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Poltava State Agrarian Academy

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GLOBALIZATION CHALLENGES. ISSUE 2**

Collective monograph

In edition I.Markina, Doctor of Economic Sciences, Professor



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## PREFACE

Globalization, as the establishment of the world integrity, is manifested, above all, in the formation of a single socio-economic, political, cultural and informational space.

The growing intensification of the interdependence of peoples and states is extended to all spheres of public life. Globalization and regionalization have become the determinative processes of the world development, the main vectors of the present. As new trends in modern post-industrial development, they lead to the emergence of new requirements for management in the 21st century, which is increasingly influenced by processes of globalization and integration, involving the consideration of regional peculiarities in the process of effective implementation of global management. However, the peculiar to the beginning of the third millennium dependence of the dynamics of society development on the quality of management activities determines the need for a solid rethinking and critical analysis of the fundamental concepts and categories of management sphere.

Traditional management, as a mechanism in its various models, forms, systems, has exhausted itself, since it does not contribute to solving the globalization problems of the development of civilization, which caused the objective need for formulation of the recent paradigm of management of the 21st century – management, the essence of which is to resist the processes of self-destruction; to create conditions for the harmonization of open self-regulatory systems: of a person, an organization, a society; to create conditions for the realization of creative potential of each person; to form and implement the management mechanism at all levels for any open socio-economic system.

These and other problems determined the need for further research in the field of modern management, which led to the integration of the results in the second issue of the joint monograph «Management of the 21st century: globalization challenges. Issue 2».

The joint monograph presents the trends in the theory of management that are developed on the basis of the analysis of scientific-theoretical and methodological works of scientists and practitioners and create opportunities for the practical use of the accumulated experience, determine the content of management, and awareness of them is supposed to become the basis for the choice of focuses for further research aimed at improving the theory of management. In the joint monograph, much attention is paid to the practical tasks connected with the formation of organizational and economic mechanism of corporate management in the context of globalization, the development of methods, principles, models of management, taking into account modern scientific approaches and consolidated informatization of business processes of modern enterprises.

The monograph presents the results of the research and scientific attitude of authors from different countries to innovative aspects of management: management

of organization as a socio-economic system, innovation, investment and information management in the system of a modern enterprise, personnel management in a modern organization, branch and regional aspects of modern management, public administration, agrarian management, tourism business management, international business management, risk management, management of security and competitiveness of the enterprise, marketing management, modern approaches to management of higher education.

The authors covered a wide range of problems – from the formation of conceptual foundations of the management of the potential for development of the state to the applied aspects of management of its individual subsystems.

The monograph consists of four parts, each of which is quite independent in terms of problem area. The structure of the monograph, presented by four parts: development of modern paradigm of management: globalization and national aspects; management of modern socio-economic systems: a sectoral and regional approach; current national and global fundamentals of social and economic systems' development; the legal, sociocultural and educational aspects of society management, helps to focus on the conceptual problems of the formation and development of the socio-economic and socio-ecological component as well as problems of ensuring the process of practical application of the developed management models.

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

The results of the research works presented in the joint monograph have a scientific and practical importance.

We believe that the monograph will become one more step towards a scientific solution of the problems in the context of formation of the effective management system under complicated globalization conditions.

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# **PART 1. DEVELOPMENT OF MODERN PARADIGM OF MANAGEMENT IN UKRAINE GLOBALIZATION AND NATIONAL ASPECTS**

## **THE PECULIARITIES OF ENSURING DEMOGRAPHIC SECURITY OF THE COUNTRY**

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Over the last decade, both in the scientific literature and in speeches of public figures and practitioners around the world the terminology has been used more often, directly or indirectly connected with the notion of demographic security. At the same time, some states are actively involved in activities aimed at developing programs and measures that regulate the principles and ways to ensure demographic security.

Under the present conditions, the urgency of studying the issues of demographic security is caused by several reasons:

first of all, in most countries there is a growing role of demographic component and increasing its influence (most often negative) on the social-economic development of the society;

as a result, governments of various countries have to solve objectively a wide range of demographic problems, which have reached the status of national threats. Thus, an urgent need arises to consider the peculiarities of demographic security;

hence, the demographic situation of any country generally reflects its social-economic wellbeing, formed by both past and present social processes. It is evident that ensuring demographic and in the broad sense national security can only be based on the objective assessment of the current situation.

Analyzing the essence of the notion of demographic security, especially its ontological component is not less important.

Most scholars confirm that demographic security is one of the kinds of the country's security, and its regions. Along with it there are economic, military, and social securities. Demographic security interacts with other sectors of social-economic relations and it cannot be considered only as a field of auxiliary interests of the state, which has only a utilitarian value to solve geopolitical tasks.

Thus, according to Rybakovskyi L., demographic security can be represented as a state of demographic processes, which is sufficient for the population reproduction without the considerable influence of external factor and providing human resources to achieve geopolitical interests of the state [11].

Other authors share the opinion that demographic security is the functioning and

developing of the population in its age-sex and ethnic parameters, its correlation with the national interests, consisting in ensuring its integrity, independence, sovereignty and the preservation of the existing geopolitical status [7, p. 15].

Steshenko V.S. notes that demographic security is such a state demo-reproductive processes that does not have real or potential negative effects on the country's development [12, p. 54].

According to Gorbulin V.P. and Kachynskiy A.B., demographic security is the protection of life and the processes of natural continuous reproduction of people. Demographic security requires consistent implementation by the state and society of social-economic, political, legal, moral-psychological and other measures to preserve and improve the people's health [3, p. 23].

In official documents the definition of demographic security is given only in the "Methods of calculating the level of economic security of Ukraine", in which demographic security is mentioned as one of the components of economic security of Ukraine and it is treated as protection of the state, society and the labor market from demographic threats, which ensures the development of Ukraine taking into account the totality of balanced demographic interests of the state, society, and the individual in accordance with the constitutional rights of the citizens of Ukraine [9].

It is necessary to take into account that demographic security purposes, being the priority for the society, yet co-exist with others, which are also important – the objectives of social, economic, political, security, performing system forming function that contributes to forming the priorities of ensuring the national security.

Besides, demographic security has independent significance, as it is connected with one of the most fundamental aspects of human activity – procreation, and therefore life continuation. Only in case of supporting health, longevity, reproductive activity of the population it is possible to solve successfully social-historical tasks [1, p. 241].

On the basis of generalization it was found that demographic security of the state is affected by the following factors: historical peculiarities; geographic position and economic situation; resource base; internal and external relations in the country; education, health protection; the position and processes taking place in other countries. Thus, the level of demographic security reflects the state of the society's resistance to various unfavorable factors hindering its development. According to this approach, reducing the country's population is the indicator of danger showing the drawbacks of organizational-state mechanism of ensuring the population's vital activity, causing the threat to the country's status. Therefore, demographic processes (birth-rate, mortality-rate, migration, etc.) in the society, have, if not purely social, but precisely social-economic character.

So, in the author's opinion demographic security is a category penetrating all the sectors, segments, sectors of the human population vital activity. Therefore, it is impossible to imagine it outside of any of the national security sub-groups (Fig. 1).

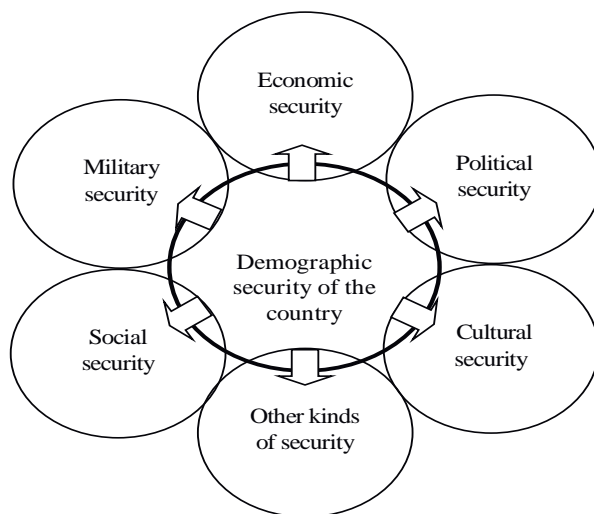


Fig. 1. The relationship of demographic security with various aspects of the national security [summarized from 5, 8]

Thus, in the broad sense demographic security is connected with almost all sectors of social vital activity, and requires separation, especially because of its ever-growing importance for Ukraine. All the above mentioned shows, that theoretically it is extremely difficult to substantiate the attribution of demographic security to a separate kind of the national security.

The demographic situation in Ukraine has been worsening in recent decades - demographers note the spreading of depopulation in the country. The population is decreasing every year as a result of natural and mechanical migration; the process of the nation's aging is going on, the indices of demographic burden on the population are growing; the reduced birth-rate in the long run will result in decreasing labor force and potential of the country. Thus, ensuring optimal demographic situation is one of the priority tasks for the Government, because all the wealth in the country is created by the labor of the population – the main productive force, labor resource potential [4].

During 2018 the population of Ukraine decreased by 233.2 thousand people by January, 1 it had been 42 million 153 thousand persons. This is stated in the express issue “The demographic situation in 2018”, published on the official website of the State Statistics Service of Ukraine [13].

According to the data the number of deceased persons in Ukraine exceeds the number of births: 100 deaths accounted for 57 births. In 2018, 335.9 thousand children were born in the country and 587.7 thousand persons died. Migration increased on 18.6 thousand people.

According to the latest All-Ukrainian census conducted in December 2001, the

population of Ukraine was 48,415,000 people.

According to the official data of the Ministry of Social Policy, about 3.2 million citizens of Ukraine stay permanently abroad to earn money without taking into account Ukrainians who travel abroad for seasonal work [2].

Another important factor for analysis is average life expectancy. The index of life expectancy shows how long the average citizen of the country will live. The essential conditions are permanence of birth rate and mortality rate, because based on these data the average life expectancy is calculated. The average life expectancy in Ukraine in 2018 was 68.8 years, and it is absolutely equivalent for both gender categories. This index is not only much less than the corresponding indices in Western European countries, but is still considerably lower than the average life expectancy in the world. According to the UN, it is 71 years. It is worth mentioning that there is a significant difference in life expectancy between men and women. If the average life expectancy of men in the world is 74.6 years, in Ukraine it is only 62.6, or 12 years less [13, 14].

In particular, the sectors of social-economic threats include high and rising level of unemployment, social and economic stratification of the population, increased poverty, criminalization of the economy, low living standards in the country; the social-psychological factors are physical degradation of the population, degradation of the institution of the family and life values. The violation of ethnic and cultural traditions is also an important factor in emerging demographic threats because their sharp change can lead to moral confusion of the population, the violations of value priorities. The worsening of ecological situation in Ukraine has a negative impact on public health, resulting in lower reproductive capacity of the population and reducing life expectancy. An important condition for overcoming the demographic crisis is solving political and armed conflicts in Ukraine.

The main threats to the demographic security of Ukraine are reflected in Fig. 2.

Demographic threats are such factors and their complex, which may cause destabilization of the demographic system and, as a result have unfavorable effect on demographic and economic security on the whole. The threats, leading to demographic danger are divided into external and internal. The internal threats are the factors that arise directly in the demographic system and are described by its quantitative and qualitative characteristics. Social, economic, political, military, environmental, informational influences are external threats having both direct and indirect impact on demographic security of the country [8, 10]. The specifics of basic demographic threats systematized above, is limited to their having inter-object (inter-state, interregional, etc.) nature.

That is demographic security of any country in the world is determined not only by demographic processes taking place in it, but also by the demographic processes that take place outside the country (in neighboring states, regions, etc.).

Thus, the demographic situation must be constantly and fully controlled by the state, regulated by implementing the corresponding demographic policy – a complex

of measures aimed at forming stable qualitative and quantitative characteristics of the population reproduction, the objectives of which are to overcome the negative demographic tendencies and solve the urgent problems.

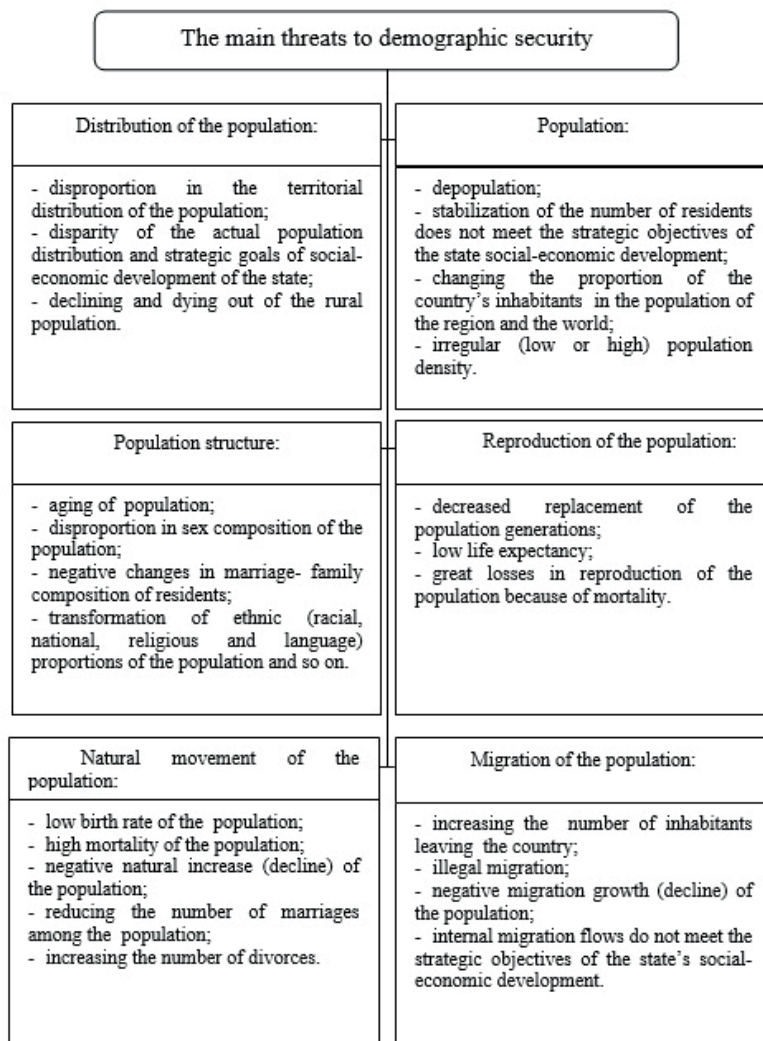


Fig.2. The main components of the country's demographic security [formed on the basis of 3, 5, 6, 14].

The country's population must be protected that is why the corresponding demographic policy should be pursued by implementing measures to overcome

the demographic and economic crises. In Ukraine there is a need to increase the population, so the country's leadership should influence the processes of the population reproduction, which can be achieved by encouraging a favorable demographic behavior of the citizens, especially in family planning.

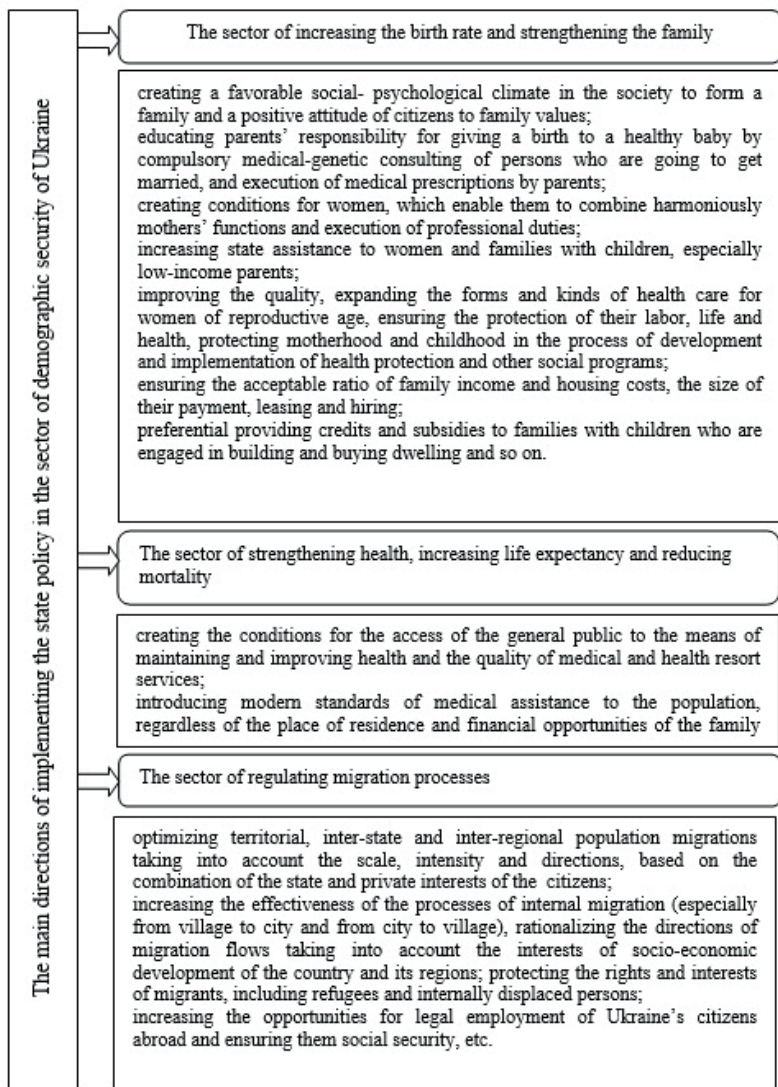


Fig. 3. The main directions of implementing the state policy in the sector of demographic security of Ukraine [formed on the basis of 4, 5, 6, 13, and 14].



Therefore, to achieve the appropriate level of demographic security in Ukraine its priority tasks should be:

- firstly, stabilizing birth-rate and bringing it in the long-term prospect to the level that ensures the simple demographic reproduction mode;
- secondly, improving the population's health, reducing mortality and increasing the average life expectancy;
- thirdly, strengthening the institution of the family, marriage-family relations and improving vital activity conditions;
- fourthly, improving the regulation of migration processes [10].

Based on the above-mentioned tasks, the main directions of implementing the state policy in the sector of demographic security of Ukraine are reflected in Fig. 3.

The main impact of the state on demographic processes can be carried out through the mechanisms of state administration, the main of them are the following ones:

There are the following mechanisms of regulating the state demographic policy:

- firstly, the legal mechanism of regulating demographic policy (creating unified legal and administrative standards of behavior);
- secondly, the economic mechanism of regulating demographic policy (providing direct financial aid, subsidies from the state budget or local budgets, indirect financial assistance);
- thirdly, information-psychological mechanism of regulating demographic policy (using mass media, art with the aim of forming public opinion, the standards of demographic behavior, definite demographic climate in the society) [14].

Thus, the demographic factor is essential for sustainable economic growth, guaranteeing economic and national security of the country because there is no sense in all other sectors of the state security, if there is no the main factor – the population, due to which all these sectors exist.

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## **BASIS FOR STRATEGIC MANAGEMENT AT HEALTHCARE ENTERPRISES**

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Provision of healthcare is the responsibility of every government to assure the health of its most valuable asset, people. Advancement in healthcare includes the development of new diagnostic procedures, new techniques, new equipments, and new drugs. These techniques are developed to diagnose diseases faster at an early stage before the disease is fully developed, shorten lengthy procedures allowing

shorter hospital stays and create new drugs that combat illness in more efficient way with fewer side effects. The practice of medicine is being revolutionalized by these techniques, however, these techniques are a result of serious research i.e. they cost money to develop and therefore, the saving achieved by these techniques is eaten by the cost of the high technology.

The great development in healthcare is also matched by the development of new standards of care, which is updated annually to match the changes in the healthcare system. The Joint Commission for the Accreditation of Healthcare Organizations (JCAHO) is updating its standards of healthcare provision almost annually. To comply with these standards hospitals have to carry on mass changes that cost a lot of money, another cost factor that is not accounted for while planning the budget for a healthcare organization.

Healthcare is a continuously developing system; it is a dynamic system that requires a dynamic system for its management. The old management by objectives system is of no value in the management of the new era of healthcare. There is a need for a dynamic management system, clear vision, and a strategic management plan to decrease cost and ensure quality of services for our patients.

Total Quality Management (TQM) is a management system developed in Japan and use for over 30 years before it became know world wide it proved to be an excellent system for provision of quality services, decreasing cost, concentrating on customers' needs and achieves full staff involvement and support as well as their satisfaction. The system is dynamic that is suitable for continuously changing and developing organizations and services. Through its Continuous Quality Improvement model it can solve problems, improve processes and decrease cost. It is an ideal system for healthcare where it allows coping with the rapid change and manages the whole organization simultaneously. JCAHO approved and requires the application of this system in all healthcare facilities that seeks JCAHO accreditation.

Before we go into the details of managing healthcare we have to understand all its aspects and all factors affecting this growing system. These aspects are: standards of healthcare and how they affect healthcare delivery, the business side of health, and the quality and its impact on healthcare delivery and promotion.

Standards: the standards of healthcare are believed to be set to assure the quality of the services we provide to our patients, yet it is just the starting point in quality. Quality of services can be improved continuously to achieve customer's satisfaction beyond JCAHO standards. The JCAHO sets the standards of practice however; it basically categorizes services as functions and sets the requirements for documentations of the services. Therefore, to provide quality services we have to start with the standards and build on to create the level of services desired by our customers. Our customers are the one who determine the quality of our services since they are at the receiving end and they are the ones whom we have obligation to satisfy, after all they are the ones who pay for our services.

Business side of healthcare: healthcare recently underwent serious transformation,

i.e. the same forces that transformed and reshaped much of the world's economy also affected our healthcare system. Healthcare became a huge business driven by market demand. Our customers became more informed, more assertive, and more demanding. Their busy daily schedules don't allow for long waiting hours for the doctors, nor for the acceptance of one physician's opinion "doctors know best" it looks like that the same demythification process of pharmacy profession, that took place following the launch of Pharmaceutical industry is reshaping the public belief in the medical profession. Customers seek quality, and go into extensive evaluation and reviews for the best doctor in the field. Also customers are not only looking for quality services but they demand convenience for the services they receive.

Healthcare providers are faced with number of issues to consider while planning for their organizations, one of the main issues is the Return On Investment (ROI); ROI has come to the forefront with the advent of the Balanced Budget Act and other financial pressures. ROI is defined as a financial measurement that looks at the percentage return on the use of specific assets (usually money, but not always) the normal formula to calculate ROI is:

*ROI= Net income divided by the owner's equity*

or

*ROI= Revenue traceable to the efforts divided by the investment made*

Generally in industry it is easy to understand and calculate the ROI yet in healthcare we are faced with number of issues that are unique to healthcare both on the impact and limit our ability to measure ROI for marketing these include e.g. innovation capital of medical facility.

There is often a significant time delay between marketing efforts and when a service is actually used. How many people come in for open-heart surgery during or right after a three-month cardiac services ad campaign.

Most healthcare usage is not planned or spontaneous. In fact usage is frequently avoided until the need becomes acute. People don't wake up and decide that today would be a good day for bypass surgery.

Many of the financial accounting systems used by providers are not geared to easily provide accurate pricing, cost, and margin information. One major problem in our industry is how we allocate overhead and the resulting margin. Our financial systems force every unit of measure (admission, visits etc.) to take a pied of the entity's overhead. While this is reasonable for annual auditing purposes, it does not make sense in measuring the ROI of a specific marketing effort. In most cases, new volume is incremental and does not result in any new overhead or fixed costs (unless significant levels of new volume are gained and maintained).

Many of the information systems used by providers are not geared to easily and quickly measure volume changes or specific usage tied to specific marketing efforts.

The bottom line is that we need to remember that marketing in healthcare is

more than tactical public relations and advertising. Marketing involves efforts that range from sales calls and physician relation to 24-hour phone access, system “ease of use”, facility quality and pricing for elective or non-insured services. Some marketing efforts do have near-term tangible returns. Other efforts, however, involve the long-term building and maintenance of the “Brand”. It is hard to attach an ROI to this brand building; through it can be measure quantitatively using broader objectives. However, ROI should be included during setting any marketing plan or strategy however, we have to keep these points in mind and not to expect the ROI will be easily assessed. It could be a long-term result.

Quality of Services: the Institute Of Medicine (IOM) defined quality of care as “the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge”. It has also been demonstrated that delivery of high-quality care, as defined by the IOM, is a collaborative endeavor and not the exclusive domain of any one discipline, department, or organization. Unfortunately, in the quest to operationalize this definition, the core healthcare principle-first, do no harm-seems to have been forgotten.

While fee-for-service are perceived by some to encourage overuse of care and managed care’s capitation system is thought to encourage underuse, clearly neither system exists to encourage misuse of medical services. Yet, according to the Centers for Disease Control and Prevention (1999), deaths due to preventable adverse events exceeded deaths attributable to AIDS, breast cancer and even motor vehicle accidents in 1998.

Using information to identify and effectively address opportunities for improvement and documenting and demonstrating the results of such efforts are critical for survival in today’s healthcare environment. Both hospitals and managed Care Organizations (MCOs) are challenged to meet these demands in environments in which healthcare resources are diminishing, yet the requirements to demonstrate, improve, and sustain quality of care are increasing.

In early hospital Quality Improvement (QI) attempts, members of each respective discipline were charged with designing and coordinating their own projects; thus they never gained an appreciation for working collaboratively with one another. Although the 1990s rectified that situation as organizations experienced the power of interdisciplinary collaboration in their QI efforts, the next logical outgrowth, that of interorganizational collaboration, has yet to occur consistently. Establishing an interorganizational approach to quality as a core operational process within MCOs and their network hospitals will cultivate refinement of care that stems not from fiscal implications but rather from making the «right thing to do, the easiest thing to do whether it is in the doctor’s office, the hospital, or the managed care organization».

The role of quality management is to assure the provision of high quality services, minimize or eliminate preventable adverse effects, maximize the

utilization of resources, improving processes with collaboration of all concerned parties and minimizing the waste attributed to misuse of services. Quality is achieved by implementing a management system that oversees all aspects of care as complementing each other and work through processes improvement to achieve their goals. The efforts of Quality management will be reflected positively on the business side of healthcare and will eventually reduce the cost of healthcare.

Developing a strategy for healthcare organizations is not a simple task, it requires full understanding of the current market challenges, evaluation of our customer satisfaction, evaluation of our current operations, assessment of the quality of our services. The strategy starts with the organizational leadership vision, and values statement, followed by development of objectives and devising a plan to the implementation of the means to achieve these objectives.

The first step as we stated earlier is the vision of the leadership, vision states the future where the organization wants to be at the said time driven by values which covers the accountability, continuous improvement, customer driven services, and the quality of the services provided.

Development of a management process for our organization is practically a Plan Doc Check Act (PDCA) cycle and it goes through five Phases:

Plan: Phase I: this phase include the feed back to the organization from different resources, e.g. Customers complaints, processes failure, stakeholders remarks, employees feedback, and the market place surveys. This data will identify the key business-related aspects of healthcare and provide clear picture on how the organization is performing, also it will highlight areas of strength and weaknesses in the organization.

Phase II: Objectives of the organization will be driven from the work atmosphere and the feedback of the working staff discussing their problems and proposing solutions for these problems. To obtain these objectives the leadership has to go through the process of Policy Deployment (PD).

Policy Deployment (PD) was borrowed from the Japanese, and the name itself isn't likely to tell a great deal about it. PD is a simple straightforward process, which provides a powerful structure to communicate to your organization through the use of facts and data, the direction you want to move your organization.

PD creates the structure to set strategic objectives, both short-term (one to two years) and longer term (five to seven years), however, in healthcare we can't go that far with our strategic planning, where the changes in healthcare is quite drastic and maximum 5 years plan will be more than we can go for. PD compels your organization through the use of facts and data to develop very specific plans and projects to meet those objectives.

PD process can be organized in the following manner:

1. Executives request all managers to submit a list of problem area.
2. Managers request their staff to find out what their problems were.
3. List of problems and areas of improvements are passed to the PD Committee.

4. Executives will carry on their own assessment and surveys to evaluate customer's satisfaction.

5. All the information gathered plus the staff problems list and areas of improvement is passed to the PD committee, which is made up of senior management.

6. PD committee along with an executive committee formulates the fundamental objectives of the organization.

7. Organizational objectives will be formulated based on the final outcome of the PD process.

Do: Phase III: The results of PD will be reflected not only in setting the organizational objectives but it will be expressed in projects and other improvement activities. Therefore, Phase III puts organization and infrastructure around the output of Phase II. It will describe Who, Will do what, by when, and for What purpose, with What linkage to the system etc.

Check: Phase IV: Management efforts are now aimed at the following:

1. Keep activities focused on the selected themes.

2. Discourage dissipating energies with other legitimate but unsolicited goals and strategies.

3. Encourage persistence; continue to demonstrate management interest and support.

4. Support the use of data and logic. Discourage careless short –cuts and reliance on opinion data.

5. Extract and organize the learning, which continuously occurs in each effort. Redirect these learning back into the system.

Act: Phase V: The management reviews Feedback on the results of the different projects and process improvement efforts. This will allow the management to assess the progress made, and accept or reject the recommended changes based on the results. Data collected will give the organization the strength to make changes and modification of its operational system based on facts and data.

Planning the strategy for your organization starts by Vision, however, assessment of your current operational functions and evaluating your organization performance is the key to establishing efficient objectives. It will point out your points of strength and weaknesses that will be an asset in devising you objectives. Data gathered through the process of PD will be of great value in shaping your future look.

It is quite clear that to have effective management of your organization, it is necessary to establish a quality management department. Quality Improvement (QI) efforts will be the major force in improving the performance of your organization and increase your efficiency. Quality has been viewed by some organizations as an accessory that they can do without, however, it was proven beyond any doubt that it could be the most important function that guides you strategic planning of your organization, improve services, gain customers satisfaction and decrease cost.

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## TRENDS OF SOCIAL ENTREPRENEURSHIP

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The aim of the abstract is to investigate the role of social business and its contribution to the development of a modern society. Definition, types and representatives of this business area are investigated in this article as well. Resources for social entrepreneurs available on market are analysed, both with current trends and issues of social business. Tools to accelerate social business are offered with the conclusion that appropriate education may boost potential of this entrepreneurial activity and some already elaborated programs observed in this article could become a basis for equal courses implementation in the other countries as well.

In this article, the authors are going to examine the phenomenon of social entrepreneurship, and to give a definition of this concept on a basis of opinions of various researchers. Stated research problem is to analyze the development of social entrepreneurship, current issues and trends with an aim to clarify main tools of accelerating social entrepreneurial activity. The development of the social entrepreneurship as a separate growing part of a modern business process is the main objective of the paper. The research on challenges and benefits social entrepreneurship brings to its stakeholders in different countries and regions is made, existing relationships within the system and the environment are analysed, foundations and available resources are mentioned to be used by the entrepreneurs with an aim to get a support. Main conclusions of the research are obtained in the result of review of latest scientific progress and according publications in the consonance with own

obtained experience: the need to change legislation according to the needs of the social entrepreneurs, wide work with publics should be provided to stimulate its activity and readiness to participate in the process of social entrepreneurship as it brings wider outcome for a society at large and to establish its sustainability, educational process should foster the social business development offering education opportunities within the field at several study levels and in different forms.

Research problem is to analyse the development of social entrepreneurship, current issues and trends which will underpin main tools of accelerating social business.

Main objective of the abstract is social entrepreneurship, its development.

For the study of the problem of social entrepreneurship the following methods were used: analysis of scientific and business literature, observations and interviews.

Methodological basis includes the following methods: system analysis - used to assess the challenges and benefits of social entrepreneurship in US, Europe and Latvia, the system of relationships between suppliers of services and publics, foundations and resources offered by the European Union.

Research results: the development stages of social entrepreneurship were analysed, tools to accelerate the social business were offered, education process as one of the most beneficial aspect to contribute the implementation of social entrepreneurship was offered to be taken into a consideration.

Research limitations: limited access to information for a truly complex evaluation and the fear of executives to reveal particularities of their business, which are connected to social entrepreneurship services in Latvia.

Originality/meaning: this article aims to identify challenges and benefits of social business in different countries and identifies the educational aspect among most beneficial tools of accelerating social entrepreneurship.

It seems obvious the development of our civilization reached self-actualization level (according to the Maslow's pyramid hierarchy) at the beginning of the 21st century as concept of social entrepreneurship is popular than ever before. The idea when profit is gained it is possible and even desirable to share received contribution with others took minds of the progressive people from many countries. Every year grows amount of NGO – non government organizations, associations, foundations and private companies which announces themselves as belonging to social entrepreneurship and supporting other companies involved in this area of a business.

It is officially admitted already that social entrepreneurship doesn't matter nonprofit or voluntary activity, it is possible and acceptable to gain profit and to remain socially active and beneficial at the same time. Legislation of the countries should be changed altogether with an approach to taxation and other evaluation of this field of the business. Latvia also remains as an area where social entrepreneurial activity takes place and amount of involved organizations grows annually. The aim of this abstract is to investigate both issues and trends of social entrepreneurship in Latvia and abroad, including tools of accelerating this field of a business.



**Definition, types, representatives.** The phenomenon of social entrepreneurship is attracting more and more of attention in today`s world and its popularity is increasing rapidly among economists, politicians and researchers.

The importance of social entrepreneurship is enormous. In the focus of social entrepreneurship there are social gaps that are forming over stiff competition in the business environment. Social entrepreneurs should carry out a phase shift in the direction of social entrepreneurship to improve the lives of the population at large.

There are some already successful examples of social entrepreneurship. For instance, Nobel laureate Muhammad Yunus came up with the idea of giving out money to the poor without collateral. He had started a microcredit project with a loan of \$ 27 to 42 people, and created the Grameen Bank with an annual loan portfolio of \$ 10 billion and a customer base of several million people. The example to follow is the Shaukat Khanum Cancer Hospital in Pakistan. Although the hospital also receives charitable funds, owners of the hospital have launched a large network of medical laboratories that helps to provide free / subsidized the treatment of cancer.

It is important to understand that the launch of social enterprises means that the implementation of social work, the organization cannot rely on charity only. Investors have their own model of work and, as a rule- social projects must comply with this. It is necessary to realize its mission and ideas for the social entrepreneurs, which may be in a conflict for a charity funding. This makes difficult the task of the social entrepreneurship as the businesses have to apply their own funds for self-financing and to be independent.

So, what is it social entrepreneurship. One of the authors had defined the social entrepreneurship as a new type of business that is successfully developing in the world, through the creation of social wealth, but generation of economic wealth is not the main aim of social entrepreneurship [Dees, 2008; Leadbeater, 1997]. Other researchers argue with the statement, as the activities of social entrepreneurs have far-reaching economic implications for strengthen economic growth, reduce poverty and improve social development scale [Zahra, SA, Gedajlovic, E., Neubaum, DO, Shulman, JM, 2009]. As a result of the intensity and complexity of the social and environmental issues, social entrepreneurship is becoming increasingly important. In the commercial sector, social entrepreneurship is closely related (although a difference) with the concept of corporate strategy and the main areas such as corporate social responsibility, corporate social innovation. In the public sector, social entrepreneurship is associated with experiments in social policy and planning, which have been implemented in European countries and the EU since 1980 [Dees, 2008].

Types of social entrepreneurship:

1. The Leveraged Non-Profit: This business model leverages resources in order to respond to social needs. Leveraged non-profits make innovative use of available funds, in order to impact a need. These leveraged non-profits are more traditional ways of dealing with issues, though are distinguished by their innovative approaches.

2. The Hybrid Non-Profit: This organizational structure can take on a variety of forms, but is distinctive because the hybrid non-profit is willing to use profit to sustain its operations. Hybrid non-profits are often created to deal with government or market failures, as they generate revenue to sustain the operation outside of loans, grants, and other forms of traditional funding.

3. The Social Business Venture: These models are set up as businesses designed to create change through social means. Social business ventures evolved through a lack of funding-social entrepreneurs in this situation were forced to become for-profit ventures. In places like the United States, this model is friendly to environmental entrepreneurs, due to the available market opportunities [The Power of Unreasonable People, 2008].

By the year 2015, Forbes magazine mentions about 30 of young entrepreneurs who established their business with large social contribution in US. However, social entrepreneurship has a long time tradition in Europe as well. In 2013, by the support of the European Commission the portal with the aim to join social entrepreneurs was established: SEE, Social Enterprising Europe. It joins more than 50 social businesses across the Europe from following countries: Switzerland, Spain, Belgium, the UK, Italy, Former Yugoslav Republic of Macedonia. On the website, Socialbiz.eu, which is a part of the project, both with holding conferences and other events for social entrepreneurs is possible to find also the list of the organizations that can help to the social entrepreneurs to make their first steps. There is information about different foundations, supporting this area of business, such as:

1. The Skoll Foundation ([www.skollfoundation.org](http://www.skollfoundation.org)), benefits communities around the world by investing in, connecting and celebrating social entrepreneurs. The Foundation has awards programs and presents their recipients on its website.

2. The Schwab Foundation ([www.schwabfound.org](http://www.schwabfound.org)), provides unparalleled platforms at the regional and global level to highlight and advance leading models of social business.

3. Ashoka ([www.ashoka.org](http://www.ashoka.org)), a global organization that identifies and invests in leading social entrepreneurs – individuals with innovative and practical ideas for solving social challenges.

4. Grameen Foundation ([www.grameenfoundation.org](http://www.grameenfoundation.org)), helps the world's poorest, especially women, gain access to financial services, life-changing information and unique business opportunities.

5. NEF ([www.neweconomics.org](http://www.neweconomics.org)), the new economics foundation is an independent think-and-do tank that inspires and demonstrates real economic well-being.

Social entrepreneurs and their initiatives can be also awarded by the following worldwide recognized awards:

1. The Global Social Venture Competition ([www.gsvc.org](http://www.gsvc.org)) G SVC is the biggest worldwide competition of social business planning, and it is organized by national chapters.

2. Brookes University Social Entrepreneurship Award (<http://www.brookes.ac.uk/business-and-employers/social-entrepreneur-awards/>) An award for social

entrepreneurs from Brookes University, UK.

*Table 1*

**Useful Resources, Established in Order to Support Social Entrepreneurship in EU**

|   | Name of the resource | Website   | Remarks   |
|---|----------------------|---|---|
| 1 | Technet              | <a href="http://www.technet-berlin.de">www.technet-berlin.de</a>  | A network of people engaged in regional and local development in technology, employment and development (in German) |
| 2 | EMES                 | <a href="http://www.emes.net">www.emes.net</a>  | A network of researchers and graduate students on social entrepreneurship   |
| 3 | Le Mat               | <a href="http://www.lemat.coop">www.lemat.coop</a>  | A social brand to promote social tourism  |
| 4 | European Network     | <a href="http://european-network.de/englisch/aims.htm">http://european-network.de/englisch/aims.htm</a>                                       | European Network for Economic Self-Help and Local Development   |
| 5 | European Commission  | <a href="http://ec.europa.eu/internal_market/social_business/indexen.htm">http://ec.europa.eu/internal_market/social_business/indexen.htm</a> | Page of the European Commission on Social Entrepreneurship  |

Social economy in Europe is a large part of the business. Today, the social economy represents 10% of all European businesses and employs over 11 million paid employees. However, the social business is united under the most common challenge, which is: funding. Because of their unique mix of social goals and business techniques, banks and other financial intermediaries are often unfamiliar with the needs of social businesses or have difficulty in assessing the risk of investment. The European commission fully understands the gap between the needs of the social entrepreneurs and limited funding possibilities. There are two main challenges focusing the funding of the social entrepreneurs:

1. Funds dedicated to investing in social business can be costly and difficult to set up and gather investments
2. Funds which concentrate on investing in social businesses are not always easy to identify or distinguish from other funds, and it can be confusing for investors to compare the advantages of different funds or working out how effective a particular investment might be in supporting social businesses.

That is why it was proposed by the European Commission to invent a recognized brand for social entrepreneurship funds: European Social Entrepreneurship Funds. Funds that market themselves using this brand would have to invest at least 70% of their money in social businesses. With this label, investors will know that the majority of their investment is going into social businesses. In addition, the common EU-wide brand will make it much easier for investors throughout the EU to locate these funds. European Social Entrepreneurship Funds will also act as a

passport. Once a fund has provided the required information and follows some key requirements on how to organize and conduct themselves, it would have the right to gather investments from investors across the whole EU without incurring major costs. They would be supervised – to ensure they follow the rules – by the authorities in the Member State where they are based. These funds would provide new opportunities for private individuals and professional financial services investors to help fund social businesses, adding to support already available from funds, banks and public bodies. It is prospected that following benefits will be available both for social business representatives, professional investors and investment managers:

1. Social businesses will get easier access to private finance, helping support their growth. This will benefit many ordinary citizens: creating inclusive and sustainable jobs and growth across Europe.

2. Professional investors will find it easier to identify and choose funds that are targeting investments in social businesses (European Social Entrepreneurship Funds).

3. Investment fund managers will find it less costly and complex to raise funds, including cross-border, and will find it easier to distinguish their social entrepreneurship funds from other kinds of funds [European Social Entrepreneurship Funds, 2011].

European Social Entrepreneurship Funds was established in 2013 and is starting its activity with the aim to offer its services to the entrepreneurs across the Europe.

**Social entrepreneurship aspects in Latvia.** The concept of social entrepreneurship in Latvia is still under development, therefore we have a unique opportunity to build it exactly the way we need it. This statement is a quota from the mission of „Sabiedriskās politikas centrs PROVIDUS” [Providus, 2014], founders of the online portal socialauzņēmējdarbiba.lv, foundation of social entrepreneurship support in Latvia. The foundation supposes there should be following requirements to social entrepreneurs in Latvia:

1. The company’s goal is to address socially important problems, creating measurable and useful benefits to the public.

2. Activities of social enterprise are organized according to commercial practice - creating goods and providing services in the market.

3. Social enterprise profits are channeled to achieve social goals, business development or to build reserve fund.

4. Employees must receive adequate and appropriate salary for their work.

5. Management methods and ownership of social entrepreneurship relies on democratic and participatory principles - corporate governance may consist of employees and stakeholders

6. A company can only get special social entrepreneurship status if it meets all of the characteristics and features in this list.

A legal framework for social entrepreneurship in Latvia has to be created so as to not only support establishment of new social enterprises, but also to help successfully expand the already existing ones.

Other programs and foundations that support social entrepreneurship in Latvia:

1. Baltic sea countries joint program INTERREG;
2. Programs of Society Integration Foundation, as Non-government organizations project support program (2009-2014), dedicated to micro projects;
3. Programs of Society Integration Foundation, as Non-government organizations co-finance program 2014-2016;
4. Riga City Council department of education, culture and sport program;
5. Association of Women with disabilities “Aspazija” in association with Teterev foundation.

There are also other non-governmental organizations, foundations and societies that support social entrepreneurship in Latvia. Some of them can be sponsored by private persons, companies and even agencies of other, non EU countries, such as NEW D(o)r initiative, whose main sponsor in The Jewish Agency For Israel. The project is a school for social entrepreneurs and actively operates already 2 years in Latvia and since 2015 also internationally ([www.newdoor.lv](http://www.newdoor.lv)), [New Do(o)r, 2015].

**Education.** Tools to accelerate social businesses are following:

- public organizations, governmental programs, EU programs in the frames of Erasmus + (Key Action 2 programs and others);
- private foundations with programs, boot-camps, courses and seminars supporting social businesses as Presentence (Israel), New Do(o)r (Latvia) and others;
- investing organizations, as Ashoka;
- online crowdfunding platforms, as kickstarter.com;
- platforms, supported by educational institutions, both public and private, (as ISMA Business Incubator, Latvia);
- zones, announced by government entrepreneurial friendly (with reduced taxes or other positive conditions);
- business parks, where companies could pay less for manufacturing and consumption;
- meeting points, where social entrepreneurs can meet together discussing their ideas, with free WiFi (as Tsiferblat chain of free space cafes in Russia, public libraries etc.)

However, there should be better involvement of higher education institutions into this process. It is more than clear already that social entrepreneurship as a field of a business has very sustainable trend to develop. That is why one of most beneficial tool to develop this business area is to deliver to its market experienced professionals. Appropriate education should contribute to this process.

Growing interest to this area of business is noticeable and many universities are starting to implement educational programs and platforms in relations with this entrepreneurial activity. For example, Harvard Business School (Harvard Business School, 2015) provides different enhancement activities for MBA, also offers Strategic Perspectives in Nonprofit Management program (SPNM), which provides thousands of nonprofit leaders with the tools and strategies to help them better deliver on their missions and make a difference in the world. Each summer, SPNM brings together

some 150 leaders of nonprofits from across the globe for an intensive six-day program designed to strengthen the capacity of nonprofit CEOs and executive directors to lead their organizations effectively. SPNM provides a conceptual approach to shape the direction, mission, policies, and major programs of nonprofit organizations.

The other famous HEI, Oxford University (Oxford University, 2015) in the frames of continuing education, offers online course “Social Entrepreneurship”, which lasts 1 semester.

The potential of the program is wide and some sources on its implementations could be taken from ERASMUS + program funding. For example there could be elaborated Joint Master Degree program in the frames of the ERASMUS MUNDUS call. Erasmus Mundus Joint Master Degrees (EMJMD) are delivered by an international consortium of higher education institutions and, where relevant, other partners with specific expertise and interest in the areas covered by the program. An EMJMD is a high-level integrated international study program of 60, 90 or 120 ECTS credits, i.e. from a minimum of 12 months, to a maximum of 24 months. Study must take place in at least two of the Program countries represented in the consortium. Part of the studies can also take place in a Partner country if there is a partner-country institution involved (Erasmus +, 2015).

Other impact where HEIs could be involved might be traineeships at social business enterprises. These internships of international students are also financially covered by ERASMUS + funding and the help of these 2-12 months participants could be a noticeable shoulder for social businesses, sometimes with limited profit or even non profitable organizations.

Erasmus + programm guide, published by European Comission (Erasmus +, 2014) states that social businesses could be receiving organizations for such traineeships: “Eligible participating organizations, the receiving organization can be: ... any public or private organization active in labor market or in the fields of education, training and youth. For example, such organization can be: a public or private, a small, medium or large enterprise (including social enterprises)”.

The financial crisis unleashed economic fear throughout Europe bringing high unemployment rates, increasing poverty and widening social gap. The pressing economic situation demands a new way of thinking and developing instruments which will bring both prosperity and social welfare and cohesion. Social entrepreneurship is a new but sustainable way able to combine both successful business and decrease of negative social effects. To contribute its acceleration, following tools should be involved: public organizations, governmental programs, EU programs, private foundations with programs, boot-camps, courses and seminars, investing organizations, online crowdfunding platforms, platforms, supported by educational institutions, zones, announced by government entrepreneurial friendly, business parks, meeting points. Educational process must also be involved, different courses and programs should be developed to contribute successful run of social entrepreneurship. Especially significance for the business of preparing young

people are IT technologies [Nenkov, Momchev,2011, Nenkov, 2014].

Summarizing the need of implementation of social entrepreneurship program into the process of HEI offered education, we can state following:

- There should be a clear understanding of a purpose and motivation of learners and the course should be elaborated accordingly.

- Main topics should cover an introduction with explanation of definition for social entrepreneurship, students should be able to apply business models, to target exact social problems and to be able to create value proposition to interest potential investors.

- The course could differ on its length, content and destination. It could be boot camps, online and or distance studies, semester courses or full time MBA programs.

- Full time MBA programs can be elaborated in cooperation between ERASMUS + eligible participants applying for funding in the frames of ERASMUS MUNDUS.

- The connection between HEIs and social businesses could be even tighter with student`s involvement into this field of entrepreneurship thanks to their participation as being trainees during their traineeship, also covered by ERASMUS + funds.

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# **THE CURRENT SITUATION OF CHINA'S FOREIGN INVESTMENT IN THE ECONOMY, EXISTING MANAGEMENT PROBLEMS AND COUNTERMEASURES**

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The Chinese economy has experienced rapid development for 30 years. It has maintained the status of the largest foreign investor in developing countries for more than 20 years, and surpassed Japan to become the world's second largest economy. At the same time, China's foreign investment The pace has also been accelerating, and its growth rate has substantially exceeded the growth rate of China's foreign investment. Driven by the state's policy of encouraging enterprises to "go global", China's foreign investment is guided by the development of free trade zones, overseas economic cooperation zones and multinational corporations. It should also be closely linked to the national strategy of "One Belt, One Road". However, there are still many unavoidable problems in the foreign investment activities, which seriously affect the quality and effect of investment and cause many unnecessary losses. As the scale of Chinese companies' foreign investment continues to expand, the management of foreign investment has become increasingly important. The article starts from the status quo of Chinese enterprises' foreign investment, analyzes the related problems in the process, and puts forward corresponding suggestions for the management problems existing in the process of Chinese enterprises' foreign investment [1].

According to data from the Chinese Ministry of Commerce, Chinese foreign direct investment flows have ushered in the first decline in a decade. The amount of foreign investment in 2017 was US\$158.29 billion, a year-on-year decrease of more than 19 percentage points (Figure 1). Compared with the spurt growth of overseas investment by Chinese companies in 2016, the amount of overseas investment by Chinese companies in 2017 has dropped significantly. In order to further guide the "going out" behavior of enterprises, the Chinese government has intensively introduced enterprises to enterprises in 2017. Going out to the relevant policy. For example, "Guiding Opinions on Further Guiding and Regulating the Direction of Overseas Investment", "Code of Conduct for Overseas Investment and Management of Private Enterprises"; at the same time, the National Development and Reform Commission issued the "Measures for the Management of Overseas Investment by Enterprises" to further standardize the overseas investment reform of

enterprises while simplifying the administration of power [3].

China's national regulatory authorities have increasingly refined the management of Chinese enterprises' "going out", effectively promoting the healthy and orderly development of Chinese enterprises' foreign investment, and constantly optimizing the structure of foreign investment, and promoting the real economy, innovation, and high-tech to the world stage. At the same time, optimizing the global allocation of corporate resources will further promote China's transition from a big investment country to an investment power.

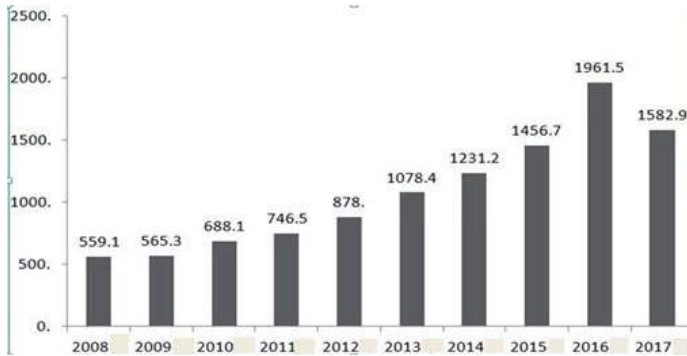


Fig. 1. 2008-2017 Changes in China's ODI flows, \$100 millions

Source: calculated by authors according to

<http://www.ccg.org.cn/Research/View.aspx?Id=10541>

From the regional distribution of overseas investment, the overseas investment of Chinese companies in 2017 was concentrated in Europe, Asia and North America, with the proportion of investment accounting for 53.4%, 18.8% and 16.6% respectively. (Figure 2). Chinese companies have relatively few overseas investments in Oceania, South America and Africa, with a share of 3.5%, 7.7% and 1% respectively. In 2018, the Beijing Summit of the Forum on China-Africa Cooperation, the growth of Chinese companies' future investment cooperation in Africa is obvious.

According to the statistics of Center for China and Globalization (CCG), from the distribution of China's "going out" investment industry in 2017, the manufacturing industry accounted for 40% of the total, up 4% from the previous year, and continue to be China's overseas investment. The most popular industry. The information transmission, computer services and software industries accounted for 15% of the total investment case, which has been the third consecutive year of growth, up 4% from 2016. With the M&A activities of Chinese Internet giants such as Alibaba.com and Tencent Holdings, the industry will also show rapid development [3].

Manufacturing is still a key industry for Chinese companies to invest overseas. Through the acquisition of advanced technology and scientific management

experience through overseas mergers and acquisitions, and the transformation and upgrading of the entire industry, the allocation of the domestic industrial structure can be better optimized.

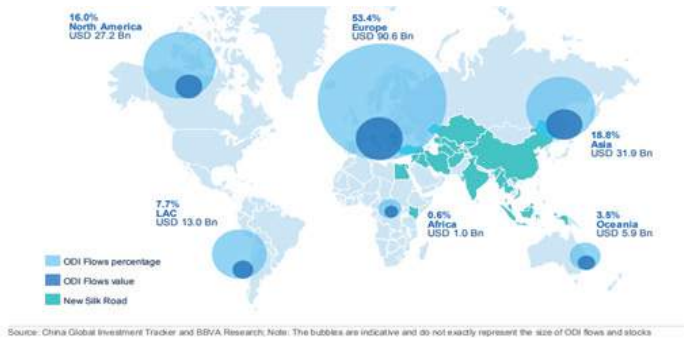


Fig. 2. 2017 Major distribution areas of China's foreign investment

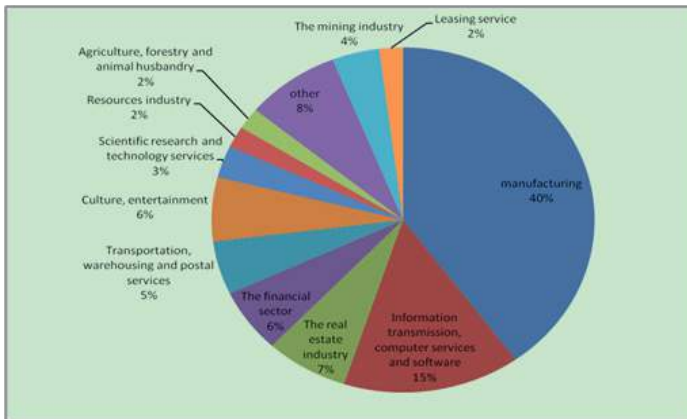


Fig. 3. 2017 Distribution of Chinese enterprises' foreign investment industry  
 Source: calculated by authors according to <http://www.ccg.org.cn/Research/View.aspx?Id=10541>

At the same time, Chinese companies have acquired R&D, operations, management and technical teams that are in line with international standards, as well as relatively stable customer markets through overseas mergers and acquisitions in information technology, computer services and software industries, and constantly improve the high-tech fields of Chinese companies. The right to speak.

Judging from the current situation of world economic development, the adjustment of the world economic structure is relatively large. Faced with relevant opportunities and challenges, “going out” has become an important part of China’s social and economic development. The same is also an important way to adapt to the

economic development of the international community. In addition, from the above economic development work in China, it can be seen that for the demand of the international market, increasing the pace of Chinese enterprises' foreign investment has become an important factor in promoting global economic development. Faced with the increasing pace of China's foreign investment, in the process of global investment, China needs to develop faster and more smoothly, and the management problems in the process of foreign investment become even more important [3].

Since the 21st century, China's foreign direct investment has continued to grow. According to data from the Chinese Ministry of Commerce, China's total foreign investment in 2018 reached US\$129.83 billion, a year-on-year increase of 4.2%. China's foreign direct investment is gradually becoming an important part of international capital. At the same time, the «One Belt, One Road» initiative has greatly promoted the close ties between countries along the line in economic and trade activities and achieved a win-win situation.

With the increasing number of Chinese foreign investment enterprises, corporate management issues have become an important issue for Chinese companies in the process of foreign investment. Faced with the increasingly complex foreign investment environment, the increased risk of foreign investment, and the increasing uncertainty of the international security situation, Chinese companies' foreign investment still shows rapid growth, which is the result of the confidence and management ability of Chinese enterprises. From a vertical perspective, through continuous exploration and market-oriented reforms, Chinese enterprises' self-management and management capabilities have been continuously improved, laying an important foundation for conducting and expanding the supervision of foreign investment of Chinese enterprises. Of course, we can't be blindly optimistic, because there are still many problems in the management of foreign investment enterprises [3].

Objective and sufficient investigation and research to determine a reasonable investment direction is an important prerequisite for realizing the purpose of investment. Unreasonable or even unclear investment directions are common problems in corporate foreign investment. Serious research on policy support, technical feasibility, reliability of the economy, and market environment and capabilities is an important part of ensuring investment success. Many companies do not conduct research or research at all, but they are not based on the subjective judgment of policy makers, and they do not have a sound investment policy and investment management system. They also do not have realistic medium- and long-term and short-term investment plans, and investment activities are free. It will create a huge loss of hidden dangers for enterprises.

Whether the success of a company's foreign investment is important or not is whether it has realized the expected investment income. Whether the investor's equity is its own net assets has increased or not, and whether it has played an active role in the overall development of the company. However, in many cases, because

the enterprise is not accurate in grasping the market environment and its own capabilities, and does not form its own market survival and competitiveness, it will make the investment income of the enterprise unsatisfactory. The lack of scientific expansion will also lead to the loss of income [4], [5].

In the face of the global market environment, foreign investment operations are more challenging than local own operations. If Chinese enterprises want to succeed in the global economic environment, they must not only do a good job in corporate management, but also do a good job in capital operation, so as to realize the development and growth of the company and enhance its position in the international market. Enterprises should formulate their own foreign investment policies and overcome the blindness and short-term nature of investment behavior. The investment policy should be adapted to the characteristics of the company and conform to the national industrial policy and relevant regulations. The scale of investment must be in line with the control scope of the enterprise, including capital capability, management control capability, and risk solvency.

Management is the decision-making, the quality of decision-making comes directly to the effect of investment, and successful decision-making comes from the scientific, democratic and compliance procedures of decision-making. The enterprise investment department should strengthen the implementation of its functions, make decisions on investment, truth, and prudence. In the decision-making process, we must listen to all aspects, relevant experts and the opinions of the employees. In the process of investment decision-making, it is necessary to pay attention to relevant laws and regulations, and investment projects must comply with relevant laws and regulations, thereby protecting the interests of enterprises [5].

As the main body of decision-making and implementation of foreign investment, enterprises are the key to China's optimization of foreign investment structure and improvement of investment quality. Chinese enterprises "going out" should pay more attention to the adjustment of investment structure, climb to the upstream of the global value chain, and improve the quality and level of "going out". On the one hand, Chinese enterprises should learn from developed countries and enhance their investment capabilities; on the other hand, they should cooperate with developed countries to develop third-party markets and achieve mutual benefits and win-win results [6].

With the sustained and rapid economic growth, the Chinese economy has become an important engine of the world, providing a very good opportunity for Chinese enterprises to invest abroad, especially the proposal and promotion of the "Belt and Road" construction, bringing all-round improvement to China's openness. Major strategic opportunities. Chinese enterprises should make full use of their development advantages and adaptability to foreign investment, effectively integrate production factors and build independent value-added chains across enterprises, regions, and countries, and strive to move toward the high-end and high-value-added links of the value chain. The integration of resources in a broad space enhances their competitive advantage and more actively participates

in the competition in the international market. With the continuous optimization of China's foreign investment enterprise management issues, China's foreign investment development will become more and more open, and China's foreign investment will be more healthy and stable development in the future, contributing to the global economic development [7].

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# **MODELING OF THE PROCESS OF RESOURCE RISK MINIMIZATION WITH CONSIDERATION OF TRANSPORT EXPENDITURES IN THE FIELD OF FOREIGN ECONOMIC ACTIVITY**

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The current development of business activities in all sectors of the economy in Ukraine is characterized by a rather high and at the same time an ever-increasing level of competition. At the same time, the business environment itself is characterized by a high degree of risk. This, first of all, requires the use of resources additional to those that can be obtained from the profit of the enterprise or organization. However, even today, effective business activity is impossible without making important decisions about their functioning and further development. Changes that take place in the surrounding environment make modern organizations flexible and adaptive, react instantly to transformation, and predict the probable factors of negative impact on the activity of enterprises in general. Yes, we see that, together with economic factors, the non-economic components are of paramount importance in the competitiveness of firms and their achievement of high performance indicators. In particular, it is a management of the organization of production processes - the introduction of resource-saving and energy-saving, environmentally safe technologies, the introduction of quality control systems, etc. [1, p. 601].

In modern conditions of economic actors economic activity to assess the state and dynamics of the economic system, to manage, make decisions in the financial and economic sphere of enterprises have to be in the conditions of risk, conflict, the actions of destabilizing factors, etc.

Biopreparations of the SE «Sumy Biological Factory» are currently exported exclusively to Moldova. The issue of expansion of markets is due to the rational management of the resource risks of the investigated enterprise. So, at the present time it is necessary to conduct research aimed at reducing the subjectivity of the decision-making process and increasing its scientific capacity, especially in the presence of a resource risk factor. Scientifically grounded decision-making will help the enterprise manager to be more systematic, and the tools of this process will help him to be more rational.

Thus, marketing risk management should take into account transport costs for the delivery of manufactured products to their destination.

Economic and mathematical methods of decision simulation are used to develop such tools. The use of these methods and tools aims at evaluating prospects and alternatives systematically, not intuitively. In the case of a managerial decision to conclude an agreement or contract for the sale of goods, it is imperative to use

simulation to formulate administrative decisions, thereby becoming programmatic decisions. However, sadly, but in modern conditions of functioning domestic enterprises of bio-industry, modeling of solutions is not used. That is why there is a real need to create models for individual types of decisions.

For example, in making decisions in the field of foreign trade, which would closely reflect the actions of the main elements of the management structure of the enterprise, common within this type of activity. By analyzing and experimenting with such a model, an entrepreneur engaged in foreign economic activity could identify the best course of action. For example, knowing their economic condition, losses and profits from foreign economic activity by item, the risk situations that arise when working in the foreign market, the manager can calculate the possible gains or losses from the future transaction in a risk situation. The risk element, as already noted, is present in any managerial decision to a greater or lesser extent.

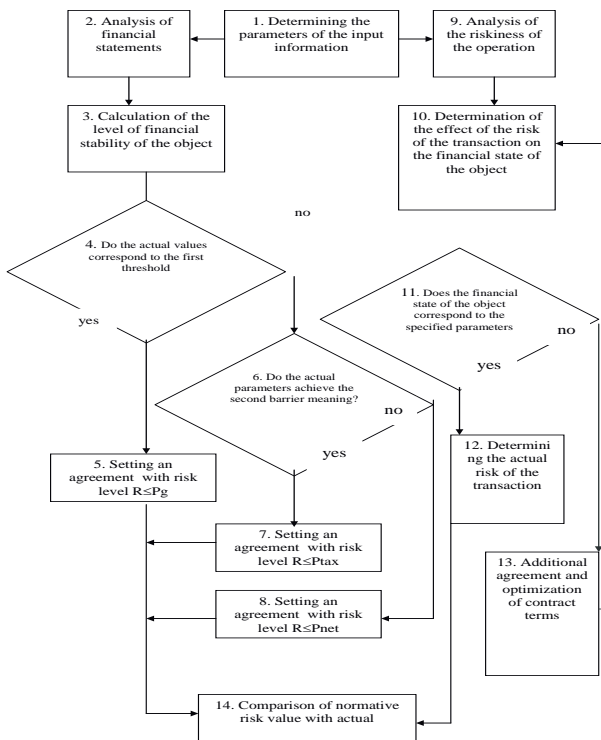


Fig. 1. The algorithm for modeling the process of minimizing marketing risk taking into account transport costs

Source: proposed by the author



Thus, the simulation will be conducted in accordance with the algorithm, provided that at the time of preparation of the signing and execution of the contract, the state of the resource risk exists, and the manager has sufficient information to assess the possible consequences of the decision.

$P_g$  – gross profit of the enterprise from the transaction;

$P_{tax}$  – taxable profit of the enterprise from the transaction;

$P_{net}$  – net profit of the enterprise from the transaction.

The model of approval of the decision by the exporter for foreign-economic activity in a situation of risk is developed, and it involves the use of a set of formalized and non-formalized methods. They were chosen as a means of an objective assessment of complexly regulated environmental factors. This model allows to develop a mechanism of approaching the behavior of the management system of the foreign economic agreement to a rational and reliable determination of the optimal strategy of the enterprise in the market. In the process of formation of contractual relations in the situation of resource risk it is necessary to determine the sequence of actions of the enterprise to implement a set of measures aimed at achieving maximum returns in a risk situation. In order to systematize this process, an algorithm for modeling the resource risk minimization process is proposed, taking into account transport costs (Fig. 1). The solution of the proposed model is carried out in accordance with the proposed blocks. Let's consider the step-by-step proposed scheme of modeling the decision-making process when concluding agreements for the transportation of biological products abroad in the conditions of resource risk.

The first block of the algorithm contains information about the possibilities of the enterprise, which have developed under the influence of factors of the economic environment. The main objective in assessing the potential of an enterprise is to identify the strengths and weaknesses of its activities in the foreign market and to make adjustments to the strategy in order to increase the competitiveness.

To simulate the behavior of a specific control system, an analysis of the financial and economic activity of the enterprise in conjunction with the study of the subject of control (block 2) is carried out. This gives an opportunity to assess the objective state of the enterprise, due to its organizational and economic and technical and organizational characteristics, and to carry out the calculation of generally accepted indicators that determine the profitability of the enterprise, its commercial activity, financial stability.

Reporting statistical and analytical material on the activity of enterprises, used in the analysis taken from the balance sheet of enterprises, forms No. 1, 2 to the letter of the Ministry of Industrial Policy of Ukraine No 01 / 8-1-5-402 of March 17, 1998 and Form No. 1 to the Decree of the Minister of the Ministry of Natural Resources of Ukraine No. 348 dated by May 23, 1995. All indicators are considered in dynamics for a number of years from 2012 to 2016, which makes it possible to draw conclusions about the development of the enterprise for the period under study.

To determine the financial position of the company more appropriate is the

method considered in [2], because it enables to determine not only the main reasons for the poor state of the financial sector of the enterprise, but also gives an idea of the current financial situation in the enterprise.

The table shows that the company in recent years has suffered financial instability, which led to a crisis of finance. Regarding the risk areas, the company moved from the high risk area (2013) to a steady financial state, which allowed the enterprise to balance its solvency in the area of critical risk (2014) and then into the area of unacceptable risk (2015-2016), when the company is on the verge of bankruptcy. The reasons for such a situation can be: a permanent shortage of own working capital, which does not allow to increase the scale of the enterprise and does not guarantee the fulfillment of obligations. This indicator characterizes the reliability of the company as a partner. In this case, any enterprise conducting general commercial activity is entitled to expect from its partner additional guarantees for the implementation of the agreement in order to avoid the risk of non-fulfillment of obligations by the partner, as the risk in executing the transaction is partly determined by the structure of own funds. Resource risk increases with a decrease in the share of own funds. From 2017 financial state of the enterprise can be considered stable. To overcome the crisis, it was helped by additional external financial infusions and stabilization of long-term contractual relations with partners.

According to the results of the calculations, the enterprise is divided into areas of resource risk for the identity of problems in the financial sector. Further calculations of resource risk values are conducted in selected groups (Table 1).

*Table 1*

**The state of the enterprise depending on the financial stability and the area of the resource risk in which it operates**

|                                       |                                    |                                    |                                       |
|---------------------------------------|------------------------------------|------------------------------------|---------------------------------------|
| Area of normal stability              | Area of hesitant state of finances | Area of critical state of finances | Area of crisis state of finances      |
| Area of minimum resource risk         | Area of increased resource risk    | Area of critical resource risk     | Area of unacceptable resource risk    |
| SE «Sumy Biological Factory»<br>99-00 | SE «Sumy Biological Factory»<br>95 | SE «Sumy Biological Factory»<br>96 | SE «Sumy Biological Factory»<br>97-98 |

*Source: proposed by the author*

Calculation of indicators of financial sustainability of an object (block 3) makes it possible to find a zone of resource risk, in which the enterprise is located, to determine the limits of the resource risk, which must be respected by the enterprise, while conducting foreign economic activity, taking into account financial stability. Thus, the definition of a financial state of an enterprise gives us a limit on the size of the resource risk of a possible transaction:

$$R_{\min} < R < R_{\max},$$

where  $R_{\min}$ ,  $R_{\max}$  – limiting the parameters of the agreement, or the minimum and

maximum values of the permissible resource risk in the existing economic conditions.

The uncertainty always exists, therefore, the resource risk of activities can not be destroyed. It is an acceptable resource risk that is the result of simulation, it is laid down in contractual terms by both parties. An economic precondition for an acceptable resource risk is the impact on the management system, on external and internal factors, as well as the interconnection and interdependence between them. It is economically expedient for a foreign economic agreement to use in the calculations the principle of optimization of activity, break-even, which determines and specifies the calculation of the zone of permissible, critical, catastrophic risk for a particular enterprise engaged in external activity. Such an approach leads to a more complete integrated assessment of the state of the enterprise and maximally approximates to obtaining a system for managing optimal predicted results, reducing possible deviations from achieving the goal [3].

So, having considered the financial condition of enterprises, we can talk about the area of resource risk in which the company works, but this does not show the risk of concluding transactions, but only gives certain restrictions when they are concluded in the form of the marginal amount of risk, that is, what the businessman may risk to achieve the goal — the conclusion and implementation of the agreement [4].

The scale of the maximum allowable losses under the agreement should have the following form (Table 2). In block 4, 6 the verification of compliance of actual indicators of financial stability of the enterprise with the nature of the risk of concluding transactions is carried out. Blocks 5,7,8 characterize the quantitative value of an acceptable risk for the identified financial state.

*Table 2*

**The scale of losses in areas of financial sustainability of the enterprise and zones of resource risk**

|  |                                    |                                    |   |                                  |
|--|------------------------------------|------------------------------------|---|----------------------------------|
| The area of absolute financial sustainability of the enterprise      | Area of normal stability           | Area of hesitant state of finances | The area of the critical state of finance | Area of crisis state of finances |
| Area of maximum permissible resource risk                            | Area of unacceptable resource risk | Area of critical resource risk     | Area of increased resource risk           | Area of minimum resource risk    |
| The risk can be equal to the amount of the supply on the transaction | Balance profit on agreement        | Taxable profit on the transaction  | Net profit from the transaction           | Net profit from the transaction  |

*Source: proposed by the author*

The following is an analysis of the riskiness of operations on the foreign market and the frequency of their occurrence, determining the resource risks that most often appear in the activities of domestic enterprises (block 9).

At enterprises, contracts on content and their compliance with regulations were considered, as well as data on the availability of claims, late payment or non-payment of goods in the years from 2013 to 2017. The total amount of losses by item, as a percentage of the total proceeds are shown in Table 3.

Thus, comparing the amount of expenses from risky transactions with the average revenue from sales of products in certain years (Table 3), it is possible to determine the riskiness of transactions in the current year, that is, to determine which region of the resource risk these contracts are. However, we first calculate the coefficient of resource risk as the ratio of planned expenditures when transporting products to the expected revenues from sales of products.

*Table 3*

**Calculation of the resource risk factor when applying the model of marketing risk minimization taking into account transport costs**

| Indicator  | Year    |         |         |         |         |
|--|---------|---------|---------|---------|---------|
|  | 2013 y. | 2014 y. | 2015 y. | 2016 y. | 2017 y. |
| Total proceeds from sales of products, ths. UAH                          | 8872,0  | 7316,0  | 8984,0  | 7129,0  | 13826,0 |
| Total costs, thousand UAH, including:                                    | 504,8   | 516,5   | 240,9   | 449,9   | 796,3   |
| transport losses   | 230,7   | 74,6    | 25,2    | 22,1    | 49,8    |
| currency losses  | 186,3   | 124,4   | 179,7   | 171,1   | 290,3   |
| losses from non-payment of goods under a letter of credit form           | 0       | 240,0   | 0       | 82,7    | 52,5    |
| losses from non-payment of goods in the form of payments - bank transfer | 39,0    | 32,9    | 8,1     | 69,2    | 232,3   |
| losses due to non-conformity of the goods                                | 22,2    | 16,8    | 8,1     | 78,4    | 132,7   |
| losses through the application of penalties                              | 26,6    | 27,8    | 19,8    | 26,4    | 38,7    |
| Risk factor,%  | 5,7     | 7,1     | 2,7     | 6,3     | 5,8     |

*Source: proposed by the author*

Thus, it has been established that with each passing year the coefficient of resource risk on the investigated enterprise varies. In particular, the highest level of resource risk occurred in 2014, and the lowest - in 2015, which was correspondingly 7.1% and 2.7%.

Having considered SE «Sumy Biological Factory», we calculated the average value of losses from risk transactions and expanded them according to the types of financial sustainability, thus, it is possible to determine in which area of resource risk transactions were conducted, in particular, the focus is on 2018 (Table 4).

**Average losses from risk transactions depending on financial sustainability of the enterprise**

| Risk of external economic agreement        | FINANCIAL STATE OF THE ENTERPRISE |                            |  |   |   |                    |
|--|-----------------------------------|----------------------------|--|---|---|--------------------|
|  | Normal financial stability        |                            |  |   |   |                    |
|  | Transport losses, % (R tr)        | Currency losses, % (R cur) | Non-payment under the letter of credit, % (R lc) | Non-payment by bank transfer, %, (R bt) | Losses due to quality mismatch, % (R q) | Penalties, % (R p) |
| 1. Minimum resource risk agreement.        | 0,0                               | 2,01                       | 0,0  | 2,12                                    | 0,25                                    | 0,41               |
| 2. An agreement on increased resource risk | 0,0                               | 1,91                       | 0,0  | 3,35                                    | 0,0                                     | 0,5                |
| 3. Agreement on critical resource risk     | 1,6                               | 2,3                        | 0,0  | 1,15                                    | 0,04                                    | 0,02               |

*Source: proposed by the author*

The proposed model of resource risk minimization, taking into account transportation costs for SE «Sumy Biological Factory», allows us to work out optimal strategies for harmonization of contracts for the supply of biopreparations in the market of pharmaceutical services at the time of its signing. The validity of the obtained results determines the possibility of their wide application at the enterprises, regardless of their sphere of activity.

The institutionalization of resource risk research involves the allocation of specialists in the field of resource risk and the formation of targeted curricula. It was established that the factor of resource risk in applying this model on the investigated enterprise on average over the last five years amounted to 5.5%, and 2.6% of this degree reached the costs of transportation of products.

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## **METHODOLOGICAL MANAGING PRINCIPLES OF ENTERPRISE SUSTAINABLE DEVELOPMENT**

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In the context of the increasing globalization rate for many countries of the world, including Ukraine, the problem of sustainable development of the agrarian sector is becoming more urgent. There is much concern about sustainable and integrated development in the agrarian regions of our country, where this form of territorial organization of the population and production prevails. Taking into account the fact that the priority of the national policy of Ukraine is to provide the population with high quality food products in an assortment of varieties and sufficient quantity, the scientific problems of the agrarian sector development are relevant. Their solution largely depends on the state and conditions of functioning of agriculture, which has undergone significant transformational changes as a result of reforms and, nevertheless, continues to be in a difficult financial and economic situation.

The problem of effective management of the enterprise development is under consideration of the modern scientific elite of the world for a long time. Special attention to its study is paid, first of all, in developed European countries, where the status of an active participant in market relations depends on the successful implementation of the “concept of sustainable development”. In the context of European integration of Ukraine, leading domestic enterprises are supposed to be interested, first of all, in the introduction of progressive elements that ensure constant development.

Nowadays, there is no a single generally accepted definition of the category “sustainability of agrarian branch development”, which is caused by the contradiction and underdevelopment of the concepts of sustainable development, the lack of information for quantitative measurement of the degree of sustainability. Some authors consider sustainability, in particular of arable farming, as the ability to withstand negative effects, mainly – spontaneous forces of nature, to prevent or weaken declines of production [6]; others consider it as the sustainability of the middle level of the dynamic series [9]; still others interpret it as the sustainability of evolution, development of the phenomenon under study [8]. However, the notion of sustainability is not limited to these. Sustainability of agrarian development is not only an opportunity to overcome unfavourable phenomena in agriculture, but also the ability to use them to maximum effect.

It is well-known that in economy of any country enterprises of agrifood sphere specializing in production of food products have a special role. This is due to the fact that they influence the trends of the national economy, are first that test innovative ideas and, if successful, worthily compete with foreign producers of this segment.

Taking into account the isolation of some scientific schools and the lack of works devoted to the complex theoretical and applied analysis of the subject under consideration, we note that there is no complete study on the management of sustainable development of the agrifood enterprises in Ukraine and Nigeria, which determines the topicality of this research.

The main tendencies of the agrifood sector in Nigeria are aligned with the problems that are typical for the Ukrainian agro-industrial complex. Within this framework, the comparative analysis of these two countries in the context of sustainable development of enterprises (SDE) and raising the standard of living of the population is relevant and valuable from practical and theoretical point of view. The proposed analysis of the management of SDE as a factor in improving the quality of life is particularly important in terms of scientific novelty. A thorough study of the peculiarities of the development of agrifood enterprises as exemplified in the two countries can help to formulate effectively and clearly the task for the formation of powerful economic potential by Nigeria and Ukraine, which is evidence of the practical relevance of this scientific work. Based on the systematization of the main problems restraining the development of enterprises of the two countries, the authors found out that respondents distribute them in such a way – fig. 1 [7, 10, 14, 15, 16].

Fig. 1 shows that the most significant are the problems listed on the principle of decreasing below [7, 11, 14]: low domestic demand for products manufactured by enterprises (we note the constant increase of influence); insufficient investment of money; the presence of outdated equipment (that causes lower production rates).

Taking into consideration the problems mentioned above, adequate management is needed, since, nowadays, the requirements for managerial decisions are rather strict. This results in the acute need to form and test effective management tools related to functional operations (e.g., planning, control, etc.) that take place at the enterprises of the agrifood sphere within their SD. Therefore, it is necessary to consider the problems, opportunities and conditions for achieving SD at the level of enterprises in the context of comparative analysis of the two countries.

Following the principles and recommendations declared at the United Nations Conference in Rio de Janeiro, Brazil in June 3, 1992, and guided by them both in Ukraine and in Nigeria, the strategic transition to SD of the two states was mapped out, which provides the optimal solution of economic, social and environmental problems and the task performance [1].

Regarding the etymology of the interdisciplinary universal “sustainable development” commonly used in the scientific sphere and politics, it was proposed during a meeting of the commission headed by Norwegian Prime Minister Gro Harlem Brundland [4, p. 234]. In the author’s interpretation, it meant progress that

satisfies primary needs. According to [3], this kind of development will not prevent the next generation from providing for new needs.

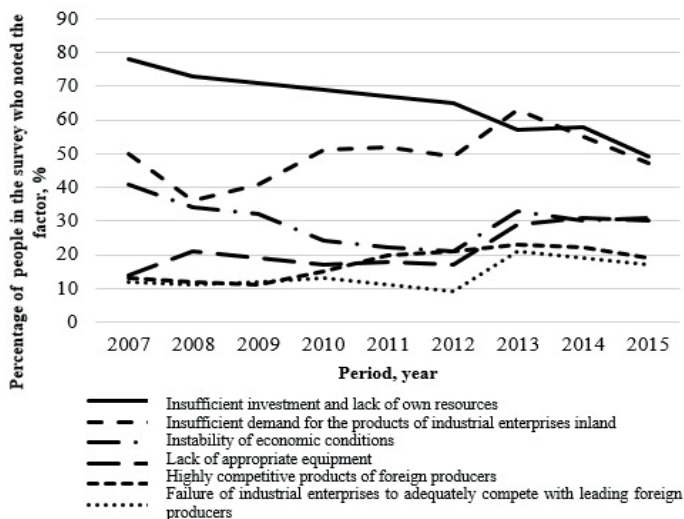


Fig. 1. Problems that influence the development of processing enterprises in Ukraine and Nigeria [based on 7, 11, 12, 14]

The authors of modern etymological and lexicological dictionaries often identify the notion “sustainability” with “continuity”, justly noting that it indicates the existence of some balance between the desire to meet current needs (for example, in natural resources) and take care of the needs of future generations (interest in positive institutional changes, investment attractiveness, favourable environment, etc.).

It should be noted that “sustainable development” is rather new notion (though its appearance dates back to 1972). In modern science, it is at the stage of formation, which can be seen from a large number of authors definitions and contradictories about its essence, the principles of the formation and functioning. Unlike other forms of development, SD has the following characteristics:

- 1) direct connection with the environment;
- 2) forecasting future needs;
- 3) focusing on improvement of life quality;
- 4) use of equal opportunities;
- 5) coordination of all actions taken with the impact on the environment.

It is important to emphasize that for a long time, in the context of market relations, the term “socio-economic development” was interpreted exclusively as an indicator of technological and economy-wide growth. The GDP growth showed progress and, accordingly, was identified with improvement in the standard of



living and welfare of people. It should be noted that functioning of public institutes, economy as a whole and the environment was considered isolatedly for some time. As a result, destructive changes occurred in the natural human environment and internal worldview.

A similar model of society existed only by means of generations “in future”. The global challenges of our time, when civilization faces environmental problems, total poverty, hunger and moral degradation, can be explained by these factors. The depreciation of moral standards provoked the massive appearance of terrorist organizations, religious and ethnic conflicts. In the view of many experts [8-16], the twentieth century has made it clear that the unregulated market and economic planning cannot fully ensure positive changes either in the ecological or, moreover, in the socio-economic sphere.

The combination of all of the above reasons contributed to the fact that advanced international public organizations (the analytical centre the Club of Rome with its famous report “Borders of Growth” [15], the International Institute for Applied Systems Analysis (IIASA) (Luxembourg, Austria) and the International Federation of Institutes for Advanced Studies [1] approached the challenges of globalization in a different way. In science, such a critical approach was named “sustainable development” (“concept of sustainable development”). In part, it is a continuation of the doctrine of the noosphere proposed by the famous academician V. Vernadskyi at his time [5, p. 17].

The essence of this approach is to necessarily coordinate economic, social and environmental development of society. Its goal is to maintain the quality and safety of life in place for present and future generations so as “not to deteriorate the state of the environment and to promote social progress that takes into account the needs of each person” [13].

As a result of the complete introduction of the notion “sustainable development” and the adoption of the document declaring its basic principles (“Agenda 21” following the results of the monumental United Nations Conference), leading specialists and politicians expect that obvious crisis moments of civilization will be avoided. This accounts for the trends outlined in the society at the end of the 20th century, which concern many states, spheres of production, subjects of commercial / non-commercial activity [1].

At the United Nations World Summits dated 1992 and 2002, attended by prominent scholars, politicians and public figures from 180 countries, the concept of SD received a generalized interpretation. And the delegates of the International Ecological Forum in 2003 put forward an initiative to popularize the principle points of the concept at the micro and macro level. The members of UNEP proposed a certain list of characteristics of integrated economic sustainability (fig. 2).

“Agenda 21” mentioned above was approved by all the participants of the United Nations Conference. According to its content, countries and cities should gradually come to SD by introducing this notion at the macro and micro level. Since, in M.

Castells' opinion, it “unites most of the main problems of preservation, restoration of nature and ensuring decent life of all generations” [1].

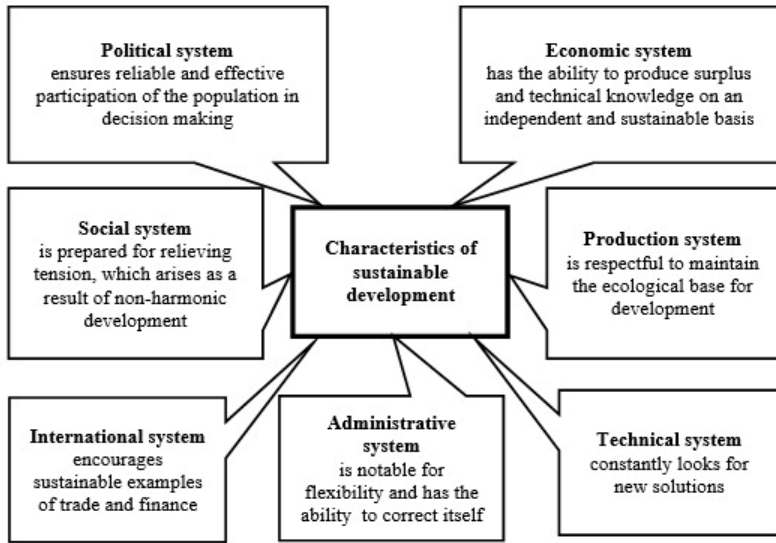


Fig. 2. Content of characteristics of sustainable development of systems  
[based on 1, 4, 6, 7, 9, 14, 16]

As a signal to the integration of entrepreneurship and social problems, the innovations described were conceived and quickly used by advanced business circles. So, at the end of the 21st century, the Charter “Business and Sustainable Development” was published, which proclaimed, “Economic growth creates all conditions necessary for preserving the ecological balance and achieving the social goals that determine SD [11]. Dynamic and socially responsible business is the driving force of the economy SD and forms the managerial, financial and technical resources necessary for solving the problems of the environmental conditions” [14]. The created Business Council of business circles developed and published another document of strategic importance – “Changing Course” [12].

In general, successful testing of the SD concept by representatives of business circles is becoming more and more global and has significant support. It is used by such industrial bookends of universal importance as: Intel, Procter & Gamble, British Airways, Bayer AG, Dupont, Canon, Volvo Car Corporation, Shell International, Hewlett Packard, Volkswagen AG, Ford Motor Corporation, Electrolux, Hitachi, Mitsubishi Corporation, Nike, Philips Electronics, Nokia, Renault, etc.

Following a unique trend “sustainable development”, as well as on the wave of the popular in the early 21st century trend towards the introduction of social

responsibility at the corporate level, a new indicator – the share index of sustainable development of Dow Jones (Dow Jones Sustainability Index – DJSI) was introduced by the efforts of the global business elite [6]. Today, the subjects of DJSI are determined on the principle of integrated assessment of the development level, and, therefore, are automatically regarded as the most successful.

Summarizing all above-mentioned information, we consider that it is necessary to propose our own definition of the notion “sustainable development of the enterprise”. Sustainable development of the enterprise is suggested to be defined as a dynamically progressive process of purposeful changes within the main areas of the enterprise activity, where the main criteria of development are determined by economic efficiency, environmental safety and observance of the foundations of social justice and business responsibility for improving the quality of the nation’s life. Coordinating and consolidating these three components is the main task. In this regard, for enterprises that are oriented in their activities on the principles of SD, the performance of the specified tasks and the whole complex of administrative missions is becoming the first priority.

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## **FACTORS AFFECTING THE COMPETITIVENESS OF THE COUNTRY**

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In modern market-based economic conditions, the competitiveness capacities of companies, industries, regions are regarded as the main instrument for intensification of the socio-economic development of the country [6]. Both market participants and the state are the subjects of the formation and regulation of the competitive environment, the development of competition justice, creating conditions for improving the efficiency and competitiveness of the economy.

The consideration of the nature of the factors that shape the competitiveness of the country is of particular interest. At the early stages of the competition

system development, these factors were associated with the economic activities of enterprises, and the competitiveness of the country was considered as an integral indicator of it, which synthesized the parameters of competitiveness of national enterprises and their products [2].

Later, the experts changed their approach to the interpretation of the concept of competitiveness of the country and considered it as the capacity of the state to form and develop an environment that promotes the creation of the adding value for enterprises, and for citizens - improvement of their well-being. Accordingly, competitiveness was related not to the resources but to the institutional factors, in other words, the economic environment parameters that determine the type of the entities' economic activity [3, 5, 10]. In this regard, the notion of country's competitiveness, which reflects the significance of the institutional properties, reflects the nature of the phenomenon more adequately in comparison with the concept of competitiveness of the national economy. Moreover, the emphasis is laid not on the result achieved by the country at a certain point in time, but it reflects the potential of the country more fully, which corresponds to the concept of ability.

Modern definitions of the country's competitiveness adopted by a number of official organizations are in fact consistent with the theory of M. Porter [9] and reflect a new stage in the evolution of the concept of competitive advantage. The definition of competitiveness, adopted by the OECD, reads: Competitiveness is the ability of companies, industries, regions and nations to generate a relatively high level of income and wages while remaining open to international competition [4].

Thus, competitiveness is a complex multidimensional and multilevel category inherent in a market economy system. The pragmatic meaning of this category conveys the extent to which a set of its content characteristics can be used as a basis for developing methods and means for solving practical problems, related to the goal to achieve the required level of competitiveness. The traditional approach to the definition of any category is obviously insufficient for conveying the pragmatic aspect of its content. We need some explication that could reveal at the most general level the content interconnection of the category itself and its components with the content of other categories in the subject area. Depending on the sources, there are two types of country's competitiveness:

- Competitiveness achieved through low production costs;
- Competitiveness determined by the required knowledge and skills.

The competitive advantages are the result of an interaction of many factors that can be divided into two groups. Each group characterizes a certain sphere of reproductive conditions for the country [2].

Thus, the first group comprises the factors that determine the technological conditions of production. The factors belonging to this group form the technological matrix, through which the production activity is carried out. Schematically matrix consists of two elements: material (equipment and technologies) and manpower (labor force). The level of production efficiency depends on the qualitative

parameters of these parties: the level of technique and technology development, and the quality of labor force, represented as the aggregate of knowledge and production skills.

The second group is formed by the factors that reflect the social conditions of production, that is, the peculiarities of the environment in which this technological matrix (the productive forces of society) operates. This group includes social, cultural, institutional, legal and other factors, the combined effect of which forms the social conditions of production.

This study offers to understand the competitiveness of a country as creating conditions for:

- the residents to confer benefits that they consider to be valuable;
- use (attraction) of the respective types of economic resources for this purpose;
- the conclusion of the appropriate types of contracts to preserve the country's attractiveness for its residents.

Accordingly, a country with more developed productive forces is competitive, and among countries that have equal levels of the development of productive forces, and a country that creates better conditions for their functioning will be more competitive.

The typology of factors of a country's competitiveness provide further opportunities, on the one hand, to consider the interdependent factors as a unity; on the other hand, to reveal the nature of the causal relationship between them.

The criterion for the classification of factors is the stability degree of the competitive advantages they generate. According to Taranukha Yu.V., there are two types of factors: of low and high order (Fig. 1) [11].

In the process of globalization of the economy, the importance of the factors of low order weakens and that of the factors of higher order increases, although the formation of the latter becomes more and more complicated task and the potency of their neutralization increases. However, it is important to argue that the competitiveness of the country is ensured not by the presence of factors, but by the creation of conditions for their effective functioning and the availability of a mechanism for their implementation. Thus, the country's competitiveness is a multifaceted concept that has content features and consists in the ability of a country to redistribute the value created in the world economy in its favor and to maintain the quality of life of the population at a rather high level.

The ability to assure a country's economic independence from fluctuations of the world markets, from the influence of other countries is an important indicator of competitiveness, although it is a factor possessing the characteristics of the lower order. The level of competitiveness in this context depends on the kind of the competitive advantage the country is ready to copy, the available resources and the types of the external economic operations.

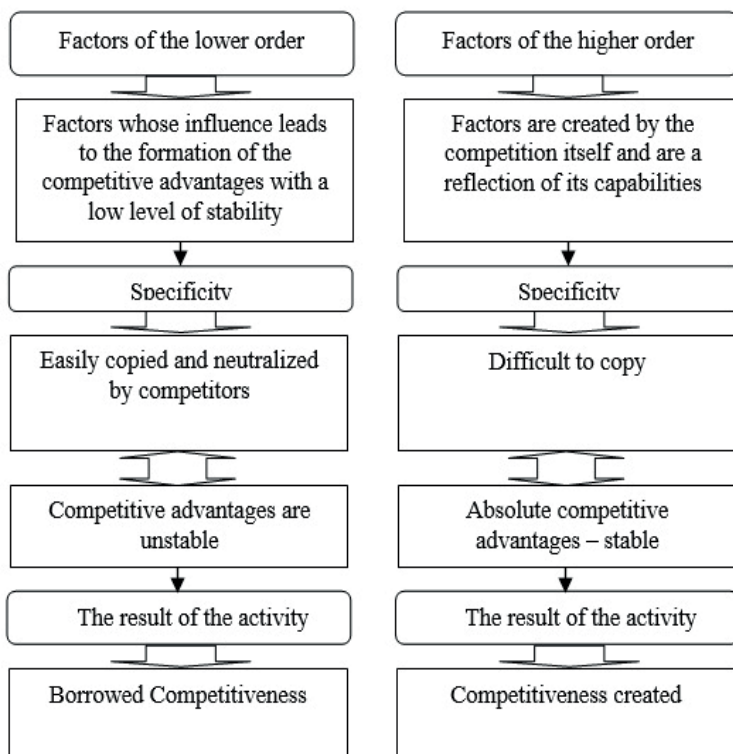


Fig. 1. Types of factors of a country's competitiveness  
[formed on the basis of 2, 10, 11]

It is essential to determine the matrix dependence of the factors of the competitiveness by their types, which will contribute to an effective assessment of competitiveness and the formation of competitive advantages of the country (Table 1).

National competitiveness is determined on the basis of the identified competitive advantages and weaknesses of the country. The competitive advantages of the country include:

- high expenditures from the state budget for research and development (R & D);
- human development and high opportunity costs;
- stability of the political and legal system;
- share of gross domestic product (GDP per capita);
- high life expectancy;
- high resource efficiency;
- optimal export;
- low inflation;

- availability of natural resources and favorable climate, favorable geographic location;

Table 1

**Criteria for assessing the competitiveness of the country**  
**[designed on the basis of 1, 5, 7, 8]**

| Factors of the lower order   | Factors of higher order       |   |                                  |                                 |                              |                               |                                    |                             |
|------------------------------|-------------------------------|---|----------------------------------|---------------------------------|------------------------------|-------------------------------|------------------------------------|-----------------------------|
|                              | Domestic economic potential   | Foreign Economic Relations              | State regulation                 | The credit and financial system | Infrastructure               | Management system             | Scientific and technical potential | Labor resources             |
| Component factors            | Added value                   | Current balance of payments             | National debt                    | Capitalization of the economy   | Basic                        | Efficiency                    | R & D expenses                     | Demographic characteristics |
| Investments                  | Exports of goods and services | Government spending                     | Accessibility of capital         | Technological                   | Labor costs                  | Scientific level of the staff | Characteristics of the labor force |                             |
| Savings                      | Import of goods and services  | Fiscal policy                           | Dynamism of stock exchanges      | Business-based (for business)   | Corporate intensity of labor | Technological management      | Employment                         |                             |
| Final consumption            | National currency rate        | The efficiency of public administration | Efficiency of the banking sector | Energetical                     | Management efficiency        | Scientific environment        | Unemployment                       |                             |
| Economic sectors development | Investments in securities     | Justice                                 | Ecological                       | Corporate culture               | Intellectual Property        | Education al system           | Cost of living                     |                             |
| Direct foreign investments   | Law enforcement agencies      | -                                       | Standard of living               | Adaptability                    | National protectionism       | -                             | National cultural values           |                             |

- a significant proportion of competitive organizations;
- competitiveness of labor resources;
- flexibility of the financial system;



- lack of public/government debt;
- high educational level of the population;
- high competition in all spheres of activity;
- openness, high level of international integration and co-operation;
- high quality of the market infrastructure in regions;
- low tax and customs rates;
- high culture of business;
- a high level of information management of the country [5].

The world ranking, according to the Global Competitiveness Index (2017-2018), was published on the basis of the statistical studies conducted by the World Economic Forum. Traditionally the rating was headed by Switzerland. The most competitive top ten states were the United States, Singapore, the Netherlands, Germany, Hong Kong, Sweden, the United Kingdom, Japan and Finland.

Ukraine this year ranked 81th among 137 countries, having improved its positions by four points (Table 2).

*Table 2*

**Positions of Ukraine and some countries according to the Global Competitiveness Index [12]**

| Positions of Ukraine and some countries according to the Global Competitiveness Index | 2012-2013<br>(3 144 countries) | 2013-2014<br>(3 148 countries) | 2014-2015<br>(3 144 countries) | 2015-2016<br>(3 140 countries) | 2016-2017<br>(3 138 countries) | 2017-2018<br>(3 137 countries) |
|---|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| Ukraine   | 73                             | 84                             | 76                             | 79                             | 85                             | 81                             |
| Georgia   | 77                             | 72                             | 69                             | 66                             | 59                             | 67                             |
| Turkey  | 43                             | 44                             | 45                             | 51                             | 55                             | 53                             |
| Russia  | 67                             | 64                             | 53                             | 45                             | 43                             | 38                             |
| Poland  | 41                             | 42                             | 43                             | 41                             | 36                             | 39                             |

According to the study, Ukraine has worsened its position in 4 out of 12 key indicators, the biggest losses (minus 13 points) are in the part Labor Market Efficiency. The last year's researches also assumed the tendency to deterioration of this indicator. Then Ukraine worsened its positions by 17 points.

According to the data, Ukraine has demonstrated a decline in the indicators of the innovation component of the Index - (minus 9 points), the infrastructure (minus 3 points) and in the level of education and professional training of the personnel (minus 2 points).

Despite the slight improvements, this year we still have the worst positions in the bank stability ranking (130th place), the regulation of stock exchanges (134th

place), the quality of roads (130th place), inflationary changes and the ability of the country to retain talented people (129th place), in property rights protection (128th place).

The negative factors for doing business in Ukraine are inflation, corruption, political instability, high tax rates, complexity of tax legislation, instability of government, difficult access to finance, inefficient state management, bureaucracy, currency market regulations, insufficient education of the employees, poor ethics of workforce, lack of ability to innovate, restrictive regulation of the labor market, inappropriate quality of infrastructure, crime and theft, poor quality of health care [12].

The in-depth analysis of the domestic and foreign experience and the key findings of the study contribute to better understanding of the principles of competitiveness efficiency, observance of which will allow the country to increase or maintain its competitiveness. The study argues that the golden rules of competitiveness efficiency are:

- stable and predictable legislation;
- flexible structure of the economy;
- investments into the traditional and technological infrastructure;
- stimulating private savings and domestic investment;
- increasing the aggressiveness of exports and attracting foreign direct investment;
- improving the quality, efficiency and transparency of management and administration;
- interdependence of wages, labor productivity and taxes;
- reducing the gap between the minimum and maximum earnings in the country;
- significant investments in education, especially secondary education, as well as in the continuous improvement of the skills of workers;
- balance between the advantages of globalization of the economy and the country's national characteristics and interests (that is, alongside with the awareness of belonging to the world community there must exist a national idea and national self-identity).

The experience of economic restructuring in Ukraine and other transition economies clearly shows that at the present stage of economic transformations only a substantial expansion of competitive advantages can become a significant factor and facilitator in the recovery of the national economy. For Ukraine, this factor is of particular importance, as it allows to accelerate the market transformation of the economy, to get access to the world commodity market and create foreign exchange reserves necessary for the modernization and structural adjustment of production [11].

Competition is a complex category. It provides an opportunity to actualize a vigorous potential of the market stimulus for business activity. Implementing an effective economic policy with an emphasis on fair competition principles, we can attain the desired harmonization of the interests of the state and business entities. It's important to emphasize that the state only creates the appropriate conditions

for the emergence and improvement of the factors of competitive advantages, and commodity producers directly create these advantages. Therefore, the state efforts to create acquired or specialized competitive advantages can be nullified by the slowness of the state authorities' decisions, their inability to timely understand the needs of specific industries and adopt new directions of activity.

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## **THREATS TO INFORMATION SECURITY: MONITORING ASPECT**

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In the context of a permanent information confrontation in the world, the spectrum of the information threats is rapidly increasing and expanding significantly. This situation poses a serious threat to national and international security and leads to unpredictable and sometimes harmful consequences in all spheres of vital activity of the state [2].

The issue of information security of enterprises has become extremely topical these days. The reason for this is a high level of informatization of the economic activity and social life on the whole through using information resources in all spheres of human activity, which often substitute other types of the resources. In the era of the formation and development of the global information economy, the counteraction to various threats and challenges born in this era is becoming a serious problem, which concerns the issue of ensuring sustainable functioning and development of the modern world and individual subjects in the current and strategic perspective [6, p. 94].

The statistic data provided by the Information Security Monitoring Center at the beginning of 2018 confirm this provision. Monitoring Center «Prospective Monitoring» is a service that processes information about security events from the connected to the center systems, determines whether a sequence of the events is an incident or not, and helps the employees of the monitoring organization respond to the incidents.

Although the observations and research analytics of the mentioned center covers only a sample of registered entities, the data presented in the report will allow us to trace the overall picture of the information threats range and information security system [5].

Regarding the analyzed data it is expedient to note that:

- the information security event is understood as identifiable occurrence of a change in the everyday operations of the system, service or network, indicating a possible violation of the information security policy, or failure of the protective measures, or the emergence of a previously unknown situation that may be relevant to the security of the information systems;

- the notion of information security incident refers to the occurrence of one or more undesirable or unexpected events of information security, which indicate the probability of a violation of business operations and the creation of a threat to the security of the information system.

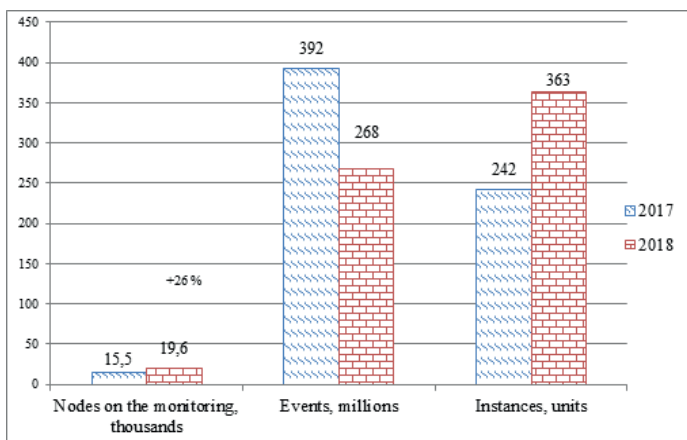


Fig. 1. Dynamics of the changes in the main determinants of the threats to information security [according to the data from the Center for Information Security Monitoring]

The sources of security events are networks and host IDS, network devices, security scanners, antivirus solutions and honeypots.

Within the internal processing of the information security system, incidents are classified according to their influence resources (Table 1).

The study has revealed that the High Criticality level of a security incident is related to the key server resources or high-risk resources of the user (resources that handle critical in terms of business, finance or legislature information). Medium Criticality level of a security incident deals with noncritical resources of server sector. Low Criticality level of a security incident refers to the noncritical resources intended for regular users sector.

Malware takes the largest share in the incidents because the more nodes to monitor, the more incidents related to the software. Like in 2017, the family infected by malicious software WannaCry and Petya / notPetya prevails. It does not encrypt data, but spreads over the network, infecting the vulnerabilities of EternalBlue-nodes.

Adware involves infecting the end system, transferring information about the user to the command server and displaying the targeted advertising.

Virus software aims at infecting the end-system, spreading the virus over a local network, disconnecting/blocking services that obstruct the spread of the virus, attempting other attacks inside the network to get the critical information and transfer to the command servers.

These days Malware is increasingly being used for Mining cryptocurrency.

As for «Exploitation of vulnerabilities», in addition to the usual EternalBlue exploits, you can separately highlight a large percentage of vulnerability exploits on the Web, and especially in Apache Struts, exploits that fell into the Metasploit suite.

**Classification of the information security violation incidents  
[based on the data from the Center for Information Security Monitoring]**

| Incident class                    | High criticality | Average criticality | Low criticality | Total incidents | Share incidents |
|-----------------------------------|------------------|---------------------|-----------------|-----------------|-----------------|
| Malware                           | 59               | 29                  | 66              | 154             | 42%             |
| Exploitation of vulnerabilities   | 33               | 19                  | 16              | 68              | 19%             |
| Selection of passwords            | 26               | 23                  | 10              | 59              | 16%             |
| Attack                            | 10               | 26                  | 11              | 47              | 13%             |
| Violation of the policy of the IS | 11               | 9                   | 8               | 28              | 8%              |
| DDoS                              | 4                | 3                   | 0               | 7               | 2%              |
| In general:                       | 143              | 109                 | 111             | 363             | 100%            |

Matching the passwords involves attempts to select authenticated information for access to the services and resources of the controlled organizations – RDP, SSH, SMB, DB, Web.

Violation of the information security policies is a violation of the information security policies by the users / administrators of the controlled resources in the use of outdated versions or non-trusted software. This software can be used by hackers to attack by exploiting vulnerabilities and the use of resources for their own benefit (Mining bitcoin / ethereum).

DDoS with using resources of DDoS Amplification organization is the technology of replacing your address with the address of the «victim» and generating small requests to open services. Upon request, the service returns the response to the sender's address several dozen times larger.

Attempts to identify and exploit the system's vulnerabilities include the use of flaws in the system, in order to violate the integrity and proper functioning of the system. The vulnerability may be caused by programming errors, design flaws, unreliable passwords, viruses and other malware, scripting and SQL-injections. Some of the vulnerabilities are known only theoretically, while others are actively used and have well-known exploits.

The sources of attacks, in this case, are the IP-addresses, which are the parties to networking with controlled addresses.

The map shows the location of the first hundred IP- addresses by the number of the registered events. Most of these addresses are located in Russia, Ireland, Germany, the Netherlands, the USA, Canada, China, Germany, Mexico (Fig. 2).

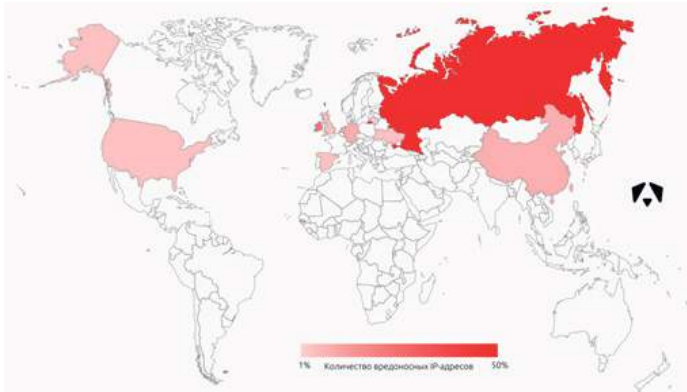


Fig.2. Map of the malicious IP-addresses in accordance with the number of the registered events of an information threat [the data from the Center for Information Security Monitoring]

At the same time, Kaspersky Lab specialists compiled a map that displays the percentage of the attacked computers in the country. The highest level is observed in Vietnam - 69.6%, Russia - 46.8%. The lowest recorded number of attacks was in Israel (8.6%), Denmark (13.6%) and Great Britain (14.5%) (Fig. 3).



Fig.3. Map of the attacked computers in the country [based on Kaspersky Lab data]

Microsoft has released a regular report on security threats to information systems.

According to the study in 2018, up to 9% of computers encounter malicious software [7].

The growing popularity of cloud services has increased the number of attacks on them. According to Microsoft, in 2018, the world recorded 4 times more security

threats than the same period a year before. The number of attempts to sign in to Microsoft from harmful IP-addresses increased by 44%, becoming the main source of the cloud service infections (51%). The most common attacks are through the dial-up protocol (23%), spam (19%), port scanning (3.7%), SSH protocol \* (1.7%), and others [3].

The report argues that the most widespread are Trojans malware (by the end of 2018 they had been caught out by the users of 10.26% of computers).

The second and third place belongs to viruses (1.59%) and bootloaders of trojans – droppers (0.64%). In the same period, unwanted software was found on most infected computers by the installers of additional software (5.49%), browser modifiers (2.14%) and adware (0.25%) [3].

Accordingly, Gartner forecasts costs increase in all major areas in 2019. About \$ 57.7 billion (+ \$ 4.65 billion) is planned for cyber defense services, for security of infrastructure - about \$ 17.5 billion (+ \$ 1.25 billion), for network security equipment – \$ 11.67 billion (+ \$ 735 million), for consumer software – \$ 4.74 billion (+ \$ 109 million) and for the IAM-system – \$ 4.69 billion (+ \$ 416 million) [4].

Analysts also believe that by 2020, more than 60% of the world organizations will invest simultaneously in data protection tools, information loss prevention software, encryption and audit. By the end of 2018, the share of companies purchasing such issues was estimated at 35%.

Another significant Article of the corporate costs in information security is engaging the third-party professionals. The costs of the companies for IT outsourcing in 2019 will increase by 11% and will amount to \$ 18.5 billion. The main reasons for it are the increasing demand for the cybersecurity personnel, the technical complexity of the IB-systems and the growth of the cyber-threats.

According to Gartner, in 2019, corporate costs for third-party IB services will amount to 75% of the total cost of software and cyber security equipment, while in 2017 this share was at 63% rate [4].

Achieving a higher level of cyber resistance within individual enterprises or the entire society requires more efforts to identify and manage new risks inherent in modern technology. Companies need the effective guidance and procedures for implementing information security measures that digital progress requires. In the digital transformation, special attention should be paid to the protection of the technologies and processes while implementing, and in some cases, to integrate cybersecurity into this process.

Summing up, it is worth reminding of the need to reconsider the interpretation of information security as an additional optional service, the inclusion of which is not a prerequisite for the successful functioning of the society, country, organization, personality. These days the information environment is developing and being structured. The issues that we could have neglected before can not be ignored now. This is an incentive to introduce new legal acts and promote the emergence of new regulators, both public and private. This is also the reason for transforming the



criminal information world both by the methods of attacks and by the participants [1].

Thus, the provision of the information security remains one of the most pressing and complex problems in modern data transmission networks.

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## **IMPLEMENTATION OF ECO-INNOVATION MANAGEMENT TO ACHIEVE SUSTAINABLE DEVELOPMENT GOALS**

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In modern conditions ecological economics goes in the first place, which addresses the relationships between ecosystems and economic systems by integrating ecological, social and economic aspects in sustainable development.

Following the end of the World War II economies of developed countries grew rapidly: economic prosperity characterized by high productivity, wages, consumption and system of social benefits. The economy became more prosperous, but since oil crisis its explosive growth slowed down. The recognition of significant global challenges such as the economic recession, environmental degradation and resource shortages led to the successive technical change for the creation of a new model of society.

The global community set sustainable development as a goal for society and acknowledged that business and industry play a crucial role in reducing impacts on resource use and the environment through efficient production processes, preventive strategies and cleaner technologies. Eco-innovation globally emerged as route to achieving sustainable development [2; 5].

Due to increased mass production and improved technological efficiency, eco-innovation must address aspects of the economy, ecology, and society to impose limitations on the present rate of environmental resource use.

Eco-innovation aimed at significantly improving environmental protection and comprises new, better or cheaper abatement technology; green products, energy technology and transport; cleaner process technologies and waste reduction. They are closely related to the development and use of environmental technologies as well as the concepts of eco-efficiency and eco-industry. Initially, eco-innovation merely focused on production and processes, but has been expanded to new management and business methods, the use or implementation of which is likely to prevent or substantially reduce the risks to the environment, pollution, and any other negative impact of the use of resources throughout the lifecycle of related activities (Fig.1). Currently, the world market of environmental products and services is growing.

Eco-innovation exerts a significant influence on environmental performance, enhances a firm's competitive advantage, and industrial symbiosis allows firms to achieve a win-win situation in their supply chain network [6; 7]. The technology push is particularly important during the initial phase of an innovation's life cycle, and environmental regulation may lead to eco-innovation by forcing technological improvements. In the diffusion phase of new environmental products, the demand from consumers, public procurement, and other firms, and exports is important.

The guarantee of accelerated private investment in innovation is the expectation of rapidly growing demand for products based on those new technologies. Environmental accounting systems, eco-audits, and eco-labels may improve eco-innovation's information base and determine innovative behavior in firms. R&D investments or fiscal benefits, can help to develop eco-technologies, and financial aids contribute to forming and supporting eco-innovation markets. [1; 3; 4; 9].

Environmental technology involves new design principles, operational tools and processes along with practices for continuously improving environmental performance. The closed-loop supply chain, which consists of both forward and reverse activities in a specific system, is considered to play a critical role in the management domain.

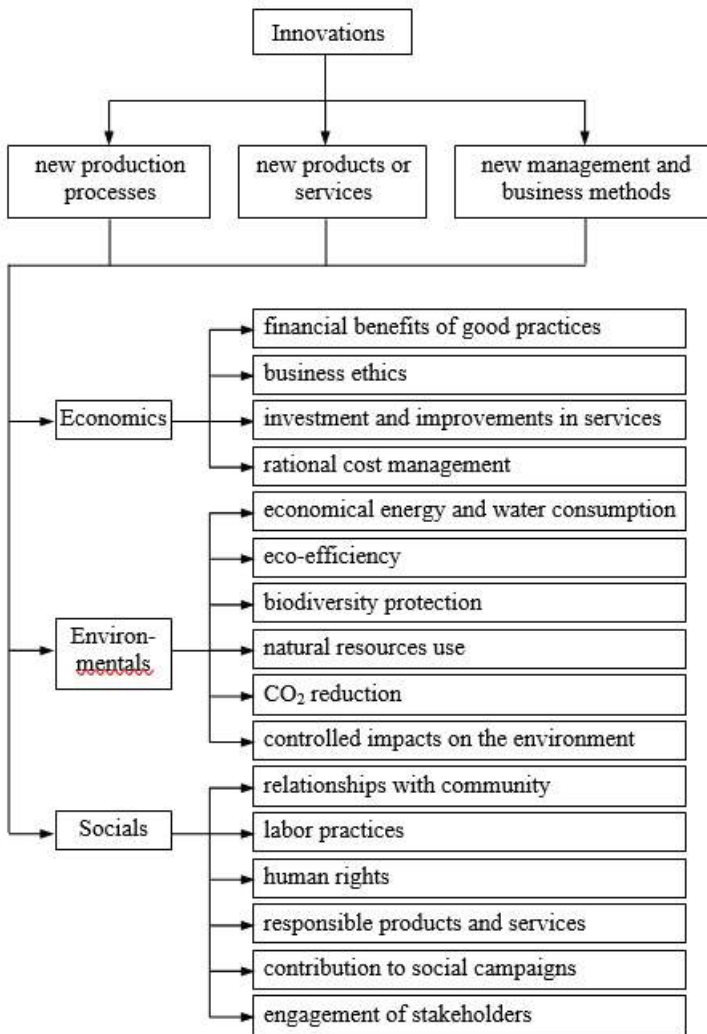


Fig. 1. Innovation features subordinated to sustainability criteria  
 Source: developed by the author.

Faced with the fuel intensiveness of material acquisition, highly energy intensive manufacturing, the end of life of products, harmful fertilizers, raw material wastage, the degradation of the ecosystem and land, high water and chemical consumption, companies are forced to embarked on eco-innovation. Establishing sustainable production and consumption patterns is the common aim of eco-innovation.

Table 1

### Priorities for Eco-innovative projects in different sectors

| Economic sectors                       | Specific priorities considering its important environmental impact  |
|--|---|
| The building & construction sector     | <ul style="list-style-type: none"> <li>- Innovative building products that reduce environmental impact and/or support a rational use of natural resources;</li> <li>- Water saving, re-use of natural waters, rainwater collection and green roofs;</li> <li>- Innovative sorting, re-use and recycling of construction and demolition waste.</li> </ul>  |
| The food & drink sector                | <ul style="list-style-type: none"> <li>- More efficient and cleaner processing of products that reduce waste and increase material recycling and recovery;</li> <li>- Innovative packaging methods and material that reduce environmental impact and maximize the use of raw materials in the food sector;</li> <li>- Innovative products, processes and services reducing environmental impacts of consumption (new packaging, distribution and purchasing decisions);</li> <li>- Improved efficiency water management processes that reduce the use of water across supply chains.</li> </ul> |
| Greening business / 'smart' purchasing | <ul style="list-style-type: none"> <li>- Promotion and implementation of environmental criteria for purchasing decisions of enterprises;</li> <li>- Innovative cluster approaches to management which contribute to the optimal use of resources, energy efficiency and biodiversity conservation</li> <li>- Products and services that follow the life-cycle approach in line with the principles of the sustainable consumption and production</li> </ul>   |
| Materials recycling                    | <ul style="list-style-type: none"> <li>- Improved sorting processes for waste materials: industrial, construction, household, electrical and electronic waste;</li> <li>- Business innovations for strengthen the competitiveness of the recycling industries;</li> <li>- Eco-friendly design and production of high quality consumer goods;</li> <li>- Innovative recycling processes.</li> </ul>  |

*Source: developed by the author.*

Eco-innovation as a priority area requires support projects in different sectors which aim at the prevention or reduction of environmental impacts or which contribute to the optimal use of resources. Practical examples of eco-innovation include processes to recover valuable substances from waste water, more efficient food packaging, producing construction materials from recycled waste; introducing technology to generate energy from the processing of organic waste; reduction in harmful chemical use; sustainable business practices; eco-tourism (Table 1).

However, remains big hurdles like stubbornly high domestic competition, the risk of intellectual property violations, complex regulations, and administrative processes, cheap imports of raw materials which undercut demand for organic produce, a lack of viable financing options, to commercial loans in particular [8; 10].

The scarce development in the companies in respect to their environmental strategy may be a consequence of the links among some of the following factors: limited financial resources, the type of organizational structure, the managers' scarce environmental training and short term orientation, the staff's scarce environmental awareness and training, the status of the environmental issues in the company, the companies' lower ability to obtain highly radical innovations, the scarce influence of manufacturing process flexibility in the most advanced states of the environmental strategy in the companies and their lack of relation ability with external stakeholders.

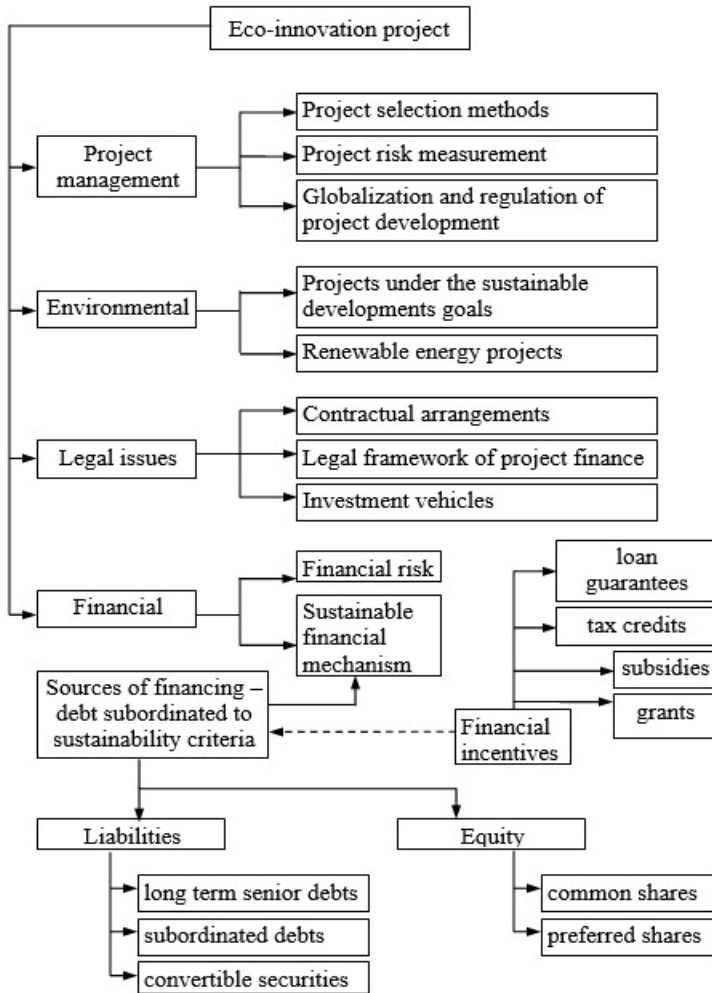


Fig. 2. Organization and management of eco-innovation project  
 Source: developed by the author.

There was a need in a systemic approach that facilitates understanding of the relationship between the biosphere and the economic-finance structure which is focused on optimizing resources for generating not only environmental benefits (global warming prevention, resource recycling, and environmental consciousness) but also economic profits (quality, costs, and delivery). Changes are needed to establish new ways in order to close the gap between the development of infrastructure systems and financing sources using the incorporation of sustainability criteria in the financing process (Fig. 2).

The implementation of environmental management systems plays an important role in building eco-innovation in circular business. Managing waste in a proper way helps to protect human health and the environment and enhances a firm's sustainability. Therefore, creating a program that controls the amount of waste they generate is important. Cooperation with suppliers plays a vital role in formulating a firm's innovative ability. The relationship between firms and suppliers should be built based on trust, information exchange, technological collaboration, and investment.

Firms gain numerous benefits from information knowledge sharing among buyers, manufacturers, and suppliers, such as improving communication among employees, enabling better and faster decision-making processes, stimulating innovation and growth, improving deliveries to customers, and reducing the loss of knowledge. By building a tracking system for products, firms can make more accurate forecasts or decisions based on all information regarding the stock, delivery, and condition of products (Table 2).

An environmental management system can help achieve cost savings, improve operational efficiency and environmental performance, increase customer loyalty, and enhance employees' skills. Firms should give more consideration to launching environmental management systems to enhance profitability and to developing increasingly more environmentally friendly products and services, which is critical to building eco-innovation and to gaining further competitive advantages over business rivals.

Eco-innovation can enhance environmental awareness and increase operating efficiency within a firm. The technological, entrepreneurial, territorial and economic dynamics of innovation favors innovative approaches by actors who, through their behaviors, strategies and smart innovation policies, modify economic models in a perspective of sustainable growth.

Table 2

### Suggestions about the decisive attributes that may assist business in reaching the circular level

| Directions                            | Aspects   | Explanation   |
|---------------------------------------|---|---|
| Environmental technologies            | waste management  | reduces the amount of materials, energy, water, and land used, thereby raising the input efficiency of each business unit that is produced and distributed  |
|                                       | green-power technology development                                | development of new technology that is more environmentally friendly   |
|                                       | recycle, reduce, re-use   | allows used resources and used materials to be part of the production and consumption process for a longer time, that is, until they are physically degraded  |
|                                       | environmental monitoring / pollution control                      | an important type of eco-innovation that can lower air emissions and waste. In addition, environmental monitoring can help to reduce damage by preparing methods against risks  |
| Organizational innovations            | management of the value chain                                     | includes strengthening the transformation from local and unidimensional optimization to extensive life cycle optimization and addresses the entire product life cycle   |
|                                       | information knowledge sharing                                     | allows suppliers, manufacturers, and retailers to increase the accuracy of forecasts, orchestrate production and delivery, align inventory-related decisions and develop a platform to share information  |
|                                       | creating knowledge  | relates to the sources of knowledge, and suggested that the key to success relies on collaboration and coordination among partners throughout the entire value chain  |
|                                       | implementation of environmental management system                 | suggesting that eco-innovation occurs only if the applications are not harmful to human health and the public widely understands the meaning of the natural environment   |
| Green product and service innovations | development of environmentally friendly new products and services | generates new demand and opportunities for green product / service deliverables   |
|                                       | eco-efficient package innovation                                  | traditional and non-sustainable business practices encounter constraints linked to a rising green agenda; current products / services deliverables are thus required to consider a broader definition of value to fulfill public expectations, including ecological value   |
|                                       | adapting to customers through personalization                     | can be considered a buffer to reconfigure and shift existing products / services and design new products/services as ecological product / service deliverables, thereby addressing stakeholders' needs and market segments. This approach is a value proposition that complements the more "traditional" financial and market-related metrics |
| Green innovation process              | knowledge sharing among partners / employees                      | a firm is able to promote knowledge sharing practices among groups or organizations to generate new ideas and explore new business opportunities to facilitate innovative activities  |
|                                       | cooperation with suppliers  | research and development related to green innovation processes can guarantee inputs or elements with eco-friendly characteristics   |

*Source: developed by the author.*

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# THE SHADOW ECONOMY ASPECT IN THE NATIONAL SECURITY SYSTEM

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Since the beginning of the transition period, Ukraine has faced the problem of a shadow economy – illicit economic activity, uncontrolled by society production, distribution, exchange and consumption of inventories and services. The shadow economy in Ukraine has become one of the major threats to the national security. Its impact on the Ukrainian society and the state is complex and systemic.

The topicality of this problem is substantiated by both internal and external factors. Firstly, the complication of intra-economic and socio-political problems in a number of countries: the state budget deficit, unemployment, «shadow economy rampage» and other negative phenomena of decline in production, political instability and aggravation of social tension in society. Secondly, in conditions of some countries debilitation, the desire of other states to military-technological superiority over them, the use of economic levers of pressure to achieve their political interests is increasing. Thirdly, the issue of maintaining a certain balance between the positive and negative factors of the foreign economic relations influence on the course and pace of the national socio-economic transformation, including the provision of the state defense capacity, are the issues of vital importance [3].

At all times, national economic security has been a paramount problem. The economic security of the state is characterized by the conditions and factors that determine the state of the economy, its stability, degree of the legalization and the level of legislation efficiency. Actually, the economy of any state, as well as other spheres of human life, includes the shadow sector [9].

At the moment, the issues of the shadow sector's influence on the state economic security of Ukraine is one of the most urgent, since their solution depends on the leveling of external and internal threats to the subjects of legal relations, as well as the prospects for their economic growth.

All countries of the world try to cope with the shadow economy in their systems of economic security with alternating success. The essential determinants of the shadow economy identification are the volume, forms, aspects of implementation and the level of socio-legal control. The economic specificity of the shadow economy is its destructiveness, that is, the direct negative impact of the subjects of legal relations on the economy of the country or a region [1].

According to Z.S. Varnalii, the shadow economy is a complex socio-economic phenomenon, which is represented by a combination of uncontrolled and unregulated (both illegal and legal but immoral) economic relations between the economic entities aimed at getting surplus income through the concealment of income and

evasion of taxes [2].

Some Ukrainian and foreign economists assume in their works that the shadow economy is an economic activity that contradicts the law and is a combination of illegal economic activities that fall into a category of criminal offenses of different degree of gravity.

O.V. Skoruk argues that the main reasons for the existence and growth of the shadow economy in Ukraine are:

- protracted socio-economic crisis in the country;
- presence of the organized economic crime and corruption in the state and local self-government bodies (in terms of corruption Ukraine was the 131st among 176 most corrupted countries in 2016);
- extra-banking money circulation;
- the complexity and chaos of tax legislation;
- the imperfection of the current legislation in the sphere of national security;
- the criminogenic activity of the banking system;
- shadow psychology and shadow morality of our society [8].

Most scholars in this area consider the shadow economy as a system of three integrated sectors:

1. Informal economy («second» or «white collar»). It is prohibited, concealed by law economic activity of the «white» (official / formal) economy, which causes a hidden redistribution of the previously created national income. This kind of activity is mainly performed by «respectable professionals» from the senior staff («white collars»). That is why this kind of shadow economy is often called «white-collar» economy or the «second» economy. It does not develop any new products or services, that is, the benefits of the «second» shadow economy are at the expense of the losses of the others. In modern conditions, the unofficial economy forms the largest sector of the shadow economy. Subjects of unofficial economic activity are those who oppose the state and evade government control and tax levies [5].

2. Fictitious economy (gray) is the economic activity permitted by law, but which is not registered (mainly small business) and deals with the production and sale of consumer goods and services. Unlike the «second», «gray» shadow economy functions more autonomously. The participants of the shadow economy or producers deliberately avoid official registration (not wanting to pay the costs connected with getting licenses, paying taxes, etc.), and the report on such activity is not provided by law.

3. The underground economy (black) is illegal economic activity related to the production and sale of the banned and extremely insufficient for the demand goods and services. The «black» shadow economy, in the broadest sense of the word, includes all activities that are commonly excluded from the formal economic relations, since they are considered to be harmful to the society and dangerous for the formal economy development. This activity may not only be based on the violence and redistribution (theft, robbery, extortion) but also implies the

production of goods and services that destroy a society (drug business, racket). In recent researches, attention is focused, first of all on the economy of the organized crime and the activities of the professional economic criminals.

It is a commonly recognized fact, that the shadow economy can exist and develop on a large scale only in the conditions of corruption of all systems of state power and management. It forms corrupt relations in all spheres of politics and economy.

The shadow economy closely correlates with the number of jobs and the level of corruption and crime. In a country with underdeveloped industry, with a high rate of unemployment in the economy, the employment that does not meet the needs of the population, the shadow economy with its large share in GDP is inevitable. People, deprived of legitimate work, are forced to adapt and therefore are engaged in any activity that brings income.

In countries with high taxes system, shadow economy helps the business survive. Therefore, it performs a positive function, reducing the official unemployment rate and providing the population with illegal jobs. Despite this positive (short-term) effect, the disastrous consequences for the economy (in the long run perspective) are inevitable.

Since the shadow economy actions are uncontrolled and unregulated, a significant number of able-bodied population of the country is forced to take an illegal, criminal path. The main goal of the shadow economy is profit, which they can not get without violation of the country's legislation.

It is a generally accepted fact that the shadow economy and corruption are inseparable and generate each other. The shadow sector in the economy is a fertile ground for the development of the corrupted actions since it lies outside the scope of legal norms. In addition, the shadow economy generates a steady demand for the corrupt services and regulates the number of the corrupt officials it needs. The corrupt activity itself is an integral part of the shadow economy. Thus, the fight against corruption can not be effective without combating the shadow economy. In this context, the problem of studying these negative socio-economic phenomena in the country and working out the strategy of the state policies against corruption and the shadow economy ought to be considered together, as one single complex task. Only this methodological approach can ensure reliability of the obtained results and data.

The most debatable, controversial and versatile issue is the assessment of the balance between the positive and negative effects of the shadowing activities on the official economy. In the case study of the complex institutional phenomena, to which the shadow economy belongs, the dualistic approach to the interpretation of the positive and negative features is more appropriate. Most of the economic processes are characterized by the duality of positive and negative qualities that have a constructive and destructive impact in terms of the interests of the society. Depending on the period of cyclical development, both official and shadow economy can equally manifest their beneficial system-forming and destructive antisystem characteristics. In this respect, the national research specifics are principal. In certain studies on economy, the degrees of negativism and the threats of the shadow

economy are somewhat overestimated. It is natural because they are predominantly associated with the underground (criminal) sector of economy. In this case, the absolutization of the negative assessments will ignore the positive effects of the shadow economy (for example, the contribution of the hidden component to the GDP of the country, which is not taken into account) [6].

Many experts on the economic relations argue that the presence of the shadow economic activity is a determinant of the unsuccessful economic policy of the state. The imperfection in the policy provides further opportunities for the shadow economy to penetrate into all spheres of the social life. The shadow institutes have taken spreading roots and germinated in the political and legal system. Thus, shadow activity has a significant impact on the state of the economy and the social climate of the society. Most of the aspects considered by us suggest that the shadow economy leads to negative social and economic consequences. At the same time, one can argue that these consequences, which are the results of the shadow economic processes, can not be estimated exclusively as negative ones. Many types of shadow economic activities facilitate the development of the legal (official) economy. The negative effects of the shadow economy activity concern, above all, the fact that various social and economic institutions undergo systemic changes and cause the deformation of the society foundation.

Table 1 shows the results of the analysis aimed at comparison of the positive and negative determinants of the shadow economy influence on the legal economy.

Consequently, the key findings of the study suggest that the role of the shadow economy in a constantly changing socio-economic environment is ambiguous. On the one hand, tax evasion increases the competitive advantages of the enterprises engaged in the shadow actions, and also allows the employees of these companies to receive additional incomes and reduces the level of real unemployment. On the other hand, as a result of the shadow activity, the state budget suffers losses, the efficiency of macroeconomic policies decreases, the structure of the economy undergo transformations, the investment climate and the competitive environment for law-abiding entrepreneurs worsen. The shadow sector in the economy has detrimental effects on the national interests of the country and its economic security. The formation of the effective policy to combat the shadow economy requires new scientific socio-economic and economic-legal approaches.

The analysis of the role of the shadow economy in the national security system has revealed that its influence on the economic growth and the development of the formal economy is multidirectional and besides the negative and harmful features, they have some positive effects.

Undoubtedly, any shadow economic activity is a crime. Economic crime starts with a deviation from the generally accepted regulations of social development, which is still unstable in Ukraine and is characterized by legislative inconsistency, administrative disorder and violations, and many other negative factors. Therefore, it will be appropriate to note that the transition to the shadow economy is not only a

digression from the standards of social development but may also be a forced act of the economic entities. In general, their economic activity is carried out on legal grounds, but real final financial profits are concealed in order to evade tax payments [7].

*Table 1*

**Positive and negative aspects of the shadow economy**

| Positive features  | Negative features   |
|--|---|
| The effectiveness of the shadow enterprises activity is higher than the effectiveness of the legally existing enterprises.                 | The shadow economy destructively affects competition and distorts the market mechanism  |
| Participants in shadow relations have the opportunity to earn extra money and increase their incomes                                       | Shadow relationship distort the tax system of the country and do not provide sufficient tax revenues to budgets of different levels |
| GDP of the country on the whole is growing including the regions where the shadow business is developed                                    | Shadow activity negatively affects the state financing system, reduces the state budget and deforms its structure and budget sphere |
| Shadow relations reduce social tension in the society, facilitate social contradictions between the rich and poor strata of the population | Shadow producers do not invest in R & D (research and development)  |
| Shadow economic activity of the population helps to smooth excessive inequality of incomes   | The shadow economy entails deformation of the social sphere   |
|  | Shadow economic phenomena negatively influence the reproduction of the labor force in the formal economy                            |
|  | Shadow economic activity has a significant negative impact on the country's ecology   |
|  | Enterprises participating in shadow relations violate consumers' rights   |
|  | Active shadow activity is one of the causes of the corrupt society  |
|  | Shadow economic activity has a substantive negative impact on the international economic relations                                  |

Thus, the shadow economy destabilizes mostly the interests of business entities:

- it obstructs the formal mechanisms of taxation and, accordingly, reduces the amount of taxes collected, thereby affecting the national interest. Alternative, shadow tax mechanisms (the content of «roofs», payments to officials for their direct duties, etc.) often supplant the official taxation;
- shadow activity disorganizes the production process in the official economy, worsens the situation of existing economic organizations and prevents the creation

of «healthy» enterprises, infringing collective interests;

- the shadow economy, being related to the criminal activity, generates numerous conflicts, the only way to resolve some of which is the use of violence. Sociological surveys indicate that 30-40% of enterprise managers have personally encountered cases of racketeering, extortion, attempts to put the enterprise under the control of criminal groups;

- institutionalized de facto and many other far-from-not-harmful economic phenomena, for example, resolution of conflicts between entrepreneurs using force or illegal privatization of former state property, etc.

Thus, the existence of the shadow sector in the country's economy is a serious threat not only to economic but also to national security on the whole.

The key findings of this study provide evidence that the shadow economy effects on the formation and growth of the legitimate economy should not be interpreted as purely destructive but as multidirectional ones. The detailed analysis of the shadow economic activity contributes to better understanding of the negative, destructive factors and positive features of the shadow processes in the economy. The conclusions of the research may help to determine the strategy of how to control their expansion because of the potentially serious consequences for the national security system.

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# INCLUSIVE DEVELOPMENT OF THE UKRAINIAN ECONOMY: STRATEGIC ASPECTS

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In modern conditions of fundamental changes, on both domestic and world scales, it is difficult to holistically comprehend and objectively evaluate processes and occurrences in the economic sphere of the state. The escalation of international military and political tension is due to a change of technological systems and age cycles of accumulation, during which there is a profound structural restructuring of the economy on the basis of fundamentally new technologies and mechanisms of the capital reproduction.

The key positions of the neoclassical model of economic growth, provide consideration of scientific and technological progress as the only way to achieve long-term development and recognize endogeneity of accumulation of capital, knowledge and human capital, are also relevant today. This is evidenced by the chosen course of states to ensure sustainable development, which strengthens the role of innovation. However, by this time one of the complex, and even the most debatable problems of developed economies is the problem of so-called secular, that is, «eternal» stagnation [5]. The existence of «failures» in the system of social protection, health care in many countries, the problems of social adaptation and environmental risks, and the restriction of access to goods and services already today characterize the inability of a market economy to solve key social problems.

For the first time, the term of inclusion was applied in the 1970s in the United States, but then only social inclusion was highlighted, which meant the increase in the degree of participation of all citizens in society, when each person as an individual is perceived by society and has the ability to fully participate in society. Differences and deviations are consciously perceived in the context of social integration, but their significance is limited. The right to participate in society is based on social ethics in all spheres of life [3]. Gradually, the concept began to apply to the economy. Severe environmental circumstances as a result of technogenic activities, a number of social and political problems indicate that the evaluation of economic, social or other processes purely from the standpoint of financial and material profitability is, though indicative, but imperfect. Also, the growth of separate country or sector of the economy is not isolated from others due to globalization and technological progress.

Foreign economists J. Robinson and D. Asimoglu consider the economic essence

of the notion of «inclusiveness» as an involvement in the process of everyone, without distinctions and restrictions [1]. According to the domestic scientists A. Bazylyuk and O. Zhulin, inclusion consists in adapting the system to the needs of the person, «... the concept of inclusive development implies that each subject of the economy is important, unique, valuable to society and has the abilities to satisfy it's needs...» [2, c.20].

Inclusive growth is a concept that provides fair opportunities and equal rights for economic actors, accompanied by benefits brought to each sector of the economy and various groups of society. This approach extends traditional models of economic growth and includes focusing on equality of health, human capital, ecological state of the environment, social protection and food security as global security factors in the broad sense [2].

Inclusive growth is fundamentally different from standard economic growth, since it has wider goals than income growth and GDP, and requires the country's government to actively work to achieve these goals, without assuming that positive results will automatically come from growth; shifts the accent on human development and increasing its welfare and reducing poverty and inequality level; aimed at increasing attraction and active participation in the economy, and not only on the results of the distribution. The development of the concept of inclusive development in accordance with the EU Development Strategy up to 2020 is presented in Fig. 1.

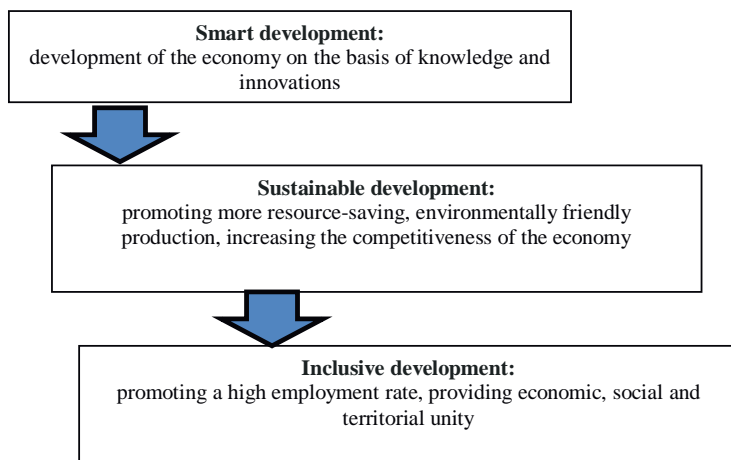


Fig. 1. The place of inclusive development in the system of the main priorities for Europe according to the Development Strategy up to 2020 [4]

The main key aspects of inclusive growth are investment in human capital, creating new jobs, structural transformation, progressive tax policies, social protection, avoidance of discrimination, social integration and participation,



effective institutions.

The study of the content and features of inclusive economic development and the opportunities for its achievement in countries with different levels of social and economic development were at the center of scientific research in many countries and international institutions, including the Organization for Economic Cooperation and Development (OECD), the United Nations Development Program (UNDP), the European Commission, International Monetary Fund (IMF), World Economic Forum (WEF), World Bank, International Center for Inclusive Development Policy. The main areas of this research are the identification of opportunities for ensuring equal access to markets, resources and an unprejudiced regulatory environment for different social groups, the formation of mechanisms for ensuring productive employment, increasing income for alienated groups and combating poverty, developing new approaches to the consumption of scarce resources and achieving inclusive growth in the long run. Inclusiveness, in particular, has been identified as one of the key priorities of the strategy for economic growth “Europe 2020” [4]. According to this strategy, the EU is working hard to resolutely overcome the crisis and create a more competitive economy with higher levels of employment. The Europe 2020 strategy aims to achieve the priorities of smart, sustainable and inclusive growth.

The World Economic Forum in Davos presented the Inclusive Development Index 2018. Ukraine ranked 78th place among 103 countries. The first in the rating is Norway, the last one is Mozambique. At the same time, GDP was and remains the main indicator of the country development. At the same time, this indicator has a number of limitations, such as how much conventional hryvnias or dollars per person according to GDP index, in no way shows how these funds are distributed and what quality of life they provide.

The Inclusive Development Index (IDI) is an expanded estimation of the country’s economic development. In addition to the GDP estimation, this Index measures 11 additional parameters. IDI consists of 12 indicators, which are divided into 3 large groups:

1. Growth and development (GDP per capita in US dollars, labor productivity, healthy life expectancy, employment).
2. Inclusiveness (inequality of income, poverty rate, inequality of wealth, median income of dollars per day - for parity purchasing power - per capita).
3. Generational equity and sustainability (net savings, CO2 emissions per unit of GDP, state debt, the ratio of working-age population to disabled).

For convenience of comparison, the country’s ranking is divided into two sectors: developed (30 countries) and developing countries (79 countries), including Ukraine. Ukraine ranks 47th place in its sector. For comparison: Moldova – 31st, Russia – 19th, Poland – 5th, Turkey – 16th. In the first group we have a problem with employment – 51st place.

In the group responsible for inclusiveness, we have rather high rates - the total 17th and the first place among developing countries according to the index of

income inequality and poverty.

At the same time, according to the index of wealth inequality, Ukraine ranks one of the last places (73rd out of 79). This may mean that even with the concentration of wealth in the hands of a few families, it does not work on them and does not generate sufficient income to influence income inequality. Another likely explanation is that there are some problems with the collection of used data.

For stability, Ukraine has negative indicators: the total place is 75th out of 79. One is more or less positive, is the ratio of the working-age population to disabled (10th out of 79).

Global changes in conditions of the world economy inclusive development, particularly in the employment sector, which are reflected in the analytical conclusions of leading HR agencies around the world, indicate a possible disappearance of about 66% of traditional professions over the coming years. A significant number of people who are working today will be replaced by technologies, machines that have been spreading over the last time. This means that for successful activity only narrowly professional characteristics are not enough. The modern economy and the labor market place absolutely new demands not for fulfillment of the set goals, but for how the tasks are carried out, the problems are solved, how quickly a person guides and adapts to changing business environment. It must possess a whole range of personal, psycho physiological, moral and aesthetic, emotional, volitional qualities necessary for the successful development of its own potential. In addition, the ability to effectively co-operate, build communication channels, critically think and predict the effects of its actions are necessary components of a fully developed personality to succeed. People in the 21st century are exposed to the environment characterized by diversity and interconnectedness. The constant influence of economic, digital, cultural, demographic and ecological factors on human life is caused by constant intercultural collisions. It requires the development of skills related to global competence, which focuses on the development of global and intercultural human world view. Strengthening of global competence is essential for the prosperity of people in a rapidly changing world, as well as for progress in conditions of the world economy inclusive development. Therefore, it should be noted that today there is a need not only for the skills needed to be competitive and ready for labor market challenges, but also to develop capacity for analyzing and understanding global and intercultural issues.

In Ukraine there are enough speeches by both scientists and politicians and government officials who see a single opportunity «to move from «raw drift» and «debt hole», depending on international financial institutions to ... the European level of well-being» in the transition «from the extractive to the inclusive economy, when economic processes will involve the broad groups of population, which can freely demonstrate their talents and entrepreneurial initiative». Some of them consider the key mechanisms for this is cooperative movement and programs like ESOP operating in the United States and Europe, believing that «this is a real way

to «soft deoligarization» and an inclusive economy».

However, in Ukraine today, there is already a legislative initiative that can be considered as a step towards an inclusive economy, involving the broad groups of population, solving social and economic, demographic, and environmental problems in rural areas and Ukrainian agriculture. The conviction that the «proper» launch of the land market should lead to the improvement of all processes that took place during the 15-year moratorium on the sale of agricultural land, and the leveling of distortions in the Ukrainian agrarian model caused by these restrictions, are not shared by all involved in decision-making in this area. Moreover, this is a decisive resistance, and not only about «not being worse». Sale of agricultural land in the version proposed by the government (the Ministry of Agrarian Policy of Ukraine) opens the market for ordinary peasants, but excludes large «players» (primarily agrohholdings) from this process.

Ukraine has made some important steps towards increasing level of inclusive growth and development. At the current stage, a national plan for the practical implementation of sustainable development ideas is in effect (National Report «Sustainable Development Goals: Ukraine»).

As practice in other countries shows [6], the development of projects of inclusive market involves large numbers of low-income population as producers, small businesses, customers and consumers. The development of inclusive markets in Ukraine should be an important step in implementation of a holistic concept of the system of population social protection, focusing on reducing social risks for the poor and vulnerable, creating conditions for reducing poverty, helping to form active employment policies and reduce unemployment, including:

a) organization of public works;

b) development of an automated system of information from local labor markets, primarily through the bank of vacancies, and the organization of information exchange, at least within neighboring administrative districts;

c) professional training and retraining of unemployed on the basis of tripartite agreements between employment services, employers and educational institutions, etc.

For this purpose, it is necessary to consider inclusive business models as an element of a common business strategy aimed at attracting vulnerable groups of population to the business activities of various sectors of the national economy.

Despite the controversy about the feasibility of using the inclusive development index in statistics, the concept of inclusion itself is quite rational for Ukraine (Table 1).

The concept of inclusive economic growth arose because financial profitability cannot be the only criterion in a number of aspects of the social sphere, in environmental issues, etc. Inclusive growth is aimed to provide fair opportunities for economic actors in the economic growth and equality of sectors of the economy and groups of population, and also focuses on equality of health, human capital, ecological state of the environment, social protection and food security.

**The main advantages and disadvantages of implementing the concept of inclusive growth for Ukraine**

| Disadvantages   | Advantages   |
|---|--|
| Lack of legal framework   | Gives impetus to economic recovery without using tough measures                                |
| Does not underestimate the problem of the country's external debt | Pays attention to the diversification of the economy (tourism, intellectual development, etc.) |
| Requires financial investment upon startup                        | Takes into account the problems of ecology and social injustice                                |
|   | Increases employment level   |

In the system of qualitative indicators of inclusive growth, based on its theoretical essence, and taking into account the example of the functioning and implementation of the European model of inclusive development, it is necessary to allocate the employment level of population and creation of work places with the income that exceeds the poverty line. In the process of seeking a national strategy for inclusive economic growth, it is important to outline the priorities that reflect the achievement of the strategic goal - high level of population welfare and living standards. Increasing employment and diversity of its types as the basis of inclusive development will promote the activation of entrepreneurial activity, especially in rural areas, reducing seasonality of production, full use of endogenous potential of territories. Opportunities to adapt to the European model with the elements of «inclusive growth» should be provided, based on at least two key conditions:

- 1) business development and business availability to financial resources within the framework of new institutional approaches;
- 2) formation of the European integration of the economy.

Therefore, the active participation of the population in the development of rural entrepreneurship, the effective distribution of public goods and the attraction of capital will promote the modernization of agrarian production, technological improvements, increase of labor productivity, and thus creation of conditions for inclusive growth.

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## **INTERNATIONAL LABOR MIGRATION AS AN INSTRUMENT FOR ENSURING THE NATIONAL ECONOMY COMPETITIVENESS ON THE WORLD MARKET**

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The modern global economic system has emerged as a result of the international division and specialization of labor and the further development of trade in goods, services and production factors between countries. The share of trade in world GDP has almost tripled from 1960 to 2017 from 24.12% to 57.85% [1]. Such a sharp jump was possible because of the deepening the specialization and the better use by the countries of their competitive advantages.

N. Gruschinskaya [4] notes that similar geographic, climatic, resource and other conditions enforce individual competition between different countries for creating better conditions for producers. Also, N. Grushchinskaya [5] points to the existence of geoeconomic competition, which is conditioned by the similarity of the factor conditions of neighboring countries, which contributes to their specialization in certain sectors. D. Yatskov [6] notes that selecting the enterprise location requires the analysis of the country's factor conditions in order to determine minimum production costs location to ensure the competitiveness of the company and its products in the world market.

N. Krivenko also agree with such view and admit that global producers that create major part of world GDP, on its side, allocate its capabilities in order to get better business conditions with lower manufacturing costs [2].

We focus on manufacturing costs as one of the factors that determines the

country's ability to provide favorable business conditions primarily due to lower cost of production in comparison with other countries.

As the existing borders create barriers to the movement of factors of production, and the prices of factors of production vary between countries and for a little within the countries, we assume that the competition is for the placement of production.

This assumption is confirmed by the theory of comparative advantages of Geksher-Olin. Each country provides competitive advantages over other countries through the surplus of certain factors of production used in a particular industry. The achieved competitive advantages, however, can be offset due to the Stopler-Samuelson Theory of international trade [3].

Considering the facts mentioned above we want to pay attention to The Global Manufacturing Cost-Competitive Index (BCG's Index) calculated by Boston Consulting Group. This Index measures changes in direct manufacturing costs from 2004 to 2014 among the world's top 25 exporting economies. The index develops competitiveness scores based on manufacturing wages, productivity, energy costs, and currency exchange rates compared with the U.S. dollar [7].

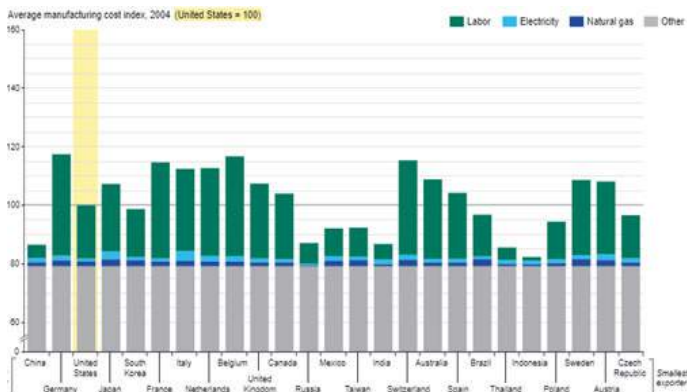


Fig. 1. The Global Manufacturing Cost-Competitive Index for 2004 [7]

It must be understood that productivity directly depends on capital, which is necessary for productivity growth, or in other words, the creation of technological production.

The BCG's Index points out a fact that many countries with low wages and resources costs have much higher manufacturing costs comparing to developed countries with high wages and resources price.

Figure 1 shows that the share of energy costs and other resources is relatively tight for all countries. However, labor costs adjustments by productivity are the most differentiated for exporting countries and, according to our assumptions, determine the competitiveness of the country on the world market.

Comparing the cost structure of the BCG's Index for 2004 (see fig. 1) and 2014

(see fig. 2), we see that the biggest changes in the structure occurred in the share of labor costs. For a number of countries this factor has become decisive.

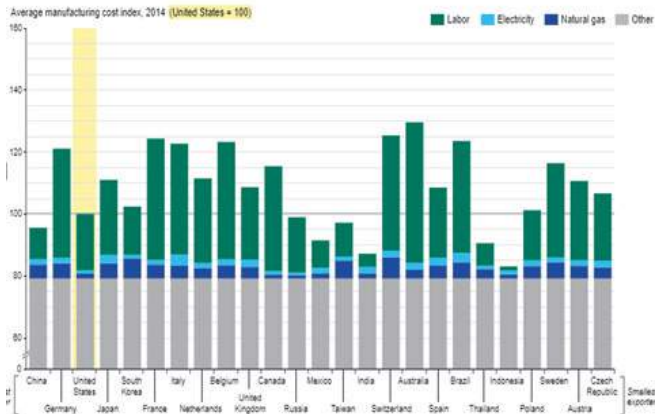


Fig. 2. The Global Manufacturing Cost-Competitive Index for 2014 [7]

For example, the cost of manufactured goods in China was on average 15% lower than in the United States in 2014. And just for a 1% in 2016. To better understand the causes of such changes, consider Table 1 and Figure 3.

The wage increased for 1000% in China and for 81.6% in the United States from 1995 to 2015. An important was the acceleration of the wages growth rate.

Table 1

**Hourly wage for 1995, 2005, 2015 years [9]**

| Countries     | Years |      |      | Відносне відхилення, % |              |              |
|---------------|-------|------|------|------------------------|--------------|--------------|
|               | 1995  | 2005 | 2015 | 2005 to 1995           | 2015 to 2005 | 2015 to 1995 |
| China         | 0,3   | 0,7  | 3,3  | 133,3                  | 371,4        | 1000,0       |
| USA           | 11,6  | 15,9 | 21,1 | 37,1                   | 32,5         | 81,6         |
| South Korea   | 7,3   | 15,1 | 20,7 | 106,8                  | 37,1         | 183,6        |
| India         | 0,7   | 0,9  | 1,7  | 28,6                   | 88,9         | 142,9        |
| Great Britain | 17,2  | 30,1 | 38   | 75,0                   | 26,2         | 120,9        |
| Germany       | 30,4  | 38   | 45,5 | 25,0                   | 19,7         | 49,7         |
| Japan         | 23,4  | 25,3 | 24   | 8,1                    | -5,1         | 2,6          |

Hourly wage growth in China was 133.3% from 1995 to 2005, and 371.4% in the next decade. At the same time, the hourly wage growth in the United States

slowed down. The opposite satiation was observed with productivity growth.

Despite the fact that productivity growth in China was ten times higher than in USA it obviously could not cover hourly wage growth for 1000%. As a result China almost lost in comparative advantage in manufacturing costs mainly because of labor costs.

Similar tendencies were observed in other countries. The Boston Consulting Group report [8] indicates that a number of countries traditionally considered low-cost countries are under pressure from a number of factors that have been causing a significant increase in production costs since 2004, including Brazil, China, the Czech Republic, Poland, Russia.

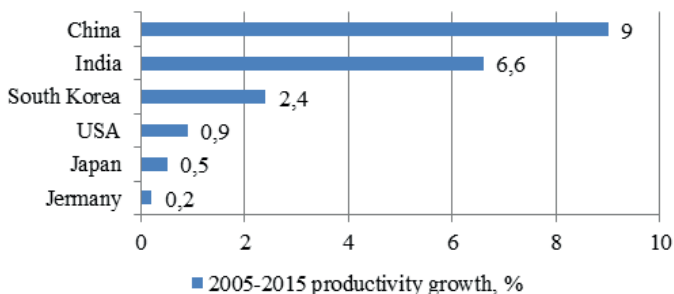


Fig. 3. 2005 to 2015 productivity growth

At the same time, Mexico and the United States are becoming more competitive through slower growth in labor costs and energy prices. As of 2014, Mexican production costs are lower than in China. It is expected that the costs of TOP-10 exporters will grow and become from 10 to 25% higher than in the United States.

Thus, there we consider that an equalization of production costs between the major exporters of the world will accelerate the competition between main exporters. The labor cost adjusted by productivity will become one of the main factors determining the competitiveness of the country in the nearest future.

As the wages growth depends on a number labor force and productivity depends on capital we can make next assumption:

- Preserving the actual level of labor costs or slowing down its growth rates in developed countries will require an engagement of international migrants to lower wage growth. Raising the productivity, as an opposite, requires much more capital as it considers developing and implementation of a new technologies for developed countries. The margin growth of productivity might appear too little to cover the wage growth.

- As opposite, for developing countries it is better to raise the productivity as it considers implementation of existing technologies. By the way, migration policy is also crucial for such countries as mass labor outflow can dramatically push the wages and as a result the labor costs. Another important point is a brain drain.



Raising the productivity will be lowered if a country loses its high skilled workers.

It should be noted that the engagement of international labor migrants in developed countries is possible under the relevant conditions of the labor market in such countries.

First of all, it is low unemployment rate particularly in specific sectors. Such and other conditions describe Dual Labor Market Theory [10] and The 2000 World Migration Report [11].

The ability of developed countries to engage international migrants to its labor market and the corresponded threat for developing countries are explained by raising labor mobility in the world. The UN data on number of international migrants (see table 2) shows that their number tripled during the period from 1970 to 2015 years.

Rising of mobility of international migration is also confirmed by rising of share of remittances in world GDP (see fig. 4).

*Table 2*

**Number of international migrants and it share in total population [12]**

| Year | Number of migrants, persons | Number of migrants to world population, % |
|------|-----------------------------|---|
| 1970 | 84,460,125                  | 2,3                                       |
| 1975 | 90,368,010                  | 2,2                                       |
| 1980 | 101,983,149                 | 2,3                                       |
| 1985 | 113,206,691                 | 2,3                                       |
| 1990 | 152,563,212                 | 2,9                                       |
| 1995 | 160,801,752                 | 2,8                                       |
| 2000 | 172,703,309                 | 2,8                                       |
| 2005 | 191,269,100                 | 2,9                                       |
| 2010 | 221,714,243                 | 3,2                                       |
| 2015 | 243,700,236                 | 3,3                                       |

This represents the fact that international migrants are first of all workers what is important for both countries that receive and send the migrant.

Before the conclusion we want to describe the example of migration policy of USA that might describe the country’s success in world manufacturing cost competition. Figure below shows that USA received 49.8 million of migrants that is 20.4% of all international migrants in the world.

The US share of highly skilled migrants is about 40% and determines their leading position in the process of brain drain. It is also noted that the United States accepts about 32% of all international students enrolled in higher education abroad [14]. Authors note that brain drain from developed countries to developed countries causes minor damage for such countries, because such migrants usually return to their countries of origin. However, highly skilled migrants from developing

countries mostly do not return.

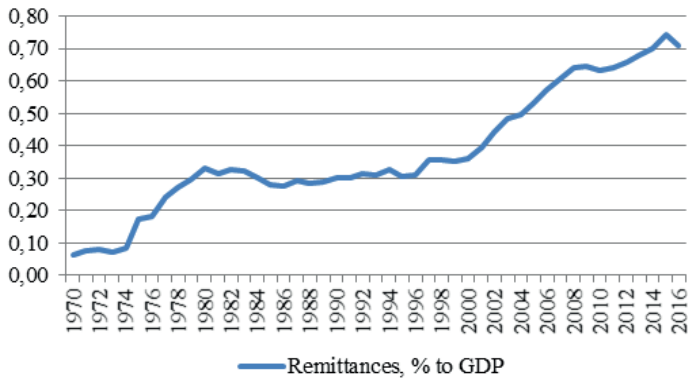


Fig. 4. (a) Remittances share in world GDP from 1970 to 2016 [13]



Fig. 4. (b) TOP 10 countries by the number of international migrants received by 2017 [9]

Taking into account the conducted research, we formulate the following conclusions:

- global competition between the world's leading exporters is intensified by the equalization of production costs between them. It is expected the change of traditional production centers in the near future;
- the largest change in the structure of production costs is caused by change of labor costs adjusted for productivity;
- maintaining the actual labor costs or slowing in its growth will require an increase in labor productivity and/or lowering the wage growth rates;
- the labor productivity growth in developed countries is limited due to the need to develop new technologies, while in developing countries it requires a using of already existing technologies that lead to greater productivity growth than in developed countries;
- developed countries might engage international migrants to slow down wage

growth. Developing countries need to slack a labor outflow to prevent a high wage growth rate and brain drain.

Therefore, in view of the growing competition of exporting countries in the global market, increasing labor mobility, the ability to slow down the wage growth in developed countries by attracting international migrants and the threat of sharp rise in wages in developing countries as a result of the outflow of labor force, international migration should be seen as an instrument for ensuring the competitiveness of the national economy.

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## **THE FORMATION OF FOOD SECURITY MECHANISM AS A MAIN CONDITION OF THE NATIONAL ECONOMY STABILITY**

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Ensuring the optimal level of food security as a part of the national economic security presupposes close relationship of all its components [1].

First of all, food security depends on the territorial community of the population and has multi-level hierarchy based on the subject who solves the food problem and its functions. The center of this problem is the person with his (her) food requirements, without satisfying which it is impossible to perform productive activity and reproduction (Table. 1). Today, in the conditions of Ukraine, the level of food security is affected by many factors. The main factors of influence on food security are: the ability of agrarian sector to respond timely to market conditions, the stability of resource supply and cooperative relations, the availability of the necessary volumes of transitional stocks, solvency of the population and the accessibility of food for all citizens, the degree of protection from the dominance of imported products, insufficient investments in developing rural territories, and as a result, the introduction of new technologies and machinery in food sub-complex branches.

In other words, food security is achieved by the available corresponding systems

and mechanisms guaranteeing the sufficient volume of production and supply of food and adequate response to risks caused by irregularities in this area [2].

*Table 1*

**Hierarchical levels of food security**

| Number | Level         | Subject solving the problem   | Function of object  |
|--------|---------------|---|---|
| 1.     | Global        | The UN, specialized bodies (FAO, WTO Committee on Food Security, etc.).                   | Promoting sustainable economic development of states, long-term food adequacy programs  |
| 2.     | International | The EU and others (created by signing trade, pricing, standardization of food agreements) | Promoting sustainable economic development and the formation of state and international funds, improvement of food quality parameters |
| 3.     | National      | Legislative and executive bodies of state power   | The stability of economic development, formation of the national food funds, balance of supply and demand                             |
| 4.     | Regional      | Regional authorities  | The stability of economic development, formation of regional food funds   |
| 5.     | Local         | Local authorities (municipality, district)  | Creating the conditions for receiving incomes from households, supply of products and their quality control                           |
| 6.     | Family        | Households  | Buying and using of food products   |
| 7.     | Individual    | Average citizen   | Productive activity of every citizen  |

*Source [3] and supplemented by the author*

All this has to be ensured by active, balanced, and consistent agrarian policy aimed at the development of agriculture, stimulation of agricultural production in order to ensure the needs of all sections of the Ukrainian population in food and food products of plant and animal origin in the necessary amount, assortment, quality, and the established safety level which are necessary for the health and normal vital activity. It is also necessary to revive export potential of the national agrarian sector. All these measures, together with the appropriate legal regulations – the adoption of a special law of Ukraine “On food security”, in which, first of all, the definition of food security as a legal category and its characteristic features will be given, will improve increasing the effectiveness of legal regulation of the relations in the field of food security, and, thus, ensuring the population with high quality and safe food products at the necessary level, and also will enable the agrarian sector to react adequately on food market conditions, increase the competitiveness of farm products manufactured by Ukrainian producers both inside and outside the country

and realize its export potential [4].

Under modern conditions the problem of forming the mechanism of ensuring food security in Ukraine remains unsolved to the end. The situation is complicated by inter-regional differences in the state of agrarian economic sector and the level of food self-sufficiency.

The economic management mechanism can be defined as a definite system of the society's management, the model of economic sphere of the public life. Reproducing the totality of all the components of the latter, the economic management mechanism forms synthetic category, the essence of which is made of systemic and integral functioning of all economic forms of the social life [5].

Consequently, the nature of the economic management mechanism is considerably connected with the political and economic priorities of the state in the context of the existing historical conditions. Effectively functioning economic management mechanism is aimed at ensuring stable reproduction process, both at micro- and macro-levels.

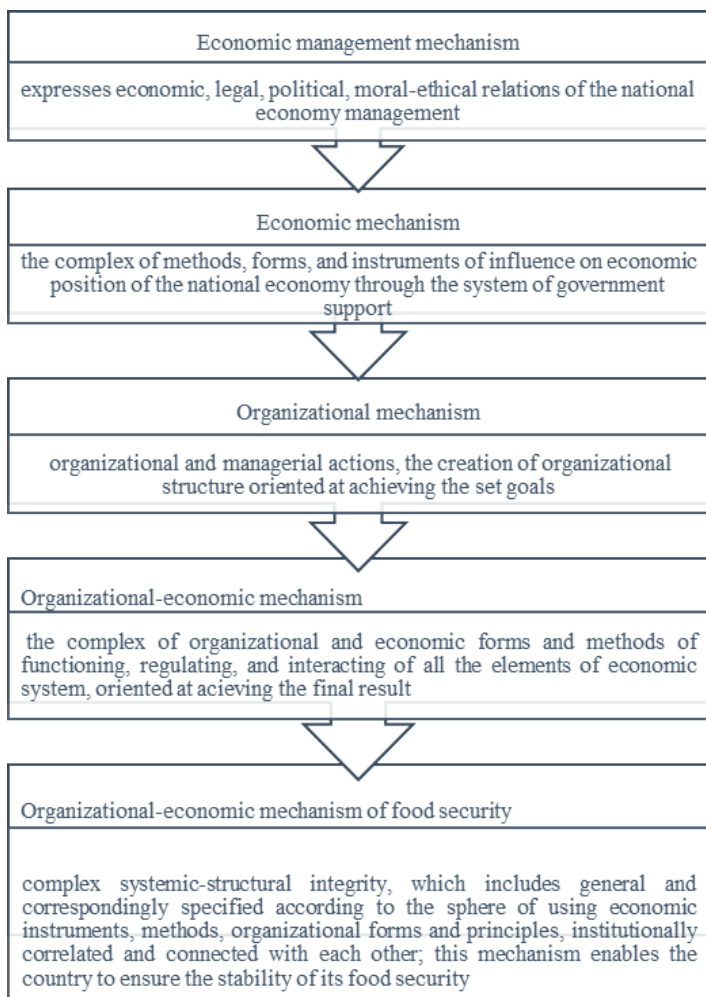
The economic management mechanism is based on full economic and legal independence of economic subjects, the economic mechanism of branch regulation. Its main tasks are: to provide intensive, competitive production based on innovations; to coordinate economic interests of producers, consumers, and the state [6].

Despite the apparent complexity of the studied phenomenon and complications connected with using the approaches to defining the essence of economic management mechanism it is necessary to single out organizational- economic mechanism as its important element. Organizational-economic mechanism is a combination of techniques, methods and means to manage social production aimed at achieving high final results with the least spending of labor, material, and financial resources [7]. Organizational-economic mechanism (OEM) is a form of economic management mechanism implementation on the background of the phenomena of economic life, which is a combination of organizational-economic tools and methods of influencing the corresponding processes [8].

Osipov Yu. M. characterizes organizational-economic mechanism as a system of organizing social economy as a social system of economic subjects with inherent mechanisms of management and the corresponding public institutions regulating the activities of economic subjects [9, p. p. 60-61].

The contents of organizational-economic mechanism are contained in establishing strict mutual relationship, order and determining the degree of importance of the elements, which it includes, i.e. developed organizational-economic measures, and in choosing necessary qualitative transformations in the production system [9].

B. Pohryshchuk considers organizational-economic mechanism as a synthesizing notion, i.e. a complex of organizational and economic forms and methods of functioning, regulating, and interacting of all the elements of the economic system aimed at achieving the final result [10].



Generalized and adapted by the author based on  
 Fig.1. The structure of economic management mechanism of the national economy

Organizational-economic mechanism, as viewed by Yu. Luzan [11] is a way of ensuring the implementation of the objective laws' requirements in the process of subjective human activity. The following areas are independent objects in the complex of organizational-economic mechanism: state-legal; managerial-legal; administrative-executive; state and economic management; self-governance.

Thus, the organizational-economic mechanism of food security is a complex systemic-structural integrity, which includes general and correspondingly specified according to the area of using economic tools, methods, organizational forms and

principles, which are institutionally coordinated and linked, and this mechanism enables the state to ensure the stability of the country's food security [12]. On the whole, the effectiveness of the organizational-economic mechanism of food security depends on the institutional coordination of all the components of this mechanism (Fig. 1).

In modern economic conditions of Ukraine's integration in external markets it is particularly important to increase the competitiveness of the national production in manufacturing food products and other consumer goods.

The problem of ensuring food security at the national level is extremely important because solving this problem consists not only in providing safe and high quality food products, but also in supporting and developing agrarian food sector and other sectors of the economy, contributing to solving the demographic problem and ensuring the efficiency and competitiveness of the national economy.

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## **OUTSOURCING: HISTORY OF DEVELOPMENT AND PRACTICAL APPLICATION**

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The business management efficiency in the modern economic environment requires adoption of complex quick decisions in real time regime. Intensive competition compels managers to implement actively all available technologies today, attract more skilled workers and renovate production facilities without delay.

The rapid development of outsourcing and the practitioners' close attention to the issue are caused by gradual changes in the fundamental aspects of the modern economy, which increasingly takes on a form of the network. The network, in this case, can be defined as a group of interconnected companies which joined together to utilize their specific resources and advantages in the joint projects and which can be geographically located in any part of the world. Outsourcing has become one of the ways of establishing the organizations of such type in the globalized world.

The term «outsourcing» comes from the English words «external resource use». The international business practice determines this term as the sequence of the organizational decisions, the essence of which is the shift of tasks, operations, jobs, or processes, previously implemented by the organization independently, to an external organization which is commonly known as the third party. Outsourcing is often referred to as «the phenomenon of the twentieth century» and «the greatest discovery of business in the recent decades», since this concept was introduced in the business practice and spread worldwide only in the late 80s of the twentieth century.

The origins of the practical outsourcing as a method of production co-operation and high technology management in the industry relate to the period of «great confrontation» between two great managers – Henry Ford (1863-1947) and Alfred Sloan Jr. (1875-1966) who ran the giants of the automotive industry – Ford companies and General Motors.

Henry Ford substantiated the philosophy of outsourcing in the following way: «if there is something that we can not do better and cheaper than our competitors, then it makes no sense to do so; we need to entrust this work to those who perform it with a knowingly best result» [3].

In fact, those activities that were either secondary or peripheral were shifted to outsourcing. In the distant 1950s, outsourcing for a small business was seen as a way to overcome many restrictions, and as to a large company it was considered to be a sign of the inefficient doing of the business and even an indication of financial distress.

The confrontation of the two leaders of the automobile industry has clearly shown that under the conditions of strict competition, no company can be self-sufficient and rely solely on its own resources. It is expedient and convenient to

shift some of the processes, that ensure a large company 's production, to the specialized smaller companies. The shift of production and management functions outside the company initiated the practice of outsourcing. Since the 1970s of the twentieth century, outsourcing in the production of cars has become the basis of the production process organization [3].

Now outsourcing is of the same value as reengineering was in the 1990s. Ten years ago, this concept was rarely mentioned, but now outsourcing is as commonplace, as the core functions of enterprises – research and development, production, and work with personnel.

What is outsourcing today? Recently there has been an increase of interest in the interpretation of the notion. In our opinion, the most accurate among them is the definition suggested by B.A. Anikin in his manual «Outsourcing and Outstaffing: High Management Technologies». The scholar defines outsourcing as «the sequence of the organizational decisions, the essence of which is the shift of some functions or activities, previously implemented by the organization independently, to the external organization, or, as it is commonly called, the «third party»» [1].

Ukrainian terminology of outsourcing is not yet sufficiently unified. An enterprise, that provides services in the sphere of the division of labor, can be called an operator, outsourcer or a contractor.

Those companies that want to, or those who have already shifted some of their functions to outsourcing, are called the customer.

One more definition of the outsourcing provided by foreign, rather authoritative resource «WiseGEEK» is worth mentioning in the analysis. It reads: «Outsourcing is a treaty act of two companies concluded to provide the services, that otherwise can be performed by their employees» [8].

In the course of this study, we have come across the work by D.V. Lanska in the Scientific Journal of KubSAU. It provides a list of terms that are very close in their outsourcing content:

- «Facilities management» – management of enterprise facilities;
- «Shrinking» – reduction, compression of the organization activities;
- «Downsizing» – reduction of organization;
- «Spin -off» – division of business units or «unfastening» of the structures;
- «Contracting out» – shift of a contract to the third parties;
- «Externalization» – the shift of the control over the performance of any function to the company specializing in this field [6].

Some researchers still put the sign of equality between the concepts of outsourcing and subcontracting. However, current research argues that outsourcing is broader in its meaning concept, which is not limited to the shift of the technical functions and business processes, but also includes the transfer of a part of the risks to the partner; it is long-term by nature and depends on the lifecycle of a company [4].

The Institute on Outsourcing, having conducted its own research, distinguishes between IT outsourcing and the VRO business process outsourcing. It is this

division that is appropriate for analysis because each type can be easily described. In addition, IT outsourcing has been singled out as the precursor of modern outsourcing and is the absolute leader in the outsourcing market today. Practically, almost all companies refer to IT outsourcing in the beginning, and only then gradually switch to the other types of it. However, production outsourcing, which has recently become more commonplace in the activities of companies, deserves special attention [3].

Take as an example Toyota. The company is engaged only in the design, assembly and sale of products, while most of the component parts are manufactured by the third parties, often small enterprises. Moreover, this way of doing business is characteristic of almost all Japanese car manufacturers. The automobile companies of this country, due to the flexibility and mobility of their business since the 1970s, began to regain market from the «big three» of the automotive industry in the United States – companies of General Motors, Ford and Chrysler and did it with a quite torrential pace. By the beginning of the 1990s, these three companies had lost 25 % of the American car market. And only the creation of alliances with Japanese companies and the transfer of part of the business to outsourcing (not only auxiliary processes, but also the main ones) allowed them to improve their position.

Well-known long-term relationships between companies EDS and General Motors or Systemhaus and Daimler Benz can be another vivid example of the established mutually beneficial relationship between the outsourcer and the client. The leading position among IT outsourcing companies at the end of the 20th century was IBM Global Services IBM, which had a turnover of more than \$ 25 billion in 1997 and more than 110,000 employees in 60 countries. The range of outsourcing services is expanding along with the development of computer technologies, information networks and relevant technical and software tools. The constant use of the Internet and other information networks has stimulated the development of the market for access to data (applications) placed by the provider (Application Service Providing, ASP). At present, according to the analysts of the International Data Corporation (IDC), the leader of the market for ASP service providers is Oracle and its Oracle Outsourcing subdivision that provide customer support for Enterprise Resource Planning (ERP) and systems of Customer Relationship Management (CRM). According to Oracle's own estimate, companies that use IT outsourcing can save more than 75% of their labor costs [2].

As for Ukraine, the activity and readiness of its representatives for new knowledge in this field make this country a desirable and promising partner. Among the most prominent Ukrainian market participants are such companies as Information Technologies, Incom, GlobalLogic Ukraine, Luxoft, AMI, SITRONICS VERNA, Art Master and SoftServe. At the same time, insufficient wages for these services within the country make the highly-qualified specialists emigrate abroad. An interesting fact is that Poland is looking for IT professionals in Ukraine, and Germany uses 6% of the Ukrainian outsourcing opportunities. In 2016, the

volume of services provided in Ukraine reached \$ 1.1 billion, and the number of IT professionals working in this field reached 25,000 [7].

In addition to the main reasons for using outsourcing, some complimentary factors should also be highlighted:

- the boom of individual entrepreneurship in the service sector around the world in the 80-90s of the last century (the emergence of small enterprises) has increased the demand for financial, accounting, legal, IT services that the established network of highly specialized outsourcing companies could provide;

- the development and distribution of the Internet allowed to provide outsourcing services in real time, even in case the company providing them is territorially distant from the enterprise-customer, which makes the cooperation more effective.

Today, determining the role of outsourcing in the business system, it is necessary to identify in which spheres of the company's activity outsourcing finds its application. Different kinds of outsourcing and practice of using this business methodology suggest that all areas of a modern organization activity are open to the application of outsourcing.

There are the following spheres of outsourcing application:

- 1) outsourcing of the supplementary production sector concerns, first of all, provision of equipment, electric power, transport, assistance in the repair of equipment, supplying the auxiliary devices and facilities, etc. The refusal to perform the functions of auxiliary production independently allows the company to achieve much higher level of the main production activity;

- 2) outsourcing of the main production area is a strategic plan aimed at the integration of the company into a national or transnational global production system. The degree of outsourcing of the main production functions and the form of relationship with outsourcers may differ depending on the level of development and lifecycle of the industry, the lifecycle of the individual products, the availability of the international sources of resources, the efficiency of the resources utilization, internal reserves and external capabilities, the peculiarities of the competitive environment;

- 3) outsourcing of the sphere of the company's management (outsourcing management functions) is related to the increased requirements for the qualification of managers and the widespread use of information technology management. To determine the capabilities and the main areas of outsourcing of management functions it is necessary to:

- to focus the company's management attention on the main components of the production value creation chain;

- apply an individual approach to all management functions in terms of their uniqueness and strategic importance;

- 4) outsourcing of services covers various types of activities in the organization related to meeting the needs of society in services, as well as those that serve business processes which are a part of the business system and ensure its functioning.

Outsourcing of the service sector is primarily related to the technological specialization of the producers and the expansion range of complex and knowledge-intensive services. It involves significant growth of business services volumes (including credit-financial and insurance) and also telecommunication services;

5) human resource outsourcing, or HR-Outsourcing becomes a top priority for the organization due to the spread of modern human resource management. The functions of the human resources management (hiring/dismissal, training and certification of personnel, career planning, motivation policy development, etc.) are shifted to a special subdivision of the company. Outsourcing of these functions can significantly reduce the cost of maintaining the relevant departments and subdivisions and improve the quality of human resource management including the overall level of corporate culture [1].

The study has revealed that benefits of outsourcing for companies are as follows:

- cost reduction of the functions transferred to the executor;
- improvement of quality and reliability;
- concentration of attention on the main goals of the enterprise;
- access to additional resources, new technologies and knowledge;
- reduction of operating expenses;
- speeding the release of goods of the company in the market;
- improvement of management system;
- the possibility of placing orders for the production of component parts abroad at prices lower than domestic ones and of better quality;
- reducing staff training costs;
- increasing the market segment that the enterprise covers;
- reduction in the cost of the functions transferred to the outsourcer;
- increasing the investment attractiveness of the company;
- distribution and reduction of risks [5].

Thus, outsourcing can be a beneficial bargain for many businesses that do not have sufficient resources to control all stages of the production process.

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## **THE IMPORTANCE OF FOOD SAFETY POLICY IN THE STRUCTURE OF NATIONAL SECURITY OF UKRAINE**

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One of the most important and ambitious socio-economic goals of the society is the creation of decent quality living conditions for the citizens, primarily, by satisfying their needs in food in accordance with the ration standards of nutrition improvements and nutrition security. The state policy is aimed at preserving public health and regulating the demographic situation in the country. Food security issues are among the priorities of not only economic but also social policies, as they are determined by the macroeconomic situation and depend directly on the efficiency of the social production and the income of population.

Globalization puts forward new requirements for providing high-quality food products to the population. This problem is very complex and multifaceted and concerns the interests of every citizen and the interests of the whole state. For this purpose, the research company The Economist Intelligence Unit has published the results of a global study of countries around the world in terms of food security. In the 2014-2016, research and food security rankings in the world covered 109 countries which were ranked in three main categories: the level of availability and consumption of food, the availability and adequacy of food, the quality and safety level of food [5].

According to the 2017 Global Hunger Index, Ukraine is among the first in the ranking of the developing and the underdeveloped countries in terms of the number of starving people. In the last four years (2014-2017) Ukraine has fallen to 16 points in the Global Food Security Index - from the 47 place to the 63rd [10].

Hence, one of the priority directions of state policy development is the promotion of food security in the field of food products supply to the population and in the sphere of industry resources. The problem of preserving food security is not a new phenomenon. It has always been a global issue both in the political and in the socio-economic spheres of life in any state and in the world politics too. Food security

is a multifaceted socio-economic and political phenomenon. There are different approaches to the definition of the notion of food safety in the economic literature: philosophical, sociological, economic, methods of economic and mathematical modeling, etc.

The term «food security» first appeared after the grain crisis of 1972-1973. The term was interpreted then as «maintaining stability in the markets of food products with the availability of basic food products for all countries of the world» [2].

Many Ukrainian dictionaries and encyclopedias on economics do not contain the definition of the term food security. There is no consensus among scientists and economists in defining this concept. Nevertheless, representatives of the leading economist schools are consentient in determining the components of the economic security. A commonly-used definition of food security is “a state’s capability to satisfy the needs of the population for food at the level that ensures their decent living” [3].

The Law of Ukraine «On State Support to Agriculture in Ukraine» gives the following definition to the concept: «food security is the protection of human life interests, expressed in the state’s guarantee of unrestricted economic access of a person to food products in order to maintain their quality life activity» [6].

The analysis of different approaches to the definition of «food safety» allows us to draw the following conclusions. Food security of the state is:

- 1) the state of the economy and such degree of the agroindustrial complex development, which guarantee a stable level of the population self-sufficiency rate that corresponds to the scientifically substantiated parameters in terms of medical norms;
- 2) independence of the country from the world food market situation concerning the provision of the population with foodstuffs;
- 3) creation of necessary reserves and stocks;
- 4) sustainable development of the country’s agricultural sector.

Food security is achieved through own production of the necessary amount of foodstuffs, or by means of own food production and the system of measures for its purchase with optimized prices, including transportation, storage, processing, etc. From the logistic point of view, the trading system sufficiency and consistency are of great significance for providing the population with food and, undoubtedly, the country’s own production forms its basis [8].

As an object of research, food security is seen primarily as a system for the production and distribution of food.

In its economic sense, food security covers the four main components of its achievement:

- physical availability of food, that is, the availability of food throughout the country, whenever necessary and in the required assortment. Within this component, the following indicators of food safety assessment are to be taken into account: level of self-sufficiency of necessary types of agricultural products and foodstuffs, the nutritional value of the consumed food, the imports share in food resources,

territorial availability of foodstuffs, etc.;

- economic availability of food. Every citizen must have a level of income that allows them to buy food regardless of their social status and place of residence. Within this component such indicators as the ratio of the growth rates of monetary incomes and food prices, the polarization of the distribution of cash income by social groups, the share of food costs in the total expenditures of people are calculated;

- the stability of access to food, which guarantees access to food for every citizen not only in the short term but also in the long run;

- food security, which is considered as a possibility to prevent the production, sale and consumption of low-quality food products that are harmful to the health of the population. For this purpose, the amount of the food products rejected by the state bodies, the population with overweight and other indicators are considered [1].

The World Summit on Food Security was held in Rome on November 16-18, 2009, which identified strategic goals and outlined five basic principles for ensuring sustainable global food security.

Principle 1. Invest in country-owned plans aimed at channeling resources to well-designed and results-based programmes and partnerships.

Principle 2. Foster strategic coordination at national, regional and global levels to improve governance, promote better allocation of resources, avoid duplication of efforts and identify response gaps.

Principle 3. Strive for a comprehensive twin-track approach to food security that consists of:

1) direct actions to immediately tackle hunger for the most vulnerable strata of population;

2) medium- and long-term sustainable agricultural, food security, nutrition and rural development programmes to eliminate the root causes of hunger and poverty, including through the progressive realization of the right to adequate food.

Principle 4. Ensure a strong role for the multilateral system by sustained improvements in efficiency, responsiveness, coordination and effectiveness of multilateral institutions.

Principle 5. Ensure sustained and substantial commitment by all partners to investment in agriculture and food security and nutrition, with provision of necessary resources in a timely and reliable manner, aimed at multi-year plans and programmes [4].

The most important indicators of food security include:

1) a high level of development of the agro-industrial complex, able to provide food for the entire population, including its poorest stratum;

2) availability of necessary transitional strategic reserves;

3) possibility to invest in food production the required funds for long-term sustainable development of agriculture.

The agri-food policy should strive for prevention and termination of the threats to ensure food security. Prevention should be understood as activities aimed at



preventing the implementation of the arranged threats. The goal of prevention is to implement a system of measures to detect and neutralize or eliminate the causes of threats. Termination of threats involves activities aimed at preventing or ceasing the threats that have been already activated [9].

Threats to food security are divided into internal and external ones. The internal threats include:

- 1) increase of import dependence on food products supply;
- 2) excessive openness of the economy;
- 3) criminalization of economic relations.

The external threats include:

- 1) a technological blockade, the danger of which grows because of lagging in the scientific and technical sphere;
- 2) the loss of markets in the far and near abroad;
- 3) overproduction of food in other countries;
- 4) economic and financial dependence on other countries.

In this context, the feedback of food security and competitiveness is a topical issue, as the main principles for achieving food independence are the effective work of foodstuff producers and the improvement of the general state of the economy. Thus, the competitiveness of business creates conditions for the realization of the food policy of the country. At the same time, the effective work of agricultural and food processing industries contributes to the development of markets for raw materials and food products, promotes creation of new jobs, improves the employment situation of the country and creates conditions to increase income of the population, increases revenues to the budget due to the growth of tax deductions.

The provision of food security, as well as the competitiveness of the economic entity, is also associated with typical risks for them: the macroeconomic risks (reduction of the investment attractiveness of the domestic real sector and dependence on the foreign economic situation); the technological, manufacturing and financial risks.

Thus, the place and role of food security correlate with other components of the national security system and its reliability is extremely important for the economic stability of the regions and the state.

To achieve the level of the developed countries, it is necessary to solve several interconnected and capital-intensive tasks simultaneously. The decisive among them are: technological modernization of the agricultural and food processing industry, sphere of services in the agro-industrial complex, formation of the personnel potential, capable of developing innovations, carrying out the programs on the restoration of production on the abandoned agricultural lands, including measures of increasing crops, development of the modern social infrastructure in the rural areas (houses, roads, etc.), transition to the policy of the intensive development of the rural sector. It is necessary to monitor constantly the parity price in the agricultural sector and other sectors of the economy, use indicative prices for timely

measures to ensure the production profitability of meat, milk, grain, sugar and other vital food products [7].

The activities of subjects at all levels must be coherent and interdependent, since food security at each level depends on the subjects, the tasks faced by them and the ways of their solution. The food security control is carried out by the State Food Department, which was established as a part of the Ministry of Agrarian Policy of Ukraine on the basis of the Food Industry Committee [6].

Thus, the notion of food security is an integral part of the concept of national security in any country, and the state is directly in charge of its reliable functioning. Sustainable socio-economic development of society is impossible without ensuring a sufficient number of people with quality food. An important condition for ensuring food security is the consistent implementation of a set of interrelated and coordinated organizational, economic, legislative, administrative and social measures at the state and regional levels that provide basis for successful food security management.

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## **ORGANIZATIONAL AND ECONOMIC RECONDITIONS OF FORMING OF THE EFFECTIVE SYSTEM OF MANAGEMENT OF THE UNIVERSAL SECURITY MANAGEMENT**

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The article analyzes the organizational and economic preconditions for the formation of an effective personnel security system of the enterprise, examines the issues of close interrelation between organizational and economic methods of providing personnel security. It was emphasized on the necessity to use complex and combined solutions for increasing the effectiveness of personnel security, considering the criteria of personnel security as an indicator of the level of implementation of labor potential.

Formulation of the problem. Domestic enterprises in today's conditions operate in unstable market relations, unstable economic, social and political environment. That is why there is a need for firms to adapt to economic, scientific and technological, informational and social changes. Therefore, the issue of the formation of scientifically grounded recommendations in the formation of an effective system of personnel safety management at the enterprise, which would contribute to the ability of enterprises to self-development, the efficient use of resources, the practical implementation of scientific and technical ideas, become a priority for its managers.

Analysis of recent research and publications: theoretical analysis of the organizational and economic prerequisites for the formation of an effective system of personnel security of the enterprise was considered by such authors as Yu.Garust, V.Karkovsky, A.Lobza, I.Migus, O. Parkhomenko-Kutsevil, O. Khalin and others. However, the theoretical aspects of the preconditions for the formation of the personnel security system require a more detailed consideration and generalization.

The purpose of the paper: generalization and analysis of organizational and economic prerequisites for the formation of an effective system of personnel security management of the enterprise.

Presenting main material. The development strategy of an enterprise always ensures economic growth, which can be achieved through the effective management of the personnel. As an effective management process is one of the inalienable factors

both in the organization of successful activities and in ensuring the competitiveness of the company on the market. Between the effectiveness of management activities, personnel security and how fast the company can be directly connected.

In modern conditions, the issue of staff loyalty becomes particularly relevant, due to the fact that staff is considered as a factor of competitiveness, and the loyalty of employees of the company as a competitive advantage. Loyalty is an emotional commitment to an organization, the level of which depends on the degree of acceptability of external personnel (salary, benefits, working conditions, etc.) and internal (the content of the work, opportunities for professional growth, recognition and evaluation of achievements) incentives offered by the employer [4].

An important component of personnel security is the effective functioning of the staff motivation system. Of great importance in the management of the personnel component of economic security are management methods, through which the direction and coordinated activities of units and officials of the enterprise to achieve the goals of ensuring the economic security of the enterprise [6].

Motivation of personnel in the personnel security system plays the role of the stabilizer, which is revealed in the system of measures aimed at attracting, implementing, developing and maintaining highly skilled personnel, as well as motivating specialists to reveal hidden capacities in order to carry out their work efficiently and effectively [2].

An important factor that affects the level of personnel security is the organization of work with personnel, characterized by a number of measures and methods aimed at the effective use of human resources and its protection.

One of the organizational preconditions for the formation of a personnel management system can be considered the need for an organization to provide its security at the initial level - in the recruitment of employees to work. That is why the enterprises apply special measures and checks at the recruitment stage.

The recruitment of personnel is a key point in the process of guaranteeing personnel security of the enterprise. It should minimize the negative impact on personnel security of the enterprise through the risks and threats that may be caused by the staff and its intellectual potential and labor relations in general [1].

Organizational methods provide the necessary conditions for the functioning of the organization, and also create the limits in which it operates and develops. These include, in particular, the distribution of functions of senior staff, the periodic renewal of powers (cancellation of orders, redistribution of functional duties, etc.), the assignment of cases to not only one specialist, but several - on a competitive basis [6].

Organizational methods include such concepts as organizational structure, selection of personnel, determination of the responsibilities of each employee, the development and implementation of internal standards of work, the provision of mandatory orders. One of the main functions of administrative methods is to ensure the interconnection between all divisions of the enterprise.

The organization of a sufficient level of personnel security at an early stage may in the future play a very important role and help to ensure the most efficient and rapid training of employees, the use of their internal capacity in full to achieve the goals of the enterprise.

The hiring system is a set of measures aimed at attracting and selecting applicants, taking into account the relevance of their competencies to the requirements of the vacant position and interests of the organization. The hiring system is a complex concept and involves a series of complex organizational measures aimed at attracting candidates who have the qualities and competencies necessary to achieve the goals set by the organization [3].

The reluctance of the organization to bear material losses or not to make a profit where it is possible can be attributed to the economic preconditions for the formation of the personnel security system. The economic position of any organization depends from the frameshift. And as a result, each enterprise uses certain economic measures and methods to achieve its goals.

Economic methods of providing personnel security - these are such measures that create a favorable financial environment for employees of the organization. The main measures by which economic management of personnel security is carried out are the payment of labor, the provision of a certain level of income, and the mandatory management accounting.

Economic management methods are implemented through the use of economic levers and incentives, namely, remuneration, income, management accounting, etc. Under economic methods of securing personnel security, it is first of all to understand such measures, which create a favorable material and motivation field for the employees of the organization and do not encourage them to move to competitive organizations with more attractive wage conditions. Therefore, the enterprise needs regularly to recalculate wages and ensure that it corresponds to the work being performed [6].

Low level of personnel management, untimely payment of labor of certain categories of staff or insufficient level of it also have a negative impact on personnel security of the enterprise [1]. There are cases when economic methods have an advantage over organizational ones, because incentives are more robust than orders.

As a result of using economic methods one can see the settlement of interests of all parties. When implementing these methods it becomes possible to ensure effective production planning, management accounting is carried out, and the effectiveness of each unit and each individual type of work is determined.

I also consider it is necessary to note that the organizational and economic preconditions for the formation of the personnel security system, as well as their further application in the system of personnel security management in the form of special methods, measures and restrictions, are closely interconnected and can not exist separately from each other. These aspects of personnel security are also influenced by the psychological climate within the team, prompting the

organization's leadership to find certain approaches to the team to organize the most effective work, and sometimes apply disciplinary methods to employees in case of violations of established rules and standards.

As Parkhomenko-Kutsevil notes, psychological methods constitute a set of specific ways of influencing interpersonal relationships, social processes that arise in labor collectives. From the standpoint of personnel security, such methods should be based on the creation of a supportive socio-psychological climate, the formation of a stable team, personal work with personnel and personnel management, solving individual problems of each employee in order to accumulate staff and a sense of collectivism. In such teams, as a rule, employees appreciate their work, they want to continue to work in the future [5].

Control is an important element of personnel security – it is a set of tools set up for all personnel of the enterprise (including administration). Its constituents are regulations, restrictions, regime, technological processes, valuation, control and other operations. The purpose of this complex of means is to prevent and eliminate the possibility of causing damage to the company. The task of the security service at the enterprise in this area is the organization of a democratic and transparent system of personnel attestation and compliance with its current system of remuneration [1].

In the disciplinary sphere of life of the organization certain restrictions are imposed and liability is imposed for violation of the rules of handling certain information. The category of information depends on the occupied position of the employee and access to commercial secrets. Disciplinary methods can be used in the form of dismissal, transfer of an employee to a lower position, reprimand, material recovery or retaliation. This sphere of organization functioning is very important as it gives the employee an understanding that each of his actions has consequences for which he is personally responsible.

Conclusion. Thus, economic and administrative methods are closely interlinked with other areas of the organization's safe operation. Their correct and effective work is impossible one by one. It is necessary to analyze the measures applied in each component of personnel security and ensure their coordinated work. It is equally important to monitor compliance with all existing standards and standards operating at the enterprise. Due to the correct and efficient provision of economic and administrative methods, as well as their close interconnection, an effective system of personnel security management of an enterprise can be created. These methods ensure the coordination of the work of all divisions of the enterprise, clearly form the rights and responsibilities of each employee and create material and economic conditions in which employees seek to develop themselves and the whole enterprise as a whole. Therefore, the prospective directions of further research will be the analysis of modern technologies of management of personnel safety of enterprises of agro-food industry.

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## **PART 2. MANAGEMENT OF MODERN SOCIO-ECONOMIC SYSTEMS A SECTORAL AND REGIONAL APPROACH**

### **DIRECTIONS OF ADAPTATION OF AGRICULTURAL MARKET TO THE CLIMATE CHANGE**

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One of the important environmental problems of the XXI century is the global climate change. Climate change for agriculture in Ukraine is conditioned, first of all, by global warming, the direct consequences of which are droughts, which adversely affect the yield of crops, since the weather component of the crop in our state is more than 50% [4].

Therefore, the most important task for land users is to search and implementation of effective methods for the accumulation and rational use of available moisture reserves in the soil.

It should be noted that the problem of moisture supply of plants has always worried scientists and producers, therefore, a constant search for techniques to create a favorable water regime of the soil was conducted. Even in the eighteenth century, a scientist agronomist O. O. Izmailsky wrote in his well-known agrarian book «How Our Steppe Has Dried Up»: «All the worries of the owner should be reduced to the sole purpose of increasing the part of the atmospheric moisture that is absorbed by the soil, if possible, adequately decreasing amount of atmospheric moisture, uselessly flowing from the surface of the soil» [5].

At the same time, the director of the Poltava experimental field B.P.Cherepakhin emphasized that in the conditions of the Forest-steppe, the efficiency of agriculture is based on soil moisture, while emphasizing «... everything in moisture, everything for moisture, everything for the sake of moisture.» In connection with global warming, these thoughts of the classics of agriculture become topical.

Today, there are three theories of climate change, which are associated with drought. Some climatologists believe that climate fluctuations (cycles) are probably related to the influence of solar activity, that is, with those internal processes,



resulting the appearance of spots on the Sun, which are gigantic electromagnetic vortex formations. Their number and size are not always the same. The variability of sunspots number has relatively well-ordered nature, it passes in wave-like way.

Now, a close relationship between solar activity and physical processes in the upper atmosphere is revealed, but scientists believe that solar activity also effectively affects the lower part of the Earth's atmosphere. Kh. P. Pogosyan [9] writes: «There is no doubt that the age fluctuations in the climate occur as a result of changes in the nature of the atmosphere general circulation. Similarly, the nature of circulation, obviously depends on solar activity and other astronomical phenomena».

Consequently, age fluctuations in the climate occur due to changes in the nature of the overall atmosphere circulation. I. E. Buchinsky [3] believes that the climate change is a common phenomenon in nature, has a relatively ordered nature and passes in a wave-like way. It causes many people to perceive that the climate «in our eyes» is changing. However, this evident climate change, is only its «natural» fluctuation, rather than a steady change in one direction.

Basing on the basis of the meteorological concept of nonlinear processes and predictability of the behavior of complex natural systems in the future, E. M. Biletsky and S. Stankevich [2] practically also tend to the fact that droughts are a common occurrence in nature due to the climate fluctuations. At the same time, they note that large-scale natural disasters that cyclically occur on the planet have already repeatedly occurred in the history of the Earth and human civilization.

An international group of scientists believes that global warming is caused by the displacement of geomagnetic poles of the earth's axis, which are influenced by space factors. As a result, the planet slightly slowed down its turn, about a second a year. Due to the loss of that second, the amount of released thermal energy exceeds all the energy produced by mankind as a result of its activity during the year. This caused a change in the albedo of the planet, its orbital parameters, an increasing the surface temperature, which seriously affects climate change, the emergence of threatening hydrometeorological phenomena, one of which is drought.

However, displacement of the geomagnetic poles of the earth's axis brought not only more heat. At the same time, changes in the «wind rose» are appear - as a result of the transformation of the global circulation of air masses on the planet, in Europe and in our country in particular [6]. Change of geomagnetic poles affects sea currents, the main of which is the Gulf Stream, whose flow rate has already slowed down by 20%, which also affects the climate of Europe. The air masses that are saturated with moisture from the Atlantic Ocean, primarily from the warm course of the Gulf Stream, moving above the vastness of Europe in the eastern direction, gradually irrigate the land with relatively regular rains. The movement of such air masses is a kind of obstacle for the invasion of cold air to our country from the Arctic (northern direction), or hot and dry air from the continental depths of Asia or Africa (eastern and southern directions). The easing of airflow pressure from the Gulf Stream side may be one of the causes of the penetration of these air currents,

which contribute increasing the temperature and drought [6].

Another theory of global climate change on the planet is anthropogenic impact on nature as climatologists believe. Scientists have proven that the changes that we are currently witnessing and which are projected in the future are largely a result of human activity: we burn fossil fuels, emissions from the transport industry and the scale of intensive agriculture are increasing. A significant increase in production emissions «warms up» our atmosphere, it rapidly increases the number of greenhouse gases (carbon dioxide, methane, nitrogen oxides, chlorofluorocarbons, etc.).

It should be noted that the «greenhouse» gases of our planet operate on the principle of hothouse: it passes visible light to the surface, and heats radiation kept in the middle. As a result, the temperature on the Earth's surface is suitable for life. But the more «greenhouse» gases in the atmosphere, more heat is delayed near the Earth's surface.

So, human activity strengthens the «greenhouse» effect, resulting in increasing the surface air temperature, and from the agronomic point of view, the Forest-steppe of Ukraine becomes a classical zone of arid climate and, in general, zones of risky agriculture are expanding.

It is likely that the influence of cosmic and anthropogenic factors on the planet climate is complex, droughts (spring, summer or autumn) will become a frequent phenomenon. Therefore, today global warming is seen as a fact, and the main problem here is the lack of moisture, its accumulation, preservation and rational use.

So, first of all, it is necessary to develop adaptation measures to the negative effects of weather that should organically enter the technology of agricultural production. Secondly, it is the introduction of technological measures for the accumulation, conservation and rational use of moisture, especially in the conditions of drought.

The measures of first group that can withstand climatic problems can be: the development of new zoning of the territory; the use of drought tolerant varieties and hybrids of crops adapted to a significantly less vegetative period; introduction of new (niche) drought-resistant crops; application of antistress chemical, biological and microbiological preparations, complex microfertilizers; pouring and composting; the use of humates, minerals (bentonite, etc.); control of the phytosanitary state of crops, and so on.

According to the National Academy of Sciences of Ukraine, over the past decades, the actual displacement of the boundaries of the country's natural and climatic zones is 100-150 km to the north. Vegetation conditions in the traditional subzone of the Northern Steppe (Dnipropetrovsk, Kropivnytsk oblasts, etc.) already correspond to the Southern Soil subzone. The subzone of the Northern Steppe gradually shifts in the territory of Cherkasy, Poltava and other regions, which traditionally were in the Forest-steppe zone [7, 10].

In such circumstances, the existing zonal set of agricultural crops is changing. First of all, in addition to the main crops (winter wheat, corn, sunflower), there are so-called niche cultures (hen, lentil, safflower, sorghum, millet, etc.), which have

high drought tolerance and export capacity. In connection with the warming in the south of Ukraine exotic cultures began to grow: kiwi, persimmon, banana tree, zisifus (Chinese date or unabi), peanuts, sweet potatoes, black pepper. Olive trees are sailing.

Secondly, in conditions of high dryness of the climate, moisture determines the level of productivity. Therefore, due to the increasing role of moisture as a limiting factor in harvesting, the stereotypes of the evaluation of efficiency of agricultural systems and technologies for growing crops are changing. Studying and implementation of the production of technological receptions and systems of agriculture, which allow receiving planned crops at the level of existing water supply, are becoming urgent.

The need to accumulate moisture in the soil in the autumn-winter and spring periods is growing, which can, with rational costs, to a large extent, ensure the physiological needs of agricultural plants during vegetation, in periods between the rainy days when drought occurs.

Firstly, it should be noted that the most significant for saturation of soil with water can be considered precipitation, reaching its surface (each millimeter of precipitation accounts for 10 tons of water per hectare).

Over the last 20 years, the average annual temperature in January and February has risen by 1-2° C, which has led to changes in the rhythm of seasonal phenomena - the fall rainfall significantly increased in the autumn-winter period. Therefore, one of the important sources of water supply in the soil is the flow of water from melting snow. In this regard, the role of snow retention is greatly increasing.

Let's consider the main elements of an intensive agricultural system in the context of moisture conservation and rational use of moisture [11]. Among them: the structure of sown areas, scientifically grounded alternation of crops in crop rotation, rational soil tillage systems, taking into account their impact on the conservation and rational use of moisture, plant care techniques, fertilization, pest and disease control, and the use of modern agricultural machinery.

An important role in regulating moisture provision of crops belongs to crop rotation. Agricultural crops are significantly different in their susceptibility to soil moisture and have a different effect on the water regime of the soil. For directional regulation of water regime in a soil-plant system, it is necessary to alternate crops in crop rotation, in which the rational use of plants of soil moisture is combined with the subsequent restoration of its reserves in the corresponding layers of soil.

It has been found that under such crops as corn and winter wheat and after occupied vapors, the reserves of productive moisture in deep layers of soil are sufficiently well recovered. Therefore, it is expedient to place these crops in the crop rotation after cultures with a deeply penetrating root system that dries the soil to a greater depth in order to restore the moisture reserves in these horizons.

Exploring the impact of soil cultivation on its water regime, it should be noted that the traditional cultivation of soil, the main species of which is plowing, for many

decades, has been able to provide humanity with food, but at the same time created a lot of problems associated with soil erosion, deterioration of their quality and drying [12]. The task of the modern soil cultivation system is to intensify production and simultaneously preserve existing natural systems, maximize accumulation and rational use of moisture setting in the soil. The plow goes to the background, while to the foreground comes out tools that only loosen the top layer of soil, which helps to maintain more moisture in the arable layer, reduce the sowing and, even more important, save energy.

Positive results, despite the weather cataclysms, have those farms that take into account climate change, and instead of deep plowing, carry out deep soil fracturing or its surface (shallow) cultivation, which has a greater effect on the accumulation, preservation and use of moisture. Its annual moisture content is 30-50 mm higher than of plowing, which is especially important during drought.

Fertilizers play an important role in the productive use of moisture. Each ton of soaked manure during the years of its operation in multi-crop rotation gives, in addition to 1 cwt in terms of grain, and every quarter of mineral fertilizers in standard tukes, when introduced into the main field crops (winter wheat, corn, barley, millet) - on average up to 1.5 cwt of grain. It is clear that the soil moisture plays an important role in fertilizer efficiency. For example, it is known that each additional millimeter of soil moisture can increase by 0.5 t / ha of crop, and in the period of drought additional 2.5 mm of water leads to an additional increase in corn yield by 0.5-0.7 t / ha [5].

It should be noted that in conditions of drought, the use of organic fertilizers, due to which the organic component of the soil increases, improves its water regime.

In conditions of climate change – global warming and increasing the frequency of drought, the study of moisture-saving agricultural systems, one of which is organic farming [1, 8], which agrotechnical techniques contribute to the accumulation, conservation and rational use of soil moisture, are becoming relevant.

One of the technological elements of this agriculture, which helps to improve the water regime, is soil protection, moisture-preserving, shallow soil cultivation at a depth of 4-5 cm, which creates a vertical orientation of aeration pores, preserves the natural structure of the soil, its capillarity, formed by the roots that is decomposed, and rainworms. The accumulation of moisture is also facilitated by the observance of scientifically grounded crop rotation, the introduction of perennial legumes, siderates, the use of humus, the use of trench remnants, and the unproductive part of the crop. Due to this, the organic mass increases in the soil, which makes the soil more loose and enhances the ability to retain moisture. Mulching of the field surface with plant residues also contributes to lowering the soil temperature and moisture evaporation. So, for organic farming, the moisture content of the soil in different periods of vegetation on average is 28-32% higher than the soil on which intensive farming is conducted.

The application of the organic farming system also contributes to the growth of

the water resistance of structural aggregates. The coefficient of water resistance of structural aggregates for the organic farming system was 10, and for intensive – 5.2.

With the prolonged use of organic technologies, the tendency of changing the parameters of the humus as waterproof part of the soil is also revealed. In the layer of soil 10-20 cm the total humus content for the organic system was 5.26%, for mineral – 4.70%. In individual fields, due to more intensive humification of organic residues, it reached a difference of 1.57%. Especially tangible process of soil formation on eroded lands, the yield of which, after a certain period after the introduction of the system, reached the indexes in plain fields.

The modern complex of agricultural machines and mechanisms for continuous and inter-row tillage of the soil complements the system.

It is logical that the increase of soil fertility positively influences the productivity of agricultural crops. But if under the condition of moisture lack at this level of fertility can not be high yield, the use of intensive methods will not increase them. But when grown products are certified as organic, there is an opportunity to get an additional 30-50% or more of its implementation.

Consequently, the widespread introduction of organic farming is the optimal response of the agro-industrial complex to global warming, as the technologies of this system allow more efficiently to accumulate and use moisture through crop rotation, small-scale tillage, organic fertilization and growing of siderates, the use of modern machines and mechanisms for soil cultivation. It allows to receive environmentally safe products, to store and even increase the soil fertility (to preserve the land).

Consequently, in conditions of increasing the climate drought, it is necessary to use systemic and science-based measures to adapt agrarian production to new climatic conditions. Confrontation with the constant deficit of moisture in agriculture is achieved at the expense of its accumulation and preservation by constantly applying modern energy resources and saving technologies of growing crops, minimizing soil cultivation, shortening the terms of spring field work, and generally adhering to the regulations for the use of all technological operations.

These measures contribute to the sustainable development of the agrarian sector of Ukraine, as they are based on the principles of the golden rule of ecology, which must be implemented at all times at the level of farms, - global problems of ecology are solved locally.

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## **MARKETING STRATEGIES OF ENHANCING COMPETITIVENESS OF THE ENTERPRISES OF BUDGET GENERATING BRANCHES OF THE FOOD SECTOR**

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The technological level of business process in enterprises of budget generating branches and activities of the food sector cannot be permanently audited to radical changes due to traditional production and sustainability technologies. Similarly, the objective possibility of creating unique or newest food products does not always

exist, and the whole assortment of finished products is practically mastered by the leading business entities. Therefore, it seems appropriate to consider providing reputation and establish close and well-established relationships with customers as mainstream competitive advantages for enterprises of budget generating branches of the food sector.

In determining this task, it is advisable to agree with the opinion of Markina I.A., Andryeyeva N.M., Golovchenko O.M. that it is important to establish the requirements of consumers to producers on properties, quality, cost and other competitive characteristics of their products [1, p. 153]. A set of expectations and needs of consumers can be presented as follows: consumers want peace and security; consumers are very grateful to those who can take care of their everyday problems that they themselves difficult to handle; many entities grow and prosper because they are more comfortable for their consumers; consumers want personal attention and communication; consumers want quality. Sometimes consumers want to be partners of the company; consumers want to be able to turn things or products that are not fully satisfied; consumers want to bring joy and pleasure; consumers want to live in an atmosphere of the relative predictability of businesses entities or consumer markets, services and products.

According to Aranchiy V.I. and Ihnatenko M.M., consumer's expectations and demands form the reasons for the purchase, which include security reasons, affection, comfort, pride and novelty [2, p. 55]. The motive of security is determined by the businesses entities reputation, a sign of good's quality, money back guarantee on the purchase. The attachment motive is formed by the quality of service, an effective system of discounts. The motive of comfort is determined, first of all, by the ease of operation, goods quality, and high-quality products. The motive of pride is determined by belonging to a certain social class and status, possession of rare things. The motive of novelty is formed the consumer's desire to buy new goods.

The decision of numerous of the above aspects appears to ensure proximity to customers, establishing trust, personal relationships with customers, individualized marketing, satisfy and retain loyal customers. In practice, these trends, according to Marmul L.O. and Rusnak A.V., can be implemented through the development of branding tools, the improvement of the trade organization, brand and assortment policy, measures for the enterprise public mission formation and the industry as a whole [3, p. 269].

The essence of branding is to create long-term consumer advantage to the brand. The use of branding in a competitive environment caused by the need to distance themselves from competing products facilities management. The objective necessity of applying to brand on the market for food and other goods is explained by the fact that in each country' region there are manufacturers who simultaneously try to enter the markets of neighboring regions and, at the same time, they are experiencing pressure on their domestic market by competing manufacturers from these regions. Forming a unified system of creation and distribution of advertising media is a part of branding. Its task is to determine the place of the trademark in the consumers' minds.



Thus, branding forms the psychological commitment of consumers to a particular brand of goods. The psychological commitment to trademarks is based on the fact that consumers have a limited ability to perceive and analyze marketing information. As «taking a decision on what to buy», apparently brain full of logical calculations considering all «for» and «against» compared with one another [4, p. 238].

Instead, people are exploring information about products and goods exclusively, and only then make decisions based on very large and general representations and their feelings about which product is best for them. These general ideas and sensations determine the degree of adherence to this or that brand. The pride of a stable brand is the loyalty of consumers; low vulnerability to competitive marketing activities and crises; higher profits; inelasticity with increasing prices; increase profitability and efficiency of marketing communications; additional opportunities to promote the brand.

The essential difference between a trademark and a brand (trademark) is that the trademark allows identification of the products of one or another manufacturer. While the perception of a trademark is accompanied by various associations, images, and expectations of consumers, which ultimately determine the consumer choice. According to Ihnatenko M.M., the development and perfection of branded trade in the market is the most reliable tool for the branding development and the formation of psychological commitment to the brand [5, p. 267]. Branded trade carries out two important organizational functions in modern conditions: firstly, it allows to fully control the channel of sales of products; and secondly, it provides a continuous flow of funds, improving the turnover and financial position of business entities and the industry as a whole.

In our opinion, branded trade can solve the problems of forming a psychological commitment to the trademark and satisfy consumer motives by using a high culture of service, offering the most diverse product ranges, the freshness of sold products, and tasting. The task of branded trade is to establish effective feedback from the consumer with the manufacturer on quality issues, prices, product ranges as well.

Along with the considered directions, the tools of general communication influence should be used to form the consumer's commitment. This requires the constant presence of developed combinations of information broadcasting of institutional advertising in the product sales field. The objectives of the advertising information are to inform consumers of the new product arrival on the market, lower prices and the introduction of discounts system, lotteries, and raffles, etc.

The objectives of the speech advertising are the formation of the brand advantages, change the product perception properties, the conviction to make a purchase. Repeated advertising is intended to support product awareness and place of its purchase, maintain a commitment to the brand, recall the need to purchase goods in the near future. Institutional (prestigious) advertising should form and maintain a favorable image of the businesses entities, which affects the competitiveness of budget generating branches of the food sector.



According to Romaniuk I.A. and Levayeva L.Yu., except of planned advertising campaign is necessary to implement a set of the following measures: firstly, the constant development of various forms of communication with consumers, for example, conducting consumer conferences, participating in exhibitions, fairs, seminars, holding tastings in the largest retail outlets, contact phones availability for direct communication of consumers on quality issues, the goods range of businesses entities and express claims [6, p. 48]. Secondly, it is important to promote the use of mass media to disseminate commercially sensitive information on products and businesses entities of budget generating branches of the food sector based on establishing a long-term mutually beneficial relationship with the heads and specialists of leading experts and media.

The proposed measures are able to create sustainable, long-term, trusting relationship between businesses entities and consumers in their systematic, consistent and regular use. They can provide the consumers psychological commitment to the manufacturer' brand, improve the businesses entities reputation. They can also create significant competitive advantages and increase the products competitiveness, potential for enterprises of budget generating branches of the food sector.

However, considering the formation of businesses entities reputation, it seems necessary to highlight some aspects in more detail [7, p. 85]. The image components are organizational and managerial culture of businesses entities, internal social and psychological climate, image of businesses entities from consumers (quality, design, trademark popularity, service, discount system, price, corporate style), business image of industries (business reputation, honesty, reliability, loyalty to partners, information openness, business activity), social image (sponsorship, patronage, participation in solving environmental problems, employment, health care, assistance to specific individuals), and the image of industries for state structures (products importance for the region, participation in regional social programs, adherence to laws, jobs creation).

Positive image improves the competitiveness in the market by attracting customers and partners, as well as facilitating access to resources. In our opinion, the social image of budget generating branches of the food sector is also an important tool for consumer opinion forming, as information about facilitating industries to social programs will always have a response to domestic consumers. Thus, the development of these areas will strengthen the reputation of the businesses entities of budget generating branches of the food sector among consumers and the degree of their commitment. It should be noted that the consideration of the businesses entities image as a derivative of several components corresponds to the modern understanding of the marketing role in the market activities management of businesses entities and the allocation integrative function as the main function [8, p. 49].

Integration marketing pays special attention to the market actors, which affects the activities of businesses entities of budget generating branches of the food sector. The basic principle of classical marketing is market orientation, which in the framework

of integration marketing is interpreted not as customer orientation, but as a focus on all groups of influence: on staff, suppliers, sales partners, competitors. However, the ultimate effectiveness of marketing depends on the degree of integration of individual measures and the effectiveness of coordination between them.

In our opinion, this understanding of marketing confirms the validity of the chosen method of studying the competitiveness of businesses entities of budget generating branches of the food sector as a system of interdependent factors of competitiveness, as a system actually used in the management practice businesses entities competitiveness. In analyzing the competitiveness of a separate business entity and developing reasonable management decisions, it is necessary to use a wide set of indicators that characterize the effective activity of the business entities and it is an indicator of effective work and interaction of all units. This circumstance allowed us to develop a system of indicative management of the decisions system adoption to increase the competitiveness of budget generating branches of the food sector.

The proposed system combines a set of solutions that are both internal and external orientation action allows you to create an integrated approach to decision-making to ensure competitiveness as summarizing the characteristics of the businesses entities of budget generating branches of the food sector in the market and can be used as part of operational management and control. Sustainable competitiveness of the budget generating branches of the food sector will be ensured through the use of all the paths of certain organizational and economic principles and the formation of significant competitive advantages on the basis of the proposed set of methods.

However, it should be noted that the development budget generating branches of the food sector as a whole is largely dependent on unregulated domestic facilities management tools impact factor - aggregate demand in the market [9, p. 141]. The elasticity of demand for population income and high potential demand suggest that increasing the consumers living standard will lead to an increase in aggregate demand and supply, will ensure the efficient operation of all production system elements, allowing them to develop within the cluster of competitive budget generating branches of food sector (the most sustainable form of economic interaction).

In modern conditions, there is a need to change the orientation and evaluation criteria for food products produced by agricultural enterprises belonging to the budget generating branches of the food sector. The competitiveness of any product can only be determined by comparison, and therefore it is a relative indicator. It is a characteristic of the goods, reflecting its difference from rival products on the degree of satisfaction of social needs competition. Competitiveness is determined by the combination of properties of these products, which are part of its quality and importance to consumers that determine consumer spending in the purchase, consumption (use) and waste products.

The competitiveness assessment of goods (services) of enterprises belonging to the budget generating branches of food sector begins with the research goal definition: if it is necessary to determine the product position in a number of similar, then it is

enough to conduct their direct comparison of the most important parameters; if the aim is to estimate the prospects of good sales in a particular market, the analysis of the information should be used, which includes information about products that will come to market in the future, and information about changing the current standards and legislation in the country, the dynamics of consumer demand as well [10, p. 189].

Regardless of the research purpose, the market research conditions are the basis of the competitiveness assessment, which should be conducted continuously, both before the new products development and during its implementation. The task is to distinguish the group of factors that influence the demand formation in a certain sector of the market: changes in the requirements of constant customers of products are considered; directions of similar developments are analyzed; areas of products possible use are considered; circle of regular customers is analyzed.

Long-term forecasting of market development takes a special place in its study. The products, which will be conducted by analysis or emerging requirements for future good, are selected on the market research basis and customer requirements. Next, the nomenclature of parameters is determined. The analysis should use the same criteria that the user operates when choosing a product. A comparison is made for each group of parameters shows how these parameters are similar to the corresponding option needs.

The competitiveness analysis begins with a normative parameters assessment. If at least one of them does not correspond to the level that is punished by norms and standards, then a further products competitiveness assessment is inappropriate, regardless of the comparison result on other parameters. At the same time, the excess of norms and standards and legislation cannot be considered as an advantage of products, because from the consumer's point of view it is often useless and does not increase the consumer value. Exceptions may be cases where the buyer is interested in some exceeding the existing norms and standards, based on their rigidity in the future.

The results of competitiveness evaluation use to develop a conclusion about it; to choose the ways to optimally increase the product competitiveness to solve market problems as well [11, p. 85]. However, the fact of the product high competitiveness is only a necessary condition for the product implementation in the market at a given volume. It should also consider the forms and methods of maintenance, advertising, trade and political relations between countries and etc.

The following management decisions regarding the set of ways to increase it can be taken as a result of the products competitiveness assessment: the change in the composition, structure of materials (raw materials, semi-finished products), component parts or product design; change the order of product design; change in production technology, test methods, production quality control systems, storage, packaging, transportation, installation. An important direction is the changes in prices for products, services, maintenance and repair, spare parts; changes in the order of products on the market; changes in structure and size of investment in the development, production, and marketing.

It is also important to change the incentive system of producers, change the products export and import structure by volume, types, channels of implementation. Overall, the strategy of improving food quality is an important part of the strategy to increase the enterprise's competitiveness belonging to budget generating branches of the food sector. The objects of its forecasting for the future are indicators of quality and value of food products, inferior to similar indicators of competitors' goods.

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# **PRINCIPLES OF TRANSFER OF EUROPEAN VERSUS CZECH RIGHTS AND OBLIGATIONS ARISING FROM LABOUR RELATIONS**

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Legal relationships define the legal theories such as social relations (Aganaba-Jeanty, 2014), which are regulated by law, i.e. normative system generally binding and enforceable by the state. In the event that legal relations are linked to the labour process especially for dependent work, we talk about labour relations, whose participants are holders of rights and obligations towards each other (Steel, Pierce, Berman et al., 2017). The transfer of rights and obligations arising from employment relations can occur in cases provided for by law or by special legislation. If there is a transfer of activities the employer or the employer's activities or to the transfer of tasks or part thereof to another employer, rights and obligations of employment relations in full to the employer (Jouza, 2014); the rights and obligations of the collective agreement to the employer at the time of the effectiveness of the collective agreement, but not later than by the end of the following calendar year (Van Camp, Sloan, El Bassiouny, 2016). For tasks or activities, the employer shall be regarded tasks related to ensuring the production (Bellairs, Halbesleben, Leon, 2014) or provision of the services (Škodová Parmová, 2015) or similar activities according to the specific legislation (Barret, 2015), the legal or natural person performs in dedicated facilities for these activities or usual places for their performance on their own responsibility (Mugarura, 2016), under its own name. Contractual transfer of contractual arrangements can be realized, for example by the purchase agreement on the transfer of the plant with the tangible (Kuznetsova, 2016), intangible and personal folders are undertaking of the business unit a lease contract or atypical (Koniaris, Coombs, Meslin et al., 2016). European law is enshrined on the principle of the transfer of rights and obligations arising from the labour relations of the realized on the basis of administrative and legal acts (Štefko, 2012), but also court decisions. In the case that the subject of implementation will not be undertaking as a whole or its branch, it will be necessary to consider the possibility of a transfer within the meaning of the Directive, while maintaining the identity of the economic units to be transferred (Barnard, 2016). According to the article 2 (2), 1 (b) and

directive, «transferor» means any natural or legal person who, as a result of a transfer under article 17. 1. Directive ceases to be the employer in respect of the undertaking, business or part of the undertaking or business (Barancová, 2010). The fact that the transferor ceases to be the employer, arises in connection with the disposition of company.

The authors present a comparison of the current national and European legislation, based on the essential parts of the provisions of the relevant legislation of the Czech Republic in order to analyse it in accordance with legislation, European legislation, which should be binding and having primacy over for Czech law. Czech national legislation is based on the provisions of §338 paragraph. 1 of Act no. 262/2006 Coll., The Labour Code, as amended, under which the transfer of rights and obligations from employment-relationships are occurring in cases specified by law or by special legal regulation. From the above it is clear that the definition of the transition can be defined by the Labour Code, but also by specific legislation. For the purpose of comparison of Czech and European legislation, The Czech Labour Code implies the following formulation of the legal consequences of the rights and obligations: in case of the transfer of an activity of the employer or the employer's activities or the transfer of tasks of an employer or its part is provided to another employer, the rights and obligations of labour relations are transferred in full to the transferee employer (Allaire, Backman, Alheresh et al., 2013); rights and obligations under the collective agreement are transferred to the transferee employer on the effective period of the collective agreement (Matuska, 2011), but until the end of the following calendar year (Waggoner, 2017). Czech law distinguishes between a transfer of an activity or its part and a transfer of tasks or its parts. That concept does not correspond to European terminology. The Labour Code also defines the tasks and activities of the employer for the purpose of considering the rights and obligations and sets the receiving employer. The tasks or activities of the employer are considered particularly tasks related to ensuring the production or provision of services, and similar activities under special laws, which legal or natural a person engages in facilities or in designated places commonly used on its own responsibility and under its own name. Under the successor employer, irrespective of the legal reason for the transfer, whether there is a transfer of ownership, considers the legal or natural person who is competent as an employer to continue to perform tasks or activities, previous employer or similar type of activity. The information is required: “before the transference of rights and duties, arising from labour relations, from the hitherto employer (transferor) to the employer being a transferee, both of them shall inform the trade union or the works council and consult them with a view to reaching the agreement on the determined or proposed date of transfer, the causes of such transfer, legal, economic and social implications for the employees and envisaged measures related to the employees. Where there is neither a trade union nor a works council at the employer's undertaking, both the hitherto employer and the future employer shall inform the employees who will

be affected by the transfer and consult them on the facts laid down in subsection 1. Compared to the European legislation, it is necessary to mention the definition of transferring rights and obligations by Council Directive 2001/23/EC of 12 March 2001 on the approximation of the laws of the Member States relating to the safeguarding of employees' rights in the event of transfers of undertakings, businesses or parts of undertakings or businesses. Based on its charter 1 article 1 (a) The Directive shall apply to any transfer of an undertaking, business, or part of an undertaking or business to another employer as a result of a legal transfer or merger; and b) Subject to subparagraph (a) and the following provisions of this Article, there is a transfer within the meaning of this Directive where there is a transfer of an economic entity which retains its identity, meaning an organised grouping of resources which has the objective of pursuing an economic activity, whether or not that activity is central or ancillary. As the text revealed, the relevant Czech and European legislation is different. European legislation is explicitly expressing the prerequisite called a contractual transfer or merger, based on other criteria to be considered for the transfer of an undertaking which is not the automatic result of a legal transfer or merger. There are a number of issues related to the interpretation of the terms in relation to transferring rights and obligations in the European legislation as applied by the European Court. As an example, we can see the Judgement of the Court of 20 November 2003; C-340/01 - Abler and Others. An Austrian company, Sanrest was providing a catering service for a hospital within the hospital; however, it was an outsourcing business activity. After cooperation was cancelled in the form of notice from the hospital and replaced with another entity under a commercial contract in the same range. The court had to decide if the employers of the first entity were supposed to be transferred to the second entity. The Court concluded that the transition was carried out regardless of the state between the transferor and the transferee company among whom there is no legal relationship, i.e. the transfer may be affected through a third party, regardless of the transfer of tangible property that was used for the activity in question. Similarly, the European legislation interpreting the above mention directive in the case of C-392/92 Christel Schmidt vs. Spar und Leihkasse discussed an employee who was employed to clean the premises and was dismissed on account of the refurbishment of the branch office, and offered the same job by another entity, however for a lower wage. The Court discussed the criteria for which there is a transfer of rights and obligations in a situation where the transfer of business (cleaning) has been the core business of the original employer, but it was a transfer of a single employee without any concomitant transfer of assets. The court verdict concluded a transfer of an undertaking under the Directive and stated that it is not important providing the main economic activity, but the activity support (optional). Furthermore, it is not a priority, given that the activity is carried out by only one person and that was not transferred any tangible assets, does not preclude the classification of the subject operations in the transfer of the business or its parts. Due to the above mentioned, the authors suggest a change in Czech legislation in



order to reflect the European conception based on the current European law.

**European legislation related to the rights and obligations arising from employee relations.**

**Principles of European legislation.** Council Directive 2001/23/EC of 12 March 2001 on the approximation of the laws of the Member States relating to the safeguarding of employees' rights in the event of transfers of undertakings, businesses or parts of undertakings or businesses. In its article 1(a) it states, that the directive shall apply to any transfer of an undertaking, business, or part of an undertaking or business to another employer as a result of a legal transfer or merger. In 1(b) it says that subject to subparagraph (a) and the following provisions of this Article, there is a transfer within the meaning of this Directive where there is a transfer of an economic entity which retains its identity, meaning an organised grouping of resources which has the objective of pursuing an economic activity, whether or not that activity is central or ancillary. The directive replaces Council Directive 77/187/EEC of 14 February 1977 on the approximation of the laws of the Member States relating to the safeguarding of employees' rights in the event of transfers of undertakings, businesses or parts of undertakings or businesses due to better clarity and rationality. The aim of the Directive is to define the significance of the transfer of economic units with implications for industrial relations, especially in order to protect workers' rights. According to European legislation, the legislation is included in the directive, which applies to public and private undertakings engaged in economic activities with the aim of making a profit or not this goal. The principle of preserving the rights of employees, arising from a contract of employment or employment relationship existing on the date of transfer are transferred to the transferee, The Member States may specify the transferor and the transferee after the date of transfer, being both liable for obligations that arose from a contract of employment or from an employment relationship prior to the date of transfer or existing on the date of transfer. In this sense, it is the principle of automatic transfer of rights and obligations under the contract, court decisions, administrative decisions or other actions and legal acts, including the principle of protection against dismissal of employees by the Directive, provided by the transfer of an undertaking, business or part of an undertaking or business does not involve any grounds for dismissal, but this does not prevent dismissals for economic, technical and organizational reasons, related to changes in the workforce. There is the principle of information and adversarial obligations, according to which the transferor and transferee are required to inform a representative of their employees affected by the transfer on the date or proposed date of the transfer, reasons for the transfer, its legal, economic and social implications for the employees and possible measures with regard to employees. A transferor is required to communicate such information to the representatives of their employees-for in advance before performing the actual transfer. If there are not any representatives of the employees for the reason not depending on their will, the employees must be informed in advance directly to the date or proposed



date of the transfer, about the reasons for the transfer, its legal, economic and social implications for the employees and possible measures with regard to employees. The transferor shall notice all rights and obligations transferred to the transferee by the transfer.

**Principle of the automatic transfer of rights and obligations.** The principle of automatic transfer means that the present employer transfers all the rights and obligations to another employer only on the basis of law and conditions specified in the law, but not in situations where the transferor or transferee themselves negotiate their own terms. The principle was defined by the Czech Supreme Court, arguing that there cannot be a legal significance of a delimitation in the area of labour relations, as no relevance is granted to the will of the parties. Concluding the Delimitation agreement is only important to specify the conditions under which the transition occurs; so that there is the transfer of rights and obligations *ex lege*, the contractual arrangement supposed by law must precede to the legal transfer or merger as defined by the Directive in Article 1, an economic entity must be transferred. The entity is defined as organized clusters of funds whose aim is to pursue an economic activity as a principal or ancillary, which retains its identity. As the above-mentioned definition reveals, it is related to a transfer of companies or its parts as separate organization units but also the transfers of tasks or activities to be performed by the transferor without transferring a company or its part. The contractual transfer can be realized in many different contractual arrangements, e.g. the purchase agreement, agreement on transfer of the business as a whole, with all tangible, intangible and personal components its parts thereof as a separate organizational unit or by a rental or innominate agreement. European law is anchored on the principle of transfer of rights and obligations from labour relations, which can be realized on the basis of administrative acts, legal acts and court decisions (Dagan, 2017). If the object implementation is not business as a whole or its separate organizational unit and some assets or intangible elements of business or premises used for business or just tasks without any current transfers ownership are transferred, it will be appropriate to consider whether this really is a transfer within the meaning of the Directive when the determining factors in interpreting the definition of transfer is preserving the identity of the transferred economic entity.

**Transferor.** Based on Article 2, part 1(a) «transferor» shall mean any natural or legal person who, by reason of a transfer within the meaning of Article 1(1), ceases to be the employer in respect of the undertaking, business or part of the undertaking or business.

**Transfers based on public decision.** One group of causes related to the transfers of rights and obligations, as reported by the authors of this paper include transfers on the basis of decisions of public bodies as discussed by the European law, e.g. the judgment of the Court of Justice of the EU 172/99 of 25. 1. 2001. In this case, a transfer of an undertaking was deduced from a situation in which a public entity commissioned a third-party operating bus services to meet the public

service obligation and consequently this activity was entrusted to another carrier. Similar conclusions were made by the European Court of Justice in Case 29/91 of 19. 5. 1992, when the original employer (Foundation for assistance to drug addicts) lost its entitlement to subsidies from municipalities and then ceased its operational activities. The village then began to subsidize another entity to ensure identical tasks.

**Transfers in connection with outsourcing.** Another form allowing the transfer of rights and obligations is related to ensuring a task or activity through a subcontract from a third party. Under the European law, many cases have been discussed; however, the authors highlight a frequently mentioned judgment in Rask's case. In this case, a business entity (Philips) leased manufacturing facilities to a third party for the operation of a canteen, which in the previous period was run by a business entity itself for its employees and when there was not a contractual transfer, and no property was transferred to a new operator of the canteen, it was realized by only renting space by the business owner. The European Court concluded that it is possible to perform a contractual transfer on the grounds that the directive in question will apply to the case regardless of the operation of the canteen is not the main activity of the lesser, so they can subcontract to fulfil the general criteria for legal transfer in accordance with the Directive.

**Transfers in connection with the contractual transfer of the participation of the three private entities.** Another group of atypical cases of transfers of rights and obligations is related to negotiations, resulting in the transfer contract, with the participation of three private entities. The authors of the paper reported the EU Court's decision in the case of the Daddy's Dance Hall of 10. 2. 1988, when the contract transfer was inferred in a situation where the landlord rented space to various entities and transfer of rights and obligations in relation to the employees concerned persons which were employed by the original tenant, which was converted to employment in connection with the tenant's will to the lesser who completed the initial hiring and leased a new entity. Similarly, the court decided even if the original owner of the building rented premises for the purpose of manufacturing to the tenants, who ended, the lease and then sold the property to a third party (the buyer). In this case, the transfer of rights and obligations of the employees concerned the original tenant in relation to the new owner of the object (the buyer).

**Transfers of an undertaking under the Directive.** If there is a contractual transfer or merger, the question arises whether it is a predictable situation, i.e. the transfer of undertaking within the meaning of the Directive. In assessing the existence of a transfer of an undertaking, the authors mention the crucial decision of the Court of Justice of the EU 24/85 of 18. 3. 1986. In this case, the criteria were set to define issues of a transfer of an undertaking as an economic unit with the preservation of its identity. There were also other cases where it was appropriate to consider the type of undertaking or business, the transfer of material goods, i.e. buildings and movable assets, the transfer of intangible assets, the value of intangible assets on

the date of transfer; and also the fact whether the new employer took over most of the original staff if there was a takeover of customers to determine the degree of similarity between the activities carried out before and after the transfer and the period for which such activities were discontinued. The criterion of transfer of the undertaking, as an economic entity which retains its identity, was formulated by the Court of Justice of the EU based on the criteria, which were not interpreted into the text of the Directive, which resulted in the creation of non-compliance, including deviating from the principle of the transfer of the entity which retains its identity. It was decided to remove the criteria for the transfer of tangible or intangible assets in connection with the transfer of the company and vice versa emphasized similarity of the activities and tasks transferred. Against this loosened interpretation, the authors of this paper follow the rigid interpretation, based on a strict scale of preservation of the identity of the entity transferred, referring to relevant European law, according to which should be decided, such as the decision in cases of *Rygaard* (Czech, 1994), in *Süzen* (Czech, 1995) in *Oy Liikenne* (Czech, 1999) and others (Czech, 1999b), where the basis for a reasonable interpretation of the Directive can be seen, and it is possible to preserve the meaning and purpose of the legislation so that it is balanced and rational to protect the employees and at the same time not to burden the employers disproportionately. It is revealed that these ground-breaking decisions that demand the existence of a stable economic entity and characterize factors such as governance, forms of work organization, production methods, the existence of means of production, etc. The Court emphasized these criteria, such as the transfer of tangible resources for the action, i.e. the transfer of a substantial part of the material resources where without these resources it cannot be properly carried out in the activity or signs of a cautious approach to the assessment of the transition to the transfer of activities or parts of activities or tasks. In the Czech national legislation, the Labour Code does not reflect the definition set by the Directive and the scope of the Directive combines the transfer of rights and obligations only with the transfer of the activity or activities or tasks or parts of tasks without any restrictions other factors that best correspond to European legislation, the meaning and purpose of the issue.

**Identification of transferred employees.** Given that the transfer of rights and obligation upon occurs automatically under the law (resp. Directive) after the contract takes effect transfer of a business or a merger, for other inalienable requirement of people considered determining the employees directly affected by the transition. In difficult (atypical) contractual transactions, it will be appropriate to identify persons who belong/not belong to the transfers of an undertaking or the transferred activities or tasks. In this regard, disputed cases may occur in a situation where the employee performs more activities for a transferor, some of which are subjected to the transfer or not, and the group of persons is not defined or limited, it is always necessary to assess an individual case. People who are involved in the transferred production process will be interested in the transfer. Persons who

perform activities and tasks of ensuring the operation of the transferor will not be part of the transition, because their activities are not tied to the transferred part.

### **Czech legislation related to the rights and obligations arising from employee relations.**

**Principles of Czech legislation.** As mentioned in the introductory part of the paper, Czech legislation represented by the Labour Code is not a literal interpretation of the definitions cited in European legislation, as there are obvious deviations. The transfer of rights and obligations of labour relations under special legislation occurs or occurred in the past, e.g. by the Civil Code (transformation of legal entities); Act no. 182/2006 Coll.; Insolvency Act, as amended.; Act no. 125/ 2008 Coll., on Transformation of Companies and Cooperatives; Act no. 427/1990 Coll., on Transfers of State ownership of Certain Things to Natural or Legal Persons; Act no. 92/1991 Coll., on Conditions of Transfer of State Property to Other Person and Act no. 42/1992 Coll., on Regulation of Property Relations and Settlement of Property Claims in Cooperatives. In the case of such transfers, there is a contractual transfer under the conditions foreseen in EU legislation. In connection with the reasons specified in the Labour Code, the Czech legislator significantly deviated from European legislation. The transfer of rights and obligations from employment relationships can occur under the Labour Code in the transfer of activities of the employer or parts of the employer's activities or the transfer of tasks of the employer or their parts to another employer without a fixed term of maintaining the entity.

Authors of the chapter acknowledge the relevance of the opinion of Petr Čech when the language, but also the formal legal point of view say it is possible to consider that parts of the business, although they are not important, such as individual rights, etc. belong to entrepreneurs and are used to operate enterprise or by their nature they have to serve this purpose, known as the analytical approach to an undertaking. If we admit that part of the enterprise can be a single component of business, which connects the transition to a mere transfer of the activities or tasks or parts of tasks without requiring actual transfer of the business or its separate organizational unit, we come to the irrelevance of the statement.

Contractual transfer under Czech law The Labour Code does not explicitly define a contractual transfer. Proceeding from euro-conform interpretation of domestic laws, interprets only the transfer of a business or its part of as an organizational unit based on a contract between the two entities, but under the conditions mentioned above, in which a stabilized by European law. It includes ordinary sale, transfer in the form of inheritance or corporate transformation or lease a business or its parts as separate components or nonstandard conversion, found relevant by European law as in C-392/92 Christel Schmidt vs. Spar und Leihkasse. Czech legislature, according to the authors of the paper, anchored legislation favourable to the employees in comparison with the majority interpretation of the EU Directive. In the case of the European interpretation, it cannot be ruled out that the Czech right legislative more advantageous for a weaker

party beyond the range of minimum standards of EU law. We cannot forget the labour law or the private parties and the principle of equality in the opinion of the authors, it is not an obvious reason to Czech legislature created a disproportionate imbalance in the relationship of employer and employee, for which there is no known public interest and guarantee increased protection for employees. Application practice of Czech courts approach to the issue conservatively, based on the assumptions of Czech legislation, particularly the Labour Code, i.e. a transfer is considered to be a transfer operation of the activity or task. According to the decision of the Supreme Court dated 14 January 2010, it was sufficient to convert part of the activities involving the management and payroll processing, without examining the subject of a transfer of an economic entity, as defined by European legislation or required by the Commercial Code to transfer part of the business. The practice of Czech courts can interpret the example of two relatively current court decisions, which can be stated minimum difference from European case law. According to the conclusions of the Supreme Court treaty, which the defendant (the transferor) transferred to the purchaser laboratory equipment and other movable assets necessary for the operation of dental laboratories, represents together with the fact that the licensee has become the tenant of commercial premises formerly leased defendant in which he began without interruption of the operation of the dental laboratory, instead of the defendant after the takeover of the majority of the customers and the employees mostly legal reality with which under § 338 paragraph 2 of the Act associated transfer of rights and obligations to employees of the defendant, who previously worked together in the performance of its activities (tasks) and whose employment relationship until then had not finished. It was argued in accordance with and with reference to European legislation the fact that not there is a transfer of an economic entity which retains its identity, so it can be considered an organized grouping of resources within the meaning of Article 1, paragraph 1 b) Council Directive no 2001/23 / EC, since the scope of assets that have been transferred to a purchase contract with the defendant and has been quite marginal. The court rejected the objection on the grounds that the appellant overlooks the fact that the directive is mandatory for the Czech Republic and result to be achieved is not directly applicable (cf. The provisions of Art. 249 of the Treaty establishing the European Community consolidated version published in No. 325/2002 - the Official Journal of the European Union). Range (value) of the assets transferred to another employer can be realized on the basis of an assessment of the transfer of an economic entity under the provisions of Art. 1, paragraph 1 of Council Directive no. 2001/23 / EC, which cannot be examined in isolation, but always in tandem with the what kind of undertaking or business concerned, whether the new employer was taken over most of the original employees. The court in this regard refused direct application of the Directive, however, the findings justify using an interpretation which was in conformity with European case law and the Directive itself. In another case, the Supreme Court argued that the transfer of rights and

obligations from employment relationships occur under § 338 paragraph. 2 and 3 of the Act always applies, if it was made legal act (contract) or occur when another legal fact, according to which by law entails a transfer of operations or parts of operations or tasks or part of tasks to another employer, provided that the transferee natural or legal entity it is capable of continuing to perform the tasks of an employer or employer actions or similar kind of activity, but it is clear what is the legal reason for the transfer, through which the transfer of the owner's rights, and whether the current employer lost the ability to be the employer. If all the conditions required by the Labour Code or special laws are met, the consent of the employees' existing (current) employer is not required and the rights and obligations arising from employment relationships are transferred to the transferee employer and provided disapproval employees, i.e. the transfer of rights and obligations from labour relationships occur from the law, without the consent of the employee and without termination of employment an employee with current employer and conclude a new employment contract with the receiving employer. In the present case, the Court concluded that when the defendant on the basis of a commercial lease continued without interruption in the operation of cafes formerly operated by another person in the existing premises with all existing employees took along with interior fittings such as tables, chairs, coffee, recipes, food supplies, computer, where the majority of customers and charged cafes, i.e. the transfer took place of business (in part) by the provision of §338 of the Labour Code in respect of employees who were involved in this activity. The authors of the paper recently participated in legal consultations concerning the assessment of whether a contractual transfer is interpreted according to the definition of a legal transfer in accordance with the Labour Code, from which emerged a discrepancy of Czech and European legislation. In that case, a Czech trade corporation (person A) employing the majority of employees decided in 2012 to provide meals for its employees through a third party (person B), that would produce and deliver food, drinks and provide services. In this sense, a contract for the provision of services for an indefinite period with the possibility of termination on both sides was signed. Serving meals and drinks under the contract took place in an area of person an allocated for that purpose. In 2016, person A decided to terminate the contractual relationship in the form of notice because of dissatisfaction in the quality of food. Before giving notice, person A implemented an informal tender for a new provider of corporate catering and chose the person C, who until then mostly did not run a business in the provision of food, but with regard to its capacity (own material and staff), they signed a contract with person A and concluded that the subject matter was the same as the contractual relationship with person B. By law, there was not a direct legal relation of person B and C. Person A simply exchanged one provider for another. Between the person B and person C, there was no transfer of tangible, intangible and staff components of business. They only had in common that they provided the same activities for person A in the same area of person A using their own background, their own creation of

food and drinks, different contractors, own the means of production and production facilities for the production of food or security personnel. If this is the case, if we should put the model situations interpreted in this paper, we define this relationship as a three-way transfer through outsourcing. The subject of extrajudicial dispute between the person B and person C was the requirement of the person B, that person C should employ the manager of person B, who was responsible for managing production, business and human resources of catering. On the contrary, ordinary employees of the business, cuisine and food dispensing should be a staff of person B, whose principal activity is the provision of catering for third parties. Person C resisted to employ the manager, pointing out that among the person's B and C there is no transfer of activities or tasks, and the claim that the provision of services for people and workers need with regard to their own security personnel. Under this reasoning, the manager would be unnecessary after the transition to the new employer, burdensome to labour costs of the person C. Authors of the paper conclude that the consequences of redundancy is on behalf of the original employer because there is no rational reason for the interpretation that in the absence of preserving the identity of the transferred economic entity is no transfer is not in terms of the contractual relationship between the parties B and C, despite this an employee is transferred (in addition, it is a manager) to person C. In accordance with the case law of Czech courts and in particular with regard to the labour code suggests that this particular case would be if legal settlement was apparently formalistic interpreted as a transfer of rights and obligations from the labour relation due to the broad definition of the provision. § 338, paragraph. 2 and 3 of the labour Code, but the authors of this paper do not consider that legislation or its interpretation for appropriate and efficient.

**Draft of measures related to changes in Czech legislation.** In formulating proposals for changes in Czech legislation and designing ideas that would contribute to the debate over modifications to Czech legislation, the authors of the chapter assume the following premises and they further propose:

- European directive in question is binding for the Czech Republic at least by the result to be achieved.
- Czech legal standards must be applied and interpreted in a European conformity.
- Without a good reason, Czech legislation is diverged from the European Directive in defining reasons for rights and obligations transfers. As seen by the authors, it is definitely to the disadvantage of the employer.
- European legislation does not discuss the legal transfer criteria in detail based on the case law of the EU Court of Justice, which is variable.
- It is not appropriate, that Czech legislation and law is diverged from European legislation being the philosophical and inspirational source of Czech legislation.

The authors of the paper draw attention to a disharmony in Czech court's decisions in European conformity within the proposed measures. Those decisions do not provide legal certainty with regard to the need for a judicial decision to deal with



the legislation arising from the Labour Code. Moreover, it should be considered the fact that nothing prevents the Czech legislators to provide a wider range of rights protection of employees than those provided by European legislation. They see European law as balanced, presenting the legislative amendment to the Labour Code as the only legal certainty relating to the rights and obligations of employers and employees assuming a balanced equilibrium between employees and employers. Authors of the paper also point to the imbalance between employees, when there is at least the fear of advantage of existing employers versus employers receiving and transferring the burden of their own shortcomings in business to another employer (recipient), which, thanks to obtaining a contract is forced to accept the engagement. If the Labour Code defines that the transfer is applied in transfer of any parts of activities and tasks, the range of legal protection of employees is too wide and advantageous for some employers in case of termination of activities or tasks defined for the third persons. The authors of the chapter suggest the following change in §338 of the Labour Code:

- The transfer of rights and obligations of labour relations can occur only in cases prescribed by this act or special legislation.

- The transfer by the act occurs in case of the transfer of operations of the employer or the employer's activities or tasks or their parts to another employer; in case of a transfer of an economic unit maintaining its identity seen as an organized group of resources which aims to pursue an economic activity either central or additional. Considering the identity maintenance, assesses the type of an organization, transfer of tangible and intangible assets constituting the assets of the economic entity to the value of intangible things at the time of transfer, whether the new employer was taken over most of the original staff, whether the activities carried out before and after the transfer, there is a higher degree of similarity or for how long such activities have been discontinued.

- In case of transfers of rights and obligations arising from labour relations, the rights and obligations are fully transferred to the transferee employer. By such transfer, the employees, that have been performing the activities and tasks that are subjected to the transfer, are affected. The rights and obligations of collective agreements are transferred to the transferee employer on the effective period of the collective agreement, but only until the end of the following calendar year.

- The rights and obligations of the previous employer to employees whose employment relationship disappeared to the date of transfer, remain intact, unless a special law provides otherwise.

The authors of the chapter suppose that the propose paragraph 2 of §338 of the Labour Code could be shortened by the criteria of assessing the maintenance of the identity of an economic entity transferred, as there may be a time lag affecting the postponement of tasks. However, they agree that some of the criteria are considered as long-recognized by the European law. They propose to establish legal framework of labour relations providing legal certainty for participants in these relations.



Legislation on the rights and obligations of employee relations is generally interpreted in the European legislation. Although, it would be appropriate to actually think about adding the results of a subsequent European law to the relevant EU Directive that would re-define and materialize the written legislation the European legislator not agree with the proposal. Czech legislation reports differences in the text of legal decision of Czech judicial authorities that are not unimportant. By the opinion of the authors, they report disproportionate and unjustified protection in favour of one of the parts of the employee relations and advantages for current employers against transferee employers. Some rulings of the Supreme Court, but a number of disputed issues remain difficult to grasp for employers. To improve legal certainty, more detailed provisions on the transfer of rights and obligations in the Labour Code would have contributed, as well as discussions on a possible change of legislation or amendment with a view to a comprehensive, fair and reasonable final form of agreements for all legal purposes.

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# METHODOLOGICAL PRINCIPLES OF MODELING AND COMPARATIVE EVALUATION OF AGRICULTURAL ENTERPRISES COMPETITIVENESS

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One of the methodological peculiarities of modern researches of enterprise competitiveness is the identification of the processes of its modeling and evaluation. In the theory of competitiveness, the boundary between the terms «competitiveness evaluation», «competitiveness model», «modeling (model) of competitiveness evaluation» is gradually smoothed out. This is a methodological problem because modeling and evaluation differ in objects and goals, and methodological apparatus as well. Evaluation methods are used for systematic research of competitiveness, modeling methods are used to study the formation processes.

Author's competitiveness evaluation methods are beginning to be interpreted as economic and mathematical models in the scientific literature more often. As a result, the focus moves to the methodological approaches to assessing competitiveness, which has a completely different purpose, instead of developing real competitive models. Given the above, it is methodologically important to determine the differences between evaluation and modeling and to establish their interconnection as well.

Contemporary concepts of enterprise competitiveness and theoretical approaches to the quantitative measurement of objects, processes, and phenomena constitute the basis for the competitiveness evaluation. The evaluation is defined as an opinion, reasoning, conclusion about the quality, character, value of the object [1, p. 871]. During the evaluation, the economic object describes that have the quantitative values the most accurate and complete reflect its properties.

According to the foreign economists' findings, evaluation is a measure of competitiveness by giving it a numerical value. According to the high-level abstraction of the «competitiveness» concept, identification of competitive evaluation process with the calculation of indicators, which give quantitative interpretation to the sources of formation, namely, the competitive advantages, is more specific and understandable.

Instead, mathematical modeling is the process of presenting the research object as a model, which takes into account only those characteristics that are essential to achieve a specific goal. In competitiveness research, modeling techniques used to study ways to improve its level.

It is based on the identification and analysis of potential changes in competitiveness as a result of changes in factors directly influence its shape. If the enterprise raises the question of strengthening the competitive position, it means that the available benefits were not satisfied. In this situation, it becomes a necessary revision of actual and potential (future) benefits. In this case, the following are possible: 1) changing the qualitative and quantitative characteristics of existing benefits; 2) stimulating the processes of creating future benefits.

These options include a variety of behavioral schemes, or strategies to strengthen the current competitive position of the enterprise. The optimal strategy can be identified only by study the process models of competitiveness formation, considering all alternative management decisions, likely challenges of the external environment and internal risks. To do this, it is necessary to identify sources of competitive advantages (direct-action factors), as well as significant of indirect-action factors. Subsequently, functions competitiveness indicators form depending on the selected factors.

These functions, according to Marmul L.O. and Boyko V.O., are mathematical models of the competitiveness formation process [2, p. 84]. Changing the parameters of one or more factors it is possible to determine how this will affect the competitive position of the enterprise. As a result, that option will be selected, which the positive change will be the most significant in competitiveness indicators. Given the above, modeling results make clear how competitiveness will change in the implementation of each individual management action, while evaluation allows only a quantitative view of competitiveness (current, potential, planned etc.).

Another distinction between modeling and evaluation is the factors (input factors) on which the use of the appropriate methods is based. The direct-action factors of the hierarchy upper level (product competitive advantages and management areas) are the evaluation objects. Interaction mechanism of direct-action factors of lower and intermediate levels (in particular, absolute indicators of the resource support effectiveness, production, sales) and external influence of indirect-action factors are taken into account in the competitiveness mathematical model (fig. 1).

The economic-mathematical model, developed by Kuzmin A.Ye. and Melnyk O.G., corresponds to the modeling process. They account the product demand as a measure of competitiveness. Researchers determine the enterprise reputation as the main factor, which is modeled taking into account the time factor, reliability and production cost of its maintenance. By changing the input parameters (listed factors) of the proposed model, it is possible to manage the competitiveness in order to maximize it.

The simulation model is used as a model for assessing competitiveness, on the basis of which it is possible to construct a scenario forecast for the competitiveness level [4]. In this case, object modeling is the process of creating a competitive position. It is presented in the form of functional dependencies performance competitiveness of individual products and enterprises on direct-action factors. These are indicators that quantitatively describe the results of individual enterprise

business processes. Since on the simulation model basis it is impossible to measure the actual levels of competitiveness indicators, the methodology developed by the authors should be attributed to modeling, not to the evaluation of competitive positions of the enterprise.

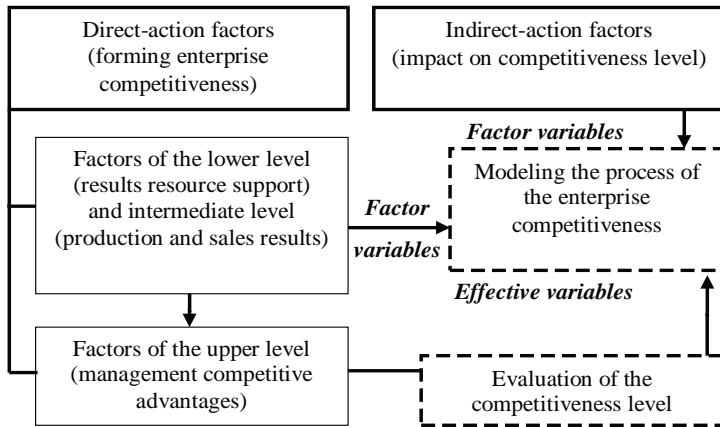


Fig. 1. Competitiveness factors used in the process of evaluation and modeling  
*Source: author's research.*

The evaluation model is mentioned in the study of O. Nikoliuk, who divides the competitiveness factors into factor (initial conditions) and productive (direct-action factors of the upper level). The author notes that the competitiveness evaluation should answer the question: how will change the competitive position of the research object (enterprise) when changing one or another primary competitiveness factors. Initially, it is proposed to determine the actual level of competitiveness based on the synthesis of performance indicators in the integral indicator. After that it is possible to carry out «factor correction» of the obtained indicator of competitiveness by constructing a regression model, depending on its initial factors [5, p. 18].

In essence, the author's methodology of evaluation is presented in the study of Markina I.A. The interconnection of competitiveness with the mediated-action factors and direct-action factors of the lower levels (with initial conditions) is determined as the method result. In other words, using her own methodology evaluation, a competitive regression model was developed. The author recommends to use it in the management of competitive advantages [6, p. 59].

Some economists use the modeling method purely for assessing competitiveness, not to build its model. S. Savchuk proposes to put the competitive pressure on the basis of quantitative evaluation of competitive positions. [7, p. 130]. Pressure rivals are calculated by the ratio of the enterprise actual profit to the maximum possible, in other words, to the profit that could be obtained by the enterprise in a monopoly position. The first indicator corresponds to the actual economic effect achieved,

while the other is determined by maximizing the profit function. In the optimization problem considered limitations that are characteristic of pricing in the monopolistic market.

According to S. Savchuk's research, the level of competitiveness shows how much of the monopoly profits the enterprise gained, operating in a competitive environment. Business entities are identified as competitive if they are least affected by rivals, and the benchmark is functioning in a market where there are no competitors. The main disadvantage of this approach is the abstract of maximum profit that cannot be achieved in competitive markets.

According to M. Oral and A. Kettani, competitive advantages are a form of competitiveness manifestation in the volumes of manufactured products and cost characteristics of resources [8, p. 27]. Scientists associate competitiveness with the deviation of the existing competitive advantages from the existing opportunities for enterprises to create them. They propose such opportunities to quantify the decision on the basis of optimization tasks. Commenting on the highlighted approach, we note that researchers accounted the maximum possible results (obtained by optimization). In general, the method of mathematical modeling is used in this case as a method for assessing competitiveness.

Summarizing the results of the comparative analysis of the evaluation and modeling processes, it should be noted that the competitiveness evaluation involves the quantitative measurement of competitive advantages [9, p. 257]. Instead, modeling competitiveness is based on the allocation of factors that shape it and the formalization of causal relationships between them. The purpose of the evaluation is to determine the competitive position of the enterprise relative to its rivals. The purpose of modeling to substantiate the decisions on choosing the directions of competitiveness management.

The problem of modeling can be interpreted as follows: determine how much should change the initial values of controlled factors of direct and indirect actions to achieve the desired level of competitiveness. Potential changes in competitiveness in case of certain adjustments can be calculated only on the basis of research models. At the same time, it is important to keep compliance competitiveness indicators with evaluation indicators that are used as productive in the model of its formation process [10, p. 352].

Quantitative evaluation of competitiveness should be viewed as a tool for creating and filling information database management processes of its formation. Then, the identification of the most competitive rivals and factors, which provided them with better market positions than the analyzed entity, must be added to the goals of the numerical measurement of competitiveness (fig. 2).

In addition, according to Marmul L.O. and Romaniuk I.A., treatment evaluation results allow defining the most important factors of competitiveness [11, p. 48]. Script forecasts competitiveness indicators are based on mathematical modeling.

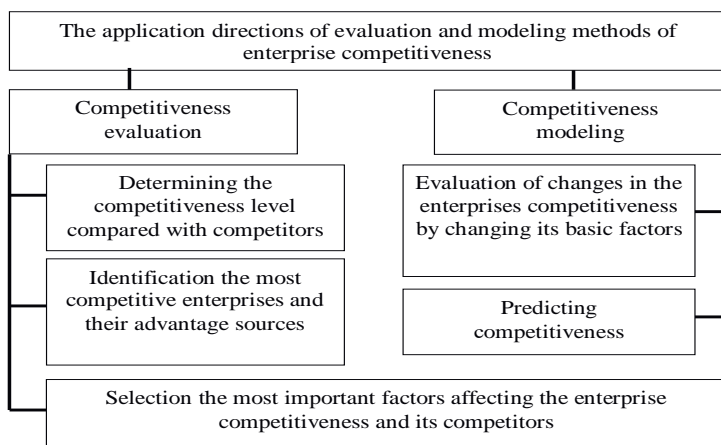


Fig. 2. The application directions of evaluation and modeling methods in the research of enterprise competitiveness

*Source: author's research.*

As noted earlier, the evaluation methods are the basis of a systematic study of enterprise competitiveness. It should cover the following sub-processes:

- 1) Identification of the competitiveness factors of the upper level (competitive advantages);
- 2) Assessing the competitiveness level;
- 3) Comparative analysis of the enterprise competitive position from its competitors. The analysis and systematization data results of the enterprise competitiveness, obtained at each of the selected stages, are the basis for a generalization of the current state, problems, development trends and prospects for changing the enterprise competitiveness.

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## **FOOD SECURITY AND THE VALUE OF THE VEGETABLE CROP IN AGROINDUSTRIAL PRODUCTION**

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The objective of the actual research is to determine the role of the vegetable crop in solving the problematic issues of the formation and development of agroindustrial production and the needs of state regulation of food security in the country. Vegetable crop is an important branch of agriculture, which occupies a significant place in providing people with dietary products and canned vegetables throughout the year. Vegetable crop as a branch of plant growing is engaged in the cultivation of vegetables in open and sheltered soils. However, the amount of concentrated foods is increasing recently in the human diet [1].

The main task of the vegetable crop is the growing of vegetable and melon crops and the efficient operation of the vegetable industry in order to ensure uninterrupted supply of consumers' needs for fresh and processed products. Vegetable crop is one of the most labor-intensive agricultural sectors in the country, which produces



extremely important and valuable food products for the people.

According to the criteria of attractiveness and priority of the branches of the Ukrainian economy, some authors identify the strategic branches that provide the vital activity of the state: energy, transport, machine building, science; priority sectors of the economy: agriculture, food industry, trade, from which the food security of the state depends; infrastructure: industrial and social [2].

There is a need to study the problem in the theoretical and methodological aspects, the development of which could form a new agrarian policy, based on the responsibility of the state for the development of agriculture to the level of food security of the country's population, great opportunities for food exports [3, p. 65].

In today's conditions, the role of agroindustrial production in the country's economy and social welfare is not so much its share in the formation, as the social significance of the industry in ensuring the vital activity of the population, primarily agriculture. Therefore, in a strategic vision, the mission and objectives of agroindustrial production should be determined not only in terms of food security of the country, but primarily as an economic basis for the development of rural areas [4].

The essence of agroindustrial production is difficult to reveal that, not proceeding from the general theory and practice of integrated development of the entire national economy, according to which, one of the characteristic features of this formation is the relative closure and completeness of the process of complete reproduction of the final product of agricultural origin. At the same time, this closure is relative, since in general this complex and its branches carry out and interconnection with other industrial systems of the economy. However, this does not mean that he needs to include all sectors and activities that have something to do with agriculture. Then you can consider all economic activity as agroindustrial production, because food is irreplaceable for all types of human activities. The criterion for the existence of agroindustrial production can be expressed by the degree of interconnection of inter-branch relations: at the specific weight of the cost of industry for agricultural products; share of agricultural raw materials in the structure of the cost of processing enterprises; quantitative alienation of the agricultural sector of an industrial product from its general production. In our opinion, agroindustrial production of the country is a set of interconnected branches and sub-sectors of industry, agriculture, servicing and circulation, which operate on the basis of inter-branch links in the field of production, transportation, processing, storage, processing and marketing of agricultural products. Thus, agroindustrial production is a combination of agroindustrial sectors, as a whole, and its product subcomplexes.

The main causes of food dependency of the country are: food shortages and low level of solvent demand, which causes the imbalance of the domestic food market on demand and supply; the dependence of the domestic market on imported food supplies, not the competitiveness of the national agro-industrial complex; low competitiveness of products in quality or price in the conditions of sufficient food production of their own production [5, p. 108].

Food security requires the establishment of a monitoring system, which is tasked with determining its actual state, forecasting internal and external threats to food security. On this basis, measures are being developed to locate and neutralize negative factors that affect or may in the future affect the level of security. The food security monitoring system focuses on the following areas: agroindustrial production, food market, food consumption, food supply, quality and safety of food [6, p.10].

Materials of surveys of consumption of the population of the country's main food products show that in 2017 consumption of such basic food products as fish and fishery products (1,8 times less compared to a rational consumption rate). Such important food products as: meat and meat products; fruits, berries and grapes also do not meet the normative indicators for a rational norm of their consumption. The above indicators show that in recent years (since 2015), vegetable production has a higher demand from the population than meat, dairy and fish products. This is due to the economic crisis in the country and the poverty of the strata of the population.

All intermediate links (from manufacturer to consumer) are combined for the sole purpose of meeting the needs of consumers, taking into account their time, price, quality, quantity, and assortment requirements. When the requirements of consumers become a priority for all stages of product promotion, enterprises must create conditions for optimal management of material flows [7, p. 25–30].

Despite the fact that the rate of consumption of vegetable and melons is 100%, in individual cultures it is not fulfilled [8].

Thus, the production of agricultural products for the period under study tended to increase, compared with the base year, with the exception of milk. The reason is the rise in prices for material and energy resources and ineffective inter-branch economic relations. In addition, a certain proportion of the rural population refuses to grow vegetable crops on private plots, considering it economically unprofitable. We believe that the pricing of agricultural production should be based on free pricing of mutual combination of the economic interests of producers and processing companies of agricultural products through the implementation of integration measures. The very nature of prices is that commodity alone should receive income from own production.

Producers permanently lose their purchasing power and running costs of production. The wording of the producer price of products is a form of socialization of trade and interbranch economic relations. Indeed, in this case the role of social factor is increased. The goal of each manufacturer is to get maximum revenue from sales and therefore it is in constant search for a profitable market offers [9, p. 114].

The pricing policy in the agrarian sector should be based on free pricing combined with state regulation and increased antimonopoly control over the prices of material and technical resources, energy carriers and services for commodity producers.

The formation of a pricing mechanism in the agrarian sector should be based on the definition of a price that would help to ensure the equivalence of exchange and provide agricultural producers with an income level sufficient for production. In

the market conditions, the regulator of production is the profit for the total advance or borrowed capital advanced for a certain period. Lacks of pricing negatively affect the motivation of agricultural producers. Insufficient purchasing power of domestic consumers leaves prices for agricultural products low. Due to the lack of equivalence of inter-branch exchange, agriculture loses its assets, sharply reduced opportunities for not only extended but also simple reproduction [10, p. 94–95].

Thus, the crop area under vegetable crops in 2017 (compared with 2000) decreased by 99,0 thousand hectares, and the yield on the contrary – increased by 96 c/ha. Due to the low solvency of agricultural enterprises, there was a decrease in profitability in the cultivation of such crops as: potatoes, sugar beets and open-field vegetables. The Fund for the Consumption of Vegetable Products in Ukraine reaches 7,3 million tons, per person – 161 kg. Due to the dynamic structural changes in the sectors of primary and deep industrial processing of agricultural raw materials, where the fixed capital of value added is formed, there is a misbalance of inter-branch relations. Most of the domestic producers of vegetable products remain with the problem of processing of cultivated products on their own without significant state support.

The main tasks of the state in the field of food security are: ensuring stable physical and economic availability of food products; compliance with a high level of quality and safety of food products and agricultural raw materials; dynamic development of all branches of the agrarian sector of the state economy, ensuring a high level of their competitiveness; guarantee of food independence of the state; formation of a healthy type of nutrition of the population [11].

One of the decisive factors in improving the efficiency of crop production is the intensification of production, which aims at increasing crop yields through the use of high-yielding varieties, improving the culture of agriculture, applying scientifically-based fertility standards in the crop rotation system, taking organic and mineral fertilizers, protecting agricultural crops from borax yans, pests and diseases, high-quality and timely implementation of all technological operations [12, p. 52].

A strategic factor in the socio-economic development of society is the stable food supply of the country's consumers. In our opinion, due to the low solvency of processing enterprises, mainly the processing of agricultural products from tolling raw materials over the purchased predominant.

That is why intersectoral economic relations are crises in the areas of processing, storage and distribution of finished agricultural products to the consumer. We believe that one of the important factors that unites industries in agroindustrial production is the processing industry. For this, interdisciplinary exchange, as a leading methodological principle, should be integrated into a whole system that will envisage strategies and tactics.

To ensure the competitiveness of canned vegetables can be primarily due to technological, organizational, economic and social factors, such as: improvement of standardization and quality of introduction and management of modern technologies;

improvement of methods of technical control and mass self-control at all stages of service of the population; establishment of affordable prices, as well as powerful motivation of labor for all categories of workers in this sphere and activation of the human factor; carrying out the appropriate personnel policy; creation of proper working and living conditions for a person [10, p. 20].

To improve the operation of canneries, it is necessary to constantly monitor the level of inventories, look for rational methods of commodity supply and increase the percentage of implementation of the trade turnover and profit plan [13, p. 21].

It is very important to reduce the cost of work and establish a moderate price for socially necessary services. The main mechanism for improving agricultural production and achieving the corresponding synergistic effect is the integration orientation of agricultural production in a vertically integrated type.

Only vertical integration can ensure the unity and continuity of auxiliary and technological actions and make the best use of integrated economic resources.

State support is indispensable for the effective functioning of agroindustrial production, ensuring food security of the country, stimulating rural development, preserving the environment, improving the quality and ecological safety of agricultural production and equivalent pricing. There is a lot of discussion about state support and interference in the economic activity of agricultural enterprises.

In the conditions that arose in agriculture for many years, another way of overcoming the acute shortage of financial resources by agricultural producers in the conditions of deindustrialization of production, large debts and limited or completely lacking access to long-term loans was simply not due to the excessive removal of the state from the effective regulation of incomes of the agrarian sector. Financing of agriculture in modern conditions is carried out in the form of an inequivalent interbranch exchange [3, p. 5].

State regulation of the agrarian sector should be considered as a process of state influence on reproduction processes and economic entities of the industry in order to create the necessary conditions for their effective functioning on a market basis and implementation of state socio-economic and environmental priorities, guaranteeing food security of the state. During the years of independence in Ukraine, a number of legal acts, concepts, strategies, target programs and projects aimed at ensuring the effective development of the system of service cooperation in the agrarian sector of the economy were adopted. The main objective of the planned activities was to create a favorable economic and legal macro- and micro-environment for the effective functioning of agricultural service cooperatives.

State regulation should establish such inter-sectoral relations between the spheres of production, harvesting, storage processing and trade, providing vertical coordination or integration of partners. The basis of such relations should be based on the mutual commonality of the economic interests of participants of one product vertical [14, p. 64-65].

It is in the state regulation of the agrarian sector of the economy that there are

significant problems associated with the lack of experience in using mechanisms for regulating interbranch relations.

To improve the operation of canning plants, it is necessary to constantly monitor the level of inventories, to seek rational methods of commodity supply, to increase the percentage of implementation of the plan of turnover and profits [10, p. 21].

State policy should be based on optimal growth rates of various sectors and sectors of the national economy, with macroeconomic proportions in the fields related to agroindustrial production. It should be possible to achieve not only the structural balance in economic policy, but also the correction of intra-industry proportions of interaction between branches and spheres of agro-industrial production.

The regulation of the production of agroindustrial production in a market economy is the main task of achieving the equivalence of inter-industry exchange.

For the effective development of the field of vegetable crop, modern market conditions require the most effective structural state policy and more substantial financial support.

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## **RESOURCE POTENTIAL OF THE AGRARIAN SECTOR OF ECONOMISTS AS AN OBJECT OF SCIENTIFIC RESEARCH**

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Complex issue researches in search for opportunities for effective and rational use in production process of own resources, opportunities for positive progress of business entity have a particular importance since their solution permits implement to the fullest extent of using economic facilities, rational distribution of available costs and increasing of products and services qualitative characteristics, competitive advantage and it's stability and quantitative increase of interested consumers. The resource capacity of agriculture forms as a distinct types of resources, that are subordinated to enterprises own use. Such a set represents a material security inproductive capacity. The amount of last factor depends on more than just amount

of own resources, but also on material resources of other business enterprises and organizations that play any role as agricultural producers.

The diversity of «resource potential» requires a variety of approaches to the disclosure of content and directions for improving the mechanism for its formation and use. The theoretical concepts of the development of the resource potential, its structure and properties, which are the basis of its use, are multidirectional, therefore there is an objective need to find new approaches to ensuring its effective use.

The adoption of measures to build capacity is oriented towards the prospect and is based on actual conditions of development of relevant factors, that is, specific requirements. The needs of customers have particular importance and influence their quality. In addition, very important prerequisites are related with competitors, because the investigated potential of the enterprise may lose its value exactly under their load. Also, internal preconditions related to the guidelines adopted within the enterprise should be taken into account.

Solving important problems of the country's development depends to a large extent on the scale and nature of the transformation processes, the effectiveness and activation of which are closely interrelated with the most full use of all components of available resource potential. Insufficient utilization of the main components of available resources leads to deformation of the production structure, constraints and reduces the efficiency of production activities, which requires the development and implementation of well-considered measures to create a mechanism for ensuring the conservation and rationalization of the use of resource potential.

Under the resource potential of the country they imply a set of interrelated natural, industrial, labor, financial, investment, innovation, infrastructure and information resources, the use of which provides an economic effect. Like the economy in general, resource potential is a dynamic system characterized by a change in the proportions and relationships between its constituents in both time and space. Being in functional dependence, the change of some components of the resource potential leads to the modification of others, causing changes in the proportions of functional and territorial nature. The analysis of economic literature has shown that the range of definitions of resource potential of economic entities is rather voluminous – from a fundamentally narrow understanding of it as the annual volume of production to general categories.

The Resource Potential, Strategy and Competitiveness are the three basic components of an organization that determines the formation of strategic management. The implementation of the enterprise in the conditions of a market environment necessitates the conduct of their worthy competitive work, the need for the formation of certain competitive advantages. Their content depends on the external environment and opportunities of the economic entity - its resource potential. This aggregate forms the material basis of production potential, the size of which depends not only on the amount of labor, material and land resources of the enterprise, but also on the material resources of other enterprises and organizations



directly necessary for the production of agricultural products.

The research of the prospects of the company's activity gives an opportunity to reveal the essence of the notion of a strategy of ensuring competitiveness through the prism of a set of thought-out management decisions, which focus on the prism of the formation of resource potential and ensure the qualitative development of its main competitive principles and promote its growth. The process of developing and implementing the strategy is carried out in accordance with the rules of organizational development and accumulated own resource potential.

The evaluation of resource potential of an enterprise can be defined as the sum of the actual values of the components. For example, the potential of agrarian enterprises is proposed to measure the cost of reproduced resources.

The questions of the effectiveness of their engagement are important and permanent for all kinds of resources. The essence is to give an assessment of the effectiveness of one or another type of resource and determine the useful result of the enterprise, compared with the cost of obtaining this useful result.

The positive result of enterprise activity from the use of resources is called an effect. Two important indicators which called the effect are: profit (revenue) and profitability. The calculation of these indicators and their comparison with the size of the resources used determines the rate of effectiveness of the use of these resources. Consequently, this economic category characterizes the useful result of the enterprise. These indicators are actively used both in general and in its individual components to analyze the effectiveness of the operation of the enterprise.

To determine the size of the resource potential, the most common two methodical approaches are: integrated assessment of production resources in monetary terms and on the basis of determining the area of comparable agricultural land.

The provision of agricultural production resources can be characterized by absolute and relative indicators. An absolute indicator is a resource utilization coefficient, which reflects the correlation between the actual value of resource potential and its normative need.

It should be noted that the opportunities for economic growth of an enterprise are not always characterized by the presence of these resources. Resource potential of the enterprise is explained by four main factors:

- real possibilities of a business entity in various spheres of its activity (including unrealized opportunities);
- the volume of available and own resources used in production;
- the ability of staff to use resources and ability to manage them rationally;
- the kind of activity and specialization of a concrete enterprise.

All economic work in agricultural production, in essence, is to find the best solutions to economic problems. Non-operational, or poor-quality, processed economic information leads to a decrease in the level of business activity. For example, untimely response to changes in macroeconomic indicators leads to a decrease in production and inflation. Econometric calculations and an analysis of



the microeconomic factors of social and economic phenomena and processes are even more influential on the development of the economy. Data collection at micro level and their analysis and estimation of econometrics is the basis of successful management of economic activity.

Using of mathematical modeling as one of the methods of financial literature planning allows to correlate quantitative correlations of various indicators and factors, to find their interconnections and to search for the tendency of financial and economic results. The economic-mathematical model as a mathematical generalization of the factors of financial analysis characterizes the structure and regularities of the change of the investigated economic phenomenon on the basis of mathematical calculations. Economic-mathematical modeling can be carried out both by functional and by correlation links, such actions allow to calculate and switch from average to optimal values. In turn the use of computer technology in the financial planning of the enterprise significantly affects the growth of its scientific significance and reasonableness, enabling the development of a significant number of variants of plans, focusing on changing competitive conditions of the environment, etc.

Mathematical and statistical research is a necessary vector in obtaining in-depth knowledges of the mechanism of the phenomena and processes studied. Correlation and regression analyzes are widely used to study the intensity, type and form of causative influences.

Determination of relations in the form of regression and its comparison of quantities with values obtained by substitution in the regression equation of values explain the variables, give an opportunity to better understand the nature of the phenomenon under study. This affects the identification of factors that affect the economic process in order to obtain the desired results. The multivariate correlation-regression analysis of financial stability of a particular enterprise was carried out by us on the financial statements of the company for five years. Net income was taken as a performance indicator (y). The most simple form of dependence is linear, that is, the dependence of the species:

$$y_0 = A_0 + A_1X_1 + A_2X_2 + A_3X_3 + \dots + A_nX_n,$$

where y is the resultant indicator;

A<sub>0</sub> is a free component of the equation;

A<sub>1</sub>, A<sub>2</sub>, A<sub>3</sub>, ... A<sub>n</sub> - coefficients of the multiple correlation;

X<sub>1</sub>, X<sub>2</sub>, X<sub>3</sub>, ... X<sub>n</sub> are quantitative characteristics of the factors that influence the performance index.

Correlation-regression analysis was carried out using the module «Multiple Regression». According to the results of correlation-regression analysis, the regression model has the form:

$$Y = -6224,148 + 0,14x_1 + 0,125x_2 - 1,479x_3 + 0,843x_4 + 0,006x_5 + 0,524x_6 + 0,118x_7 + 0,039x_8 + 0,004x_9 + 0,006x_{10}.$$

Table 1

**Output data for conducting multiple correlation-regression analysis of financial stability industrial agricultural enterprise «Zlagoda», ths. UAH**

| Indexes                                    | Year  |       |       |       |       |
|--|-------|-------|-------|-------|-------|
|  | 2013  | 2014  | 2015  | 2016  | 2017  |
| X1 – revenue from sales                    | 27865 | 31367 | 48118 | 62415 | 76537 |
| X2 – cost of sales                         | 22944 | 26967 | 36146 | 50387 | 69302 |
| X3 – administrative and marketing expenses | 1861  | 2344  | 2655  | 5264  | 7020  |
| X4 – gross income                          | 4921  | 4400  | 11972 | 12028 | 7235  |
| X5 – fixed assets, ths. UAH                | 5722  | 5693  | 9615  | 16322 | 26040 |
| X6 – finished products and goods           | 42    | 54    | 112   | 38    | 17996 |
| X7 – cash ths. UAH                         | 325   | 632   | 802   | 1225  | 1537  |
| X8 – current and long-term liabilities     | 7800  | 9105  | 13095 | 14325 | 26720 |
| X9 – accounts receivable                   | 1609  | 1026  | 4006  | 2795  | 3927  |
| X10 – operating costs                      | 48208 | 51949 | 53572 | 57073 | 88913 |

*Source: compiled by the author for f. №1,2 industrial agricultural enterprise «Zlagoda»*

The most influential factor according to the built model is the administrative costs – the management of the company must pay attention to the reduction of administrative and cost optimization, since each of them increase by 1 UAH, reduces net profit by 1,479 units. After all, the correct management of them can affect the value of net profits in the future. This conclusion is confirmed by the situation in 2017, when administrative expenses amounted to 7 million UAH, therefore the company received almost 3.5 million UAH of net loss, and the level of loss in production and financial activity in 2017 was 5%.

As a conclusion we note that the implementation of financial planning requires an analytical approach in determining the goal of the enterprise development or its components, as well as the level of implementation of the planned goal. Therefore, the current and perspective activity of the company is connected not only with the development but also with the implementation of the plans.

The balance of indicators of financial planning in enterprise is a prerequisite for their qualitative development, since the excess of planned or actual indicators relative to the normative values under normal business conditions of an enterprise indicates the unsatisfactory preparation of planned financial developments and the need for their recalculation. In comparison to planned, actual and normative indicators, not only the coefficients of tensions of financial plans, but also their level of risk are determined.

Consequently, the effectiveness of the use of resource potential influences the

financial and economic outcomes of the enterprise. The potential of an enterprise should be characterized by a set of indicators, using a value or a natural estimation. Resource potential of agriculture is formed by the size of certain types of resources at the disposal of enterprises. In today's market conditions, the achievement of a high level of development of agrarian enterprises is possible through the implementation of such actions aimed at improving the quality characteristics and efficiency management process concerning the resource potential of the economic entity. Thus, a complex model of formation and provision of the potential of an enterprise indicates that at different stages of its occurrence it acts as a result of the interaction of the resources that it provides. The resource potential of the agrarian sector is formed by combining different sizes of individual types of resources belonging to the enterprise.

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## **SYSTEM APPROACH IN METHODOLOGY OF MANAGEMENT OF AGRARIAN ENTERPRISES ECONOMIC DEVELOPMENT**

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The results of the research suggest that the relations between economy, human and nature are systematic. Such a point of view is fundamental for the formation of a methodological basis for the management of economic development of subjects of agrarian economics, which is based on a system approach. The system approach in managing the economic development of agrarian enterprises means the use of a set of mechanisms and methods of influencing the subject of management on an object that is considered as the integrity of interconnected elements to use the existing interdependence and interconnectedness the most efficiently to achieve the set of agricultural production goals: economic, environmental and social.

In the management of the economic development of agrarian enterprises based on a system approach, it should be taken into account that the agrarian economy as a system in its development deals with the modification of certain coexistence of its parts, created both natural and artificial way. This coexistence (proportions)

determine the coordinated interaction of structural elements, that is, it unites them into a single unit that performs a certain function. „Coordination of many measures - writes E. Soroko - the establishment of their unity, multiplicity are actually a process of structural harmonization” [1, p. 125], which can be called the objective law of system development.

Recently, when modeling the economic development of agrarian enterprises and the system of agrarian economics in general, special attention is paid to the reproduction of natural resources, which depends on a complex of various factors, in particular those outside the economic system of a particular agrarian enterprise. In the set of activity goals of the subject of agrarian production one of the main (if not the most important) is food security, which should be carried out in the global system of economic relations, which includes the consideration of social aspects of the development of society. Still the prevailing motive for the activities of agrarian enterprises remains the need to create vital goods, which takes place in conditions of competition, inherent in a market economy, which constantly attracts attention to the problems of economic efficiency.

As the main goal of managing the efficiency of an agrarian enterprise, like any other, is to maximize the welfare of the owners of the enterprise in the current and prospective periods, the coordination of diverse interests needs a solution of a set of tasks that are too difficult in the system of „resource processing - profit generation”, namely:

- ensuring maximization of the economic effect at a certain resource potential of the enterprise and market conditions, which is achieved by optimizing the structure of resources and their rational use;

- compliance with optimum ratio between the level of effect and the permissible level of risk which on the one hand does not reject the possibility of making managerial decisions in the continuum of „aggressive – conservative” economic policy and on the other hand requires justification of the optimality parameters of the mentioned relations;

- reducing the use of artificial incentives to increase production, such as: advertising, fashion, price discounts, etc., due to the availability of resource constraints on the Earth;

- gradual replacement of the definition of the current state of the enterprise on the basis of indicators of profitability and cost of production by definition on the basis of detecting deviations of values of actual parameters from the normative (harmonic).

The last task is perhaps the most relevant within the concept of managing the harmonious development of agrarian enterprises, since it involves the establishment of a measure. When the quantitative parameters change beyond the limits of the measure, there is a jump-like transformation of the system: self-decay or rebuilding, after which it is not possible to provide such an effect on the system which will allow a positive result. The complexity of the agrarian production system is

complicated by its management due to the weakening of organizational relations, which is observed at the decrease of stability. Based on the methodology of the system approach it is advisable to formulate a number of principles for managing the economic development of an agrarian enterprise:

- observance of the universal law of the social and historical reality of unity and struggle of opposites: the emergence within the integrity of contradictions, the mutual transformation of which causes the appearance of a new quality;
- compliance of the production structure with the goal of sustainable development of the society harmonized with the natural environment;
- finding a reasonable compromise in the process of coordination of the participants interests;
- purposeful management of separated integrity, taking into account the parameters of harmonization.

The nature of the mentioned principles lies in the presence of the structural complexity of production systems associated with the use of natural resources, which, firstly, causes the problem of harmonizing the development of society and nature (co-evolution) and, secondly, - means the possibility of alternative varieties to the development of systems of management. In the agrarian sector of Ukraine we are already dealing with such forms of economic activity as agricultural holdings („Mriya”, „Astarta-Kyiv”, „Myronivsky Hliboproduct”, etc.), industrial enterprises with the inclusion to the structure of agrarian production (the group „Metinvest”), large joint-stock companies, farms, cooperatives, state-owned enterprises, micro-enterprises based on households producing honey, nuts, berries, snails, crocus, medicinal herbs, kraft products, etc., which use different strategies: import substitution, export expansion, niche markets, organic farming, clusters. In the process of co-evolution the important task is to maintain natural diversity. V. Belous writes that „... the socio-economic system will be able to ensure rational interaction with the environment only if it has a diverse subsystem of rational use of natural resources and protection of the environment” [2, p. 57]. It should be understood that the integrity can not be preserved if all elements of the system change simultaneously, structural complexity will increase and interconnections will be diversified. Something must remain constant so that the system retains its characteristics - natural cycles, technological gaps, the relationship between costs and price, supply and demand, and so on. The properties that the system saves, changing its other characteristics, are called invariants [3, p. 11].

Finding structural similarity as an invariant of the system can reduce unproductive management costs, since resources, including time, will be used only to preserve the important characteristics of production activity, neglecting all others. Many researchers consider such an invariant as the harmonic proportion [4; 5; 1; 6]. No wonder N. Wiener put forward the idea that the processes of management and communication in machines, living organisms and society are similar [7]. The first who drew attention on the invariance of systems was L. Bertalanffi, who concluded

that diversity has a limit and that the nature of the interconnections between the components of the system leads to the emergence of a certain function [8, p. 147].

Knowledge of the social system invariant makes it possible to understand which social processes can be changed and which, like invariants, will be preserved, regardless of the impact on them, or destroyed together with the system. Proceeding from the fact that the laws of nature can not be changed, their action must be taken into account when making managerial and political decisions. For example, tax administration for subjects of agrarian production, the characteristic feature of which is the presence of a large time gap between the start of the production process and the receipt of the final result, should be different from taxation of enterprises that produce and sell products in a permanent manner. Social processes as a product of conscious volitional activity of people differ from biosphere, but they are also subject to the laws of the development of the universe since man is part of the biological system and its economic activity takes place in the natural environment.

Based on the previous achievements of many scientists and guided by the results of their own empirical studies, an attempt was made to systematize the invariants of the socio-economic-ecological system important for the field of agrarian production:

- integration - the unification of parts into one whole;
- combination - multivariate combination of parts of the whole;
- attractors - points, plural points, boundary lines, planes or fractals, to which or within which the dissipation coincides;
- disintegration (natural selection) - elimination of non-viable elements;
- uneven development - non-linearity of the process of change;
- cyclicity - the repetition of phases of development in a certain sequence.

The mentioned invariants of the agrarian production system are kept for a long time, in particular, the person's tendency to unite efforts (integrity) with different intensity manifests itself in human communities, as well as in the aspiration of people to create integrated biomechanical systems, which are increasingly moving away from natural biocenoses. Animals and plants that are domesticated by a human being without it will no longer survive in the natural environment. The combination of factors of production, organizational forms, product proposals, etc. is a characteristic feature of innovative processes in the agrarian sector of the economy, which are accompanied by spontaneous and discrete changes in the paths of economic life, an imbalance, „... which change forever and replace the previous state of equilibrium” [9, p. 73-74].

The presence of attractors is a means of preventing excessive loosening of the agrarian production system and this applies not only to such issues as the structure of production, the range of products and the volume of its offer but also, for example, the definition of the degree of entrepreneurial freedom which can not be absolute and in the process of complicating economic relations is increasingly limited. Therefore, issues of economic freedom and state regulation at each stage of economic development find new solutions.

Using a system approach to managing the economic development of agrarian enterprises allows us to see the relationship between those elements that, at first glance, seem not to be interconnected, say, productivity of labor in agriculture and inflation. Governments, sometimes weakening control over prices, do not think that their increase will lead to a drop in demand for certain foods (meat, hard cheeses, gourmet fish products, etc.) and, consequently, reduction of supply which leads to a decrease in labour productivity.

Acceleration of changes, increasing of economic processes uncertainty and natural environment instability, as well as the existence of contradictions between the economic interests of various social groups and state, leads to finding compromises in the production systems management. According to Moiseyev opinion, social and economic development will depend on how much humanity will be able to find the necessary compromise between the trends of reasonable coherence of interests of various social entities, without which it is impossible to ensure the progress and survival of the homo sapiens species, and individualism, nationalism, ambitions and ignorance [10]. It is clear that the growth of uncertainty and acceleration of changes will cause increasing of the state's activity in resolving the conflicting problems of life goods competitive production; at the same time, in the regulatory process, systemic diversity as an attractor of the agrarian economy should be preserved, since its availability allows the system to produce variants of adaptation to changes in the environment.

The adaptability of the agrarian production system, whose significance in the context of food security provision, will only increase, can be manifested in several ways:

- inertia, with which the system has the ability to maintain the existing state with the growth of external influences;
- reproducibility: the ability of the system to return to its original state after some surge;
- plasticity, which means the presence in the system of a set of properties that allow it to move from one state to another under the influence of external pressure, while retaining its purpose.

Yet, in the presence of systemic disturbances, the level of adaptability may not be sufficient, which will cause the system to become unstable. In this case, the indicators of economic activity of the agrarian enterprise deteriorate, stagnation and recession begins. The value of the study of the agrarian enterprises economic activity as open complex unstable systems and the quantitative correlations between elements of production systems (enterprises) of the agrarian economy is to provide managers with tools that can predict the moments of entering the company into a critical area of the economy functioning in order to prevent its decline and maintain a balance between economic, biological and social invariants of the system.



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## ANTI-CRISIS ACTIVITIES OF AGRO-FOOD SPHERE ENTERPRISES USING PROGRAMMED-TARGET APPROACH

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Studies have shown that the using of fuzzy logics methods helps to make optimal managerial decisions in order to overcome the financial-economic crisis of enterprises.

The methods of making managerial decisions are recommended to conduct according to the following stages:

1. Evaluating enterprise's condition by means of fuzzy logics;
2. Comparing the evaluation results of model enterprises and other ones.
3. Forecasting the volumes of sales and sales volume sensitivity.

With the help of scripted forecasting of agro-food sphere enterprises' development the following variants of events can be distinguished:

1. Deteriorating or improving the financial condition of enterprises;
2. Overcoming or implementing the threat of enterprises' bankruptcy;
3. Effective or ineffective information provision to overcome the crisis;
4. Effective or ineffective ensuring of enterprises' innovation development.

The scientifically substantiated block diagram of the system of developing and implementing anti-crisis actions based on fuzzy logics using programmed-target approach is shown in Fig. 1. Raising the level of information provision and ensuring enterprise's innovation development is impossible without improving its financial condition. Improving the financial condition is a prerequisite to overcome the probability of bankruptcy.

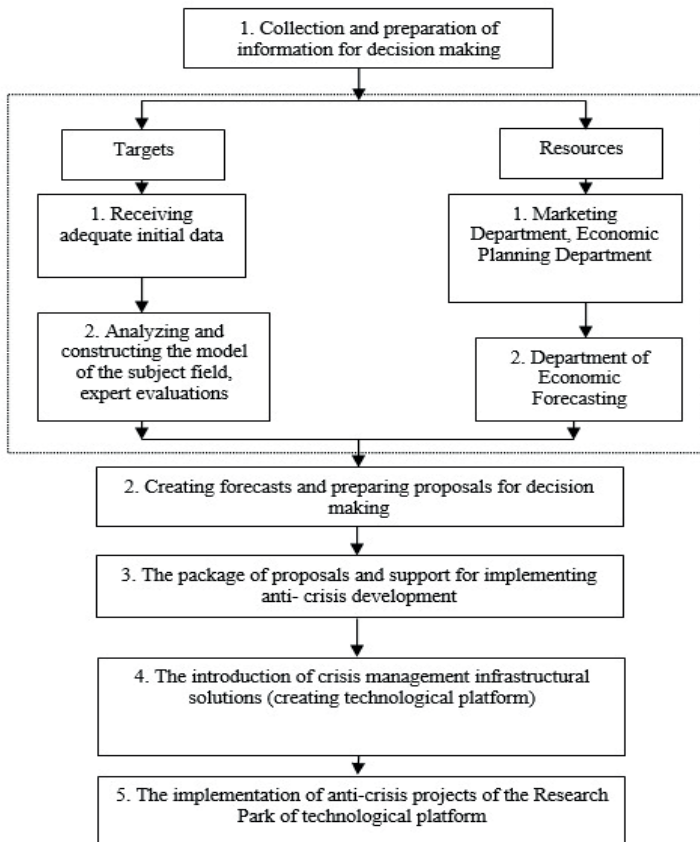


Fig. 1. The methods of developing and implementing anti-crisis measures based on fuzzy logics using programmed-target approach

The directing of the studied changes was aimed at: improving the financial situation; overcoming bankruptcy; raising the level of information security; raising the level of using innovative potential. However, anti-crisis solutions must be implemented in the complex that is overcoming the crisis of enterprises in agro-food sphere must be systemic.

Let us consider the constituents of the block diagram in more details. Using the methods of programmed-target approach requires the detailed coordination of objectives, measures and resources in crisis management [2, 3, and 4].

The structure of the element “Collection and preparation of information for decision making” is considered in Fig. 2.

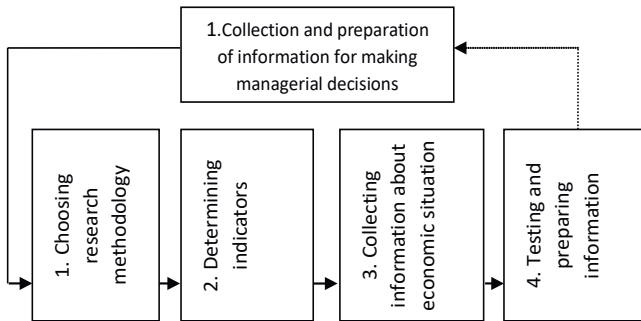


Fig. 2. The structure of the element “Collection and preparation of information for decision-making”

The creation of information base and organizational- information provision for making crisis managerial decisions requires the development of the subject area ontology: choosing research methodology, determining (fuzzy) indicators (indices), gathering information about the economic condition (crisis, the level of economic security), testing and preparing the information for further processing.

It should be noted that using the methods of fuzzy logics requires mutually coordinated qualitative and quantitative indicators of crisis condition level or economic crisis of agro-food sphere enterprises.

Testing the quality of initial economic information that comes in the system of crisis management decision-making is important in the implementation of these decisions.

Differentiating between the determined targets and structural subdivisions of agro-food sector enterprise, which are responsible for the implementation of these targets, is suggested in the unit, separated by a broken line (Fig. 3).

The analysis of the sub-system shown in Fig. 3 testifies that the absence of competent communication reduces the quality of managerial decision making that is why the definite technological base formation is necessary (standards, technical profiles, tools of technological platform).

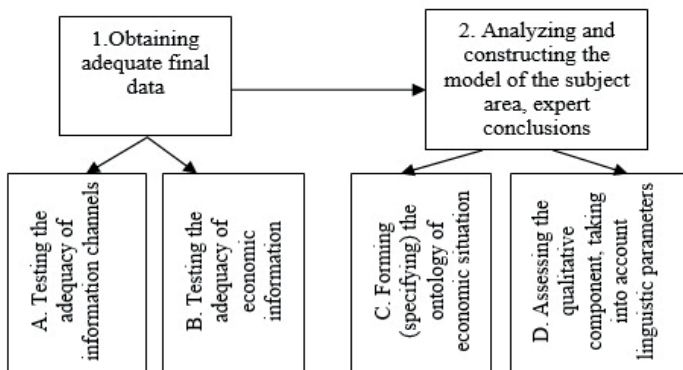


Fig. 3. The elements of economic information support in the system in crisis management decision-making

Getting the adequate data (prepared quantitative and qualitative information) requires, firstly, the testing for the correspondence (adequacy) of information channels for ensuring anti-crisis development of agro-food sector enterprises, secondly, checking for accordance with the requirements of making managerial decisions of directly collected and prepared economic information (Fig. 4).

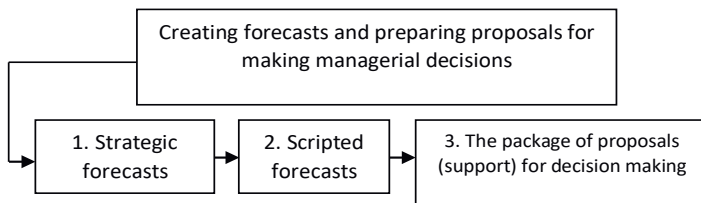


Fig. 4. Creating forecasts and preparing proposals for making (anti-crisis) decisions

For the needs of ensuring anti-crisis economic development, the formation of the model (the financial position, the probability of bankruptcy, information provision, and ensuring of innovation development) has been suggested, on the basis of this model the corresponding expert conclusions are made, and organizational-methodical base of proposals for further making anti-crisis decisions as to using economic resources is developed on the basis of structural sub-divisions of agro-food sector enterprises (Marketing Department, the Economic Planning Department, and the Department of Economic Forecasting).

Based on the created model of crisis management and expert conclusions the strategic forecasts for developing both enterprise and agro-food sphere on the whole are made.

Strategic forecasts, as researches show, are characterized by many “soft” (qualitative) indicators, that is why it is difficult to formalize them quantitatively.

Based on the strategic forecasts, divergent trajectories of enterprises' development are made considering the sensitivity to the factors of external and internal environment (scripted forecasts).

The formal completion of the phase of making forecasts and preparing proposals is the package that is the formal support of making (anti-crisis) decisions. The using of formal rules will of linguistic variable will enable to form the necessary volume of requirements for the goals' implementation taking into account the limitations of available economic resources.

Fig. 5 shows the technology solutions' implementation as to the formation of innovation anti-crisis infrastructure.

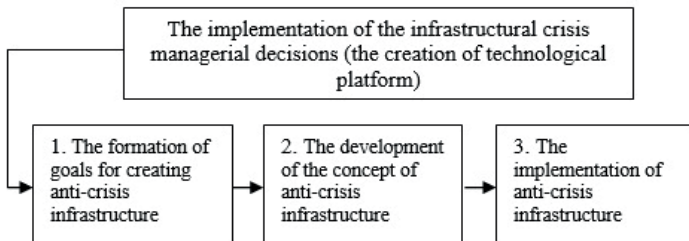


Fig. 5. Anti-crisis infrastructural decisions

The optimization of the system of agro-food sector enterprise crisis management requires creating the infrastructure of the technological platform to overcome the crisis with further developing the concept of anti-crisis infrastructure and its practical implementation.

However, practical implementation of anti-crisis projects and innovation development based on the technological platform requires the using of tools of research park and clustering [1, 5, 6] (Fig. 6).

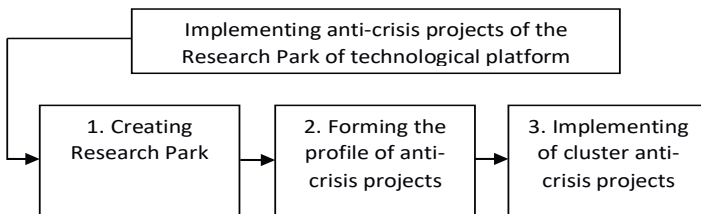


Fig. 6. The support of anti-crisis projects of the Research Park

Studies have shown that based on the leading enterprises of the agro-food sector, for example, the LLC “Hlobyne meat-packing plant”, the innovation cluster is the most effective form of integrating economic relations within the technological platform (Fig. 7).

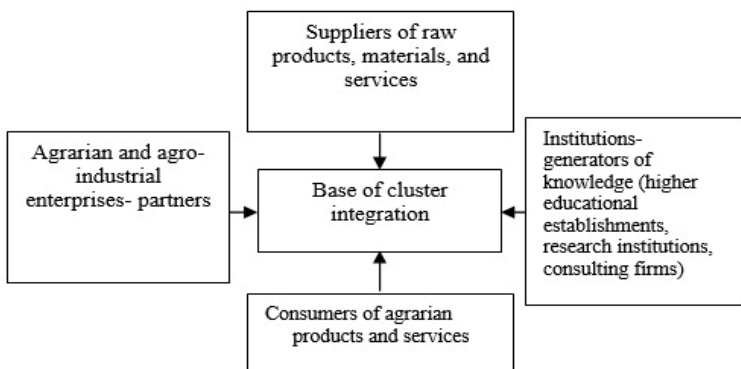


Fig. 7. Project integration of enterprises-partners within innovation cluster to overcome crisis

The implementation of anti-crisis projects of innovation development at enterprises of agro-food sphere is recommended together with using organizational-methodical base to ensure the formation of innovation anti-crisis infrastructure (the concept, methodical support, etc.).

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# INTEGRATION OF PRODUCTION MECHANISM OF AGRICULTURAL AND GRAIN PROCESSING ENTERPRISES

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The marketing departments of any enterprise have a purpose to figure out and develop an up-to-date plan of applying plant-growing technologies in the crop rotation of agriculture enterprise's work. Each crop rotation can be considered as a technological project, which should make some profit and positively affect grain processing technologies effectiveness. The purpose of the plan is to maximize the total profit of agricultural and grain processing enterprises from such projects for the whole period of planning. Herewith, profit must be maximized both through the use of intensive technologies, and increasing the output of processing products due to grain quality upgrade. Grain quality should be satisfactory during the planning period, and should not decrease in comparison with the initial state by the end of the planning period [2. 3]. Thus, the initial and final qualitative levels of grain should be within the technologically acceptable range. However, the problem statement may be more general.

For example, the initial state may not correspond to the permissible level. This problem is widely occurring in practice. So, the purpose is both to improve qualitative indices at the final planning interval and maximise profits.

Each technology is characterized by a vector of material costs (including seed and planting costs, mineral fertilizers and plant-protecting agents, etc.), labor costs, etc. The technology is gradually chosen for each production cycle.

The task of the marketing researcher is to find such system of resource management of current and potential grain suppliers, by choosing the technology (through consultative or administrative intervention), that maximizes profits for the whole period of planning, with specified limits on the quality characteristics of grain raw materials [1, 6].

We emphasize that management of the grain product components, which determine the consumer quality (content of protein, gluten, etc.) are performed at each stage. The aim of this management is to select the technological method of grain production [5]. Each such selection transfers the grain quality from one grading scale to another one. Finally, each such choice produces commodity output, the expression of which is the index of gross income.

Each plan is characterized by a combination or a sequence of technologies. Their number is equal to the number of periods included in the rotation cycle of crop rotation, which is of great interest to the grain processing enterprise. Each plan is characterized by a vector of the grain quality initial state, a similar vector of the quality final state, and the profit index as the sum of profits for each stage of the

rotational period. The plan providing maximum total profit should be selected. As we can imagine, the number of such plans is extremely large, that is why it is very difficult to make a choice. However, this issue can be solved if united to a certain class of economic and mathematical models.

Having determined the organizational parameters of the active marketing impact on grain production according to the given high-quality requirements, it is necessary to define the technical prestates to solve the problem specified in the concept.

Here is a scheme for determining and estimating the optimal plan for a given period of time as a part of a model that can be classified as a task of dynamic programming. The general statement of such tasks is as follows: a controlled process is taken into consideration, where the system is transferred from the initial state  $s_0$  to the state  $s$  as a result of the management  $X$  ( $X_1, X_2, \dots, X_n$ ). Management can be divided into  $n$  stages, and the decision is taken gradually at every stage. Management, which transfers the system (object) from the initial state into the final, is considered to be a combination of  $n$  stage-by-stage controls. The index of effectiveness of the investigated controlled system is a target function. It depends on the initial state and management.

$$Z = F(s_0, X)$$

Several assumptions have been made according to Bellman's principle. First of all, the state  $s_k$  of the system at the end of the  $k$  stage depends only on the previous state  $s_{k-1}$ , and the management of the  $k$  stage  $X_k$  and does not depend on the previous states and controls. This statement is called the "absence of aftereffect". It is represented in the form of equations:

$$s_k = g(s_{k-1}, X_k), \quad k = 1, 2, \dots, n$$

Secondly, the target function is additive from the effectiveness index of each stage. Also the effectiveness index of each stage is a function of the system state at the previous stage and management at this stage:

$$Z_k = f_k(s_{k-1}, X_k), \quad k = 1, 2, \dots, n$$

Then, in accordance with the accepted additivity of the target function, the latter is defined as

$$Z = \sum_{k=1}^n f_k(s_{k-1}, X_k)$$

The task of the stage-by-stage optimization is to determine the optimal



management  $X$  that transfer the system  $S$  from state  $s_0$  to state  $s$ , in which the target function accepts the highest or the lowest value.

We will prove that the optimization model of plant production planning connected with the determination of optimal sequence of synergetically acceptable technologies can be solved by methods of dynamic programming.

The model must meet the following requirements:

1. The optimization task is considered as a  $n$ -stage process of management. The process of choosing technology from a possible selection is taking time. The decision is made at the beginning of each year, that is, the process can be divided into stages, where the stage number is the number of the year.

2. The target function is the sum of the target functions of each stage. The effectiveness of enterprises activity will be evaluated in the form of a total effect throughout the planning period, that is, the target function of the model will be equal to the sum of the target functions of each stage.

3. Absence of feedback. In the model, the choice of management at each stage depends only on the state of the system before this stage and does not affect the previous stages.

4. The state  $s_k$  after  $k$  stage of management depends only on the previous state  $s_{k-1}$  and management  $X_k$  (in case of the aftereffect absence). The very this state for agricultural production is somewhat approximative. The fact is that lots of substances in the soil change during the periods which are longer than one year. The period of their decay does not always fit into the planned cycle. However, according to many experts in agriculture, such a phenomenon can be neglected, especially when the intensive technologies are applied. In addition, it is very difficult to achieve a continuous change of states, because then the task becomes so wide-range that its solving will become an independent problem. Therefore, we can say that the state of land resources really depends only on their state at the beginning of the planning period and the application of a specific technology and does not depend on the previous states. Once again, we emphasize that it is not rude in terms of the agriculture theory.

5. At each stage, the management  $X_k$  depends on the finite number of control variables, and the state  $s_k$  depends on the finite number of parameters. The technologies of crop cultivation are the managements of our task. A great number of technologies are limited and countable. The state of resource potential and product quality really depends on the finite number of parameters.

The tasks of dynamic programming can be solved by means of computing schemes related to the principle of optimality and recurrence relations. The principle of optimality, formulated by Belman, is: "an optimal policy has the property that whatever the initial state and initial decision are, the remaining decisions must constitute an optimal policy with regard to the state resulting from the first decision". With regard to the model of technology selection in the concept of active marketing impact on grain production with a preset quality load, Belman principle

is interpreted as follows: within an optimal trajectory, drawn by technologies in the graph, any part of that trajectory will be optimal as to the beginning and the end [4].

Let's consider the possibility of dynamic programming model development from the point of view of availability and authenticity of planning and economic information that has been used by agriculture and grain-processing enterprises. First of all, it is information concerning costs.

1. Cost calculation of agriculture production technologies. Production costs at agricultural enterprises are calculated as follows. Each technology in crop production is reflected in the technological cards. The main purpose of drawing up a technological card is direct costs planning per unit of production and 1 hectare of area. Two parts are distinguished in the technological cards: technological and economical. The technological part contains all kinds of works to be done over production cycle starting with soil preparation and all the way down to harvesting. For each type of work, a specialist from the available funds defines the park of machine and tractor units capable of getting technological process done.

Unit choice includes, for example, selecting of tractor, the type and quantity of working machines and couplings, the choice of speed modes. Further, reference books determine indices that characterize productivity, energy, labor and material resources.

After units having been chosen and their required quantity determined, required quantity of primary and secondary workforce is being figured out taking into account enterprise's capabilities. Then, all elements of direct costs are planned out and their sum is being calculated per 1 hectare and 1 ton of main produce in the economic part.

2. Modelling of the technologies influence on the soil fertility. The interdisciplinary character of ecology and economic models impose additional problems on a researcher requiring the introduce of a block describing the processes that are studied within the natural sciences disciplines into the model. Thus, the task of our research is to properly represent the combination of agro-chemical soils characteristics in order to take into consideration the influence of different technologies of resources usage on grain quality changes and its yield capacity as well.

In general, there is a great variety of factors that affect plant growth such as solar energy, heat, humidity, CO<sub>2</sub>, soil type, fertilizers. But, first of all, research institutes take these factors into account while developing typical technologies for various climate zones and secondly, when cultivating crop, a farm can affect only the last factor, i.e., many nutritional elements. So, only soil fertility indices will be taken into account in the model.

At the present stage, various methods have been developed that allow to calculate the amount of nutrients in the soil, depending on the used technology and the applied fertilizers. Production functions to figure out yield capacity of various crops depending on availability of above-mentioned components of soil fertility have been developed.

3. Modelling of the grain quality yield depending on the resource supply of the

agrarian enterprise (including agro-climatic resource). The estimating methodology of agrometeorological factors for forecasting yield qualities of winter wheat grain has been developed by M.O. Kindruk at Odessa Institute of Selection and Genetics.

So, the above-mentioned concept while solving marketing tasks of grain processing enterprise allows to unite production means of agriculture and grain processing enterprises within the framework of the economic model.

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## **MEAT PROCESSING INDUSTRY IN UKRAINE: MONITORING THE STATE AND TRENDS IN THE DEVELOPMENT**

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The world food and financial crisis, which led to rapid changes in the economic situation in Ukraine, updated the interest to the world trends in the food industry. Meat processing industry specializing in the production of meat products, which are strategically important foodstuffs, is a central issue in this respect.

O.V. Sykachina [2] defines the concept of «meat» as a functional product that provides people with the healthy diet and ability to work. Its nutritional value is due to the flavor characteristics, chemical composition, energy importance and the quality of digestion. The above-mentioned aspects influenced the choice of the topic of this study. It is the issue of the meat processing industry in the context of the main world trends of the food industry development.

Many researchers, both theorists and practitioners in Ukraine (O.V.Bodnar,

O.M.Varchenko, M.V.Hladii, I.M.Demchak, M.P.Denysenko, S.L.Dusanovskyi, M.V.Zubets, N.G.Kopytets, V.M.Nykytiuk, M.V.Prysiashniuk, P.T.Sabluk, O.M.Shpychak and others.) have focused on the study of the topical issues of the meat market reforming, production technologies and the quantities of cattle and poultry. Although a considerable amount of research has been devoted to the burning issues in the field, many of them are the one-vector studies, and few attempts have been made to conduct complex scientific research.

The purpose of this work is to study quantitative and qualitative indicators of the real state and trends of the domestic meat industry development and to identify the factors that determine the prospects for its further improvement.

The functioning of this branch of industry is increasingly affecting the national economy, because food security of the country as a whole depends on the state of its production development. The meat processing industry plays strategic role in the country's economy. This industry can actually function successfully in all regions of the world with a moderate climate regardless of the presence or absence of the appropriate natural resources. Demand for meat products will never lose its relevance, as the consumption of meat and meat products is a vital prerequisite for normal functioning of the human organism.

Modern technologies of the meat production are distinguished by the utilization of the innovative approaches, therefore their products are highly competitive. The main purpose of the industry is to provide the human organism with the required amount of meat products - a rich source of proteins of animal origin, many possessing high nutritional value. The steady increase in the indices of the meat products consumption indicates an increase in the living standard of the population and the level of food security in the state. The concept of rational nutrition primarily depends on the production of specific types of meat, although it also implies the mentality and economic preconditions for the consumption of meat by different nations. The production of meat and meat products is a long-run process and therefore involves the consolidation of the efforts of many specialists (stockbreeders, entrepreneurs, farmers specializing in the production of fodder, cattle slaughter, meat processing for the wholesale and retail trade). Consequently, this sphere of production is an integral part of the food complex sector and, at the same time, it can not exist without a well-developed raw material base.

As for cooperation between enterprises in the production and processing of food products, recent studies have shown that the functioning efficiency of the domestic processing enterprises depends on the stability of raw material supplies and the level of relationships with meat producers. However, for Ukraine, the issue of creating raw material potential within the meat processing industry has been pressing for several years. The designation of the strategically important vectors for the meat processing industry development and their profitable functioning should be based on the objective analysis of its present state through revealing competitive advantages and disadvantages in the context of internal/external factors of influence on the branch.

The domestic market of meat and meat products is directly related to the objective assessment of the state of the raw material supplies. If we resort to the historical background of this branch, it becomes clear that after Ukraine gained independence, the industry has never stopped to struggle actively for survival. The agro-industrial complex seeks to minimize the reduction of livestock and reduce the loss-making effect of the cattle breeding sector.

Now the reduction tendencies in cattle farming remain strong. According to the official data of the State Statistics Committee, in May 2018 (as compared to March of the same year), the total number of cows in all categories of farms in Ukraine decreased by almost 1% and amounted to 2190.3 heads (compare, in March 2018, this figure was 2186.2 heads). This decrease in the number of cows is observed in all regions of Ukraine. If we compare these data with those of the similar period of 2017, it becomes clear that the number of cows decreased by 1%.

As far as poultry meat is concerned, this vector now is quite stable at the food market. The stability rating is secured by keeping to the following demands: stabilization of market conditions; ensuring the profitability of commodity producers; increasing production capacity; adaptation to the new conditions of the global challenges; protection of the internal market from the probable risks; ensuring the competitiveness of the domestic producers in the world and domestic markets.

The rapid development of poultry farming in Ukraine is due to the needs of the population in the consumption of dietary and affordable food. However, it would be unfair to consider that Ukrainian poultry farming is interested in meeting the needs of the domestic market only. In the future, we hope to increase the rates of poultry meat export. If we analyze the domestic market, it is worth noting that there are only two types of farms specializing in livestock breeding for the purpose to meet the needs of the meat processing industry. These include small private farms and agricultural enterprises/complexes.

The study has revealed that there were no noticeable changes in the structure of livestock products production in 2016 and 2017. Speaking about the period from 2011 to 2015, one should pay attention to the fact that in 2011, 82% of the poultry was grown at state agricultural enterprises. At this time, the production conditions for the commodity producers were rather complicated. The increase in feed prices, naturally, led to a rise in prices for meat, while the purchasing power of the population remained at the minimum level. For a long time, the shortage of meat raw materials had caused an increase in imports. In particular, in 2017, the import figure in Ukraine was 170 thousand tons. This situation affected the formation of both wholesale and retail prices, which led to a reduction in production volumes at some enterprises.

Today, the leading producers of meat and meat products are Australia, Brazil, India, the People's Republic of China, Poland, Russia, and the USA. However, we can not assume that this situation is permanent because this segment of the market is developing dynamically due to the changes in the geopolitical environment,

the conjuncture of the world meat market, and the emergence of new companies-participants of the global level. According to A.Loza, the President of the Association of Pig Breeders of Ukraine, in the next half-century the production of meat in the world will increase 4 times. The expert explains it by the fact that the population on our planet is gradually growing and it causes an increase in the demand for meat products. The other argument is an increase in the number of middle-class population in India and China, which has given rise to an increase in meat consumption.

For a long time, the world-recognized leading producers of pork have been the EU countries (Denmark, Spain, Germany, France), China and the United States. They show a steady growth rate of meat production. On the other hand, the biggest pork consumer countries in the world are Austria, Spain, Lithuania, Germany and Poland. According to the official sources (The Economist), the consumption level of pork in these countries is 50 kg per capita per year. Our country is still very far from such indicators. In view of the financial situation, the average Ukrainian consumes about 40 kg of pork per year. This index is 85th in the world ranking. According to the Report of Food and Agriculture Organization of the United Nations, in 2007 an average Ukrainian consumed 45 kg of meat per year, including 17.4 kg of poultry, 15.3 kg of pork, 11.4 kg of beef and other kinds of meat. For comparison, an average Austrian consumes 66kg, a Serb - 64.8 kg, a German citizen - 55.6 kg, a Pole - 51.2 kg. In the overall rating, Ukraine falls behind Belarus, Russia, Gabon and Ecuador. Luxembourg consumes the most meat - 136.5 kg, the United States - 125.4 kg and Australia - 121.2 kg. It turns out that on average every inhabitant of the planet consumes 38.7 kg of meat (in particular, 14.9 kg of pork, 12.5 kg of poultry meat 9.5 kg of beef, and 1.9 kg of mutton).

Here is a more detailed analysis of the Ukrainian domestic meat market. It has changed significantly over the years of independence. In the early 90s of the twentieth century, the meat industry developed with the support of the state. There were state standards according to which producers manufactured identical by their characteristics and prices products. In the then economy, the market mechanisms were missing, and, therefore, demand did not affect the supply. The cost of raw materials was high, and the purchasing power of the population was low. Coherently, these factors significantly changed the demand structure and stimulated the strategic planning of not only sales of products but also the provision of raw materials. Over time, the supply of raw materials from the CIS countries began to grow, a large number of foreign companies appeared on the domestic meat products market. In 2008, when the feed and energy resources prices increased significantly, livestock breeding appeared to be not profitable. The livestock indicators dropped, and prices for meat grew. As a consequence of the rising prices on raw materials, the profitability of the production of these products decreased greatly.

In recent years, the political and economic crisis has negatively affected the functioning of the Ukrainian livestock complex. Thus, in recent decades production

of mutton, veal, beef and lamb has been growing slower than that of the pork and poultry. Production of pork has decreased and beef production exceeded it.

Naturally, such a demand for this type of meat can be explained by economic factors (relative cheapness, fast poultry breeding) and non-economic factors (dietary properties, fast in cooking, etc.). In the developed countries, the production of broilers is 70% of the market, and turkeys - 10%. Broilers are mostly sold in separate parts (shins, thighs, wings). In 2018, the largest share in the structure of meat processing production was chilled poultry meat. The main determinants of demand are its low prime cost in comparison with other types of meat and significant consuming demand, in view of the low purchasing capacity of the population.

If we take into account the purely physiological characteristics of chicken meat, it has significant advantages. It does not contain high levels of fats and carbohydrates. Choosing between frozen poultry meat (9%) and chilled (52%), the consumer chooses the latter because of the better nutritional qualities of this kind (the meat had time to «mature» naturally). This fact is explained by the technological specifics. The poultry carcasses pass the stage of disinfection in the very cold water, after which they enter the stage of rapid cooling. Then the poultry meat (already juicy, fragrant and soft in consistency) is distributed immediately through the retail network. Instead, the poultry meat that was subjected to deep freezing does not mature as it should, therefore, it gets tighter. This is due to the fact that under the influence of low temperatures, the liquid within of the cells, transforms into ice crystals. As a result, the chicken loses its original flavour, and its vitamin-mineral composition is washed out with meat juice.

Thus, the monitoring of the state and current trends in the development of the domestic and foreign meat processing industry shows that in the near future the population will continue to favor only those products that have been produced according to all quality standards, that is, those belonging to the category of healthy food. This means that these products contain «the necessary set of nutrients that have an attractive organoleptic, guaranteed safe low calorie and are produced in an assortment that can meet the needs of different categories of the population».

The increase in the production of turkey meat in Ukraine, which has become increasingly popular in recent years, is also due to the tendency of the Ukrainians to eat properly, to choose only ecologically clean and rationally selected dietary products.

The market is negatively affected by the reduced purchasing power of the population. In particular, it concerns reducing the growth rate of the production and consumption of turkey meat. However, experts argue that positive trends will continue, and further growth in this industry in the next few years will be 6-7%. In general, in 2018 the Ukrainian processing industrial enterprises received 1,702.9 tons of livestock and poultry live weight. This figure is 4.2% higher than in 2017. In total, 463,9 thousand tons of live weight of cattle and poultry were purchased that year (it is 27,2% of the total volume). Recycling enterprises of Ukraine utilized 1228.1 thousand tons of self-raised livestock and poultry for processing (by 6.6%



more than in 2017).

The functioning of the Ukrainian meat production market is under the slogan of the environmental friendliness. The primary factors of its development are the reduction of beef production against the background of the growth of demand for natural and dietary meat (for example, turkey), taking into account the increase of investments in domestic production, introducing advanced technologies and increasing the number of livestock.

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## **ECONOMIC LEVERS IMPROVEMENT OF RATIONAL LAND USE OF AGRICULTURAL ENTERPRISES**

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Problems of land use include, first of all, rational land use. Rational land use means the maximum involvement of all lands in economic circulation and their effective use for the main purpose, creation of the most favorable conditions for high productivity of agricultural land and obtaining of maximum production at the lowest cost per unit area. But today the most important common problem is sustainable development, the essence of which is to achieve a harmonious balance between the population, consumption and the ability of the land to support life.

In domestic and foreign literature a sufficient attention is paid to the study of multifaceted issues of improving economic levers of land use, preservation, reproduction and use of land and resource potential. These problems, in particular, are partly considered in the works of: B.M. Danylyshyn, I.K. Bystriakov, D.S. Dobriak, V.V. Horlachuk, P.F. Kozmuk, A.S. Lysetskyi, L.Ya. Novakovskiy, A.Ya. Sokhnych, M.F. Tymchuk, A.G. Tykhonov, V.M. Tretiak, M.M. Fedorov, V.S. Khorev, and other domestic and foreign scholars.

Scientists emphasize that one of the most important factors influencing the efficiency of land use is globalization [5, 7]. So, analysts from the US Department of Agriculture have re-evaluated forecasts of world grain production. Expectations for a decline in world wheat production and record harvest of corn have come true.

Looking at each culture in detail, we could notice that in USDA's next report, world production forecasts in 2018/19 continue to decline: they now stopped at a mark of 730.9 million tons. Compared to the previous marketing year, the production decline was more significant - 27.8 million tons (for reference: in 2017/18 world production was 758.7 million tons). The main reason for the decline in production, and as a consequence – the world trade turnover, was the decline in production in Australia (-1.5 million tons) and Russia (-1 million tons). The reduction in production for wheat amounted to almost 1 million tons. Forecasts for Ukraine have come true. In addition, American analysts, referring to the IGC, mark down prices for stock exchange contracts for wheat from \$ 4 to \$ 15 per ton.

The production of corn was 1068.3 million tons. However, even this did not prevent agrarians from around the world from harvesting 34 million tons more than the past in this marketing year. The forecast reduction is negligible, as opposed to a drop in expectations for the United States (-1.2 million tons) and Russia (-1 million tons) in Canada (+0.2 million tons), the EU (+0.2 million tons, and a number of other countries, the forecast is growing, which will not prevent the growth of world trade volumes (+ 0.85 million tons), which, according to forecasts of American experts, is 158.6 million tons and can become record in recent years. The situation is

such that the decline in forecasts of export to Russia (-1 million tons) may be offset by growth in the United States (+1.5 million tons). In addition, forecasts continue to grow experts on the global consumption of corn in 2018/19 marketing year. In the latest report, they estimate it at 1107 million tons, which is 43.4 million tons more than in the previous marketing year. If we take into account this latest forecast figure, then the increase in consumption in the last five years can reach 12.08% or 119 million tons.

Along with wheat, barley is picking up the tendency to world production decrease. According to the latest data, production in 2018/19 was 141.25 million tons, which is 3 million tons less than the previous marketing year. The main reduction of expectations is observed in Russia (-1 million tons). Taking into account the general trend of production, forecasts for world trade volumes are also decreasing – from 1 million tons to 27.53 million tons. The rating for Ukraine remained unchanged (Table 1).

*Table 1*

**Ukraine’s place in the world grain market in 2018/2019  
marketing year, million tons**

| Culture | Production | Consumption | Export | Final stocks |
|---------|------------|-------------|--------|--------------|
| Wheat   |            |             |        |              |
| Ukraine | 25,50      | 9,20        | 16,50  | -            |
| World   | 730,92     | 745,60      | 180,80 | 260,18       |
| Maize   |            |             |        |              |
| Ukraine | 31,00      | -           | 25,00  | -            |
| World   | 1068,30    | 1107,17     | 158,60 | 159,35       |
| Barley  |            |             |        |              |
| Ukraine | 7,60       | 3,50        | 4,30   | 0,95         |
| World   | 141,25     | 142,98      | 27,53  | 17,43        |

It should be noted that Ukraine holds 9.2% of world wheat exports, 15.8% of corn and 15.6% of barley. But this is not the limit.

Increasing the efficiency of land use in agriculture is facilitated by the intensification of crop production through progressive farming systems, advanced technology and crop production technologies.

Describing the process of intensification, it should be noted that agriculture is developing not by increasing the amount of cultivated land, but on the basis of improving the quality of cultivation, by increasing the size of the selected areas. The funds of agriculture intensification are as follows: complex mechanization and automation of production on the basis of its electrification, chemical planting and livestock farming, development of agricultural land reclamation, organizational and economic measures (specialization and concentration of production, the introduction

of progressive forms of organization and remuneration), the widespread use of scientific achievements and best practices [1, 3, 6].

Rational and efficient land use in agricultural production can be achieved if the measures of soil fertility are consistently implemented and protected from erosion and other destructive processes. Based on national interests, society must use the land in such a way to pass it on to next generations being improved.

The diversity of natural conditions necessitates the introduction of scientific management of agriculture, which involves increasing the soil fertility, improving the quality of agricultural land. Therefore, the main component of the system of agriculture is the farming system.

Crop rotation is an important part of the land use system. The practice of modern agriculture shows that the development of theoretical and practical foundations of biological agriculture focused on the selection of more productive crops, their placement after better predecessors, the determination of the impact of different ratios and alternation of crops in short-rotation for the soil fertility, its phytosanitary condition and crops per different levels of intensification.

Crop rotation improvement involves increasing its anti-erosion efficiency by introducing repeated crops for feeding, as well as improving the composition of precursors to leading crops.

Adherence to the crop rotation allows raising productivity of arable land by 15-23%, without any additional costs of material and technical resources, advanced resources, through the full impact of highly efficient productive varieties and hybrids, organic and mineral fertilizers, and soil cultivation with pesticides.

Violation of the scientific basis of crop rotation leads to accumulation of infections in the soil, increasing pollution of crops, the spread of pests of agricultural crops, deterioration of water and nutrition regimes. Under such adverse conditions, there is a need for increased fertilizer and pesticide application standards, which in turn generates environmental problems of soil and groundwater contamination by chemical elements and compounds harmful to human health.

The scientific principles of crop rotation are aimed at optimizing the positive factors in their interaction with the soil and among themselves. Outside the crop rotation, in the conditions of a permanent culture of agriculture, the influence of negative biological, chemical and physical factors, causing the phenomenon of grounded plants and, consequently, the decrease of plant productivity [8, 10, 11] increases.

Each implementation of crop rotation requires agronomic, organizational and economic substantiation, and includes the following requirements:

- 1) the most favorable placement of the leading crops by the best predecessors;
- 2) ensuring the most even and rational use of production and labor means during the growing season;
- 3) ensuring the successful implementation of the production plan at the lowest cost of labor for its production;

4) provision of agro technically substantiated structure of sown areas and implementation of all measures provided for by the system of soil cultivation, control of pests and diseases;

5) rational use of the land fund of the economy in the conditions of the zone;

6) harmonization of the projected system of crop rotation taking into account the limits of investment in the industry.

Given the different levels of water consumption of field crops and the peculiarities of soil and climatic conditions, the optimal set and the ratio of grains, technical and fodder crops should be observed, which ensures the rational use of moisture reserves.

For example, in the crop rotation of Poltava region, depending on the specialization of farms, it is recommended such a specific gravity of individual crops: cereals 45-65%, technical – 10-30%, feed – 20-40%. In the group of grain crops, winter ones should occupy not less than 50%, peas – no more than 20%, sugar beet – 10-20%, in order to withstand the established period of return to the previous place. Net pairs, as one of the factors guaranteeing the harvest of winter wheat, should occupy not less than 10% of the total area of arable land.

The system of crop rotation is developed taking into account the prospects of the enterprise development after the planned structure of the crop area. The structure of the sown areas of individual enterprises is improved on the basis of the achievements of agricultural science, best practices, and also under the influence of other factors.

Improvement of the structure of crops must be carried out in two ways:

- replacement of less productive crops and varieties more productive, without changing the system of farming;

- restructuring of the economy, namely, the deepening of inter-farm and farm specialization, changing the composition and combination of industries, the relationship between agriculture and livestock. This causes organizational changes in the economy, including the structure of crops.

In improving the efficiency of agricultural production, its analysis is of great importance and is based on optimal solutions. The use of economical and mathematical methods makes it possible to find the rational structure of the production of an agricultural enterprise, to calculate the optimal structure of its sown area or area of a separate group of crops, to determine the best composition and use of the machine-tractor and car park and other activities. The actual and optimal structure comparison reveals significant reserves of production increase and cheapening of all products types of the agro-industrial complex. Small optimization tasks can be solved manually using conventional computing means.

The urgent condition for improving the efficiency of agricultural production is the availability of labor resources, rational use of them and the even distribution of them by industry.

Highly developed agrarian production requires, respectively, highly skilled personnel who would possess methods of development and development of market

production. This testifies to the need to create appropriate conditions for the training of agricultural workers and their consolidation in the countryside.

Formation of personnel potential of agricultural production is carried out under the direct and indirect influence of various factors related to the nature of the development of the socio-political system, forms of ownership, industry specificity of the agrarian sector of the economy.

Payment for the team products in plant growing can be carried out not in each crop separately, but in general for all crops attached to it.

The amount of remuneration for products accrued by the team at prices, as a rule, is not adjusted to the changes in technology that occurred during the year, compared with the technology provided by the technological card.

When changing the structure of the crop area against the foreseen in the task of the brigade (link), the calculation of wages can be carried out in accordance with the rates, specified immediately after the sowing.

However, in cases where individual technological operations were performed or not performed from the reasons independent of the members of the production unit, the amount of wages for the volumes of such works in the final calculations for the products need to be adjusted.

The objective assessment of the personal contribution of the executor to the final results of the production involves close contacts of the direct supervisor with the subordinates, a clear definition of the criteria and indicators under which the promotion is carried out.

In the task-and-bonus plan, bonuses have been distributed to save on direct costs up to 70% of the savings achieved. It takes into account those direct costs, the use of which depends on the specific staff of employees. In excess of the established costs of the staff, they are reimbursed in full or in part at the expense of the funds provided for remuneration and bonus.

Positive role can be played by bonuses for overcoming the tasks of production, increasing the productivity of agricultural crops against the level achieved in the previous 3-5 years, increasing the production of feed, performing and over fulfilling the production tasks provided for by the contract, improving the quality of products and other indicators of work, depending on the industry, specialization, nature and conditions of production.

In the economy, it would be expedient to use the practice of advanced agricultural enterprises of the district, when the funds for labor remuneration (tariff fund and additional payment for products), additional payment for products and high quality of work, as well as bonuses are combined for the payment of workers, workers on progressively increasing prices for products, at which, as the yield increases, the price per unit of output increases.

According to the specialists and managers of these farms [2, 4, 9], in this order of remuneration the employee's interest in the final results is substantially increased, the payment system in plant growing becomes simple and effective.

An integral part of the final calculation at the end of the year may be the direct employee participation in profit. The essence of profit participation lies in the fact that a separate, predetermined portion of the net profit is distributed among members of the labor collective, depending on certain indicators. A properly selected system of remuneration will be effective under the condition of rational organization of labor as employees of the management apparatus, as well as workers of certain branches, including the field of plant growing.

Thus, the management of economic and social factors will lead to an improvement in the effectiveness of land resources.

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## **STATE OF DEVELOPMENT OF THE MEAT AND MILK PROCESSING INDUSTRY IN UKRAINE**

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The agro-industrial complex is one of the most powerful and dynamically developed sectors of the Ukrainian economy. The effectiveness of its functioning influences not only the development of domestic and foreign markets, but also the overall state of the economy as a whole. The agro-industrial complex of Ukraine includes food and non-food sub-complexes, each of which has its own raw material base and markets. The following branches belong to the food complex: fruit and vegetable canning, grape growing and wine making, oil and fat, meat and dairy products, sugar beet, grain products, and potato products industries.

The processing industry maintains strong links with agriculture, machine building, which supplies processing technological equipment to the chemical, microbiological and food industries. There is a close connection between the processing and food industries. Processing industries supply raw materials to the food industry for their further processing, in particular alcohol, oil, starch, sugar, meat, milk, etc. The links of processing enterprises with agriculture are the most effective. The process of interaction between agriculture and processing industries is based on the organizational and economic technological unity of production, storage and processing of crop and livestock products. The processing industry complements the food industry and supplies raw materials and semi-finished products for their further processing. The active processes of international integration update the task of increasing the role of the processing industry, its economic growth and competitiveness on the domestic and foreign markets [1].

The processing industry is one of the most important components of the national system of any state, and its function is to optimally meet the needs of the population of the country with high-quality, economically and physically accessible food products with the predominant food self-sufficiency of the state and adjustments for participation in globalization processes [2].

Due to the fact that the country's economy has not been in the best position in recent years, the current state of its production today is characterized by a high level of fixed assets wear, their physical and moral obsolescence. This is especially true for the industries belonging to the processing complex of the country which suffered the greatest losses.

The only way out of such a situation is to transfer all production through an

innovative development model to a qualitatively new level of functioning. That will help stabilize the development of the economy, transform the domestic processing enterprises into competitive exporters of high-quality products, and expand the niches for domestic commodity producers in the international market for goods and services [1].

The meat and milk processing industries are priority and strategic ones for Ukraine. Strengthening of globalization processes and Ukraine's integration into the world community put forward new requirements for the development of the meat and milk processing industries: compliance with the international standards of quality, and safety; transition to an innovative model of the industry development and active introduction of modern resource-saving technologies of production based on the integrated use of raw materials.

Meat processing industry plays a significant role in providing food security in Ukraine, supplying the consumer with fresh meat, offal, sausages, smoked and canned meat, as well as semi-finished products. The market for meat and meat products is the most important segment of the country's food market, sustainable development of which is of strategic importance. The meat processing industry is the basis of the food complex of Ukraine, though it is now under rather difficult conditions [3].

The milk processing industry at the present stage of development is no less important for the Ukrainian economy. Significant rates of economic downturn in recent years have negatively affected the development of the industry, revealing low competitiveness of domestic dairy products producers in international markets. Ukrainian milk processing enterprises have recently got a chance to enter the markets of Europe; unfortunately they are not yet able to do it. The ratio price to quality of domestic dairy products does not allow them to meet the needs of the demanding European consumer [4].

The development of the meat and milk processing industries should be guided by maintaining the balance between the raw material base and industrial capacities, as well as between the volumes of the final product production and the possibilities for its realization. Inconsistency in the volume of raw materials and the size of production capacities leads to breaking the rhythm of work, excessive prolongation or reduction of the production cycle duration, ineffective utilization of production capacities, irrational transportation costs.

The Ukrainian meat and dairy products market is quite competitive, and in order to operate successfully and maintain its position, enterprises need to have such competitive advantages as the corresponding raw material base, a wide range of products, adapted to the needs of the consumer, production of innovative products, use of modern technologies, etc. In view of the above, only highly effective enterprises with strict control of product quality will be able to stay in the market. Therefore, under the current market conditions, businesses are faced with the need to develop and ensure further growth of their competitiveness [5].



The competitiveness of products of the meat and milk processing enterprises can be achieved by reducing their production costs and improving quality, namely: through the development and introduction of new technologies; development of rational processing technology, use of domestic raw materials in their production. In the complex of measures aimed at increasing the competitiveness of products, special attention should be paid to improving the mechanism of resource saving management at processing enterprises, which will provide the opportunity to form stable competitive advantages [6].

The main ways of increasing the competitiveness of products and processing enterprises on the whole in the context of resource conservation are:

- use of less energy consuming equipment;
- systematic analysis of the structural and technological parameters of machines and apparatus, strict inventory of resources, their availability, and costs;
- assessment of energy consumption for lighting, ventilation, cooling, heating, etc.;
- search for energy-saving ways of production, including sanitary processing, modern non-waste technological processes, innovative engineering methods and systems;
- application of the latest resource-saving technologies with deep, complete and complex processing of the main and secondary raw materials;
- generating moral and material interest of employees in the effective use of labor tools, and conscious attitude to the enterprise resources;
- developing an appropriate resource conservation strategy; adjusting corporate culture of the enterprise, taking into account the goals of resource conservation [7].

Difficulties in the operation of meat and milk processing enterprises are caused by the following factors:

- livestock reduction and territorial dispersion of agricultural enterprises and private households, resulting in shortages of raw materials;
- production material intensity, which can be explained by the use of raw materials of agricultural origin, which already contains certain production costs;
- complexity of the technological process, and the need to increase the degree of raw materials processing which leads to an increase of investments in technical re-equipment of production;
- a short period of sale of certain types of finished products and a variety of products produced [8].

The results of the analysis of the state of the meat and milk processing industry indicate that the domestic market is experiencing a sharp decline in demand and supply. At the same time, the pace of decline in demand far exceeds the decline in supply. The decline in demand for meat and dairy products is primarily due to a decrease in real incomes, as well as an increase in taxes and other payments, limited export opportunities for processed products. This is due to the factors of political, economic, and social nature, low wages, a decline in production and, consequently, an increase in the number of unemployed, a low rate of correlation between labor

productivity and capital use, etc. The supply of goods, in its turn, decreased due to a reduction in domestic production and drawbacks in the management and marketing systems: a low interest of employees in the efficient use of resources and an increase in sales, a weak material and technical base of the processing enterprises and trade organizations, insufficient development of market infrastructure, volatile tax environment [9].

Therefore, the current conditions for the development of the country's economy as a whole have put forward a number of tasks and measures aimed at increasing the competitiveness of meat and milk processing industry products in Ukraine, minimizing the negative impact of external and internal threats to its growth, among which:

- identifying priority directions for technological development;
- development of the concept for the industry technological modernization, distinguishing clear principles, criteria, directions and mechanisms of use of resources for an innovative upgrade of technologies;
- development of the mechanism of customs incentives for innovative industries, in particular by reducing rates of customs tariff for import of investment equipment not manufactured in Ukraine, or the parameters of which are much higher than in the domestic analogues;
- development of a system of specialized refinancing of commercial banks for the provision of long-term loans for the purchase of investment equipment and innovative equipment;
- introduction of differentiated taxation of commercial banks operations by reducing tax rates for long-term lending for high-tech projects;
- improvement of the export support mechanism by simplifying and speeding up customs procedures, optimization of the VAT refund mechanism, and insurance legislation enhancement;
- introduction of a preferential implementation regime for innovation activity; tax and depreciation bonuses for resource conservation;
- transition to the program and target-oriented nature of the implementation of a complex of investment projects, financed by the state budget, and aimed, in first place, at technological updating of production and innovation development;
- improvement of the national system of standardization and certification, its approximation to the world standards, phased introduction in Ukraine of the technical regulations of the EU and industrially developed member states of the World Trade Organization (WTO);
- development of the technical regulations that accelerate the disposing of energy-intensive equipment and apparatus, which do not meet current ecology requirements;
- expansion of organizational infrastructure (legal, informational and consulting) of the producers support under the conditions of Ukraine's membership in the WTO;
- development of the programs of preferential taxation for the enterprises engaged

in agricultural products processing and growing at the expense of investments.

The comprehensive accomplishment of these tasks and provision of measures will only allow to form a highly developed processing industry for the agro-industrial complex, provide the country's own food security, increase the competitiveness of meat and dairy products in the domestic and foreign markets, break down barriers to the promotion of processed products of agricultural raw materials to new European and world markets [10].

Thus, modern meat and milk processing enterprises are characterized by insufficient material and technical base, which leads to a decrease in the competitiveness of products both in the domestic and foreign markets. Today, the conditions of competition require the introduction of modern high-performance equipment and the latest technologies, active involvement of scientific and human resources, and use of resource-saving technologies. Introduction of an effective management system for resource conservation at meat and milk processing enterprises will enable not only to ensure the competitiveness in the domestic and foreign markets, but will also have a positive effect on the overall state of the agro-industrial complex of Ukraine and the economy as a whole.

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## **METHODOLOGICAL MANAGEMENT INSTRUMENTS OF INNOVATION AND INVESTMENT DEVELOPMENT OF REGIONAL ENTERPRISES**

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In order to establish common approaches and standards for conducting an assessment of the innovative state of the Ukrainian economy and each individual enterprise, an appropriate methodology that establishes a unified procedure, the main methodological principles for conducting an examination of strategic priority directions of innovation activity and medium-term priority directions of innovation activity at the national level is approved based on the results of the forecast analytical studies of the trends of world scientific and technological development, realization of priority directions of innovative activities in Ukraine, comparing them with the real needs of the Ukrainian economy, the capabilities and state of the country's innovation potential, and allows for appropriate substantiated conclusions and suggestions as to the appropriateness of approving priority directions of innovation activity.

The process of expertise of the priority directions of innovation activity should be based on the results of analysis on the following criteria for assessing aspects of socio-economic development:

- a) globalization criterion (world markets for high-tech goods and services, forecast of market growth and the emergence of technological niches);
- b) legal criterion (principles of state innovation policy, compliance with priorities of economic development of the state, requirements and norms of the current legislation);
- c) scientific and technical criterion (costs for performing scientific and technical works, financing sources estimation of scientific and technical works on the priority direction of innovation activities, assessment of the technological structure, the number of scientific developments elaborated);
- d) the volume of innovative investments relative to the annual level of depreciation;
- e) social criterion (the share of employed in the high and medium-tech sectors in

the priority direction of innovation, growth of labor productivity);

f) environmental criterion (degree of environmental safety, degree of environmental risk).

Each of six criteria has been analyzed using a group of parameters (both quantitative and qualitative) that characterize it.

In order to systematically meet the above criteria, these criteria, in our opinion, should be divided into a group of “internal” criteria that measure the contribution of the assessed R&D direction to solving the actual social and economic problems of the state, and a group of “external” criteria that determine the scientific technological priority. The group of “internal” criteria, in turn, is divided into three sub-groups focused on:

- the person (his/her health, environment of life, education, culture, etc.);
- the nature (environmentally friendly technologies, renewable energy, etc.);
- the society (improvement of global development conditions, socio economic development of the country, defense, communication, etc.).

As for “external” criteria, we offer to pay attention to:

- potential of technology industrial use;
- obviousness of industrial use results of technology for several sectors of the economy;
- availability of the potential of general development (interest of wide circles of science, business and state structures in the development of selected technologies);
- possibility of using selected technologies by the forces of small and medium enterprises [1, 3].

On the basis of our standard statistical indicators of the system identified by us and the analysis of this knowledge area, we suggest to supplement this list of indicators with the following criteria indicators, which, in our opinion, will provide an opportunity to create a coherent systemic methodology for assessing innovation and investment activity:

- staffing potential (share of science and technology institutions graduates in the age group of 20-29 years; % of population with higher and secondary education at the age of 25-64; % of population continuing postgraduate education at the age of 25-64; % employed in the average and high technology (hi-tech) production from the total number of employed; % of employed in hi-tech service from the number of employed);

- resource support for innovation activities (expenditures for non-profit state and higher educational establishments R&D in percentage terms to GDP, expenses for research for business in % of GDP); the number of applications for patents in the European Patent Office, per 1 million population; the number of applications for hi-tech patents in the US Patent Bureau for 1 million people);

- organizational component of the innovation field (the share of independent small and medium innovative enterprises – % of the total number of small and medium enterprises);

- share of small and medium innovative enterprises in cooperation with other firms – % of the total number of small and medium enterprises;
- share of innovation costs (in % of total sales);
- general economic contribution of innovations to the structure of GDP (venture capital in the hi-tech sphere in % of GDP, new capital in % of GDP);
- sales of new market products in % of total sales;
- IT market in % of GDP;
- home access to the Internet;
- value added in hi-tech production.

The research and synthesis of the accumulated experience in the development of quantitative evaluation methods indicate that most authors characterize the organizational level as a rational (expedient, optimal) combination of production elements [2, 4, 5]. Therefore, a logical question arises about the assessment of such a level from the point of view of rationality and efficiency of the adopted organizational decisions and management methods under given conditions (technique, technology, etc.).

There are three methodical approaches.

The first approach is based on the use of rationality and progressiveness of applied forms and methods of organization as a criterion and the use degree management of labor tools and objects [2]. This approach is substantiated by the study of weaknesses in the criteria and methods for assessing the problem of the inequality of organization and management levels through different points of deduction (for different enterprises the ideal set of forms, methods and means of organization and management appears differently) and the relativity of the notion of progressive forms and methods of organization and management (which is progressive under certain conditions of production, may turn out to be inappropriate for others). The same position is expressed in the writings of other authors, where the organizational level of production refers to a set of indicators characterizing the system of regulation, regulation of labor processes and rational use of material elements of production. At the same time solving problems of increasing the efficiency of production causes the need for the distribution of indicators into two groups: those related to the cost of scientific and technological progress, and those that characterize its result.

The second approach is based on identifying the state progressiveness degree of production organizational development. In this case, it is proposed to construct an optimal production state model, its base model and a progressive standard.

There is an approach to assessing the technical level of means and methods of production using standards in three dimensions of social labor productivity: in the system of interdependent enterprises, the efficiency of labor resources and funds use at the enterprise and the progressiveness of the technical and economic level of production in comparison with the advanced enterprises of this branch in our country or abroad. One of these indicators is considered to be the most important, and the other two are considered as a system of additional restrictions.

The third approach suggests that measuring the scientific and technical level of R&D with the help of a system of partial indicators is not permissible at the initial development stage of the quantitative estimates method. To determine the aggregate, it is necessary to rank the partial indicators by the degree of their significance. In our opinion, such an average weighted estimate has an advantage over the arithmetic mean where all the shares can be measured or summed up, that is, they are considered to be equivalent. Methods for expert assessments and statistical method of correlation and regression can be used to determine the coefficients of significance [5].

Only by means of comprehensive study of the scientific and technical level of the production preparation processes trends, its quantitative assessment, the impact on the indicators of production efficiency can be substantiated, identified the main directions of improvement. A comprehensive approach to assessing the scientific and technical level of R&D involves the need for a systematic analysis, which is to study the method of organizing elements of preparation for production into a single whole, as well as the influence of the system functioning processes as a whole on its individual components.

The methodology of system analysis is related to the need for a clear allocation and study of such logical elements as a purpose or a number of goals, upon reaching which the problem will be solved; alternatives to solutions, that is, the choice of the way through which the goal, resources and time needed for each goal can be achieved; model (models) that allows you to model the relationships between goals, alternatives, and costs; criterion (criteria), by which the purpose and costs are compared for evaluation and the choice of the optimal solution.

The comprehensive approach includes a complete list of works (from the inspection of the functions of preparation of production to the implementation of their optimal option):

1. Functions inspection of the enterprise innovation in order to identify their feasibility in specific production conditions.
2. Assessment of the organizational and technical level with the help of the selected and justified system of indicators, which allows measuring it quantitatively. Tendencies investigation of changes in the values of organizational and technical level indicators, comparative analysis to determine the reserves of its increase.
3. Production efficiency estimation, including justification of production efficiency indicators and calculation of their characteristics.
4. Influence determination of the organizational level of R&D on the efficiency of the enterprise by constructing correlation models of the production efficiency dependence on the organizational level indicators.
5. Identification of reserves for raising the scientific and technical level of R&D.
6. The main directions substantiation of organizational improvement of preparation for the production of new products, taking into account the research prospects of the enterprise.

7. Development and evaluation of possible options, selection of the optimal ones and their implementation.

The research of existing methods testifies to the presence of estimation with the help of a single indicator of the system of partial indicators on the basis of the generalized indicator obtained by the reduction of the system of partial indicators by different methods.

On the basis of the conducted research of these methods varieties of labor and cost determination, the conclusion can be made that some of them are not fully justified, others require the availability of such data, which usually do not have a forecast of costs, while others are justified economically and mathematically, but too cumbersome and sometimes unrealistic in connection with the establishment of dependencies on a small number (three to five) previously issued samples of products of this class; the fourth – do not allow to coordinate the complexity of design with technical parameters of products and the amount of invested funds approved in the technical task.

This indicates the need to select and apply effective methods, or rather, the criteria for choosing the most optimal options for innovation and investment development of the enterprise, the justification of labor and costs for the preparation and production of new products.

Each enterprise develops and uses its own tools for managing innovation and investment development, but as domestic practice has shown, most domestic methods do not give the desired effect in the process of their use. Therefore, currently works are underway to create in the process of synthesis a new system of evaluation criteria that more objectively will cover trends in the field of investment management in the process of scientific and technological development of the country and enterprises in particular.

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# THE ROLE OF ENVIRONMENTAL MANAGEMENT IN THE ENTERPRISES OF THE AGRICULTURAL COMPLEX

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Management has covered almost all areas of modern business doing, including production management, human resources, finance, etc. Compliance with and implementation of the legal, technical, ecological, economic, socio-psychological regulations developed by the legislation in the process of production activity requires the establishment of a system for the administration of ecology-based works and projects and bears responsibility for the results of their implementation. The effective functioning of this system is workable under the following important conditions:

- formation of the unified environmental policy and target program;
- availability of the appropriate skills and experience in this area to guide environmental management system;
- clear understanding by the employees of the company of their tasks, responsibilities and rights in the process of implementing the target program;
- development and introduction of unified methods in the enterprise, processes for implementation of environmentally oriented target program;
- creation of facilities and conditions for the implementation of the target programs [2].

Therefore, the necessary condition for the transition to sustainable economic development is the ecologization of production. It involves limiting and reducing the nature consuming processes in production and transiting to the use of environmentally friendly technologies that minimize environmental risks and negative impact of the production on the environment.

The environmental activities of the company include the following interrelated and interdependent areas:

- rational use of the resources;
- ecologization of the production technology;
- protection of the environment.

The interconnection of these areas forms a new management structure – environmental management system of the enterprise. The ecological management is understood not only as a market instrument that promotes the development of production and a receipt of additional profits but also as the most characteristic and significant manifestation of the modern industrial ecological culture, culture of entrepreneurship and the market.

When solving environmental problems, traditionally various methods of neutralizing pollutants formed during the production process were used. The

technical and technological aspects were in the focus of attention. In modern conditions, with increasing environmental requirements for production technology, management comes to the fore and becomes the crucial factor that determines the further effective development of the company. Thus, when solving environmental problems of the company more attention is paid to management policy and culture, which find reflexion in the styles and methods of management. All these aspects, in general, put forward new requirements for managing the business doing of all types and, accordingly, the managers' knowledge quality and competence at all levels in the field of ecology. It is highly recommended to take into account environmental aspects in the management of production, the development of new products, marketing operations, personnel and finance.

Eco-management will help restore a balance between emissions of the harmful substances in the environment and ecosystem of the enterprise.

Environmental management of the enterprise is a part of the overall management system, which includes organizational structure, planning, sharing the responsibilities, practical activities, procedures, processes and resources necessary for the development and implementation of the environmental policy objectives, its revision and adjustment [5, 7].

The peculiarity of the ecological management implies, first of all, the development of the environmental tasks on the basis of relevant strategies and programs and their implementation by creating profile structures and monitoring the results at all levels. The main issue is that environmental problems are continuous and global by nature and affect the interests of several generations.

Eco-management is an integral part of the overall management system of an entity, which determines its functioning in terms of the generally accepted management principles. Among them:

- 1) the principle of consistency, which defines ecological management as a complex of interconnected elements that ensure the best implementation of the objectives of the enterprise's environmental management;

- 2) the principle of standardization, which implies the regulation of the organization of environmental management. The objects of standardization are the technological operations, technological processes of production and control; methods of management; means of technological equipment; forms of documents; classifiers of technical and economic information; material and labor regulations etc.

- 3) the principle of evaluation, which emphasizes the need for continuous measurement and monitoring of the environmental management system and its organization;

- 4) the principle of obligation and policy, which determines the company's individual environmental policy and guarantee the implementation of environmental commitments;

- 5) the principle of availability, that is, ensuring freedom of access to information and the ease of coordination of environmental management;

6) the principle of development, which involves continuous improvement of the environmental management and monitoring the level of the most effective systems at an enterprise, the introduction of all new and progressive achievements in the field of production preparation rational forms;

7) the principle of continuity, which provides for the rational arrangement of the processes to ensure constant attention to the protection of the environment [4].

Thus, the integration of environmentally significant areas of activity into one single management system can lead to the effective implementation and functioning of the environmental management system and promote the increase in the efficiency of the enterprise's activities in the agro-industrial complex on the whole.

Nowadays, scientists insist on introducing environmental management to agricultural enterprises without delay. Ans Kolk draws attention to the need to strengthen environmental awareness and responsibility of business owners, consumers, workers of the business services [1].

The concept of an environmental management system was first clearly defined and explained in the Standard of the United Kingdom, issued in 1992. The principles laid down in that document have been translated into a series of standards, recommended worldwide. Planning the environmental management system is the most essential condition for its successful operation. Every large enterprise, whose production has a harmful impact on the natural environment, develops individual environmental programs, plans their phased implementation in accordance with the enterprise's financial capabilities and performs necessary procedures for their approval by the state environmental authorities. Therefore, the introduction of the environmental management planning procedures implies, first of all, their adaptation to the existing standards of such planning. In terms of these requirements, the planning of the environmental management system of the company should include the identification of the environmental aspects of its activities, establishing compliance of the organization with legislative and other requirements in the field of environmental protection, the formation of target and planned environmental indicators of the organization and the development of the environmental management programs.

Implementation of the environmental management system is a complex process that entails a change in the structure and production relations within the enterprise and requires significant temporary and material resources. In this connection, it is necessary to determine the feasibility of implementing a standardized environmental management system adapted to the current needs of the company.

The effectiveness of the environmental management system of the enterprise can be achieved only in case of the correct and consistent implementation. Taking it into account, I. Smolensky highlights the following stages of environmental management:

1. Preliminary analysis of the real situation. Identification of all state requirements for environmental management of the enterprise and those elements of it, which

have been already utilized by the enterprise.

2. Development of a declaration on the environmental policy of the enterprise, which reflects in detail all the ecological aspects of its activities.

3. Creation of the structure of duties and responsibilities distribution in the system of environmental management.

4. Assessment of the company's environmental impact.

5. Development of ecological goals and objectives of the enterprise.

6. Identify the stages of production, processes and activities that may affect the state of the environment and develop a system for monitoring these processes.

7. Development of the environmental management program and appointment of the person responsible for its implementation.

8. Making up and publication of a detailed description of the enterprise environmental management system.

9. Establishment of a registration system for all ecologically important events, types of environmental actions, cases of environmental policy rules violation.

10. Establishing the internal audit system at the enterprise according to the recommendations provided in the Standard [6].

The development of an effective environmental management system begins with an understanding of how an enterprise can interact with the environment. Environmental aspects are most often related to non-compliance with legislative and other requirements, as well as the basic principles of state policy in the field of environmental protection and environmental management.

Having studied the ways of the ecological management system introduction and adaption to the specifics of the agrarian production, M.I. Martynchuk identified optimal stages for its implementation (Table 1).

Introduction of the environmental management system in the production process is a practical way of improving not only environmental but also economic status of the agricultural enterprise. However, the ability of this system to operate is determined and supported by the documents that can be conventionally grouped into three principal groups:

- documents that comprise the principles of the creation and use of environmental management systems (EMS);

- documents, which include the substantiation of the tools of ecological control and methods of the environmental indicators of the enterprise assessment;

- standards for product quality assessment [4].

The implementation of the environmental management system in agricultural enterprises will gradually improve the ecological characteristics and the economic indicators through the implementation of the ecological-economic, resource-saving and competitive technologies of production.

### Ecological Management System Introduction Stages in Agricultural Enterprises [3]

| Stages   | Measures   | Documentation   |
|--|--|---|
| Analysis and research                                    | <ol style="list-style-type: none"> <li>1. Assessment of the ecological situation in the agricultural enterprise.</li> <li>2. Assessment and analysis of the industries influence on the environment.</li> <li>3. Adoption of the decision on the implementation of the environmental management system.</li> <li>4. Determining the environmental aspects of agricultural enterprises and definition of legislative environmental requirements.</li> </ol> | <ol style="list-style-type: none"> <li>1. Report on monitoring of the ecological measures of the agricultural enterprise.</li> <li>2. Report on monitoring the impact of the industry on the environment.</li> <li>3. Order on the introduction of the ecological management at the agricultural enterprise.</li> <li>4. Draft text of the environmental policy of the agricultural enterprise</li> </ol>                                       |
| Creation of ecological service and training of personnel | <ol style="list-style-type: none"> <li>1. Designation of authority and responsibility among top management</li> <li>2. Approval of the administrative structure of the environmental management – the creation of an ecological service.</li> <li>3. Training of specialists in the implementation of environmental management (programs and syllabus).</li> <li>4. Establishing the mechanism of control over the work procedures.</li> </ol>             | <ol style="list-style-type: none"> <li>1. Documentary support of the declared principles and commitments on the environmental aspects of the agricultural enterprise activities.</li> <li>2. Development of a document circulation system and records for the ecological service.</li> <li>3. Development of the instructions/guide on specialists training in the field.</li> <li>4. Regulations on the control of work procedures.</li> </ol> |
| Design and implementation                                | <ol style="list-style-type: none"> <li>1. Development of the objectives of the environmental management program.</li> <li>2. Implementation of the environmental management program by sectors.</li> <li>3. Development of the emergency response plans for situations that can affect the environment.</li> <li>4. Determination of the requirements for monitoring.</li> <li>5. Implementation of working procedures.</li> </ol>                         | <ol style="list-style-type: none"> <li>1. Draft text of the environmental management program of the agricultural enterprise.</li> <li>2. Environmental Management Program of the agricultural enterprise.</li> <li>3. Instruction for an emergency response plan.</li> <li>4. Development of monitoring procedures.</li> <li>5. Documentary mechanism for the introduction of working procedures.</li> </ol>                                    |
| Certification  | <ol style="list-style-type: none"> <li>1. Conducting pre-certification audit of environmental management.</li> <li>2. Choosing a certification body.</li> </ol>  | <ol style="list-style-type: none"> <li>1. Report on the pre-certification audit.</li> <li>2. Ordering certification.</li> </ol>   |
| Audit and Evaluation                                     | <ol style="list-style-type: none"> <li>1. An analysis of the measures planned by the management.</li> <li>2. Conducting internal audit.</li> <li>3. Periodic monitoring and evaluation of the programs in the areas of the environmental management.</li> <li>4. Improvement of the environmental management program of the agricultural enterprise</li> </ol>   | <ol style="list-style-type: none"> <li>1. Protocol of management measures</li> <li>2. Report on the internal audit.</li> <li>3. Report on monitoring and evaluation of the programs in the areas of the environmental management.</li> <li>4. Development of the procedures for detection and correction of inconsistencies in the environmental management program.</li> </ol>   |

The key findings of this research suggest that the role of the environmental management in agro-industrial complex is extremely important since an effective system of ecological management determines the development of enterprises on the basis of preservation of natural resources and at the same time ensure the competitiveness of its products.

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