

Ministry of Education and Science of Ukraine
Poltava State Agrarian Academy

**SECURITY OF THE XXI CENTURY:
NATIONAL AND GEOPOLITICAL ASPECTS**

Collective monograph

In edition I. Markina, Doctor of Sciences (Economics), Professor



Nemoros s.r.o.
Prague, 2019

Editorial Board:

Roman Rossi, Hon. Dr., President of the Eastern European Center of the Fundamental Researchers (EECFR), Prague, Czech Republic;

Valentyna Aranchii, Ph.D. in Economics, Professor, Rector of Poltava State Agrarian Academy, Poltava, Ukraine;

Yuri Safonov, Doctor of Sciences (Economics), Professor, National Economic University named after Vadym Hetman, Kyiv, Ukraine;

Viktorïia Riashchenko, Dr. oec., Professor, ISMA University, Department of Management, Riga, Latvia;

Oksana Zhylynska, Doctor of Sciences (Economics), Professor, Taras Shevchenko National University of Kyiv, Ukraine;

Dmytro Diachkov, Ph.D. in Economics, Associate Professor, Poltava State Agrarian Academy, Poltava, Ukraine;

Diana Kucherenko, Ph.D. in Economics, Associate Professor, member of Academic Council of the Eastern European Center of the Fundamental Researchers, Science and Research Institute of Social and Economic Development;

Chief Editor:

Iryna Markina, Doctor of Sciences (Economics), Professor, Poltava State Agrarian Academy, Poltava, Ukraine;

Reviewers:

Csaba Lentner, Doctor of Sciences (Economics), Full Professor, Head of the Institute, National University of Public Service, Public Finance Research Institute, Budapest, Hungary;

Anatoliy Balanda, Doctor of Sciences (Economics), Professor, Professor of the special department of the Educational and Scientific Institute of retraining and professional development of the personnel of the Security Service of Ukraine of the National Academy of Security Service of Ukraine, Kyiv, Ukraine;

Aivar Stankevich, Dr. oec., Daugavpils University, Institute of Humanities and Social Sciences, Daugavpils, Latvia.

*Recommended for publication by Academic Council of
Poltava State Agrarian Academy
(Protocol No. 14 dated 5 February 2019)*

*Recommended for publication by Academic Council of
the Institute of education content modernization of
the Ministry of Education and Science of Ukraine
(Protocol No. 10 dated December 21, 2018)*

*Recommended for publication by Scientific Institution of
the Information Systems Management University
(Protocol No. 2-19 dated January 30, 2019)*

The monograph is prepared in the framework of research topics: Management of national security in the context of globalization challenges: macro, micro, regional and sectoral levels» (state registration number 0118U005209, Poltava State Agrarian Academy, Ukraine), «Macroeconomic planning and management of the higher education system of Ukraine: philosophy and methodology» (state registration number 0117U002531, Institute of education content modernization of the Ministry of Education and Science of Ukraine, Ukraine), «Business security: national and global aspects» (Protocol 2-19 of January 30, 2019, Information Systems Management University, Latvia).

Any partial or entire reproduction, of this document should cite the source. Materials are printed in original languages. The authors are responsible for the statement, the content and reliability of the materials.

© Copyright by
Eastern European Center of the
Fundamental Researchers,
Nemoros s.r.o.,
Rubna 716/24, 110 00, Prague 1

ISBN 978-617-673-845-9

Nemoros s.r.o.,
Rubna 716/24, 110 00, Prague 1
Czech Republic, 2019

PREFACE

In the early 21st century, the world faces with cardinal transformations accompanied by changes in geopolitical configurations, integration processes and other changes that affect the state of national and geopolitical security. The events of the last decade have revealed an exacerbation of the problems of global security and the ambiguous impact of the processes of globalization on the development of different countries. Under the circumstances, the rivalry between the leading countries for redistribution of spheres of influence is stirring up and the threat of the use of force methods in sorting out differences between them is increasing. The global escalation of terrorism has become real, the flow of illegal migration and the probability of the emergence of new nuclear states are steadily increasing, and international organized crime is becoming a threat. In addition, in many countries there is an exacerbation of socio-political and socio-economic problems that are transforming into armed conflicts, the escalation of which is a real threat to international peace and stability. These and other factors have led to the fact that the potential of threats to global and national security has reached a level where, without developing a system state policy to protect national interests and appropriate mechanisms of its implementation, there may be a question of the existence of individual countries as sovereign states.

The threat of danger is an immanent, integral component of the process of civilization advancement, which has its stages, parameters and specific nature. Obviously, the problem of security in general, and national one in particular, should be objectively considered in terms of its role participation in the development process, that is, to set it up as both destructive and constructive functions (as regards the latter, it is necessary to emphasize the undeniable fact that the phenomenon of safety is based on counteraction to the phenomena of danger, the necessity of protection from which exactly stimulates the process of accelerating the search for effective mechanisms of counteraction).

The formation of new integration economic relations in Ukraine and the intensification of competition objectively force managers of all levels to change radically the spectrum of views on the processes of formation and implementation of the security management system in unstable external environment that is hard to predict. Today, the main task is to adapt not to changes in market conditions of operation, but to the speed of these changes. In this regard, there is a need to develop effective security management mechanisms that are capable of responding adequately and in due time to changes both in the internal and external environment. Therefore, this problem is being paid more attention in theoretical research works of scientists and practical activity of business entities.

Taking into account the fact that the traditional means of national and geopolitical security as a mechanism in its various models, forms, systems have reached their limits, since they do not contribute to solving the problems of globalization of the

civilization development, there is an objective need to form a paradigm of security management in the 21st century, which aims to confront destruction processes; to harmonize activities of socio-economic systems: society, organization, the state, the world. The joint monograph "The Security of the 21st Century: National and Geopolitical Aspects" is devoted to these and other problems. The progress in the development of the theory of security management on the basis of the analysis of theoretical and methodological works of scientists and the experience of skilled workers presented in the joint monograph creates opportunities for the practical use of the accumulated experience, and their implementation should become the basis for choosing the focus for further research aimed at improving the security management system at the national and international levels. In the joint monograph, considerable attention is paid to solving practical problems connected with the formation of the organizational and legal mechanism of organization of the security system in terms of globalization by developing methods, principles, levers and tools of management taking into account modern scientific approaches.

In the monograph, the research results and scientific viewpoints of the authors of different countries are presented in connection with the following aspects of security management: national security, food, environmental and biological security, economic and financial security, social security, personnel and education security, technological and energy security, information and cyber security, geopolitical security.

The authors have performed a very wide range of tasks – from the formation of conceptual principles of security management at the micro, macro and world levels to the applied aspects of management of individual components of national security.

The monograph "The Security of the 21st Century: National and Geopolitical Aspects" consists of five parts and 70 subparts, each of which is a logical consideration of the common problem.

The structure of the monograph, namely the presence of particular parts, helps to focus on the conceptual issues of the formation and development of national, economic, financial, social, food, environmental, biological, personnel, educational, technological, energy, information, geopolitical security, and problems of the maintenance of the practical process of application of the developed cases.

The joint monograph is prepared in the context of three research topics: "National security management in terms of globalization challenges: macro, micro, regional and industry levels" (State registration number 0118U005209); "Macroeconomic planning and management of the higher education system of Ukraine: philosophy and methodology" (State registration number 117U002531); "Business security: national and global aspects" (Protocol 2-19 of January 30, 2019, Information Systems Management University, Latvia), which emphasizes not only scientific but also practical focus.

The results of the research works presented in the joint monograph have a research and practice value.

The advantage of the joint monograph is the system and logic of the structure, the simplicity and accessibility of the material presentation, the presence of examples and illustrations.

We believe that the monograph will become one more step towards a scientific solution of the problems concerning the formation of an effective system of security management under trying circumstances of globalization.

*Iryna Markina,
Doctor of Sciences (Economics), Professor,
Poltava State Agrarian Academy,
Poltava, Ukraine*

CONTENT

PREFACE

PART 1. THE DEVELOPMENT OF THE MODERN PARADIGM OF SECURITY MANAGEMENT AT THE NATIONAL AND GEOPOLITICAL LEVELS

Markina I., Opeoluva O. The peculiarities of geopolitical security of the country under globalization 11

Oriekhova T., Kuryliak V., Dergachova V., Iksarova N. Innovative factors of the investment behaviour transformation in the context of international security 18

Malska M., Antonyuk N., Malskyi M. Security challenges to international tourism: national and world trends 24

Zhylynska O., Bazhenova O., Kukhta P., Vikulova A. The investment priorities and security of national economic development in the context of globalization 30

Rodchenko V., Prus Y. Spatial component of providing the basic conditions for the security of the national economy 35

Prykazyuk N., Motashko T. Risks insurance of mining enterprises in Ukraine: an innovative approach 43

Zachosova N., Nosan N. Threats for financial security of Ukraine in the banking and non-bank financial sectors: tendencies of the time or negligence of the national regulators work? 53

Borshch V. Health care as an integral element of the national security . . . 59

Volokhova L., Ievsieienko O., Kovalov M. State regulation of marine insurance in Ukraine as a national security factor. 65

Vakhlakova V. Evaluation system within economic security studies of the microlevel: the structure and the correlation between its elements. 76

Dedilova T., Kirchataya I. Influence of innovative activity on foreign economic security in the context of the modern processes of globalization. 83

Skyba M. Theoretical aspect institutional basis of national security of Ukraine 89

Varaksina E. Competitiveness of the agricultural sector is the key factor of providing food security of the national economy 95

Kobchenko M. Peculiarities of the land relations system in Ukraine on the basis of sustainable development. 101

PART 2. CHALLENGES AND THREATS TO ECONOMIC SECURITY UNDER THE TRANSFORMATION OF NATIONAL AND TRANSNATIONAL RELATIONS

Aranchii V., Zoria O., Riznychenko O. Factors of forming the economic security of enterprise 106

Kopitov R, Marga Z, Riashchenko V. Enhancing business safety: improving value-based management	115
Safonov Y, Borshch V. Financing of ukrainian healthcare system within the economic security of a country	127
Kozachenko G., Pogorelov Y., Bilousova A. Development of threats to enterprise activity	134
Rudenko-Sudarieva L., Lukianenko O., Shevchenko Y. International investment behaviour of corporations in the format of investment security ..	141
Sumets O., Demchenko N., Siromiatnikov P. The economic security service of the modern company: analog model, creation algorithm	147
Danko Y., Halynska A. Marketing system of competitiveness as a key to economic security	154
Bublyk M., Bondarchuk M., Vivchar O. Management of sanation innovations as a part of economic security industrial and financial group.	160
Kopytko M., Zhyvko Z., Leskiv G. Marketing innovations as a particular composition of the process of management of innovative activities and competitiveness of enterprises: safe aspects.	166
Gudz O., Prokopenko N., Fenenko P., Lozinska Z. State level financial support for development of small enterprises in the context of economic security: foreign experience and natioanal realities.	172
Maslennikov Y., Poberezhets O., Lomachynska I. Theoretical and methodological aspects of the results of economic entities' activity	178
Maslak O., Grishko N., Ishchenko S., Maslak M. Enterprise economic behavior: essence, classification, principles	187
Bilovska O. Model of interdependent system «competitiveness – economic security»	197
Potapiuk I. The enterprise economic security: methodological aspects of the management mechanism formation	204
Pomaz O., Pomaz J, Shulzhenko I. Sustainable agriculture development of Ukraine in the context of economic, environmental and food security	210
Voronina V., Halych O. Economic security of enterprises: the essence, factors of influence, and methods of protection	217
Kovalenko M. Economic security of agrarian enterprise: essence, constituents and factors of providing	223

PART 3. THE MECHANISMS OF ENSURING ECOLOGICAL, FOOD, TECHNOLOGICAL, AND ENERGY SECURITY IN THE DYNAMIC ENVIRONMENT

Pisarenko V., Pisarenko P., Pisarenko V. Organic farming: technology, marketing	230
Kozyrieva O., Sagaidak-Nikitiuk R., Mykolenko O. Realization of the cluster	

model for pharmaceutical development in Ukraine	237
Taraniuk L., Hongzhou Q. Logistic management of agricultural enterprises of china in the system of food safety.....	243
Makhmudov H., Mykhailova O., Pisarenko S. Food security as a fundamental factor of national security	249
Balan V., Tymchenko I., Tymchenko O. Create energy security strategy based on space-analysis	254
Burdelna H., Bozhenko A. Energy security management at regional level: economic and environmental aspects	261
Lykholat S., Mykhalitska N., Veresklya M. Classification of risks and threats to the economic security of the small business sector	269
Omelyanenko V. Main aspects of technological & innovation development strategies (security based approach)	273
Pavlenko O., Opanasiuk Y., Taraniuk K. Methodological basis for ensuring the environmental security of the territory	280
Skupeiko V., Lykholat S., Voznyuk O. Features of the institutional and economic mechanism for ensuring competitiveness of the agricultural enterprises as principles of economic security	286
Svatiuk O., Dzyubina K., Tuvakova N. Environmental security management as function of state institutions	293
Peredera S., Shcherbakova N., Peredera Z., Petrenko M., Galatova A., Bezhodko O. Benzapyrene content in the environment and feeds	300
Syomych M. Peculiarities of public management of environmental and economic security of a region.	312
Yudicheva O., Kalashnyk O., Moroz S., Kalian O. Quality and safety of food as a component of food of safety	319
Dyvnych O., Voron'ko-Nevidnycha T., Demydenko L. Development of the plant growing industry as a prerequisite for ensuring food security of Ukraine	326
Fedirets O., Ustik T. The strategy of innovation support for agrarian enterprises as an element of technological safet.	333
Lopushynska O. Current state and ways of solving resource conservation problems at the enterprises of the processing industry of Ukraine.	338
Aksyuk Y. Concept of active marketing influence on grain production in the context of food security	343
Bolshakova Y. Peculiarities of functioning of security management system at domestic meat-processing enterprises.	348
Vovk M. Technological restructuring as a factor of providing the food security of Ukraine	353

Zamykula O. Increasing the efficiency of operating activity of agrarian enterprises on the basis of energy conservation	358
--	-----

PART 4. INNOVATION ASPECTS OF FORMING SOCIAL, EDUCATIONAL, AND INFORMATION SECURITY

Rossi R., Kucherenko D. Priorities of Ukrainian market of the forming lifelong learning system	364
Szatmári P., Suha G. Applied methods in international education cooperation policies	371
Krisko A., Tatay T. The new instruments of payments in the 21st century	380
Sharavara T., Sharavara R., Liulka V. Educational security in the context of ensuring national interests of Ukraine	389
Mykhailova L., Mykhailov A., Kyrychenko T. Gender policy of population employment in the system of formation of Ukraine's personnel security	396
Morhulets O. Ensuring economic security of university by modernization of managerial approaches	404
Pishenina K. Features of government regulation educational cluster for the objective of the supply social security	410
Antoshkin C. Peculiarities of social and economic security of agrarian enterprises	415
Potapiuk L. Information security in the professional activities of the software engineers	421
Sazonova T., Ostashova V. Mediation of labour disputes: legal and practical aspects	427
Ovcharuk O. Information security within the framework of anti-crisis management	433
Diachkov D. Information security threats on the part of the personnel: specifics of origin and realization	438
Tkachenko V. Theoretical bases of management of the professional safety of enterprise in the transformational economy	444

PART 5: MANAGEMENT OF ECONOMIC SECURITY IN CONDITIONS OF INTEGRATION PROCESSES: CASE OF UKRAINE

Khudolei V., Ponomarenko T. Economic security of the country as an imperative of national security and sustainable development factor in overcoming threats	449
Potential, opportunities and threats of integration for economic security of Ukraine	459
Proposals on the concept of economic security of Ukraine	483

DEVELOPMENT OF THE PLANT GROWING INDUSTRY AS A PREREQUISITE FOR ENSURING FOOD SECURITY OF UKRAINE

Olga Dyvnych,

PhD in Economics, Associate Professor,

Tetiana Voron'ko-Nevidnycha,

PhD in Economics, Associate Professor,

Lesia Demydenko,

PhD in Economics, Associate Professor,

Poltava State Agrarian Academy, Poltava, Ukraine

Plant growing plays exceptionally an important role in Ukraine's food security formation as it provides the population with food products, livestock raising with forage, food, processing and light industry -with raw materials, foreign trade - with export products. In particular, in 2017, compared to 2010, the specific weight of products of plant origin in the structure of exports of agricultural and food products increased by 12 percentage points and is 52%. At the same time 70,4% falls on grain crops, and 22,3% - seeds and fruits of oil-bearing crops [6, p. 31]. However, to date, some plant growing industries are in crisis, are low-profitable, which requires the development of measures to improve their efficiency. Under market conditions the economic instability of production is manifested not only in the productive but also in the cost component of the production efficiency. Therefore, an important place in the study of food security is the issue of economic efficiency of plant growing products production. The resolution of this issue should be carried out not only at the state but also at the regional level, where the issues of food supply to the population are solved.

Stability, productivity and efficiency as well as the level of competitiveness of an enterprise of any form of ownership are caused by the following main factors: the size of land, the level of technical and technological equipment and management. Under such conditions those entities of entrepreneurial activity, which organically combine the entrepreneurial and organizational talent of the manager with other production resources, are more effective.

The gross agricultural output in Ukraine for 2010-2017 varied, as indicated by the chain growth indices. Thus, in 2017, compared with 2016, production decreased by 3,2%, including plant growing production - by 3% [6, p. 38-39]. It should be noted that in the period from 2013 to 2017, the share of agricultural enterprises in the production of agricultural products increased from 54% to 56.4% [9, p. 47].

In the structure of the gross output of agricultural enterprises the steady predominance of crop production is 77.3%, respectively, livestock products account for 22.7% of gross output [6, p. 47].

The development of the crop sector is determined by the dynamics and structure

of the crop area, yield, the dynamics of gross fees, cost indicators - the dynamics of outlay, cost, profit, as well as relative indicators - the level of profitability and the rate of profit used to compare the effectiveness of the industry of different management entities.

During 2013-2017 there was a decrease in the area from which the harvest of grain crops in agricultural enterprises was collected by 9% and equals 10509,7 thousand hectares (66,2% of the sown area). In this case, the harvested area of sugar beet increased by 35.5% to 294.1 thousand hectares or 1.9% of the sown area of commodity crops. At the same time the harvested area of sunflower increased by 20.4% to 4980.6 thousand hectares, the specific gravity of this crop increased to 31.3%, which indicates the irrationality of the structure of the crop area [6, p. 103].

In Ukraine a steady decrease in the harvested area of potatoes, vegetable crops, fruit and berry crops is observed.

In the structure of the sown area of crops in agricultural enterprises of Ukraine the largest specific gravity is occupied by crops of grain and leguminous plants - 54.9% (Fig. 1). Among grain and leguminous crops the main place belongs to wheat - 46.2%, corn for grain - 32.8%, barley - 12.3%, while grain legumes account for 4.3%.

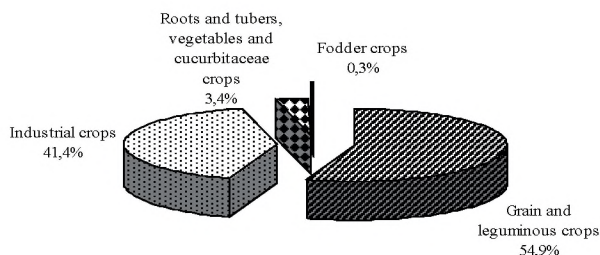


Fig. 1. Structure of sown area under agricultural crops in 2017, percentage of total area

Source: built according to the data [5, p. 13]

The second place in the structure of sown areas is industrial crops - 41.4%. Among industrial crops the main place is sunflower growing - 63.0% and soybeans - 23.0%, rape and colza have less value - 9.7% and sugar beet - 3.7%.

The share of fodder crops due to the reduction of the livestock sector is constantly decreasing and in 2017 it is 3.4%. Among the fodder crops, the largest specific gravity is fodder corn and perennial grasses for the hay and green feed.

An important condition for the growth of the economic efficiency of plant growing sectors is to increase the productivity of all agricultural crops and to reduce the material and monetary costs for the production and sale of output. Possible

reserve of improvement of the first order factors testifies experience and significant differences in the level of productivity between individual enterprises which are comparatively in identical conditions (Table 1).

Table 1

The dynamics of crop productivity in agricultural enterprises of Ukraine, 2013 – 2017

Indices	Years					Average annual growth rate, %
	2013	2014	2015	2016	2017	
Grain and leguminous crops	43,0	47,5	43,8	50,0	45,6	1,5
Factory sugar beet	419,4	490,2	448,2	494,0	484,1	3,7
Sunflower	22,8	20,5	23,0	23,5	21,3	-1,7
Potatoes	221,2	256,4	198,6	212,1	238,4	1,9
Vegetables	312,3	346,4	363,4	382,7	435,3	8,7
Fruits and berries	64,0	53,7	70,8	72,5	64,9	0,3

Source: compiled according to the data [6, p. 102].

Average annual growth rates indicate that virtually all crops have an increase in yields except for sunflower. The yield of grain and leguminous crops in agricultural enterprises of Ukraine in 2017 compared to 2013 increased by 2.6 centners / hectare (6%), but the decrease in sown area led to a 3.5% decrease in grain production.

The yield of sugar beet increased by 64.7 c / ha (15.4%) and amounted to 484.1 c / ha, while the yield of sunflower fell by 1.5 c / ha (6.6%) to 21.3 c / ha. Yields of potatoes, vegetable crops and fruit and berry crops tended to increase, but potato production decreased by 34.9%, fruit and berry crops by 24.9%.

In this regard, despite the decrease in sunflower yield, its production for the analyzed period increased by 12.2% and equals 10596.7 ths. tons.

According to the data of the table 2, 77.4% of grain production is attributed to agricultural enterprises, including 14% to farms, which is 2.1 percentage points more compared to 2013. Accordingly, the production of grain in households increased by 1.4 percentage points to 22.6%.

Sugar beet production in agricultural enterprises increased significantly as compared with households - by 11.3 pp to 95.6%. There is also an increase in the production of sunflower seeds in agricultural enterprises - by 1.1 pp and equals 86.6%, including farms - 19.3% and vegetable crops - 2.8%, although their share does not exceed 14.5%.

At the same time the production of potatoes and fruit and berry crops remains the priority of households.

The possibilities of an agricultural enterprise to realize the main strategic goal of its development - maximizing profits, are always limited to the volume of production costs and demand for products. Under these conditions, management decisions can

not be made by the management of an enterprise without an analysis of available production costs and the dynamics of their change in perspective.

Table 2

Structure of production agricultural crops by types of agricultural holdings, percentage to total production

Indices	Years					2017 from 2013, (+,-)
	2013	2014	2015	2016	2017	
Agricultural enterprises						
Grain and leguminous crops	78,8	78,1	77,3	78,7	77,4	-1,4
Factory sugar beet	84,3	92,8	92,5	95,3	95,6	11,3
Sunflower	85,5	85,7	85,4	86,1	86,6	1,1
Potatoes	3,0	3,2	2,2	2,2	1,9	-1,1
Vegetables	11,7	13,9	13,9	14,1	14,5	2,8
Fruits and berries	19,4	16,6	19,1	18,5	16,3	-3,1
Households						
Grain and leguminous crops	21,2	21,9	22,7	21,3	22,6	1,4
Factory sugar beet	15,7	7,2	7,5	4,7	4,4	-11,3
Sunflower	14,5	14,3	14,6	13,9	13,4	-1,1
Potatoes	97,0	96,8	97,8	97,8	98,1	1,1
Vegetables	88,3	86,1	86,1	85,9	85,5	-2,8
Fruits and berries	80,6	83,4	80,9	81,5	83,7	3,1

Source: compiled according to the data [5, p. 32-33]

It should be noted that during the last five years there has been some change in the cost for production plant growing output (Fig. 2).

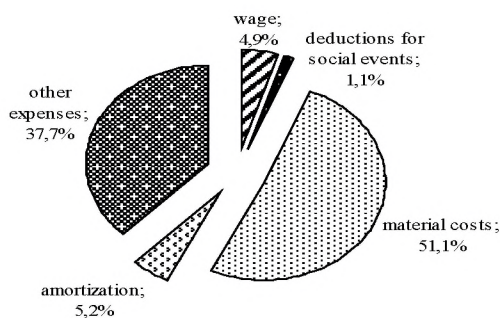


Fig. 2. Structure of Costs for Crop Production in Ukraine, 2017

Source: compiled according to [1]

In particular, the share of expenditure on labour decreased by 2.2 percentage points to 4.9%, respectively, deductions for social events - by 1.5 percentage points and is 1.1%. At the same time, the share of material costs decreases each year and in 2017 it is 51.1% which is 14.9 pp less compared to 2013. At the same time, the share of other expenditures increased by 19.3 pp by increasing the amount of payment for land lease and total production costs.

Table 3

Structure of material costs for plant growing production in agricultural enterprises of Ukraine

Cost items	2013	2015	2017	2017 (+,-) from	
				2013	2015
Direct costs of agricultural crops production including	100	100	100	x	x
seeds and planting materials	19,1	16,8	19,2	0,1	2,4
other agricultural products	0,9	0,5	2,0	1,1	1,5
inorganic fertilizers	24,4	26,6	31,3	6,9	4,7
oil products	18	16,7	17,8	-0,2	1,1
electric power	1,5	1,0	1,0	-0,5	0,0
fuel	1,7	1,2	1,4	-0,3	0,2
spare parts, repair and building materials for repairs	8	9,8	10,4	2,4	0,6
payment for services and work of other organizations	26,4	27,4	16,8	-9,6	-10,6

Source: compiled according to [1; 3; 4]

Since material costs occupy the largest share in the structure of costs and prime cost of plant growing production, it is important to analyze the structure of these costs and assess the factors influencing their dynamics (Table 3).

In the structure of material costs forming the prime cost of crop production in 2017, compared to 2013, the share of mineral fertilizer costs increased by 6.9 pp, spare parts, repair and building materials for repairs - by 2, 4 pp, seeds and planting materials - by 0.1 pp. At the same time, the share of expenses on fuel and lubricants decreased by 0.2 percentage points, which is conditioned by the active use of energy and resource-saving technologies, while the share of expenses for payment for services and work performed by other organizations decreased by 9.6 pp. to 16.8%.

Pricing for agricultural products is one of the most important ways of using economic laws for the further development of agricultural production. The index of prices on sale of agricultural products takes into account the sale of agricultural products to processing enterprises, on the market, to the population in payment for labor, shareholders for rent payments for land and property shares, exchanges, auctions and other areas. The basis for weighing to aggregate these changes is the

actual volume of sales of the respective types of products during the reporting period (Fig. 3).

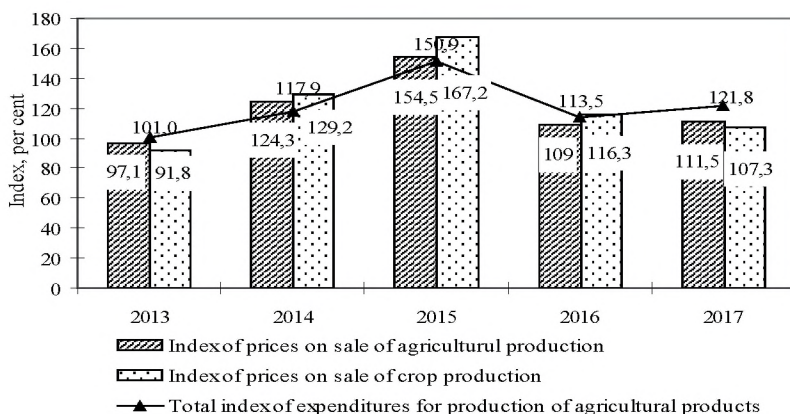


Fig. 3. Dynamics of the sales price index and the index of production costs in agricultural enterprises of Ukraine, % (to the previous year)

Source: compiled according to [2; 6, p. 183]

As shown in Fig. 3 the largest increase in the index of prices for sales of products in agricultural enterprises was observed in 2014 - 124.3% and in 2015 - 154.5%, whereas in 2017 it decreased to 111.5%. In recent years the index of expenditures on agricultural production exceeded the index of prices of sold products, which adversely affects the financial results of enterprises.

Average prices for the sale of crop production had a steady upward trend. Thus, the price of sales of grain and leguminous crops increased by 2.9 times, oilseeds - 3 times, sugar beet - 2.1 times.

The main indicator that characterizes financial results of activity is profit. During the examine period, net profit of agricultural enterprises increased by 5.3 times and amounted to UAH 78457,7 thousand, while the share of enterprises that received net profit remained unchanged - 86.7%. The level of profitability of economic activity increased by 10.4 pp. and is 18.7% and the level of profitability of operating activity increased by 11.8pp. to 23.5% which indicates an increase in the efficiency of agricultural production [6, p. 174].

In general, agricultural enterprises in Ukraine have an increase in the efficiency of plant growing production (Fig. 4).

Thus, the profitability level of grain and leguminous crops production increased by 22.6 pp and is 25%, the efficiency of production of sunflower seeds - by 13.1 pp to 41.3%, the efficiency of beet sugar production - by 9.3 pp. and equals 12.4%.

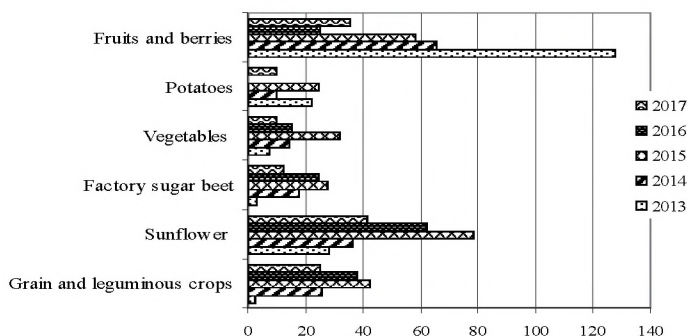


Fig. 4. Dynamics of the profitability level of plant growing production in agricultural enterprises of Ukraine, %

Source: compiled according to the data [6, p. 177]

Consequently, in the development of plant growing industry the following trends, which determine the level of food and economic security in Ukraine, are observed:

1. The expansion of industrial crops areas (sunflower and soybeans) by reducing the sown area of forage and grain crops.

2. The increase in crop yields is relatively low due to the low level of implementation of innovations and information technologies.

3. The growing role of farms in the production of grain crops and sunflower seeds.

4. The production of potatoes and fruit and berry crops remains the priority of households.

5. In the structure of the production costs of the plant growing production sector the share of other expenses constantly increases due to the increase of rent and total production costs.

6. In the structure of material costs changes are gradually taking place in favour of increasing the share of expenses for mineral fertilizer and spare parts, repair and building materials for repairs, while the share of expenses for the payment for services of other organizations substantially decreases.

7. The effectiveness of plant growing production varies considerably over the years due to a significant increase in the cost component compared to sales prices.

References:

1. Costs for the production of agricultural products in agricultural enterprises in 2017. 2017. State Statistics Service of Ukraine. [ONLINE] Available at: <http://www.ukrstat.gov.ua>. [Accessed 15.01.2019]

2. Price indices of sold agricultural products. 2017. State Statistics Service of Ukraine. [ONLINE] Available at: <http://www.ukrstat.gov.ua>. [Accessed 15.01.2019]
3. The main economic indicators of agricultural production in agricultural enterprises. 2013: A statistical bulletin. 2014. State Statistics Service of Ukraine. 84.
4. The main economic indicators of agricultural production in agricultural enterprises. 2015: A statistical bulletin. 2016. State Statistics Service of Ukraine. 48.
5. Plant Growing of Ukraine. 2017: Statistical Collection. State Statistics Service of Ukraine. 2018. 222.
6. Plant Growing of Ukraine. 2017: Statistical Collection State Statistics Service of Ukraine. 2018. 245.

THE STRATEGY OF INNOVATION SUPPORT FOR AGRARIAN ENTERPRISES AS AN ELEMENT OF TECHNOLOGICAL SAFETY

Oleg Fedirets,

Ph.D. in Economics, Associate Professor,

Tetiana Ustik,

Ph.D. in Economics, Associate Professor, Doctoral student,

Poltava State Agrarian Academy, Poltava, Ukraine

In market economy, the most important condition for enterprise development is of competitive production. One of the directions of its support is the effective use of scientific, engineering, and technological potential, the revival of creative activity of inventors and industrial rationalizers.

Scientific and technical progress in agriculture involves the improvement of machines and mechanisms, the organization of production technology, soil cultivation systems. The high use of machine and tractor fleet is ensured by the establishment of rational technological, technical and organizational systems and other measures to implement the properties of agricultural machinery with designed features that guarantee high productivity in specified agricultural and technical terms with the greatest economic efficiency.

Technological safety is an enterprise security from internal and external factors that break appropriate functioning of the support systems, threaten the effective operation of production systems and life-support systems, thus causing a threat to the enterprise itself.

The task is, besides a significant increase in the returns from the existing production potential and agricultural equipment designed on the basis of the latest technology, to create new models of machines and units, which would significantly improve the productivity and efficiency of land and labor resources. This problem becomes more acute in the conditions of development of market relations in

Markina I., Aranchiy V., Safonov Y., Zhylinska O. and other. Security of the XXI century: national and geopolitical aspects: [collective monograph] / in edition I. Markina. – Prague. – Nemoros s.r.o. – 2019. – Czech Republic. — 500 p.

Scientific publication

**Security of the XXI century:
national and geopolitical aspects**

Collective monograph

In edition I. Markina, Doctor of Sciences (Economics), Professor

English language

Passed for printing 15.02.2019

Circulation 500 copies

ISBN 978-617-673-845-9

Nemoros s.r.o.,
Rubna 716/24, 110 00, Prague 1
Czech Republic, 2019