to raise cash and repay obligations incurred. The moment of the tax assessment is reflect to the moment of displaying obligations in the accounting and does not coincide with the moment of repayment of liabilities, which have a later date.

In addition, the frequency of occurrence (charge) tax liabilities and periodicity of payment are different for different taxes during the calendar year.

Methodology of the tax burden calculation should separately consider the impact of the tax burden on the two sides of the company's activity. On the one hand, it is necessary to assess how tax liabilities recorded on its financial performance. On the other hand, it is necessary to determine the effect of the process of repayment of tax liability on the cash flows of the enterprise. Moment of the occurrence "it is, the time of the tax accrual in the tax accounting, like one of the expenditures , the same time it is the moment of the displaying tax liabilities that have legally established terms of payments. In this case, it is necessary to assess the impact of taxes not only on the operating results, but also on the cash flow of the enterprise. During the forecasting of the cash flow company must have a precise schedule of tax payments for budgeting. Skip timing of tax payments , including the reason of insufficient level of the financial resources lead to the losses of the enterprise, at least in the amount of fines. There are some other possible complications of economic activity, like suspension of operations of bank accounts that may have negative consequences in the form of additional losses.

Quantities assessment of the impact of the tax burden on the cash flows of the enterprise will be determined by the system of the next parameters ( 2).

$$PZ_{\text{splach}} = [( PZ1 , PZ2 , \dots PZn ) : + ( PZA1 , PZA2 \dots PZAn ) - ( PV1 , PV2 , \dots ) ], ( 2)$$

where PZ1, PZ2, ...PZn. – accrued statutory fees payable during the year , which is paid by the enterprise according to the type of the tax field;

PZA1 , PZA2 ... PZAn – accrued statutory fees to be paid during the year, that accrued in the company during performing functions of the tax agent;

PV1 , PV2 ... – amount of tax deductions , the right to use of which came from the company in a financial year.

To assess the quantitative impact of taxation on the financial results (PZnarah), and cash flows (PZsplach) should be determined causes (charge) of tax liabilities in business enterprise.

The use of the term "tax field" allows perform activities of the company in the form of some similarity maps, where are defined so called the points of existing of the taxes. Tax field includes a list of taxes paid by the enterprise and what is the most important the list of objects, that's mean the points where the taxes exist.. Among such points there are some separate economic activities that are carried by the enterprise, and / or certain types of companies property that are subject of the taxation, such as sales transactions, real consumption of certain resources and / or fixed assets of the enterprise ,transport, land , etc.

The economic activity of the company is cyclical in it's nature and can be represented by using well-known, in economic theory, formulas circulation of capital in three successive stages (Fig. 1).

Phase I Acquisition of resources	Phase II Production	Phase III Sale of goods (works, services )
G - T	... V...	T1 - G1

Figure . 1. Stages of economic activity and the circulation of capital of the company.

Formula circulation of capital can provide all the economic activity of enterprises in three phases.

Stage I –purchase stocks of the resources needed for running the business activity. Acquisition of resources conditionally displayed in the diagram as their

purchasing with simultaneous payment of cash without specifying the source of their receipt.

Stage II –the process of production (good or services), what is the main goal of the business operationing. This is the of “consumption» in the production process of the acquired resources on the first stage and simultaneous entry and «consumption" of services in the production process. The outcome of Phase II is: two types of assets that are recorded in the appropriate accounts in the balance sheet as separate items: as a work in progress and as the cost of finished manufactured goods (works, services).

Stage III –process of selling goods (works, services), which results in the transfer of ownership to the buyer purchased it products (works, services). Along with the actual departure (shipment) of products (works, services) company records revenue from the sale. This stage is associated with the formation of the financial results of the company. At this stage there is also a special group of expenses, the so-called cost of sales due to the «consumption» of previously acquired assets and the simultaneous purchase and «consumption" of services.

Consequently, the financial results of business activities is calculated only on Phase III of the company in the process of comparing the income and expenses incurred during the sale transactions that can be called profitable operations. However, the tax liability arising from the company not only to stage III and therefore included in the calculation of profit / loss , but as a result of business operations phases I and II ( Fig. 2).

For example purchasing of durable assets – fixed assets including vehicles and / or land, leads to a commitment for the first registration of the vehicle and of the land .

Consumption in the production of resources such as labour, leads to tax liability from the single social contribution and usage of water resources to paying liabilities for water usage, etc. However, certain tax liabilities that arising on phases I and II of the company activity, at the time they are charged included not to the accounts of financial results, but they are included in other indicators that are

formed in accounting, for example to the costs of production process and form the index of production costs of goods..

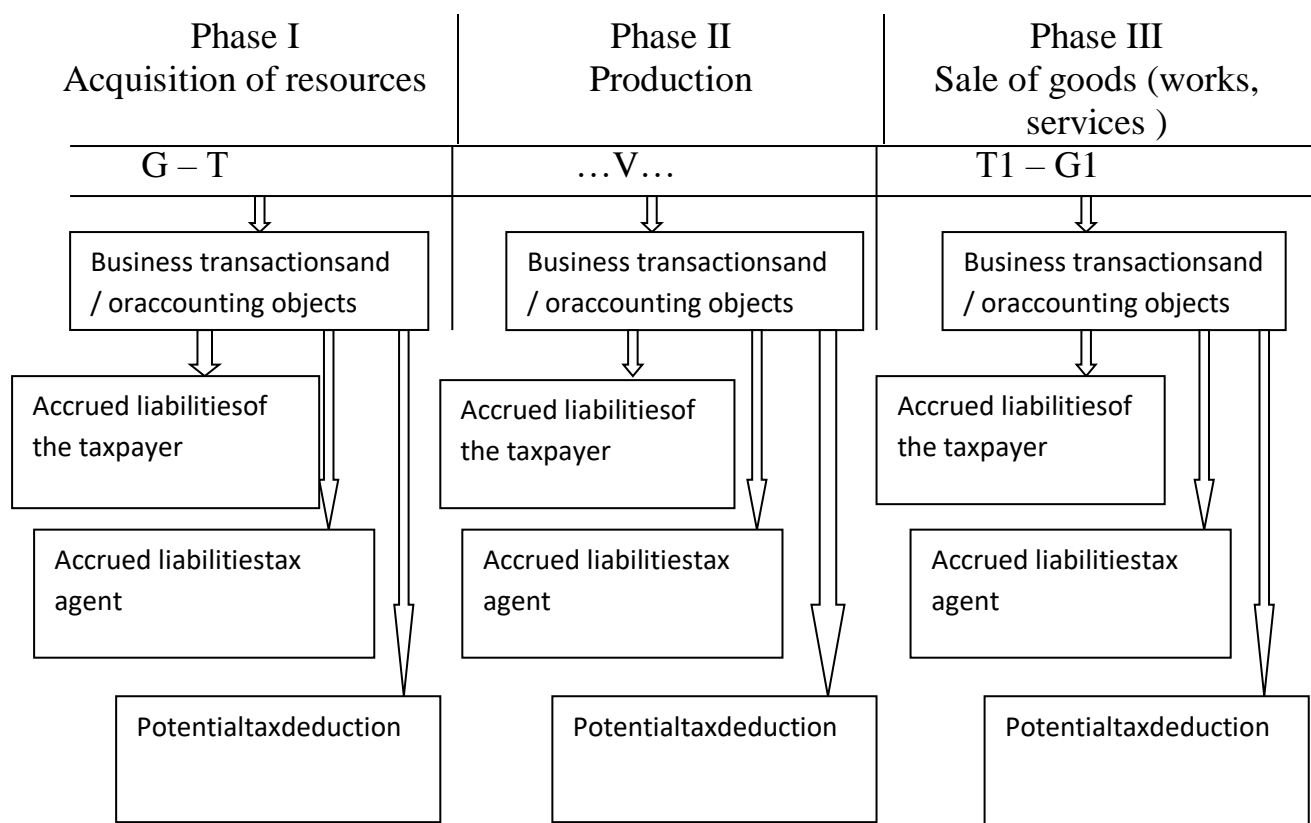


Figure. 2. Emergence of the important indexes for calculation the tax burden indicators in the process of economic activity of the enterprise.

This means that taxes are included to the expenditure and therefore to the costs of production, will participate in the calculation of financial results of enterprise during selling the products. However, during calculation of the tax burden for enterprise it is important that these tax liabilities have been already arisen and have been included in the total amount of tax liabilities.

Role of the coordinates on the tax field belongs to the specific sources of information, including:

- relevant accounting records, which shows the so-called place of origin of the compulsory payments to the budget , namely, operations and / or assets that are subject to taxation;
- accounts of the tax liabilities accounting, sources of information about accrued or incurred required payments.

In Fig. 3 described the economic activity of enterprises in three successive stages, indicating "Places" of appearance of each group of obligatory payments to the budget.

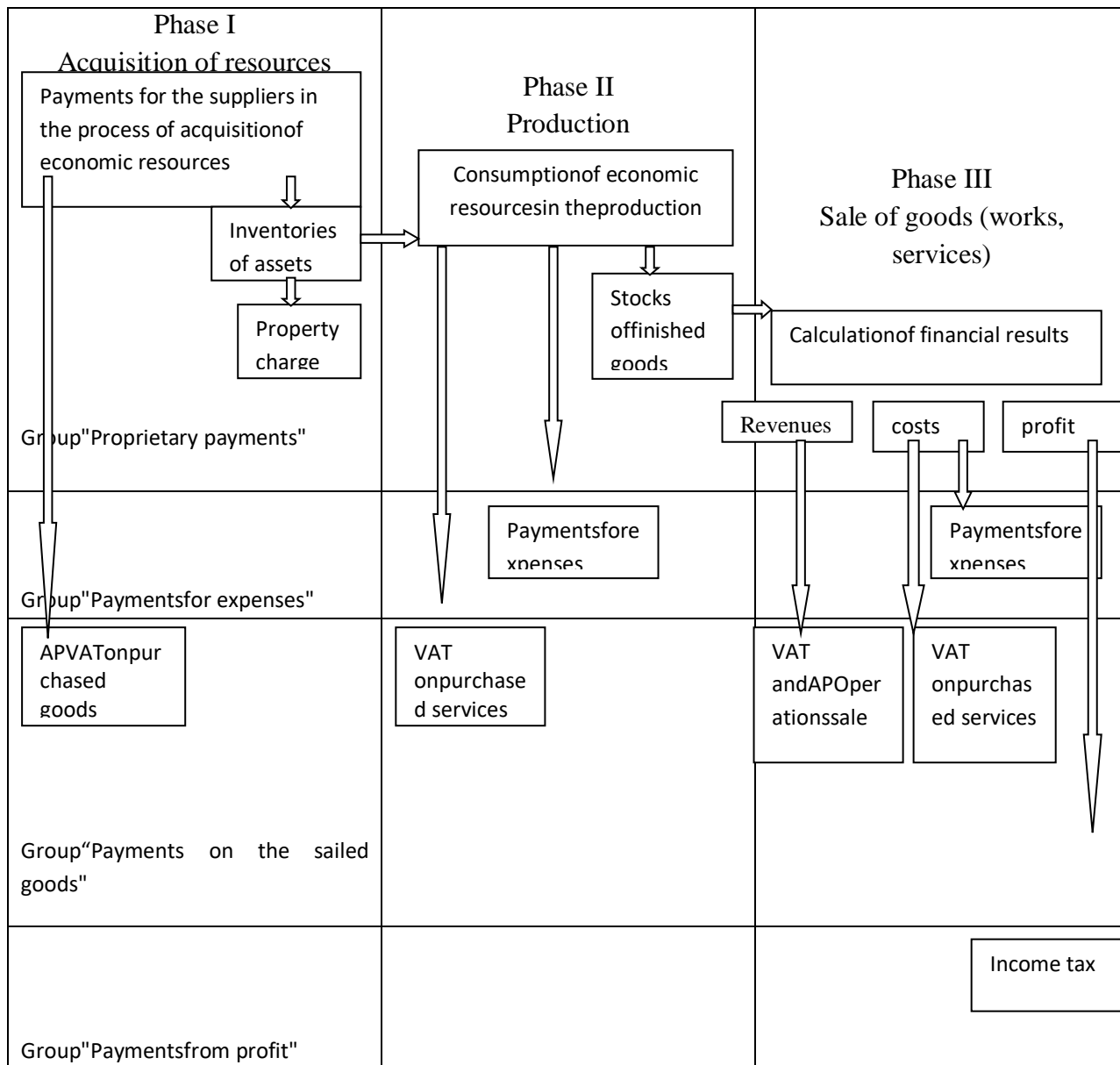


Figure . 3. Generalized tax field with the common system of taxation

Such scheme of economic activity can be called like a generalized version of the Tax Field Company, that acting under the general taxation regime. However, to calculate the tax burden of the enterprise its needed to get more information about its tax field that contains a list of tax liability from each of the required payments and the reasons for their occurrence.

**Conclusions and recommendations for further research.** The division of economic activity in three successive stages allows screen the process of the appearing of the objects in the enterprise, which are leading to the emergence of significant indicators for the calculation of the tax burden Each cause of the above mentioned indicators reflected on a credit of accounting as a business transaction or as a particular object of observation in accounting. For reflection of each of these reasons, in the accounting set the date and valuation on the date.

Thus, with the list of mandatory fees which need to be paid by an enterprise to the budget according to the tax regime that are applied and relying on the circuit of capital for each stage of the enterprise activity can be established "the exact coordinates" (certain accounts), of the date of occurrence and assessing of the causes of tax liabilities and tax deductions.

This information can provide the image about the tax field of the enterprise and give possibility to calculate the value of its tax burden.

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## **Innovative development of competitive agricultural products supply in Ukraine**

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*Profound theoretical and methodological principles of formation and development of innovation in the agricultural sector and its impact on the competitiveness of agricultural food products in Ukraine.*

**Keywords:** intellectual work , intellectual property , competitiveness , food safety , innovative developments, evidence-based options, high in protein.

**Statement of the problem.** Today, the need to address issues related to the development of an innovative society is essential. It should be emphasized that innovation - is historically irreversible change in the way of things:

- New or improved process, which implemented in practice ;
- New or improved product that is sold in the market.

The modern period of our country is determined by a significant increase in the role of science and technology, intellectual activity and spiritual enrichment.

Ukraine confidently authority shall state with high intellectual potential and modern state system of intellectual property protection.

With regard to this it is necessary to determine whether Ukraine is ready to move to a new model of development of the national economy , based on the effective use of the intellectual work of scientists , inventors , etc.? After all, it is necessary to reject traditional approaches to clearly define this new model of innovation and hard to follow the chosen path . It should be noted that Ukraine still

lags significantly behind in terms of use of intellectual achievements in the national economy compared to developed countries.

To solve this problem, there is need to create an effective infrastructure , the functioning of which shall be directed to the innovative development of the country and promote national products on the world market for intellectual property. This should be supported by the state . First of all, to create favorable conditions for effective commercialization of local R & D both in the domestic and foreign markets.

According to international experience , innovative developments in national economies (Finland, Japan, South Korea, China and others ) had not only scientific and technical achievements , but also the general intellectual breakthrough in these countries through the creation of appropriate institutions of social, educational, scientific and technical and marketing perspective, which combined intelligence production business.

Innovations play a considerable importance in ensuring competitive supply of agricultural products in Ukraine .

**Analysis of the main research and publications.** Problem of developing innovation strategies in this regard devoted to labor Schumpeter , K.Frimana , R.Fostera , M. Porter , L.Antonyuka , M.Kulayets , V.Pabata , V.Zbarskoho , M.Babiyenka , O.Vytyvtskoyi , M . Gladiy , PA Music, O.Hoychuk and other domestic and foreign scientists and economists .

**The aim** - to demonstrate the urgent need for innovative growth of competitive agricultural products and foodstuffs - an important component of food independence Ukraine . Expand bio- economic characteristics of some legumes.

The main objective of the study is to develop methodological foundations of innovation in the agricultural sector and determine the impact of this development on the formation of food resources in Ukraine .

**The main material.** Ukraine has more than 70 percent of agricultural land , including arable land - almost 33 million hectares, or 80% of their area . Mastering the total land fund - at 60% (compared to 12% in the U.S.) . [3]

Ukraine ranks first in the world in proportion of black soil with high humus

content . And that 63% of the soil , which is almost 27 million hectares of arable land , much of the human element , powerful scientific and educational potential .

On the powerful potential of Ukraine demonstrated in table 1 , where we manufacture most important agricultural products per capita in 1991. last century in most developed countries of Europe.

TABLE 1 . Production of main agricultural products per capita, kg.

<i>Types of products</i>	<i>Great Britain</i>	<i>Italy</i>	<i>France</i>	<i>German</i>	<i>Ukraine</i>	<i>Place</i>
Grains and legumes	405	295	1058	445	1033	2
potato	121	42	85	118	378	1
meat	66	63	112	96	86	3
milk	262	204	519	450	469	2
sugar	22	28	67	50	118,6	1
Butter	2,5	1,3	9,2	6,9	8,5	2

To increase food resources in our country should adopt in the first place , the experience of England. This country, with a population of 58.3 million people , has in cultivation only 6.1 million hectares and has the lion's share of its own products . Successfully addressed food security in the Czech Republic , Hungary and several other countries where privatized land only within 12-15%. In the U.S. in recent years oderzhavyly 40% of land under cultivation . [2].

In agriculture Ukraine undergoing complex and contradictory processes caused by the entry into the market economy , largely affects the problem of food security , nutrition and quality of agricultural products and foodstuffs. An important need for the life of the human body is to ensure its quality food.

Among the urgent tasks is to practice these tools and approaches that would have allowed our population to ensure national food quality at affordable prices.

Solving this problem requires the use of measures on the one hand, to ensure a smooth flow to the consumer market growing number of different food quality, and on the other - increasing the purchasing power of the population of Ukraine. It is emphasized that further performance of our fields compared with developed countries is still low , which greatly affects food security. Exhausted land. Slowly increasing returns per hectare, wearing fixed assets, dramatically aging equipment, lost genetic

potential in crop and livestock shows resource and financial imbalances .

If 15-20 years ago the task of stabilization and accumulation of humus in the soil , now the question of - to slow down the rate of decline of humus in the soil and overall performance fields. At 100 hectares annually growing area of eroded land , which is equivalent to the area of the middle region of Ukraine .

Now we must note : so far failed to stop the decline in living standards in the world and particularly in Ukraine , as illustrated by the data in Table . 2.

Table 2. Consumption of basic foodstuffs in Ukraine.

	1990	1995	2000	2005	2008	2009	2010	2011	Rational rules
1	2	3	4	5	6	7	8	9	10
Meat and meat products	68,2	38,9	32,8	39,1	50,6	49,7	52,0	51,2	80
Milk and milk products	373,2	243,6	199,1	225,6	213,8	212,4	206,4	204,9	380
Eggs pieces	272	17	166	238	260	270	290	310	290
Bread and bakery products	141	128,4	124,9	123,5	115,4	114,0	111,3	110,4	101
potato	131	123,8	135,4	135,6	131,8	133,0	128,9	139,3	124
Vegetables and melons	102,5	96,7	101,7	120,2	129,2	137,0	143,5	162,8	161
Fruits, berries and grapes	47,4	33,4	29,3	37,1	43,5	45,6	48,0	52,6	90
Fish and fish products	17,5	3,6	8,4	14,4	15,3	16,0	15,1	13,4	20
sugar	50	31,6	36,8	38,1	40	38,5	37,9	38,5	38
oil	11,6	8,2	9,4	13,5	143	15,4	15,4	13,7	13

The data in Table 2 show that the population of our country consumes a staple within 50-70% physiological nutritional standards . This is particularly true of meat and meat products, milk and dairy products , fruits , berries and grapes.

Especially thoughtless use of the land was in March 1960 to 1990. Plow in those years in Ukraine has reached more than 80% of agricultural land in some areas - more than 90%. Such tillage had and has no civilized country in the world .

Converting , based on scientifically sound options farmland into natural areas, can reduce the enormous cost of energy in agriculture. Loss of soil erosion reduced by more than five times, and many times will decrease energy losses contained in the organic matter of the soil and the batteries will improve soil fertility, preserve natural resources for future generations.

It should be borne in mind that the saturation of soil organic matter, enhance

their biological activity is not only increase productivity, but also the development of disease. Of course , you need to maximize all Agrobiological measures to help prevent the occurrence of disease , but if you threaten crop disease , weeds and pests , you need to use chemical remedies. And this should be done . After harvest losses in poor protection of plants from pests , diseases and weeds are 30-40 % or more.

Japan compared to Ukraine 10 times more per hectare crop uses of plant protection products and the Japanese live the longest in the world and mortality is much lower than in Ukraine.

To obtain high yields of good quality products that directly affects food security requires that all factors clearly worked. In this regard, one of the greatest chemists of the world D.M.Pryanishnikov wrote: " For a high yield of good quality requires that all factors of plant growth were presented in the corresponding harmonic ratios ( proportions) that best meet the needs of plants in the corresponding periods of growth and development ".

On food safety and quality of agricultural products and foodstuffs is largely influenced by culture, as peas and soybeans - high quality , valuable and irreplaceable food. As before, the main challenge remains increasing grain production , the balance of which an important place occupied by crops, such as peas and soybeans. They have a high content of proteins , carbohydrates , minerals and vitamins , so they are valuable food intake for the population , as well as an important component of feed for farm animals.

Specifically , peas - one of the oldest crops. In recent years, plantings of beans in the world is about 100 million hectares , including peas - about 15 million hectares. Pea seeds scientists are still in the Stone Age deposits .

Especially valuable peas in that it contains a grain of digestible substances than other crops and foods. High calorie and peas. By feeding quality grain green mass . Hay , straw and chaff, peas valued very highly. Pea Protein supplement lack of essential amino acids in the proteins of cereals are used in livestock feed , thus increase their digestibility.

It should be emphasized that the revival of agriculture at the present stage of

the democratic state must be based on the achievements of science and technology and technical process , the decisive role which belongs to scientific development, accelerate innovation.

In the overall scheme of disclosure of social and economic nature of science and technology and technological progress in the agricultural sector of Ukraine - "science -technology -engineering - production" driving force becomes impulsive character is a science , which in its publications , we provided examples .

The process of science in the production or function of serving the needs of material production. Therefore , no implementation of scientific advances in material production science can turn into a direct productive force.

The priority of the government should encourage the production of high quality competitive products , using energy-saving and environmentally friendly technologies . This innovative orientation plays a dominant today , and possibly decisive role in determining the number of participants of competition in the future as innovation can create strategic advantages in doing so.

**Conclusions and recommendations for further research.** The priority tasks of innovation in agriculture, in our view, include:

- Life - support agriculture in domestic and foreign competition;
- Development and consistent implementation of the program of agriculture ;
- Making at the national level was the most important branches of production subsidies , especially livestock.

As ever, the agenda should be to provide training on issues of innovation to ensure food safety and quality of agricultural products and foodstuffs at all levels of government and leaders and experts from various forms of ownership.

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## **FORMATION OF THE MARKET OF SOYBEAN AND PROCESSED PRODUCTS IN UKRAINE**

Challenges and risks encountered by global agriculture forced government officials and scientists are increasingly working on short and long-term food security programs. Under these conditions, domestic producers are interested in increasing the production of food and feed grains and oilseeds, because the demand for food, feed and biological materials. For grain and oilseed protein and opening up new and promising markets, and the market is becoming more active due to rising levels of consumption and the growth of consumers around the world.

Over the last decade, Ukraine has become a trend to increased acreage of soybeans, due to its growing profitability for farms compared to other crops. Attention to the problem of increasing the economic efficiency of agricultural production in general and soybean in particular due to the need to address the issue of growth of profitability of enterprises, improving the competitiveness of the domestic and global markets.

Despite the large number and variety of markets, the most important is the food market, since only its production ensures the existence of mankind. Market soy - it's part of the food market, which is a set of economic relations between entities, whereby the purchase and sale of soybean and processed products, in accordance with the laws of the market economy.

During the promotion of soybeans from producer to consumer involved various businesses and organizations soy subcomplex, which describes a set of organizational and technological structure of the soybean market, which celebrated diversity of forms of management and ownership.

The main factors influencing the market demand for soybeans and processed products are: a) the need for livestock in high-protein, balanced feed, and b) the price of alternative and related products (meat, milk, oil, etc.), c) the solvency of the population

d) tastes, preferences and habits of the population. Offer soybean and processed products formed under the influence of important factors: a) change in resource prices. The rising cost of fertilizers reduces supply by soy b) changing technology. The introduction of the new technology of soybean for food purposes helps increase supply, such as soy texturate c) changes in taxes and subsidies.

Annual compensation for agricultural producers sown soybeans, as well as compensation from the state budget for soybean high reproduction leads to an increase in production and thus demand for soybeans, d) changes in prices of other goods. Reduction of purchase prices for feed ingredients protein leads to increased supply of soybean meal; e) change in the number of suppliers. Increasing the number of businesses that process soybeans increases the supply refined products.

When calculating the potential demand for soybeans than use it as feed for domestic needs, it should also take into account possible exports or imports of soybeans and processed products, and use it for food purposes. In addition, the processing of soybean meal would also obtained oil, for which is necessary to provide the appropriate channels. Apart from the use of soy in animal feed on goals for Ukraine remains the most pressing issues of soybean for food purposes.

Soybean market is at an early stage of development, so that they now require appropriate action by the state to improve its functioning, namely improving the quality and safety of consumption of soy subcomplex, and to organize appropriate controls by improving the legal framework to overcome the significant gap between scientific advances and their practical application, state support producers and processors of soybeans financing, lending and stimulate crop insurance; valuable information for market participants, the development of stock trading.

The results of the theoretical and practical aspects of the market of soybean and processed products make it possible to draw the following conclusions:

1. Soybean market - food market is part of a set of economic relations between entities, whereby the purchase and sale of soybean and processed products in accordance with the laws of the market economy. Characteristic features of the domestic soybean market are: a close relationship with the market of animal products associated (in the form of food) to competitor (in the form of dietary soy protein), the

greatest demand on the market of products of soybean meal use, not oil, soybean oil difficulty positioning which is not a traditional for Ukrainian consumers, contradictory and insufficient awareness of consumers about the products deep processing of soybean (textured whites, flour, etc.).

2. Soybean production in Ukraine until 2015 to bring to 5.0 million tons. Prediction of soybean production and processing carried out depending on the elasticity of demand for livestock products with the use of soybeans for food purposes and external markets. The increasing production of soybeans to forecast parameters will allow it to process large quantities of specialized plants, which significantly improve the quality of soybean products in the future and refuse to import. Growing clean and genetically modified soybeans, Ukraine will provide a competitive advantage in the global market, which will make it possible to export 450 thousand tons of commodity soybeans and 330 thousand tons of soybean oil.

3. To formation of an effective market of soybean and processed products requires reasonable public support, which provides:

- overcome the significant gap between scientific advances and their practical application through the creation of centers of scientific support for agricultural production consulting and information groups (points, centers) on learning and increasing cultivation of alternative oilseeds such as soybeans, canola and other;

- support producers who grow soybeans in the area of guaranteed production and processors by improving the funding and tax credits;

- creation of level playing field for domestic processors and exporters to introduce export taxes on soybeans, which will allow the party to form a large increase in soybean at specialized plants and thus significantly improve the quality of soybean meal and oil;

- financing of insurance soybean crops in areas that are guaranteed to areas of production, the introduction of compulsory insurance of crops of soybeans for farmers who are at high risk, which will help reduce the amount of compensation for their losses due to economies that are in a zone of low risk and do not require insurance;

- creation of an information and marketing networks oil and fat subcomplex to ensure stable market participants with reliable information.

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**ФОРМУВАННЯ РИНКУ СОЇ ТА ПРОДУКТІВ ЇЇ ПЕРЕРОБКИ В УКРАЇНІ**  
**Анотація**

В сучасних умовах Україна може стати одним із значних виробників насіння сої. У процесі просування сої від виробника до споживання приймають участь різні підприємства й організації соєвого підкомплексу, сукупність яких характеризує організаційно-технологічну структуру соєвого ринку, яка відзначається різноманіттям форм господарювання і власності. Основні чинники, що впливають на формування попиту на ринку сої та продуктів її переробки такі: а) потреба тваринництва у високобілкових, збалансованих нормах; б) ціни альтернативних та супутніх товарів (м'ясо. Молоко, олія тощо); в) платоспроможність населення.

Для формування ефективного ринку сої та продуктів її переробки необхідна обґрунтована державна підтримка.

**Ключові слова:** формування ринку, ризики, продовольча безпека, ціни, державне формування ринку, конкурентоспроможність.

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**ФОРМИРОВАНИЕ РЫНКА СОИ И ПРОДУКТОВ ЕЕ ПЕРЕРАБОТКИ В**  
**УКРАИНЕ**  
**Анотация**

В современных условиях Украина может стать одним из значительных производителей семян сои. В процессе продвижения сои от производителя до потребителя принимают участие разные предприятия и организации соевого подкомплекса, совокупность которых организационно-технологическую структуру соевого рынка, которая характеризуется разнообразием форм хозяйствования и собственности. Основные факторы, что влияют на формирование спроса на рынке сои и продуктов её переработки таковы: а) потребность животноводства у высокобелковых, сбалансированных кормах; б) цены альтернативных и сопутствующих товаров (мясо, молоко, растительное масло и т.д.); в) платоспособность населения; г) вкусы, предложения и привычки населения.

Для формирования эффективного рынка сои и продуктов её переработки нужна обоснованная государственная поддержка.

**Ключевые слова:** формирование рынка, риски, продовольственная безопасность, цены, государственное формирование рынка, конкурентоспособность.

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**FORMATION OF THE MARKET OF SOYBEAN AND PROCESSED PRODUCTS**  
**IN UKRAINE**  
**Annotation**

In today's Ukraine may become one of the major producers of soybean seeds. During the promotion of soybeans from producer to consumer involved various businesses and organizations soy subcomplex, the totality of which describes organizational and technological structure of the soybean market, which celebrated

diversity of forms of management and ownership. The main factors influencing the market demand for soybeans and processed products are: a) the need for livestock in high-protein, balanced rules, and b) the price of alternative and related products (meat, Milk, oil, etc.), c) the solvency of the population.

To develop a viable market of soybean and processed products requires reasonable public support.

**Keywords:** market development, risks, food safety, prices, public market development, competitiveness.

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**SPECIAL ASPECTS OF MARKETING PRICE POLICY  
IN ENTERPRISES OF SUGAR BEET SUBCOMPLEX**

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**Annotation.** *The paper contains analysis of special aspects of price in market conditions. Pricing application in enterprises of sugar-beet subcomplex on marketing principles are analyzed. The dynamics of prices of main and by-products of sugar beet production are considered.*

**Key words.** *Price, pricing, price policy, marketing price policy, enterprises of sugar-beet subcomplex.*

**Statement of the problem.** The development of market relations in agriculture of Ukraine necessitates increased attention to such important parts of the market environment as competition, demand, supply, price, pricing policy of the company, pricing and more. The most important element of this is the pricing for agricultural food products, as it leads to achieving the appropriate element of food security. It should be noted that rational reasonable price policy of enterprise in modern conditions should be based on marketing principles. The use of pricing is one of the most important marketing tools, which depends on the competitiveness of products and the company as a whole, profitability, financial stability, investment opportunities, the attractiveness of the enterprise and the stability of its development.

Achieving sustainable development requires the introduction of enterprises effective pricing policy in sugar-beet enterprises that takes into account the specific features of sugar-beet production, world market trends and by-products of sugar beet production. The basis for effective marketing pricing in enterprises of sugar-beet subcomplex is a consideration of the needs and paying capacity of consumers, features of their behavior, taking into account all factors (internal and external) that affect the pricing mechanism of marketing, price analysis for the products of competitors and so forth.[2, p.4]

In the modern business environment the marketing aspects of price in activities of agricultural enterprises and in activities of the sugar-beet enterprises are considered insufficient, resulting in the adoption of inefficient decisions in the formulation and application of pricing mechanism and management in general. That is why one of the most important problems of enterprises of sugar-beet subcomplex is the process of setting prices for main and by-products, the selection of effective pricing methods and techniques based on marketing principles that contribute to the improvement of production and distribution of sugar-beet enterprises with support their competitiveness at a high level and improve image.

**Analysis of recent research and publications.** Theoretical, methodological and practical problems of formation, development and operation of the price policy of companies are discussed in the works of scientists such as Artus N.N., Babur L.G., Balabanova L.V., Byelyevtseva M.I., Garkavenko S.S., Ivaniyenko V.V., Korinev V.L., Kotler P., Litvinenko Y.V., Tormosa J.G., Shkvarchuk L.A. and others. The works of Borschevsky P., Varchenko O., Galushko V.P., Lukinova I.I., Paskhaver B.I., Fursa A.V., Chorna L.A. and others are devoted to the problem of pricing in agriculture. The issues of the formation of prices in sugar-beet subcomplex are actively investigated by scientists such as Bahatarenko A.S., Bondar S.V., Galchynskaya Y.M., Zajac O.S., Pechenyuk A.V., Sokolyuk S.Y., Stasinevych S.A., Shpychak O.M., Yarchuk M.M. and others. However, the study and use of price policy in activity of enterprises of sugar-beet subcomplex with the application of marketing principles and mechanisms remain poorly understood and therefore require further research.

**The purpose of the research.** The purpose of the research is the analysis of the dynamics of prices, the mechanism of their formation and determination of main and by-products in enterprises of sugar-beet subcomplex of Ukraine based on marketing principles.

**The main material.** In the market economy, price is the most important element of the marketing mix, since it owns the role of factors that balances demand and supply, determines the value of the goods covered by the cost of production and

sales. Ultimately, the price depends on achieved business results. This is why rational reasonable pricing on market principles enhances the competitiveness and efficiency of production and sales activities.

In the economic literature there are many definitions that reflect the nature, content and meaning of price in activities of agricultural enterprises. According to the Economic encyclopedia dictionary, the price is the monetary expression of value of goods. [9, p. 539] The above definition of price retains its value using the marketing approach. On the other hand, the price in marketing is an estimate of use value in terms of who produces or who exchanges goods. [1, p. 274] According to the definition of the price, the price policy of enterprise is aimed primarily at maximizing profits as well as customer satisfaction, establishing a competitive level of price, which contributes to the establishment of close contacts with customers, suppliers and other market participants. The price policy is a set of measures that determine prices, pricing strategy and tactics, payment terms, varying of prices depending on the market position, strategic and tactical goals of the company. [4, p. 277] The essence of the price policy of the company is therefore to establish the price of goods and the ability to change them depending on the market situation to a certain degree, to ensure the planned amount of profit and to achieve other strategic and operational objectives. [2, p. 27]

Price is the main element of competition, redistribution and transfer of capital, and one of the most important elements of marketing price policy of the company. Setting the right price allows the firm to survive in the market, to work successfully in the financial markets and have a stable financial position. Currently, there are many problems in determining the price in domestic enterprises which are caused by lack of experience in the formation of price policy in the market conditions, the legacy of the planned economy and the lack of methodological support in the pricing process considering the development of Ukrainian economy.

The economic content of an effective price policy is to establish such prices that would gain a stable market segment, deciding strategic and operational

objectives of sales volumes to achieve planned revenue and the possibility to modify them in time in response to changing market conditions (demand and supply ). [7]

Sugar-beet industry in Ukraine is not an exception because most companies of sugar-beet subcomplex use their price policy in a way to make a profit, but with the least use of marketing elements. The imperfect mechanism of state regulation of pricing and forecasting of demand and supply in the sugar industry led to the fact that during the last two years there has been disparity in prices of main products of sugar-beet production. This is confirmed by the fact that the state is reviewing the minimum approved level of wholesale prices for sugar beet and sugar, because the market price, which is in the middle of the marketing year is lower than that established by the government which leads to pauses in sales of sugar products, resulting sugar market "stands." To confirm the situation, the dynamic's of price of sugar beet products.

Note that between 2008/2009 - 2012/2013 marketing years, the price of sugar beet is subject to change when in 2008/2009 the minimum price was 141,67 UAH/t and the average selling price 218,9 UAH/t, while in 2012/2013 the price of sugar-beet was 339,85 and 426,8 UAH/t, respectively. Similar situation was observed for sugar, because growth rates are evident at the state level, as seen in the increase of the minimum price from 2083,33 to 4677,69 UAH/t (the highest price was MP 4925,00 UAH/t in 2011/2012). In the market the price has increased from 3156,00 UAH/t in 2008/2009 to 7127,98 UAH/t in 2012/2013. The market price of sugar in 2013/2014 is set at 5300 UAH/t and will increase as the season is just beginning and according to experts, from the 63 factories that were working in 2012, only half will work, there the price of main and by-products of sugar production will increase. As for the characteristics of the price of by-products of sugar production moderate growth rates are expected. As for sugar beet pulp, the demand is on dry granular sugar beet pulp, the price of which is constantly increasing. In 2008/2009 price was 1254 UAH/t with VAT, and already at the beginning of the 2013/2014 the price is 2500 UAH/t and is projected to grow. Similarly, an increase in the price of wet sugar-beet pulp is observed. In sugar factories which sell directly from the manufacturer or storage of sugar-beet pulp pit, in 2008/2009 the price was from 10 to 20 UAH/t, while at the

beginning of the production season in 2013 its price is ranging from 40UAH/t with VAT. The price of molasses also increases, as in 2008/2009 it ranged at 650-850UAH/t, while at the beginning of the season 2013 sugar refineries were selling it for 1100-1200 UAH/t under EXW (according to INCOTERMS 2010). Regarding the analysis of the prices of bioethanol, it is worth noting that the price of these products is growing because of the constant demand. The price of alternative fuels in 2008/2009 ranged from 5500 to 6300 UAH/t, and at the beginning of 2013/2014 the price can be 10000 UAH/t and is expected to grow because of at least two reasons: first, because of lack of raw material – molasses (as the number of sugar factories planning to produce in 2013 will be reduced) and secondly, the number of companies that are able to produce alternative fuels is limited. To better understand, the dynamics of prices of main and by-products in enterprises of sugar beet subcomplex are displayed in the Table 1.

Table 1

Dynamics of prices for main and by-products enterprises of sugar beet subcomplex of Ukraine

Kind of products	Marketing years (MY)*					
	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014***
Sugar beet, UAH/t without VAT**	141,67	183,33	291,66	339,24	339,85	338,1
WhiteCrystalSugar, UAH/t including VAT**	2083,33	2666,67	4250,00	4925,00 (4250,00)	4925,14 (4083,33)	4677,69
Selling price of sugar beet, UAH/t without VAT	218,9	409,9	478,5	516,0	426,8	-
Selling price of sugar, UAH/t	3156,00	3650,00	6500,00	6895,78	7127,98	from 5300
Wet sugar beet pulp, UAH/t with VAT	10-20	10-25	15-25	20-40	25-50	from 40
Dried sugar beet pulp, UAH/t	1254	1323	1460	1800-2000	2000-2300	from 2500
Molasses, UAH/t with VAT**	650-850	450-550	550-800	500-950	700-1000	1100-1200
Bioethanol, UAH/t with VAT**	5500-6300	6500-8500	6500-7200	7345,00	7500-9800	7800-10000

\*-marketing year begins on September 1 of the current year and ends on August 31 of the following calendar year;

\*\* - minimum purchase price including basic sugar content (16%) for sugar production within quota "A" according to the resolution

\*\*\* - price prevailing in the market at the beginning of the 2013/2014 marketing year.

Source: generated by author using [5, 6, 8]

The development and use of pricing in sugar-beet enterprises is affected by a number of factors which have a direct impact on its implementation and determine its characteristics. The main factors that have direct impact on the implementation of pricing in sugar-beet companies based on marketing are as follows:

- 1) seasonal and short-lived nature of production, a result of inadequate availability of sugar beet;
- 2) energy and material consumption of production: availability of high material costs to repair and run sugar companies, which is reflected in the structure of production costs of sugar production;
- 3) lack of quality raw materials, due to low levels of sugar content of sugar beet;
- 4) the forced conversion of sugar companies on tolling of raw materials due to the lack of their own acreage;
- 5) lack of awareness of management features for managing marketing principles;
- 6) persistent shortage of working capital leads to unwillingness to spend finances for the organization of marketing activities in the enterprises of sugar beet subcomplex;
- 7) increased competition from importing countries from sugar cane [3].

The application of price policy in enterprises of sugar-beet subcomplex in Ukraine should be based on certain principles and laws with regard to the development of modern agricultural markets. The basic principles of marketing price policy enterprises of sugar-beet subcomplex are as follows:

- ensuring the adequacy of the areas of marketing price policy with production activity of enterprise;
- creation of marketing price policy with market conditions and world price of sugar;
- development of marketing price policy that is based on the distribution capabilities of sugar-beet enterprise;
- flexibility of pricing;

- development of marketing price policy depending on the quality of product;
- development of marketing pricing depending on the degree of newness of product;
- consideration of factors that affect the marketing price policy of the company. [7]

Also the development and application of price policy in enterprises of sugar-beet industry within marketing principles is significantly affected by their financial security and financial stability as a financial power and expertise in marketing will enable the company to implement its activities in the marketing elements of pricing.

**Conclusions and recommendations for further research.** To sum up, the price in sugar-beet industry plays an important role, because it balances the demand and supply for main and by-products which must meet the concepts of consumers about the benefits and quality of sugar products. Prices must be competitive and compete in the product market with similar producers, serve as an effective means of competition in wholesale and retail trade. There must be correspondence between the price and the basic elements of marketing communication such as advertising, sales promotion, personal selling, recently used by enterprises sugar industry. Rational and effective value price with product lines, the distribution process and application of communication is a perspective for further research about the implementation and application of price policy and marketing in enterprises of sugar-beet subcomplex.

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# KNOWLEDGE STRUCTURE OF AGRO MANAGEMENT

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Analyzed the structure of the course "management" of the conceptual position of cybernetics, the variant chain management objective phenomena, which should be the basis for the formation of blocks of management knowledge in the following subjects of the course of study and discipline.

**Keywords:** *management, administration, events management, management knowledge blocks, classes topics.*

**Statement of the problem.** Term "Management" as a science - collection of some empirical and theoretical knowledge of managerial phenomena in biological, social, industrial and mixed dynamical systems for which they are characterized as attributes. With regard to theoretical knowledge, they reflect in human consciousness managerial phenomena not only in form, as is typical of the level of empirical knowledge, but also reflect the inner nature of these phenomena in the relevant concepts, categories, laws and principles as objective truth.

**Analysis of recent research and publications.** Conscious assimilation of theoretical knowledge from each discipline, including agrarian management will be successful if they are systematic, with separation of certain homogeneous parts (blocks) in a logical sequence.

In books, textbooks and teaching aids such administrative division of management knowlege, of course, takes place in the form of chapters, modules, themes and more. However, their logical sequence is not always maintained. So it was in the Soviet Union and by the inertia of these defects occur in publications over the years in independent Ukraine: J.S. Zawadzki (1992, 2002)., A. Shegda (2002), S.P. Dem'yanenko (2005), L. Romanova (2006) G. Osovskaya (2007), V.A. Rulyev, S. Hutkevych (2011).

In these and other similar works of sequence structural parts subject is a kind of product of the subjective attitude of authors to the problem.

**The purpose of the study** is to justify logical, objective sequence section s knowledge of agrarian management.

**The main material of the study.** In 1948, first saw the work of Norbert Winner "Cybernetics, or Control and Communication in Animal and the Machine." It

gave rise to a new branch of knowledge - cybernetics as a general theoretical framework of management phenomena.

Science believes animal, machine and human dynamic systems and their associations in different homogeneous and heterogeneous combinations systems of higher order corresponding hierarchy.

That is why the agricultural sector is a kind of macrosystem that consist of the lower order. Among them were and still are the basic agricultural enterprises and agrarians, the management of which is above all a subject of study in the theory of agrarian management. The problem is, as we have worked tested blocks (sections) of knowledge management in objective place, of course, a logical sequence. Noteworthy here that every single unit of knowledge textbooks directly related to specific management events. And therefore suggests offer first try to understand managerial phenomena and their sequence of occurrence and existence at agricultural enterprises.

As noted above from the standpoint of cybernetics agricultural enterprise is a complex system composed of biological, technical and social elements. So from the beginning of the agricultural management theorists should consider carefully the structure of the agricultural complex systems: their past, present and foreseeable future in organizational and legal aspects. Theoretical understanding of this phenomenon and must be the first block (section) knowledge of agrarian management.

The next (second) managerial phenomenon in agriculture is that businesses (agrarians) are in a dynamic state, so from the standpoint of cybernetics to be seen theoretically this condition as the essence of managing them.

The next (third) objective consistent phenomenon observed in the form of managerial employees (management), which is a source of dynamic active state of these entities on earth. This phenomenon has reason abstracted in another (third) block of the theory of knowledge as managerial personnel and administrative bodies.

Prolonged special observation for management events at the enterprise level (households) can offer their continued chain started in proper sequence objective, namely:

- 1) the content of managerial employees;
- 2) types of practical managerial skills of employees;
- 3) performance management personnel;
- 4) opportunities and dominance of certain methods for performing administrative operations;
- 5) factors of practice limitation of management employees;
- 6) results of management.

In line with this objective successive events theory of agrarian management appropriate form similar blocks (sections) knowledge and its divisions as separate subject (Figure 1).

This objective chain management phenomena in harmonious conjunction with their adequate reproduction of the abstract should serve as the core basis of the theory of agrarian management.

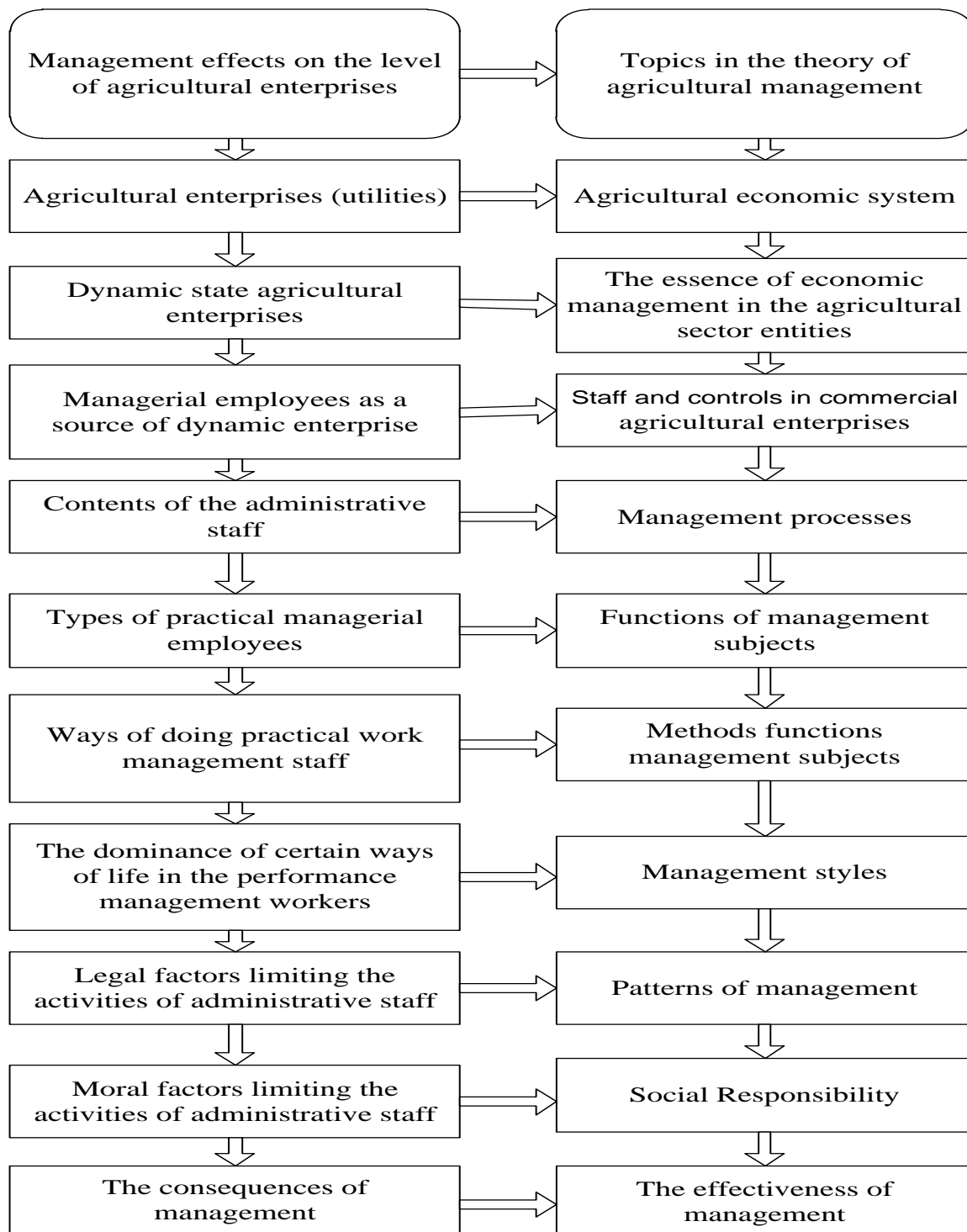


Fig.1 Adequacy partition theory (knowledge units) of agricultural management chain management objective phenomena.

The core management theory and management of national and international acquisitions it is the doctrine of the ordination of management subjects that are different interpretations are reduced to 4 types of jobs manager namely planning, organizing, controlling, and monitoring. So they are interpreted under the bench and in the textbooks, but actual practice manager takes no 4 and 7 general functions, namely: first accounts information assesses the situation determines the destination and then plan organizes, directs and controls. Disputable position of management theory (4 or 7 common functions) deserves the attention of researchers, but it is beyond the purpose of the article.

### **Conclusions and recommendations for further research.**

Management events at agrarian enterprises exist as self-contained sources of empirical knowledge. At the same time, conventional research observations revealed a relationship between them in the form of objective logically sequential circuit, which starts with a specific entity, and manage the consequences till its end.

Since the theory of agricultural management practices are abstracted from administrative phenomena, latter in relation to the theory of the primary. The logic chain management objective phenomena requires similar to the structure of the chain of successive blocks of objective knowledge management.

Depending on the amount of training time on the subject "agrarian management" for specific specialties such knowledge units can be easily distributed to the structural elements of a lower order, the specific topic of this course in the context of circuit blocks of knowledge.

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## **THEORETICAL ASPECTS OF EFFECTIVE USE CARGO TRANSPORT**

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*Theoretical aspects of freight transport of agricultural enterprises and the basic ways to improve its efficiency.*

***Theoretical aspects trucks, farms, transportation hubs, rolling stock, effectiveness.***

Effective functioning of agricultural enterprises formed its structural units, which fully applies the efficient use of trucks, so important is the timely supply of resources for productive activities, including trucks.

The main components of the effective use of trucks include information for transportation, optimized number of rolling stock and its rational use.

**Analysis of the main research and publications.** The study of such subjects were engaged scientists: L. L. Ostrovsky, O. L. Mikhailyuk, V. Semenov, A. A. Matayshvyly, A. I. Vorkuta.

Although transformational changes in the economy of Ukraine and its profitability requires further study of the efficiency of trucks.

**The aim** - to summarize the theoretical aspects of efficient use of trucks and identify ways to improve it in the agricultural enterprises.

Information support of freight traffic, given its specificity, is a necessary part of the use and interaction with other modes of transport. Where freight transport accounts for a large amount of imported and export goods that fall from senders retail and customer service.

**The main material.** Transport is a sector which is at the junction of the production sector and the service sector. It provides transportation of goods and people, developing relationships between companies, industries and regions. It is also called "circulatory system of the economy" because it is a necessary condition for the functioning of the economy. Transport is divided into freight and passenger, depending on what items she carries. Freight transport provides productive links between enterprises and public delivery of products con → tion; major performing

his work is trucking (quantity transported per year in tonnes of cargo) and turnover (the product of the volume of cargo carried on the transport distance (t-km) [1]).

To support the work of the country all modes of transport should be linked to work in concert. The combination of all modes of transport, combined with each other transport networks (roads) and nodes in which there is an exchange of goods and passengers, called the transport system.

The organization of freight transport is important on-time delivery, saving money, effective use of technology, reduce material and labor costs.

One important element of organizational and technical preparation for carriage of goods is to calculate the required number of vehicles. Experience of cargo in the economy shows that the true calculation enables a smaller number of rolling stock to perform scheduled traffic volume.

In recent years, various sources have repeatedly highlighted the issue of container transport food and non-food products, potatoes, vegetables, fruits from field to wholesale companies, which show up development in our country and abroad this progressive method of delivery. Invoked examples of the transport process in some regions of Ukraine gained some experience in the use of containers.

However, the main focus in the study was focused on promoting excellence, with such important issues as the development of the technology and economics of transport.

In the study, considerable attention has been focused on the choice and economic justification of rational economic transportation of products from the field to the buyer and the seller to the consumer.

Transportation of agricultural products from field to wholesale companies based in many cases on imperfect technology, the passage of goods due to the large number of unproductive manual operations, which accounted expend considerable labor, which increases the cost of blanks.

Transportation of agricultural products from field to wholesale companies based in many cases on imperfect technology, the passage of goods due to the large

number of unproductive manual operations, which accounted for considerable labor, which increases the cost of blanks.

A large proportion of freight transport is under the Ministry of Road Transport of Ukraine. In addition, freight transport is in private structures and has different organizational and economic forms of exploitation.

In a market economy it is appropriate to use more than one car bearing capacity because the same load with less load capacity will deliver several vehicles.

Effectiveness and that more digging is only one driver. In early 2000, the average vehicle carrying capacity was 5 tons for specialized vehicles can reduce transportation costs and minimize cost of products provide high culture of traffic.

The most widely for transportation of goods in trade used car with a body type "box" on the chassis of GAZ-52, GAZ-53, ZIL-130. Significantly enhanced operational performance of vehicles using the road trains.

One of the most advanced forms of cargo - is transport of goods in containers and on pallets. The use of containers and pallets allows extensive use of transit cargo delivery, accelerates loading and unloading and delivery to the consumer. This delivery also reduces working ability cargo operations and the need for a loader, improves vehicle use, especially reduced vehicle downtime and the need for container cut. Freight costs [1].

Experience shows that transport in general purpose containers per million tons of cargo saves 3.5-4 million. and can deliver more than 1500 employees. The introduction of a cargo container (10,20,30 etc.) allows 4-5 times increase productivity by handling operations 1.5 times lower cost of operations.

Important role in improving the delivery of goods in the shops is packing on pallets. Packages can be formed from items in any containers, bags, boxes, paper bags and so on. Such transport of goods on pallets from industrial and agricultural enterprises to retail network reduces the need for manual shifting of goods effectively mechanized operations, provides the best means of transport and warehouse capacity [2].

Packet size must not exceed 840 mm in width and 1240 mm in length. At a height when loading Bunk - 1150 mm, single-stage - 1900 mm. Pallet dimensions should be standard, it allows you to organize exchange pallets between companies that supply goods to the tourist complex.

Based on the lessons learned was the introduction of centralized delivery of goods is one of the most important ways to reduce transportation costs. This event has stimulated widespread centralized delivery of food by road from bases wholesale and industrial products companies directly to shops public transport use. Nowadays centralized transportation of goods received extensive development in Kyiv, where thus carried almost all food products.

In 2011. centralized method was carried: 1324.6 thousand tons of flour, 22.7 thousand tons of vegetables, 2,444 tons of milk and milk products. 154.8 thousand tons of fish and fish products, 489.5 thousand tons of meat and meat products, 1222.9 thousand tons of bread and cereal products, 452.3 thousand tons of liquors and 3629.2 thousand . tons of other food products [3].

Number of products with proper centralized delivery, established suppliers who provide quota, indicating the monthly fund products. Based on the customer agrees quota supplier schedule, which by volume, frequency and hours to deliver. Figure importer should be built in such a way as to ensure the continued delivery of the goods in volume and variety, to provide work vehicles in one, two changes [4].

**Conclusion.** Effective use of trucks provided by the following components: information provision in transportation, optimized number of rolling stock and its sustainable use.

The rational combination of these components and their interactions will provide highly efficient use of trucks to solve a number of issues to ensure the production of enterprises.

In addition it will address a number of social issues, including provision of jobs.

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*Theoretical aspects of freight transport of agricultural enterprises and the basic ways to improve its efficiency.*

*Theoretical aspects trucks, farms, transportation hubs, rolling stock, effectiveness.*

UDK 338.439

## **FORMING OF INFORMATIVE POTENTIAL OF ENTERPRISE**

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*The article is devoted research of the system of forming and use of informative potential of enterprise in a market environment.*

**Informative potential of enterprise, strategic informative systems, model of informative potential, market system.**

Efficiency of activity of modern enterprise to a great extent depends on the level of his adapted to the terms of market competition, which stipulates the necessity of forming of powerful informative potential and introduction of the proper system of his management, adequate market requirements. The basic tasks of forming of informative potential of enterprise is determination of him optimum structure taking into account the changes of market environment through the acceleration of practical actions in relation to introduction of innovations, and...

**Analysis of basic researches and publications.** The problem of forming and management of enterprise informative potential is lighted up in labours of foreign scientists: James O.Brayena, K.Neylora, D.Uotermana. Among domestic scientists the problems of effective management the informative systems and informative potential of enterprise scientific labours of O.V.Oliferova are devoted, N.S.Pinchuk, V.F.Sitnika, G.P.Galuzinskogo et al.

**A research purpose** is a ground of ways of the optimum forming and use of informative potential of enterprise for achievement of strategic and tactical aims of his activity taking into account the dynamics of changes of market mechanisms.

**Exposition of basic material.** The different types of financial and immaterial resources are used in business activity of enterprises, thus most ponderable from them are informative resources. Information, information, bases and jars of information, base of knowledges, behave to the basic elements of immaterial resources of enterprise, which form him informative potential. Creation of informative potential

on an enterprise takes place by an accumulation and increase of volumes of information, and the use of it promotes...

Modern approach in relation to the use of informative potential of enterprise focuses on development of infrastructure of the computer informative systems. Use of the corporate informative systems of intranet, informative systems, for leaders, consulting models and informative resources of network, the Internet allows the specialists of enterprise operatively to get information for acceptance of effective administrative decisions, which supports strategy of competitive edge of enterprise.

A table of contents of conception of forming of informative potential of enterprise is in that informative resources must be optimum structured taking into account informative necessities and aims of development of enterprise. The informative necessities of enterprise depend on such factors as: size of enterprise, of a particular branch features, type of production, scientific and technical developments, management level and level of qualification of personnel.

Realization of conception of forming of informative potential of enterprise is effective at terms, when an enterprise is strategically oriented. It stipulates creation of informative bases, banks given and bases of knowledges, which would satisfy methods and mechanisms of conduct of business and provided his transparency and benefit the proprietors of capital.

The fundamental purpose of forming of informative potential of enterprise are creations of such his structure and maintenance, which are above all things able to provide the effective decision of problems of business activity of enterprise and him permanent competitive edge in a market environment.

The analysis of the state of forming and use of informative potential of enterprises of food industry of Ukraine testifies to specificity of these processes, which depend on the features of industry (specialized subindustry of production of food stuffs) which an enterprise belongs to.

The results of analysis rotined that on the enterprises of food industry the informative necessities of departments and structural subdivisions are planned and determined, sources and forms of serve of information are watched, the own systems

"informative appeal" will get organized on the base of the computer informative systems, and also control and analysis of level and quality of satisfaction of informative necessities of specialists, departments and structural subdivisions, is carried out in control system by enterprises.

Practice of business activity of enterprises of food industry testifies to considerable positive influence of the use of the created informative potential of enterprises on results them virobniche-gospodarskoy activity. Yes, on results 2012 in comparison from 2011, growth of industrial production of food products volumes was provided by enterprises in most industries of food and processing industry. On results 2012 most growth of volumes of industrial products is in the production of butter and adiposes – on 14%, redoing, canning of green-stuffs and fruit, – on 10,5%, production of dairy products and ice-cream – on 3,2%, production of cacao, chocolate and sacchariferous pastry wares, – on 3% production of boroshnomel'no-krup"yanoy goods – on 2,6%, production of m"yasa and m"yasnikh products – on 2,5%. The increase of growth of production rates is attained in 15 regions of Ukraine. In particular most: in the Kherson area (on 18%), m. Sevastopol (on 9,8%), to Lviv (on 9,5%), Kirovohrad (on 8,6%) areas and other regions [2].

The conducted analysis testifies also and that the best business results were attained by enterprises which have not only the powerful informative computer systems and informative bases but also is strategically oriented.

Informative potential of enterprise must be strategically oriented. This process is conditioned introduction of the strategic informative systems and technologies on an enterprise. In practice of work of enterprises of the use of strategic information and strategic informative systems instrumental in realization of strategy of competitive edge of enterprise on the internal and global markets of products. Komp"yuterni the informative systems of strategic type are "pushed" through by innovations in business, positively influence on the increase of efficiency of production and fasten the strategic constituent of informative potential of enterprise.

Introduction of the strategic informative systems stipulates perfection of organizational structures of enterprise, reorganization of the computer systems,

arriving at them optimum connection and accordance tasks and aims of business activity.

The strategic aims of business activity determine the model of informative potential of enterprise. In this case forming of informative potential of enterprise focuses on development of such types of the strategic informative systems, which are instrumental in not only perfection of motion of internal and external informative streams and to providing of personala unique informative reports but also increase of volumes of knowledges in the bases of knowledges and their distribution (as to business-experience) in a middle an enterprise.

**Conclusions and prospects of subsequent researches.** Successful activity of enterprise at the market depends on the level of his adapted to the terms of market environment and attained leader positions in competitive activity. Substantial support in this activity is forming of optimum structure of informative potential of enterprise and his effective use.

A growing competition among enterprises carries out conditional "pressure" on business and administrative activity of enterprise, as well as continuous swift scientifically technological development of the computer informative systems and networks, that it is necessary to take into account in the process of forming of informative potential of enterprise.

The choice of model of forming of informative potential of enterprise is carried out in various ways facilities. To our opinion, forming of informative potential of enterprise must take place taking into account own informative necessities, answer character of changes of market environment and certain strategies of development of business activity of enterprise.

The strategically oriented enterprise is let in on the ground in relation to perfection of process of creation of informative potential due to investing of money in development of infrastructure of the computer informative systems, informative bases and banks given, introduction of the strategic informative systems, that in an eventual result is instrumental in successful business activity and strengthening of competitiveness of enterprise at the market.

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*Исследовано систему формування и использования информационного потенциала предприятия в рыночной системе.*

***Информационный потенциал предприятия, стратегические информационные системы, модель информационного потенциала, рыночная система.***

*The article dedicated to research of structure and state of enterprise information potential in market system.*

***Enterprise information potential, strategic information systems, enterprise information potential model, market system.***

# **Farm-Level Evaluation of Land Tenure Changes in case of Zhytomyr Oblast of Ukraine**

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*At the time of USSR collapse in 1991, all of the member countries of the Soviet Union, including Ukraine, had severe difficulties in implementing reforms and innovations.*

*This paper aimed to clarify the process of Agricultural land reform implementation by classifying the evolution of land tenure changes, and discussing the peculiar features of such changes on the farm level.*

*Extensive review of Laws, Decrees, Land Codes, and past studies on land reform in Ukraine were conducted. Data based on questionnaire survey of 50 private farmers of Zhytomyr oblast in 2010 is presented as well, with the aim to study peculiar features of land tenure changes during the reform that are not apparent by examining only policies and legislation.*

***Agricultural land reform, land tenure changes, private farms, farm-level***

Significant changes in land use and land ownership has happened as a result of implementation of Agricultural land reform in Ukraine after the USSR collapsed and Ukraine became an independent country in 1991. In fact, this reform was a complex process, characterized by changes of the whole system of doing agriculture, based on private ownership over collectivization, and private farms and agricultural enterprises over kolkhozes and sovkhoses. Historically, for the first time private farms were created as independent legal entities outside the collectivist framework.

This study aims to highlight the process of land tenure changes after state monopoly on land was eliminated and agricultural land was privatized, as well as to evaluate land transactions at different levels.

The objective of this paper is: to examine the main issues about establishment of private farms and to discuss the farm-level changes in land tenure status of such farms in case of Zhytomyr oblast of Ukraine.

The question of the land tenure changes during the implementation process of the land reform in Ukraine was studied by many scientists, including a significant contribution to the scientific achievements made by D.S. Dobryak, D.I. Babmindra, M.S. Bohira, P.G. Kazmir, A.G. Martin, A.M. Tretiak, M.N. Fedorov, L.Y. Nowakowski, S. Dorohuntsov et al.

The originality of this paper lies in the analysis of land tenure changes from the general outlook of Ukrainian agricultural system right after the implementation of the land reform to the detailed farm management data analysis based on collected data through a questionnaire survey of 50 private farmers of Zhytomyr Oblast of Ukraine in 2010 in order to research peculiar features of land transactions during the process of the reform.

The term “land reform” has a variety of meanings. It may involve the restoration of land rights to previous owners, a process known as land restitution. This occurs in many countries in transition when former private rights in land are being restored. At the same time land reform can also involve redistribution of land rights from one sector to another – for example, like in Ukraine, by taking land from the State and giving it to people.

The first land reform legislation was passed in December 1990 in the form of the Ukrainian Land Code. The objectives of the reform were defined in the resolutions adopted by the Ukrainian Supreme Soviet on December 18, 1990: “The task of this reform is redistribution of land and its transfer to lifetime

inheritable possession of individuals, permanent possession of kolkhozes, sovkhozes, and other enterprises, and also usership, with the purpose of creating equal conditions for the development of different forms of farming ”.

All land in Ukraine is subdivided into different categories, depends on the purpose of use, Table 1 shows the structure of the Land Fund by main categories.

*Table 1. Structure of Ukrainian Land Fund, various years*

Purpose of use	1991		2005		2011	
	Mn ha	%	Mn ha	%	Mn ha	%
Agricultural	42.0	69.6	41.76	69.2	42.9	71.2
Forest	10.2	16.9	10.47	17.4	10.5	17.4
Urbanized	3.5	5.8	2.45	4.1	2.5	4.1
Degraded scrub land	0.9	1.5	0.95	1.6	0.9	1.6
Land Reserve	1.3	2.2	1.05	1.7	1.1	1.7
Water	2.4	4.0	2.42	4.0	2.4	4.0
Unclassified	-----	-----	1.22	2.0	-----	----
<b>Total</b>	<b>60.32</b>	<b>100</b>	<b>60.32</b>	<b>100</b>	<b>60.32</b>	<b>100</b>

Source: State Land Committee of Ukraine, various years

In that case land reform should be understood as redistribution only of agricultural lands and its further transfer into different kinds of ownership after the State monopoly for lands was eliminated with the purpose of creating favorable conditions for development of agricultural sector.

As a result of redistribution of agricultural lands during the reform there are 6.9 million individual owners of arable land, with an average size of land plot of 4.1 ha. Individuals own 28.6 million ha of arable land (67% of total arable land in Ukraine). The remaining arable land belongs to state and municipal arable land reserve fund, according to the State Land Committee of Ukraine.

The December 1990 legislation, with all its restrictive shortcomings, was the first step on the road to new land relations. It took more than a year for additional milestone legislation to be adopted: the Law on Private Farmers passed in December 1991, the Law on Forms of Land Ownership passed in January 1992, and the new Land Code adopted in March 1992. These laws addressed the issue

of “denationalization” of agricultural land by recognizing different forms of land tenure: state ownership, collective ownership, private ownership, possession, and usership.

According to legislation, entitlement to land ownership was not restricted to current land users: all citizens were entitled to own land for farming and other designated uses. The list of approved farming uses included establishment of independent private farms, subsidiary household plots, gardens and vegetable patches. Legitimate non-farming uses of private land included construction of dachas (summer cottages) and garage or storage space.

The list of farming uses covers two categories of eligible persons: individuals who are members and employees of farm enterprises and individuals outside the existing farm enterprises.

To enable land to be allocated to new users, some land cultivated by collective, state, and other farm enterprises was extracted into a state land reserve. This reserve, or redistribution fund, was intended as a pool of land for distribution to individuals who are not members or employees of existing farm enterprises:

- ✧ “Outsiders” receive land for private farms, gardens and vegetable patches, and dacha plots.
- ✧ “Insiders” (members and employees of farm enterprises) receive land for subsidiary household plots.

Creation of private farms is growing in Ukraine, but remains a distant third player in contribution to aggregate production, after the new collective sector and traditional household subsidiary farming. It is therefore necessary to study the peculiar realities of private farms.

In 2010, a questionnaire survey of 50 private farmers was conducted in Zhytomyr Oblast in order to obtain detailed farm management data. An average family among farmers under study consisted of 4 persons. Average

age of the farm head varied from 41 to 44 years. These farmers have sufficient experience in agriculture or necessary agricultural skills, which is compulsory for farm establishment and legal registration.

Majority of studied farmers had high education and an average of 8 years of farming experience (Table 2).

**Table 2.** Profiles of studied private farms in the Oblast

	No.
Studied private farms	50
No. of family members (persons)	
Male	93
Female	114
Total	207
Average family size	4.1
Average age of the heads (years)	42
Distribution of the heads by education (%)	
Tertiary	56
Secondary	42
Primary	2
Distribution of the heads by occupation (%)	
Farming	75
Non-farming activities	25

Source: Farm survey in Zhytomyr Oblast in 2010.

Moreover, all studied farmers are members of Farmers Association, which is an independent public organization that brings together private farmers on a voluntary basis and lobbies for their interests at all levels. The Association represents the interests of more than 43 thousand farmers in Ukraine.

Ukrainian private farmers provided evidence that when the legal framework during the reform created opportunities for producers to function outside collectives, individuals welcomed the opportunity, and acted upon it.

Table 3 shows the creation mode of private farms in studied region (Zhytomyr Oblast of Ukraine) for various years during the reform, which are consistent with the years of creation of studied private farms.

**Table 3.** Creation mode and land resources of private farms of Zhytomyr Oblast, 1995-2008.

Year	No of farms	Total land, ths.ha	Average per farm, ha	Rented-in land, ths.ha
1995-2000	811	45.9	48.5	38.0
2001-2005	3,206	315.3	98.4	247.8
2006-2008	2,295	205.0	89.4	172.4
<b>Overall</b>	<b>6,312</b>	<b>566.2</b>	<b>78.8</b>	<b>458.2</b>

Source: State Land Committee of Ukraine (various years).

It is considered that private farmers in Ukraine are functioning between systems, and are using any possibilities that arise to keep their operations functioning. That they exist at present and that their numbers are increasing is testament to the firmly held belief that land will in the future have value, and that private production is profitable.

According to conducted survey it was observed that there were two distinct peaks in the creation of studied private farms. As it is shown in Table 4, the first wave was in 1995 up to 1999 and the second wave after 2000, immediately after the December 1999 Presidential Decree, which specified details and simplified some procedures for registration of private farms with the aim to accelerate the creation of independent private farms in Ukraine. From the comparison of Table 3 and Table 4 it could be mentioned that the dual picks of creation of studied private farms and private farms of Zhytomyr oblast are consistent.

**Table 4.** *Creation mode and source of obtained land of studied private farmers of Zhytomyr Oblast*

Year of creation	No of farms	Total land (ha)	Owned land (ha)*	Rented-in (ha)	Source of rented-in land acquisition,ha			Average size of farm, ha	SD
					People	Land Reserve	Former Kolkhoz**		
1995-2000	17	367.0	159.0	208.0	122.0	86.0	0	21.7	13.0
2001-2005	25	545.0	243.0	302.0	146.0	127.0	29	22.6	11.2
2006-2007	8	226.0	84.0	142.0	77.0	0	65	31.0	14.5
<b>Overall</b>	<b>50</b>	<b>1,138</b>	<b>486</b>	<b>652.0</b>	<b>345.0</b>	<b>213</b>	<b>94</b>	<b>22.8</b>	<b>12.2</b>

Note: This mark (\*) means that the owned land component has only one source of land acquisition – from the Land Reserve

This mark (\*\*) means that land was obtained from the lands of Former Kolkhoz which did not have official owners yet because of different reasons and were kept as a part of State Reserve until official owners will be found without the right to sell such lands, but to use them for rent only with the aim not to keep the land idle

Source: Farm survey in Zhytomyr Oblast in 2010.

Two-thirds of the respondents reported that they became private farmers to be independent. Prior to taking up private farming, some heads of households were typically employees of the local collective or state farms. In the remaining cases, the farmers used to work in rural services in the village or had managerial positions in the district centre. Majority of farmers who previously worked in the local collective or state farm reported that they were entitled to receive a land plot and some assets when they decided to exit from the collective.

It is interesting to note that all private farmers who were former employees of collectives did not actually use land, but asset shares from the collective to start up their private farms. It could be explained by not willing to pay some taxes in case of registration of this land plots in assets of created private farms as well as lack of wish to submit statistical information about agricultural activities held on these land plots plus governmental check-ups of registered lands were not welcomed too.

Farmers reported that the initial investment in their farms was about

\$4000 - \$5000. Although many farmers confirmed using credit, own savings was the most important source of start up capital. Studied farmers admitted that they experienced problems with finance in different stages of operating their farms, but on balance their outlook was more optimistic than pessimistic.

Moreover, if we would like to talk about land resources of private farms and further changes in land tenure it is useful to mention three sources from which land for private farms could be obtained: 1) from the State Reserve of the district government (the village council); 2) from the former collectives (land plots that did not have official owners yet are kept in reserve and could be rented-out for some period of time for agricultural land not to be idle); 3) from the other private landowners. Majority of studied farmers created their farms with allocations of land from the State Reserve managed by village and district councils.

According to Ukrainian law, any citizen of Ukraine 18 years old or more, who wants to start up a private farm and does not have a land could rent some land from the State Reserve and later has a chance to privatize an average land share free of charge from these rented lands, if conditions are met. Thus, the data collected through the survey confirmed that people used *mostly* the right given by the State to receive a land plot free of charge with the aim to do agriculture. The privately owned component (owned land plot) was about 3 ha per person, which was equal to the size of the average land share in Zhytomyr Oblast.

The source of rented-in land acquisition, which is presented in Table 4, points out the situation in Ukraine with available lands for doing agriculture. As it could be seen from the table, majority of studied private farms, which were created right after the independence of Ukraine and up to 2005

increased their land holdings with the help of Land Reserve or/and other landowners. However, Land Reserve is not unlimited and to obtain a land plots nowadays became more difficult and time consuming comparing to the beginning of the implementation of the land reform. At the same time studied private farmers mentioned one more source of rented-in lands for farm enlargement – from the lands of former collective, which did not have official owners yet and were kept in the reserve. The main source of rented-in lands at present is considered to rent land from other landowners.

In terms of farmland area, studied farms ranged from 6 ha to 50 ha and were divided into three groups with the respect to the size of land resources. Table 5 shows tenure status of studied private farms.

**Table 5.** Classification of studied private farms by size and by land tenure status

	Owner				Owner-tenant					Overall			
	No of farms	Total land, ha	Average farm size, ha	SD	No of farms	Total land, ha	Average farm size, ha	SD	No of contracts	No of farms	Total land, ha	Average farm size, ha	SD
Small 6-15 ha	13	132	7.8	5.3	4	60	15.0	0	5	17	192	11.3	3.6
Medium 16-29 ha	0	0	0	0	18	365	20.3	3.6	42	18	365	20.3	3.6
Large 30-50 ha	0	0	0	0	15	581	38.7	7.1	102	15	581	38.7	7.1
<b>Overall</b>	<b>13</b>	<b>132</b>	<b>7.8</b>	<b>5.3</b>	<b>37</b>	<b>1,006</b>	<b>27.2</b>	<b>11.0</b>	<b>149</b>	<b>50</b>	<b>1,138</b>	<b>22.8</b>	<b>12</b>

Source: Farm survey in Zhytomyr Oblast in 2010.

Among 50 studied farms there are 13 farmers who have only owned land component in their assets, but the rest (37 farmers) are owner-tenants (combination of owned land and rented-in lands). None of the farmers in the sample is renting land out. Table 5 shows that all farmer-owners (13) belong to the smallest group according to the size of land resources, and their average farm size is almost two times smaller comparing to the average farm size for farmers who belong to the smallest group of owner-tenants, and five

times smaller comparing to the owner-tenants from the largest size group appropriately. It certainly points out the fact that *typical* farmer-owner was a single private farmer or cooperation (union) of family members, who contributed their labour and land plots for doing farming together.

The biggest number of owner-tenants farmers is presented in the medium size group, but from the point of view of accumulation of land resources the large size group is taking the first place. Based on the survey, it should be mentioned that majority of owner-tenants farms were single-family farms, and the rest were formed by two families or/and cooperation of partners.

Table 6 presents rented-in land information of studied private farms.

**Table 6.** *Rented-in land information of studied private farms*

	No of farms	No of farms renting-in	No of contracts	Type of rent contract			
				5 years	No of contracts	10 years	No of contracts
Small 6-15 ha	17	4	5	4	5	0	0
Medium 16-29 ha	18	18	42	10	17	8	25
Large 30-50 ha	15	15	102	3	12	12	90
<b>Overall</b>	50	37	149	17	34	20	115

Source: Farm survey in Zhytomyr Oblast in 2010.

It could be observed that among all three groups, small size group has the smallest number of farmers (4 private farmers) who are renting-in some extra land. The special feature of that fact is that farmers of this group have only short-term contracts (only contracts for 5 years). According to the interview with these farmers it could be said that small farmers are not ready to expand their farm size because of different reasons.

On the other hand, according to the survey almost half of studied farmers wished to increase their land holdings, typically up to 50-100 ha. The mean enlargement desired was 85 ha. Those who did not wish to

increase their farm size complained about the lack of machinery, equipment, and capital needed to support larger holdings. Three-quarters of those who wished to expand their farms were already taking active steps to acquire more land, mainly through the village council, from the State Reserve, or by renting land shares from other people.

However, considering the type of rent contract from the Table 6, it could be assumed that the large size group of farmers has stronger market orientation and aims to control the cost of the farm with the help of long-term contract relationship.

From the point of view of quantity of contracts it could be said that majority of private farmers do not rent extra land plots only from one landowner, but from many different ones. That fact has several reasons:

1) Some rented plots are kind of small and sometimes equal 3 ha, which is the average size of land plot in Zhytomyr oblast and always-concentrated in one hand;

2) Farmers are trying to rent-in land plots that are close to their farm area, so land around it is not always concentrated in one hand;

3) Because of former collectives one area could be divided up to 100 separate land plots with different owners (equals past quantity of workers of the collective).

Table 7 presents changes in numbers of studied private farmers along with changes of their land resources for every five-year period from the moment of farm`s establishment.

*Table 7. Studied farms and their land resources for every five-year period from the*

*moment of farm's establishment.*

<b>Year</b>	<b>No of owners</b>	<b>Owned land (ha)</b>	<b>No of owner-tenants</b>	<b>Owned land (ha)</b>	<b>Rented-in land (ha)</b>	<b>Total farmers</b>	<b>Total land area (ha)</b>
<b>2010</b>	<b>13</b>	132	<b>37</b>	453	553	<b>50</b>	1,138
<b>2005</b>	<b>11</b>	105	<b>31</b>	371	444	<b>42</b>	920
<b>2000</b>	<b>4</b>	30	<b>13</b>	155	190	<b>17</b>	375
<b>1995</b>	<b>1</b>	6	<b>1</b>	12	3	<b>2</b>	21

Source: Farm survey in Zhytomyr Oblast in 2010.

The first two private farms in the sample were created in 1995 and the latest year of farm creation was 2007. Comparing the time right after the implementation of the reform (1995) and present period (2010), the total operated land area (Table 7) increased from 21ha to 1,138 ha, as well as number of created private farmers changed from 2 to 50 farmers appropriately. Rented-in land component was also increasing steadily. From these facts it could be assumed that farm-level changes during the reform in general outlook created favorable conditions for private farms' establishment and operation, as far as their number and size were increasing year by year. Another positive effect shows that majority of studied farmers considered farming as their profession and full-time occupation (Table 1)

These changes were promoted also by the issuance of State Act (Deed) on the land plot, which is recognized as the final document confirming the title of ownership to the land plot.

Based on the contents of the State Act it could be concluded that it is not equivalent in legal status to a typical European title document as defined by civil law, because:

✓ The State Act declares that the person owns some unit of property, based on the fulfillment of all administrative conditions, substantiating his/her entitlement.

✓ A Title is a document that declares the status of ownership of a land/property unit based on the civil law status of the person (usually without categorical distinctions) and unbroken chain of transactions.

According to Governmental Statistics, in 2012 in Ukraine 62 thousand State Acts on property rights to land plots were filled and issued in Ukraine.

As a result of reformation 6.92 million citizens have acquired a right to land plot; out of this number 6.41 million State Acts were issued and 70 thousand rental agreements were registered. Such rental agreements for agricultural lands enable as much freedom for performing farming operations as ownership while also providing a primary right of purchase in case of the agricultural land sale moratorium lift and given that land plot holders would be willing to sell off their property.

From the point of view of land tenure changes there were three types of farms in the survey: expanding, maintaining and shrinking farms (Table 8).

**Table 12. Types of farms according to changes in land tenure**

	No of farms	Average area started, ha	Average area 2010, ha	Reasons for maintain or change,%		
				Finance	Machinery	Self-sufficient
Expanding	15	25,1	38.7	80	20	0
Maintaining	26	16.0	16.0	60	20	20
Shrinking	9	23.7	15.7	90	10	0
<b>Overall</b>	<b>50</b>	<b>18.3</b>	<b>22.8</b>			

Source: Farm survey in Zhytomyr Oblast in 2010.

According to the Table 8, majority of studied private farms are maintaining farms, which means that from the moment of their establishment and up to the present time the size of land resources owned or rented-in did not change. Minority of studied farms is shrinking farms and their size of land resources decreased with the time of farm operation. And only 15 farms from the sample belong to farms with increased land area.

Reasons for maintaining or change of land tenure were different, but studied private farmers stressed the main ones:

1) Financial problems – lack of own capital or savings, difficulties with obtaining loans from the banks, as well as the perception that interest rates were too high, and that credit was in short supply;

2) Machinery – lack of machinery or availability of obsolete machines, lack of spare parts or/and technical services;

3) Difficulties with bureaucracy and resistance of local authorities to distribution of land for private farming or with inadequate legislation and lack of real governmental support.

***In conclusion*** it should be mentioned that land reform in Ukraine not only changed the organizational forms of "farm enterprises" but also caused a profound impact on the individual sector, accelerating creation of independent private farms as well as causing structural changes. The change in tenure system during the reform process was promoted by the issuance of State Acts for the land plots, supported by the collapse of kolkhoz/sovkhov system and motivated by cancellation of State monopoly ownership.

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Рассмотрены изменения в использовании земли в следствии проведения аграрной реформы в Украине на основе информации, полученной в результате исследования 50 частных фермеров Житомирской области. Таким образом, двадцатилетний период реформы бул проанализирован с точки зрения причинно-следственного механизма, который характеризует изменения в использовании земли на протяжении всего процесса реформы в Украине на фермерском уровне.

***Сельское хозяйство, аграрная реформа, изменения в землеиспользовании, Житомирская область, фермерский уровень***

Розглянуті зміни у землекористуванні протягом проведення аграрної реформи в Україні на основі інформації, отриманої внаслідок дослідження 50 приватних фермерів Житомирської області. Таким чином, двадцятирічний період реформи було проаналізовано для дослідження причинно-наслідкового механізму, притаманного змінам у землекористуванні у результаті проведення реформи в Україні.

***Сільське господарство, аграрна реформа, зміни у землекористуванні, Житомирська область, фермерський рівень***

## **DEVELOPMENT OF AGRARIAN COMMODITY EXCHANGE MARKET**

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*Estimation of the domestic commodity exchange market and functioning of the agrarian commodity exchange market are shown. Basic problems and trends of domestic agrarian commodity exchange market are described.*

*Keywords: agrarian commodity exchange market, commodity exchange trading of agrarian products, Agrarian Commodity Exchange, commodity exchange contracts, grains.*

**Introduction.** Globalization and intensification of the economic space show that agricultural commodity exchange market influences on the current status and trends in the agricultural sector at the global and national levels. Analysis of agricultural commodity exchange prices is increasingly being used in the world to identify the current situation and forecast the development of the agricultural market in the short, medium and in some cases long term. Forecasting is possible through using the commodity exchange instruments for basic agricultural products such as commodity derivatives. Currently, almost all stock and commodity exchanges turned into universal exchange mergers that along with trading by commodity derivatives provide trading by securities and financial derivatives. Research of the domestic agricultural commodity exchange market shows the low level of its development in comparison with global trends. In this case, the domestic commodity exchange market needs new strategy of its future development.

**Analysis of recent research and publications.** The study of the commodity exchange problems involved in the world a lot of scientists and practitioners. Particularly very popularly classic works in this area published by: A.Burenin, D.Blek, M.Daniel, O.Dehtyarova, R.Mk.Donald. Significant research of the domestic agricultural commodity exchange market were done by: M.Solodky, O.Shpychak, O.Sohatska et al.

**The objective** is to analyze the situation and determine the main ways of agrarian commodity exchange market development.

**The result of research.** Modern state of the domestic agricultural commodity exchange market as part of agricultural market infrastructure shows a low level of development for the past twenty years. No permanent government support and assistance in the development of agrarian commodity exchange trading has influence on the domestic derivatives market formation. This situation leads to the inability of domestic agricultural producers and traders to insurance price risks, and speculators to make a profit. However, the technological level of the domestic agrarian commodity exchange trading still need to be improved in the nearest futures. Analysis of the domestic agrarian commodity exchange market indicates a significant number of commodity exchanges. For a long time, many researchers have mentioned the problems of large number of commodity exchanges, most of which does not meet the requirements of global stock exchange. As of 01.01.2013 according to the data of State Statistics Committee of Ukraine in the domestic commodity exchange market registered 574 commodity exchanges (Table .1) [2]. For comparison, according to the data of World Federation of Exchanges in the world there are about 100 recognized stock exchanges.

*Table 1*

**Dynamics of commodity exchange's number in Ukraine**

Types of exchanges	2009	2010	2011	2012	2013	Correlation 2013 year to 2009 year, +/-%
Universal	103	106	106	107	108	+5
Commodity	318	341	368	391	400	+26
Agro-Industrial	26	25	25	25	24	-8
Other	37	38	38	39	42	+14
Total	484	510	537	562	574	+19

Source: [ 2 ]

Dynamics of commodity exchange's number in Ukraine for 2009 – 2013 shows an increase about 19%. Consideration of the structure of commodity exchange market

shows that the greatest increase – 26% observed by number of commodity exchanges, and a reduction number of agro – industrial exchanges to - 8%. It should be noted that such a large number of commodity exchanges not include the stock exchanges. The main problem in this situation is imperfect legislation, which does not regulate the certification process and requirements for commodity exchanges, including the size of the share capital and technical equipment. Most commodity exchanges trade by such commodities that are not found on any global exchange, thus domestic commodity exchanges mainly work as commodities auction.

Analysis of agricultural commodity trading in our country shows the increase in volumes from 2009 by 2012, especially plant products, such as cereals (Table 2). However, according to the State Statistics Committee of Ukraine in the first half of 2013 there is a significant decline in overall commodity exchange market to - 77 %. The biggest impact was the decline in crop production exchange trading (- 84%) and livestock (- 45%). However, a significant increase in the commodity exchange market has timber (+ 63).

*Table 2*

**The structure of the national commodity exchange market, billions UAH**

Types of commodities	2009p.	2010p.	2011p.	2012p.	I semester 2013p.	I semester 2012p.	Value for the first half of 2013 to the first half of 2012 + / -%
Total	73,769	51,441	94,420	118,544	11,378	49,071	-77
Timber	0,066	0,344	0,948	1,298	0,989	0,605	+63
Fuel	7,219	2,630	7,524	6,281	3,786	3,360	+13
Plant products	39,482	43,787	60,247	74,845	4,299	26,276	-84
Livestock	0,385	-	3,114	3,045	0,853	1,554	-45
Foodstuff	1,159	2,272	20,140	28,542	0,216	16,046	-97
Other	25,458	2,408	2,447	4,533	1,235	1,230	0

Source : [ 2 ]

This situation can be explain by government requirements for mandatory registration of grain export contracts at the commodity exchanges. For a long time the

agricultural products were most traded on the commodity exchanges. More than 90% of all agricultural commodity exchange trading was provided by one commodity exchange – Agrarian Commodity Exchange. Agrarian Commodity Exchange was established to create an organized agricultural market and increase its efficiency. Functioning of Agrarian Commodity Exchange is regulated under the legislative acts, the main ones are the Law of Ukraine "On State Support of Agriculture of Ukraine"[1], and the Decree of Cabinet of Ministers of Ukraine "On the establishment of the Agrarian Commodity Exchange "[3].

**Conclusions and suggestions.** In summary it should be noted that the increase in Agrarian Commodity Exchange trading in recent years have largely been achieved through the registration of grain export contracts on the accredited exchanges that had no practical impact on the pricing and stabilization of agricultural market. Another problem is low level of forward trading and absence of derivatives trading on the agrarian commodity exchange market.

The main ways of agrarian commodity exchange market development in Ukraine are: stabilization of the political and economic environment in the country, improve the mechanism of regulation of domestic agricultural commodity exchange market, development of organizational and legal conditions for attracting foreign speculative capital, improving the financial sustainability of agricultural producers, the presence of an effective infrastructure on the commodity exchange market, providing access to electronic information, licensing professional traders on the commodity exchange market, creating the necessary level of material and technological support of domestic commodity exchanges.

Fully agrarian commodity exchange market is transformed into the center of pricing and price risk insurance only if begin derivatives trading. The process of implementation must be done step by step and requires the establishment of the abovementioned organizational and economic conditions.

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