

**MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE**  
**TERNOPIL IVAN PULUIJ NATIONAL TECHNICAL UNIVERSITY**

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Faculty of Economics and Management

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(Faculty)

Department of management and administration

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(Department)

## **EXPLANATORY NOTE**

to the Master's Paper

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(education level)

Topic: Researching the directions to improve the production resources use of the enterprise (farm "Viktoriya-92" as a case)

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Performed by: sixth year student

Group: IBMm-61

Speciality:

073 Management

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Faculty of Economics and Management

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Educational Degree Master's degree

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## MASTER'S PAPER TASK

Uhegbu Chiagoziwom Precious

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1. Master's Paper Topic:

Researching the directions to improve the production resources use of the enterprise  
(farm "Viktoriya-92" as a case study)

Supervisor Mashliy Halyna, Ph.D, Associate Professor

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2. Submission deadline 23.01.2024

3. Input data

The charter of the farm, the balance sheet, the report on financial results, the data of the farm on the available production resources and their use, information about production and sale of products

4. Brief Content of the Master's Paper:

Introduction.

1. The theoretical framework of the production resources of the enterprise.

2. Analysis of the production resources use of the farm «Viktoriya-92».

3. Recommendations.

4. Occupational health and safety in emergencies.

Conclusions

5. List of tables and figures:

The main financial indicators of the farm «Viktoriya-92» in 2020-2022. The structure of operating costs  
Dynamics of fixed assets of the farm «Viktoriya-92». Dynamics of indicators of the state of fixed  
assets. The indicators of efficiency of fixed assets use of the farm. Indicators of the efficiency of material  
resources. Indicators of the efficiency of the labor resources. Stages of the technological process of  
growing barley. Calculation of projected costs for the cultivation of spring barley. Indicators of the  
economic efficiency of growing spring barley. Projected capital costs for the introduction of quail  
farming. Estimated current costs of quail breeding. Indicators of the efficiency of capital investments of  
the project. Expected financial and economic results of the enterprise. Indicators of the efficiency.

## 6. Consultants to Master's Paper Chapters

Chapter	Consultant's full name	Signature, date	
		given by	checked by
Chapter 4. Occupational health and safety in emergencies	Sherstiuk R.P.		
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7. Date of assigning the task \_\_\_\_\_

**CALENDAR PLAN**

№	Content	Chapters Deadline	Note
1	Introduction	20.09.2023 – 25.09.2023	
2	Chapter 1 The theoretical framework of the production resources of the enterprise	26.09.2023 – 20.10.2023	
3	Chapter 2 Analysis of the production resources use of the farm «Viktoriya-92»	21.10.2023 – 15.11.2023	
4	Chapter 3 Recommendations	16.11.2023 – 04.12.2023	
5	Chapter 4. Occupational health and safety in emergencies	05.12.2023 – 12.12.2023	
6	Conclusions	13.12.2023 – 15.12.2023	

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## ABSTRACT

**Master's Paper Topic:** “Researching the directions to improve the production resources use of the enterprise (farm “Viktoriya-92” as a case study)

Master Degree Paper consists of 71 pages, 12 figures, 16 tables, and 34 references.

**The subject of research** is a process of the production resources use in the farm “Viktoriya-92”.

**The object of research** is the farm “Viktoriya-92”.

**The aim of the Master's Paper** is to examine the production resources use of farm “Viktoriya-92”.

**Research methods:** analysis, grouping, comparison, synthesis, system approach, etc.

The recommendations concerning the researching the directions to improve the production resources use of the farm “Viktoriya-92” have been developed. Recommendations are outlined as for introduction of cultivation of a new variety of barley, diversification of the farm's activities, implementation of the processing of agricultural products of the farm.

**Keywords:** production resources, production resources use, efficiency of production resources use, directions for improving the of production resources use.

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## INTRODUCTION

**Relevance of research.** Ensuring the sustainable competitiveness of the enterprise and increasing the efficiency of its functioning in conditions of instability directly depends on the efficiency of the use of its production resources. The tasks of using production resources are: systematic increase in the level of production organization, flexibility in responding to changes in demand, mobility development of new products (services); maintaining optimality operation with the lowest costs; ensuring a high labor culture personnel activities aimed at accurate and timely performance of production tasks are appropriate quality. All this will contribute to the improvement of the final economic results of the enterprise.

**The aim of the Master's Paper** is to examine the production resources use of the farm "Viktoriya-92".

**The subject of research** is a process of the production resources use in the farm "Viktoriya-92".

**The object of research** is the farm "Viktoriya-92".

**The objectives of the research:**

- to investigate the theoretical framework of the production resources of the enterprise;
- to analysis of the production resources use of the farm «Viktoriya-92»;
- the directions to improve the production resources use of the enterprise (farm "Viktoriya-92" as a case study);
- to develop the recommendations for improvement of the production resources use at the farm "Viktoriya-92";
- to describe measures regarding occupational health and safety in emergencies.

**Research methods:** analysis, grouping, comparison, synthesis, system approach, etc.

# CHAPTER 1

## THE THEORETICAL FRAMEWORK OF THE PRODUCTION RESOURCES OF THE ENTERPRISE

### **1.1 Meanings and definitions of the production resources of the enterprise**

Production resources of the enterprise form a component of the resource potential of the enterprise. It is their sufficient number and effective use that enables the enterprise to implement its strategy and perform functions even in conditions of a changing external environment.

The development and implementation of the organization's own strategy is characterized by economic mobility, which is determined by the availability of resources. Taking into account the role of resource provision in the activity of the enterprise, it is appropriate to consider the research of scientists regarding the study of the category "production resources".

The term "resource" comes directly from the French language (resource - means, method, data). Currently, there is no single definition, and scientists interpret both its essence and structure in different ways.

Some scientists offers the following classification of resources: labor resources, basic means and objects of work. Important production resources are space (land area) and time. Resources can be original, natural and derived, artificial. The latter include commodity, informational, financial, scientific, etc. Other scientists identifies five main groups of resources: basic production funds, working capital, labor, material and technical, financial and informational resources [1].

The economic results of the enterprise directly depend on the resource provision of its economic activity. The volume of material and non-material resources that are involved in enterprises, in turn, depends on the quality of labor resources (qualification of workers, their level of knowledge and experience).

The main tasks of resource provision are the minimization of costs associated with their involvement, as well as the maximum effectiveness of their use.

Classification groups of production resources of the enterprise by characteristics shown in fig. 1.1.

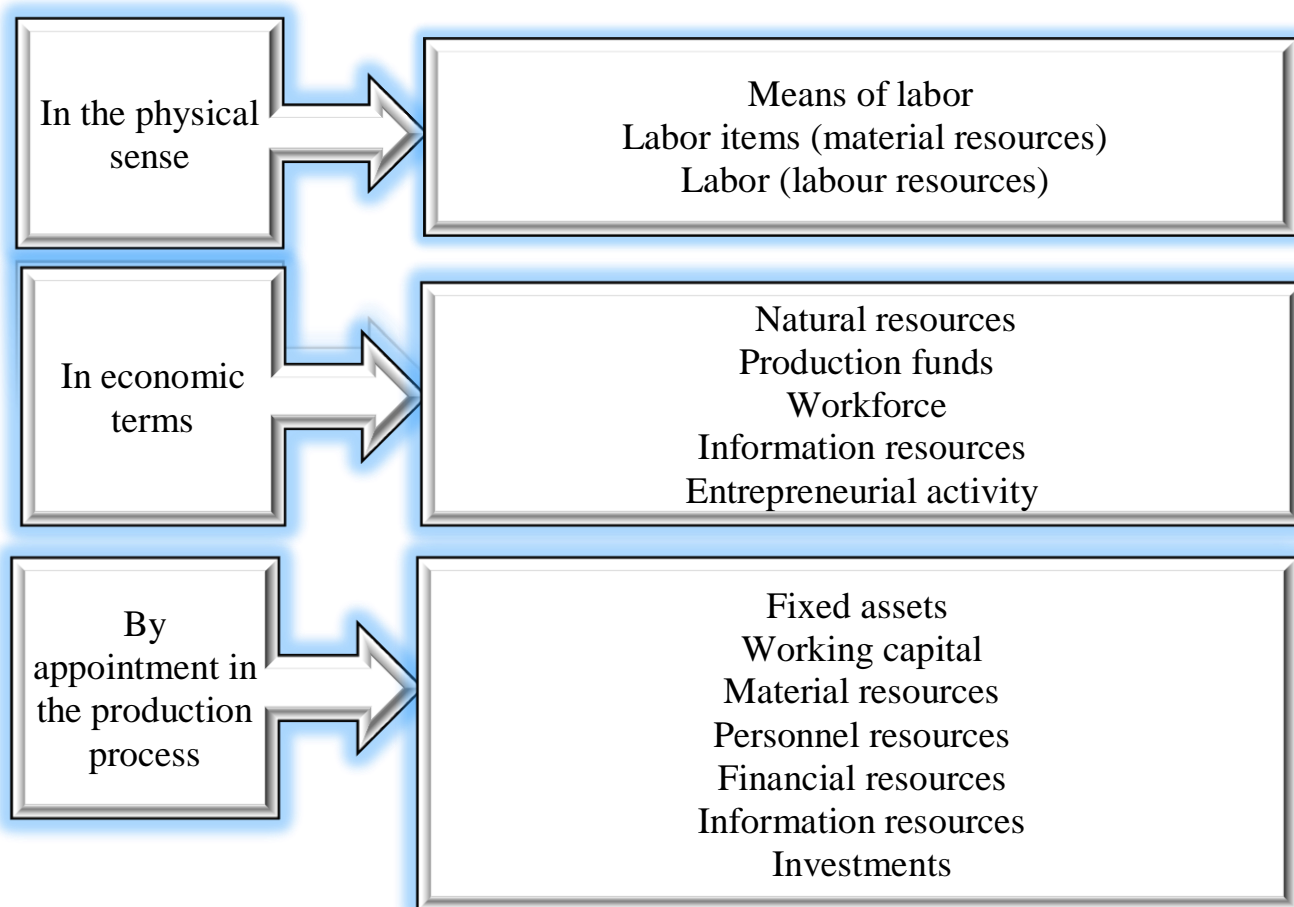


Рисунок 1.1 – Classification groups of production resources of the enterprise by characteristics (formed by the author on [3])

Many scientists single out three of their constituent elements as an integral part of production resources: the main means of production, the main working capital and labor resources.

On the basis of the conducted research, it can be concluded that in modern economic theory there is no unified view regarding the content of the enterprise's production resources and their composition.

The interpretation of the production resources of the enterprise as a set of certain factors (stocks, sources, means and objects of work) that the enterprise has at its disposal, and which can be mobilized and used by it to achieve a specific goal and



obtain the expected result in a certain time, should be considered sufficiently complete. period of time [2].

The use of each production resource requires determining the relative ability of various motivational methods to influence it, while ensuring the development of appropriate solutions. Personnel motivation methods can be used in a complex or separate way to influence the production resources of the enterprise.

It is important the adoption and implementation of a decision to influence the motivation of personnel when using production resources. It is necessary to establish certain criteria before making a choice decision regarding the impact of personnel motivation on the use of the company's production resources. This requires the presence of certain arrays of information on what impact on the company's production resources will ensure the use of certain motivation methods with maximum benefit.

Therefore, the practical motivational value is formed not from the entire profile of production resources, but from that part of it, which has a sufficiently significant influence of financial motivation, which is a necessary condition for ensuring the effective implementation of motivational measures.

Knowledge of the necessary methods of motivation is a necessary condition for making a decision regarding the growth of the influence of staff motivation on the use of the enterprise's production resources.

The totality of these criteria for selecting a decision to achieve a goal must be correlated with a defined set of constraints used to make the decision. Based on the determination of the essence of the stages, which includes the decision-making process regarding the management of the company's use of production resources, the following scheme was drawn up by scientists (Fig. 1.2).

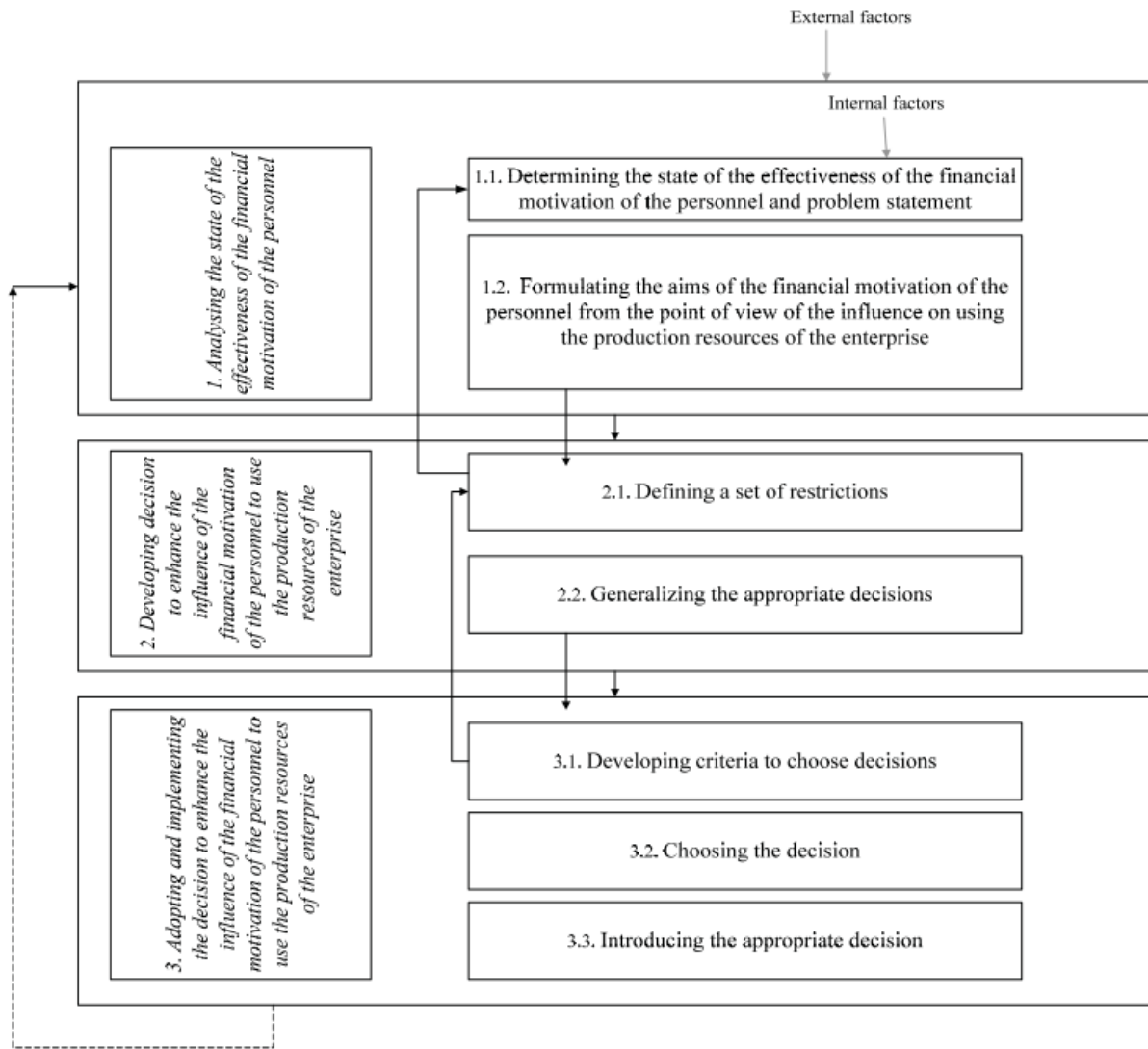


Figure 1.2 - Theoretical approach to managing production resources of the enterprise (based on the personnel financial motivation) [4]

The economic development of any enterprise and the growth of production efficiency as a whole require effective use of production resources. An important issue is the unified interpretation of the concept of production resources of the enterprise.

As noted by L.M. Matrosova and S.A. Noskova, some authors adhere to a generally defined classification of production resources in kind according to their purpose in the production process, which are called elements or factors of production: means of labor, objects of labor, and labor itself. In their opinion, the efficiency of the use of production resources, in turn, is manifested in three dimensions:

- 1) in the volume and quality of manufactured and sold products;

2) in the amount of consumption or consumption of resources for production, that is, the cost of production;

3) in the amount of resources used, that is, fixed and working funds advanced for economic activity [3].

## **1.2 Factors influencing the efficiency of the enterprise production resources use**

A number of factors affect the efficiency of an enterprise and the use of production resources. In order to facilitate the study of their impact on the system, it is advisable to group them as follows:

- by types of costs and resources (sources of efficiency improvement);
- by areas of development and improvement of production (activities);
- by the place of implementation in production (activity) management system.

They are closely interrelated, and the study of at least one group of factors will allow to correctly predict manifestations of the other. Scientists consider the most important feature of classification by the place of implementation in the production management system. It makes it possible to identify the impact of not only intra-production factors but also the external environment on the company's activities.

External factors include:

- government policy in the economic and social spheres;
- institutional mechanisms;
- economic infrastructure;
- structural changes in the industry and the economy.

In foreign business practice, classification of internal factors into "hard" and "soft" is widely used, which is rather conditional. The specific name of these groups of factors is borrowed from computer terminology, according to which the computer itself is called a "hard goods" and software is called a "soft goods". By analogy, "hard" factors are those that have physical parameters and can be measured (for example, technology, equipment, materials and energy, products), and "soft" factors are those that cannot be physically felt,

but are essential for the economic management of labour collectives (in particular, employees, organization and systems, methods of work, management style).

Internal and external factors of improving the efficiency of enterprises have different impacts on the activities of a business entity. Therefore, the primary task of top and middle managers is to determine the scope of action, select the optimal forms of control and rank the factors by importance.

The active use of sources of increasing the efficiency of production resources implies implementation of a set of measures that characterize the main directions of development and improvement of production and commercial activities of the business entities.

The interrelation of efficiency factors of the production resources use is shown in Fig. 1.3.


Sources for increase in efficiency		Main areas of development and improvement
Increase in labour productivity Decrease in: -fund intensity of products -material intensity of products - salary and labour intensity of products Rational use of natural resources		Scientific and technological progress Production structure Organisational management systems Forms and methods of organising activities Competitiveness of products (services) Activities planning and motivation Foreign economic activity

Figure 1.3 - Interrelation of factors of production resource efficiency

Possible directions of implementation of internal and external factors of improving the efficiency of enterprises and organizations differ in the degree of influence, the degree of use and control. Therefore, for business practice, for managers and relevant specialists (managers) of business entities or other types of activity, it is important to have a detailed knowledge of the scope of action, forms of control and use of the most significant internal and external efficiency factors at different levels of management of labour collectives.

The enterprise should constantly monitor the process of using internal factors through the development and consistent implementation of its own programme for improving the efficiency of its activities, as well as take into account the impact of external factors on it. In this regard, there is a need to specify the directions of action and use of the main internal and external factors for improving the business entities efficiency.

Main directions of action and use of individual factors:

1. Technology. Technological innovations, especially modern forms of automation and information technology, have the most significant impact on the level and dynamics of production (service) efficiency. Based on the principle of chain reaction, they cause significant (often radical) changes in the technical level and productivity of technological equipment, methods and forms of labour process organisation, training and qualification of personnel, etc.

2. Equipment plays a leading role in the programme of improving the efficiency of primarily production and other activities of business entities. The productivity of existing equipment depends not only on its technical level, but also on the proper organisation of repair and maintenance, optimal service life, shift work, time load, etc.

3. Materials and energy have a positive impact on the level of performance if the problems of resource conservation, reduction of material intensity and energy intensity of products (services) are solved, and management of material resources and sources of supply is rationalised.

Labour products, their quality and appearance (design) are also important factors in the efficiency of business entities. The level of the latter should correlate with the useful value, i.e. the price that a buyer is willing to pay for a product of the appropriate quality. However, the utility of a product alone is not enough to achieve high economic efficiency. The labour products offered by an enterprise (organisation) for sale must appear on the market in the right place, at the right time and at a well-considered price. In this regard, the business entity must ensure that there are no organisational and economic obstacles between the production of goods (provision of services) and certain stages of marketing research.

5. Employees. The main source and determinant of performance growth are employees - executives, managers, specialists, and workers. Business qualities of employees and increase in their labour productivity are largely determined by an effective motivational mechanism at the enterprise (organization), and the maintenance of a favourable social microclimate in the workforce.

6. Organization and systems. The unity of the workforce, rational delegation of responsibility, and proper management norms characterize good organization of the enterprise (institution), which ensures necessary specialization and coordination of management processes, and thus higher level of efficiency (productivity) of any complex production and economic system. In order to maintain high economic efficiency, the latter should be dynamic and flexible, periodically reformed in accordance with new tasks arising from changes in the market situation.

7. Methods of work. With the predominance of labour-intensive processes, more advanced work methods become quite promising for ensuring the growth of the enterprise's (organization's) efficiency. Continuous improvement of working methods involves systematic analysis of the state of workplaces and their certification, staff development, generalization and use of positive experience gained at other enterprises (firms).

8. Management style that combines professional competence, businesslike efficiency and high ethics of relationships between people has a practical impact on all areas of the enterprise (organization). It determines the extent to which external

factors of performance growth at the enterprise (organization) will be taken into account. Therefore, the proper management style as an integral element of modern management is an effective factor in improving the efficiency of any enterprise, any business structure.

9. State economic and social policy has significant impact on the efficiency of social production. Its main elements are the following:

- a) practical activities of government agencies;
- b) various types of legislation (lawmaking);
- c) financial instruments (measures, incentives);
- d) economic rules and regulations (regulation of income and labour remuneration, price control, licensing of certain types of activities)
- e) market, production and social infrastructures;
- f) macroeconomic structural changes;
- f) privatization programs of state-owned enterprises (organizations);
- g) commercialization of organizational structures in the non-production sector.

10. Institutional mechanisms. In order to continuously improve the efficiency of all business entities, the state should create appropriate organizational prerequisites that will ensure the continuous functioning of special institutional mechanisms at the national, regional or sectoral levels - organizations (research and training centers, institutes, associations), which activities should be focused on:

- solving key problems of increasing the efficiency of various production and economic systems and the country's economy as a whole;
- practical implementation of the strategy and tactics of national economic development at all levels of government. Currently, there are more than 150 international, national and regional productivity and management centers (institutes, associations) in the world.

11. Infrastructure. An important prerequisite for increasing the efficiency of enterprises (organizations) is a sufficient level of development of a network of various market, production and economic infrastructure institutions. Today, all business structures use the services of innovation funds and commercial banks,

exchanges (commodity, stock, labour) and other market infrastructure institutions. The performance of enterprises (organizations) is directly affected by the proper development of production infrastructure (communications, specialized information systems, transport, trade, etc.). A wide network of social infrastructure institutions is crucial for the effective development of all economy structural elements.

12. Structural changes in society also affect performance indicators at different levels of the economy. The most important are structural changes of an economic and social nature. The main ones occur in the following areas:

a) technology, research and development, accompanied by revolutionary breakthroughs in many fields of knowledge (proportion of imported and domestic technologies);

b) composition and technical level of fixed assets.

An important area of work is the improvement of technical and technological base of the enterprise (technical factor of product quality improvement). If a firm does not modernize its fixed assets, it may lose potential profits in the long run due to equipment wear and tear, while in the short term it will increase profits. Effective application of high-precision equipment and technology is possible only through the use of organizational factors of quality improvement, in particular, modern forms and methods of production organization and management.

### **1.3 Methodological approaches to the formation of a system of indicators of the efficiency of the use of production resources of the enterprise**

The financial and economic results of enterprises, which were obtained by them from the implementation of entrepreneurial activities, significantly depend on the efficiency of the use of production resources. Therefore, the search for ways to improve their use serves as a tool for finding reserves for growth in the volume of profits of companies, increasing the profitability of their enterprise activities. This makes it possible to establish unused opportunities to improve the financial condition of enterprises due to the increase in the intensity of their resource provision, as well



as to increase the level of competitiveness of these enterprises and the products manufactured by them.

The economic efficiency of resource provision of a business entity should always be tied to a certain type of financial and economic results of entrepreneurial activity. In particular, such results can be the company's profit, the volume of products produced by it in natural and value units of measurement, etc. At the same time, it is necessary to take into account the availability of various types of production resources at enterprises, in particular human, material and technical. The energy resources of the enterprise deserve considerable attention, since the level of efficiency of their use in many cases has a significant impact on the competitiveness of companies. Taking this into account, the economic efficiency of resource provision of an enterprise should be understood as a measure of the effectiveness of the use of a certain type of its production resources or a set of these resources, which is most often measured by the ratio of the received volume of a certain type of result of the enterprise's activity to the volume of the used resource (resources) or costs associated with using this resource (resources), i.e. according to the formula:

$$E = R / C, \quad (1.1)$$

де R - the result of the production resources use;

C - costs associated with the production resources use.

The complexity and multifacetedness of the concept of the economic efficiency of the use of enterprise resources presupposes the presence of a significant number of indicators that can be used to assess the level of this efficiency. In particular, these indicators can be grouped by such features as [5]:

1) the relationship between the value of the indicator and the level of effectiveness of the use of a certain production resource:

a) direct indicators with respect to which there is such a dependence (for example, the indicator of natural production);

b) indirect indicators, in relation to which the mentioned dependence has only an indirect nature (for example, an indicator of product profitability);

2) elements contained in the numerator and denominator of the mathematical expression of the indicator:

a) endogenous indicators, in which both components have natural values;

b) combined indicators, in which one value is natural, and the other is value;

c) exogenous indicators, in which both components have natural values);

3) degree of generalization:

a) partial indicators that measure the effectiveness of each individual resource;

b) integral indicators that simultaneously measure the effectiveness of several resources;

c) generalizing indicators that simultaneously describe the efficiency of the entire set of production resources of the business entity;

4) construction of the mathematical expression of indicators:

a) indicators calculated as the ratio of results to costs;

b) indicators calculated as the ratio of the actual to the maximum possible result;

c) indicators that are calculated as the ratio of minimum possible to actual costs;

d) indicators, which are calculated as the ratio of the increase in the result to the increase in costs);

5) the unit of measurement of the numerator of the mathematical expression of the efficiency indicator (natural, value and labor indicators);

6) unit of measurement of the denominator of the mathematical expression of the efficiency indicator:

a) indicators calculated per unit of physical volume of a certain resource;

b) indicators calculated per unit of current costs;

c) indicators calculated per unit of investment costs of a business entity [5].

Regarding the previously mentioned partial indicators for measuring the efficiency of the use of resources of enterprises, when constructing them, it is

necessary to take into account the fact that the main results of the functioning of enterprises include the volume of production of products (in kind or value) and profit from the implementation of operational activities. At the same time, costs can be represented both by the amount of resources used and by the amount of expenses for their maintenance and operation. Therefore, partial indicators of measuring the economic efficiency of the use of a certain production resource of the enterprise can be divided into four groups [5]:

1) indicators of resource productivity (for certain types of resources, in particular material, the productivity of the process of their application), which can be generally determined by the formulas:

$$Pr = Q / T, \quad (1.2)$$

where Q is the volume of products produced by the enterprise (in natural or value terms);

T is the amount of resources invested in production.

2) indicators of profitability of production resources involved by a specific enterprise:

$$Ip = P / T, \quad (1.3)$$

where P is the company's profit from operating activities.

3) indicators of the productivity of the enterprise's costs for the exploitation of the production resource:

$$Iq = Q / C, \quad (1.4)$$

where C is the cost of maintaining and operating the resource.

4) indicators of the profitability of expenses incurred for the purpose of exploiting a certain resource:

$$I_p = P / C. \quad (1.5)$$

It is worth noting that the construction of generalized indicators for evaluating the economic efficiency of the use of resources of enterprises is associated with significant difficulties, since it is necessary to combine all types of used resources in one indicator. This can be done only for the costs associated with the exploitation and maintenance of resources (given that the value of these costs is subject to summation), and not for natural volumes of resources. At the same time, it is necessary to take into account the fact that the investment costs incurred by the enterprise and reflected in the amount of their assets will be sufficiently effective if the profit per unit of these costs is not lower than a certain regulatory level [5].

When constructing a generalized indicator of the productivity of costs for the operation of the entire set of enterprise resources ( $E_t$ ), scientists suggest using the formula [5]:

$$E_t = Q / (V_t + A_n H), \quad (1.6)$$

where  $V_t$  is the total operating costs of the enterprise;

$A_n$  is the initial value of the company's assets, which are used in the production of products;  $H$  is the investment rate of return .

An important issue is the application of indicators of the efficiency of the use of production resources of enterprises when diagnosing their activities. Considering partial indicators of the efficiency of the use of resources of the enterprise as tools for diagnosing its activity, it should be noted that each of these indicators taken separately cannot provide complete information about the dynamics of such efficiency. Therefore, the question arises regarding the possibility of diagnosing the dynamics of the efficiency of using a certain type of production resources of the enterprise. The most effective approach to solving this issue is to take as a basis the indicator of the profitability of a given type of production resources of the enterprise

(as the most generalized indicator of measuring the effectiveness of the use of a certain type of resources) and to eliminate in the process of its calculation the influence of external factors on the change of this indicator.

Another approach involves the calculation of indicators for evaluating the level of efficiency of the use of a certain type of production resources of the enterprise by comparing the actual operating profit of the enterprise with the maximum possible value of this profit, which can be obtained in the case of the most complete use of a certain type of production resources. The tasks set in the process of analyzing the company's material resources are shown in fig. 1.2.

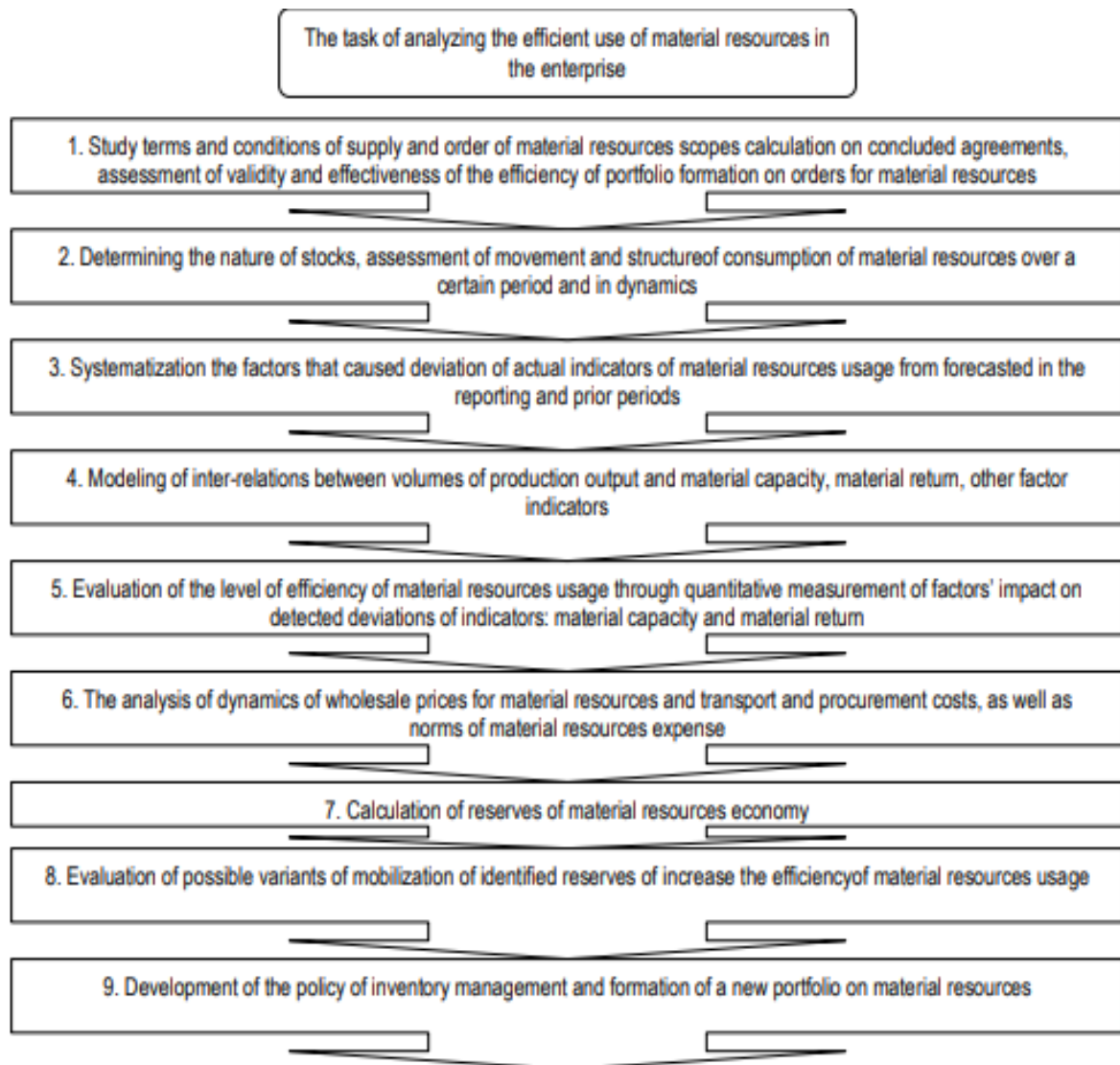


Figure 1.4 - The tasks set in the process of analyzing the company's material resources [2]

The application of indicators of the efficiency of the use of production resources for the diagnosis of the company's activity should be considered from the standpoint of system analysis. In this case, it is necessary to build a diagnostic system for resource provision of the enterprise, the components of which are:

- object of diagnosis;
- purpose of diagnosis;
- diagnostic criterion - an indicator (or a group of indicators - if a multi-criteria diagnosis is carried out), based on the numerical values of which it is possible to quantitatively assess the level of resource provision of the enterprise's activities;
- normalized value of the diagnostic criterion - such value of the diagnostic criterion indicator, with which its actual value is compared and a conclusion is made about the level of resource provision of the enterprise's activity;
- a set of classes of values of the diagnostic criterion indicator - a set of pairs of minimum and maximum values of the diagnostic criterion indicator, which form segments into which the value of this indicator can fall, which, in turn, qualitatively characterizes a certain level of resource provision of the enterprise's activity.

Under such conditions, it is possible to present the following main stages of diagnosing the effectiveness of the resource provision of the enterprise:

1. Justification of the product of the criterion indicator of diagnosis.
2. Normalization of the diagnostic criterion indicator.
3. Establishing a set of classes of the diagnostic criterion indicator.
4. Selection of a partial indicator of the efficiency of the use of production resources of the enterprise (production, material yield, fund yield, and other indicators).
5. Establishing an analytical relationship between the selected partial indicator of the efficiency of the use of production resources and the criterion indicator.
6. Setting the intervals of the values of the partial indicator of the effectiveness of the use of resources, which correspond to the sets of classes of the values of the diagnostic criterion indicator.

7. Gradation of the values of the partial indicator of resource utilization efficiency.

8. Evaluation of the company's ability to achieve higher values of the partial efficiency indicator of the use of its production resources.

This is based on the use of the concepts of the normalized value of the diagnostic criterion and the set of classes of values of the diagnostic criterion indicator (which can be, for example, the labor productivity indicator) and determining the limits of these classes on the basis of establishing a mutually unambiguous correspondence between them and the limits of the classes of values of a certain generalizing the indicator of the enterprise's activity (in particular, the indicator of the profitability of the fixed assets of the business entity).

For the purpose of a more detailed study of this issue, scientists will introduce an assumption about the independence of the change in the efficiency of the use of a certain type of production resources of the enterprise from the change in the applied volumes of these resources. Then, if this is an assumption specific case was fully fulfilled, then the efficiency of use of this resource would be a reliable indicator for comparing the effectiveness of the enterprise's activity in both temporal and spatial aspects. In other words, if the assumption about the independence of the change in the efficiency of the use of a certain type of production resources of the enterprise from the change in the applied volumes of these resources is correct, the indicator of such efficiency is an effective indicator of finding reserves for increasing the financial results of the enterprises.

However, the formulated assumption is not always fulfilled in practice and, at least, not in full. One of the reasons for this is that with an increase in the amount of resources used by the enterprise, the specific costs associated with their exploitation quite often change.

## **CHAPTER 2**

### **ANALYSIS OF THE PRODUCTION RESOURCES USE OF THE FARM «VIKTORIYA-92»**

#### **2.1 Company introduction**

Farm "Viktoriya-92" was created on the basis of the Law of Ukraine "On Farming", the Civil, Economic and Land Codes of Ukraine and carries out its activities on the principles of economic legal independence, full economic settlement, self-financing. Farm is considered created and acquires the rights of a legal entity from the date of its state registration.

Farm's location: Viktorivka village, Kozova district, Ternopil region.

Farm is a commercial organization created to carry out entrepreneurial activities for the production of agricultural products, as well as their processing, storage, transportation and sale and use of land provided for these purposes in accordance with the current legislation of Ukraine.

Farm "Viktoriya-92" is not responsible for the obligations of the state, its bodies, as well as other enterprises, organizations, institutions. It is a legal entity, has an independent balance sheet, settlement (current) and other bank accounts, a seal, a corner stamp with its name, forms, a trademark and other details. The state and its bodies are not responsible for the obligations of the farm.

The main goal of the farm is to make a profit through agricultural, industrial, and other activities, effective use of land, human, and material resources, processing, sales of products, and other activities.

The subject of activity of farm «Viktoriya-92» is:

- agricultural production and sale of commercial products;
- processing of agricultural products, both self-produced and purchased;
- wholesale and retail trade of self-produced and purchased goods, commercial trade;



- provision of services and consultations to individuals and legal entities regarding land cultivation, cultivation of agricultural crops, repair and maintenance of cars and agricultural machinery;

- supply to producers of equipment for processing agricultural products, machinery, spare parts for it, means of small mechanization and tools, vehicles, including trucks and cars; supply of herbicides, pesticides, fertilizers, seeds, other goods and material values of agricultural purpose;

- provision of soil cultivation services, cargo transportation, including agricultural purposes;

- other types of activities that are not prohibited by the current legislation of Ukraine.

Farm is a legal entity, has an independent balance sheet, its own fixed assets and working capital, current, currency and other accounts in bank institutions, a round seal and a corner stamp with its name.

Farm can have a brand and trademark, letterhead with its name. Farm activities are carried out on the basis and at the expense of own property, leased property and land shares.

Farm members are family members, relatives who have joined together to run a farm together, recognize and adhere to the provisions of the Farm Charter. Members of the farm cannot be persons who work in it under a labor agreement (contract).

Farm's activities are governed by the current legislation of Ukraine, the Charter of the economy, and other regulatory legal acts.

Farm "Viktoriya-92" is responsible for its obligations within the limits of the property it owns. Farm's property consists of fixed assets and working capital, as well as other tangible assets, the value of which is reflected in its balance sheet and belongs to it by the right of ownership, full economic commitment.

Sources of property formation of farm "Viktoriya-92" are:

- monetary and material contributions of the founder;
- income received by the farm from economic activity; loans from banks and other creditors;

- free and charitable contributions and donations of organizations, institutions, foreign legal entities and individuals, citizens;
- capital investments;
- the right to use land, water, other natural resources;
- other sources not prohibited by current legislation.

Farm "Viktoriya-92" has the right to sell and transfer to other enterprises, organizations, institutions and citizens, exchange, rent, provide free of charge for temporary use or loan the houses, buildings, equipment, vehicles, inventory, raw materials and other material belonging to it values, as well as write them off the balance sheet. These powers are exercised with the permission of the farm's owner.

The state guarantees the protection of farm property rights. Withdrawal by the state from the farm of its fixed assets, working capital and other property is carried out only in cases provided for by the legislation of Ukraine. Damages caused to the farm as a result of violation of its property rights by citizens, legal entities and state bodies shall be compensated by the farm according to the court decision.

Farm "Viktoriya-92" has the right to conclude civil law agreements (including a lease agreement) on property and land shares with persons, freely dispose of them.

In its activities, farm "Viktoriya-92" can use lands consisting of the owner's lands, as well as leased lands of both legal entities and individuals. A plot of land belonging to the head of a farm on the right of private ownership of land in accordance with the State act on private property, which is issued to the owner of the plot of land, is not the property of the farm. The farm pays rent for the use of land both in kind and in cash.

Interference in economic or other activities of farm "Viktoriya-92" by state or other bodies, officials is not allowed. Damages caused to the economy by illegal interference in its activities are subject to compensation at the expense of the culprits.

Farm "Viktoriya-92" independently determines the prospects of its development, disposes of products and profits that remain after paying taxes and other mandatory payments.

Farm harvests and processes agricultural products both of its own production and purchased from other producers, and can sell them to other consumers.

To ensure the purpose of its activity farm "Viktoriya-92":

- attracts funds and property of state, public and cooperative enterprises and organizations, foreign firms and private individuals on contractual basis;

- rents, leases and acquires ownership of premises, buildings, equipment and other fixed assets;

- concludes civil law agreements, contracts, agreements with any legal entities and individuals both on the territory of Ukraine and abroad, which relate to the production activities of the farm;

- buys goods and material resources necessary for carrying out economic activities in trade organizations, enterprises, citizens;

- independently sets the price for its own products and services. At the same time, the farm takes into account costs, demand, market conditions, or you use established price lists. Goods are sold on a contractual basis. Payment for products can be made both by cash and non-cash.

Farm "Viktoriya-92" carries out financial and economic relations on a contractual basis with enterprises, institutions and organizations of various forms of ownership.

To ensure the operation of the farm, the owner can form a statutory fund. The contribution can be made both in cash and in property. The statutory fund can be changed at the decision of the owner. An increase in the statutory fund of the farm can be carried out at the expense of additional contributions from the owner, as well as at the expense of farm profits.

The owner of the farm can transfer his ownership in whole or in part to third parties. When the ownership is transferred to a third party, the part of the rights and obligations that belonged to the owner is transferred at the same time.

Farm "Viktoriya-92" has the right to conclude agreements, acquire property and non-property rights, bear obligations, act as a plaintiff and a defendant in court.

Farm operates on the basis of self-sufficiency. All costs are covered by the farm from its own income and other sources not prohibited by law. Farm "Viktoriya-92" sells its products and property at prices and tariffs set independently or on a contractual basis, and in cases provided for by legislative acts of Ukraine, at prices and tariffs.

Farm "Viktoriya-92" is responsible for the timely and high-quality fulfillment of obligations to the customer, supplier and other natural and legal entities in the form prescribed by law. Farm makes all deductions to the budget in accordance with the current legislation of Ukraine.

The labor income of an employee is determined by an employment contract (contract) or an agreement and cannot be less than that established by the labor legislation of Ukraine. Labor income of all employees is subject to taxation in accordance with current legislation.

Farm independently plans its activities and determines development prospects in compliance with the current law. It records the results of its work, keeps accounting and statistical reports in the order established by the relevant regulatory documents, submits them to statistical and financial authorities.

Farm is obliged to:

- to protect the natural environment from pollution and other harmful effects;
- to compensate for damages caused by the irrational use of land and other natural resources with environmental pollution;
- to ensure the safety of production, sanitary and hygienic standards and requirements for the protection of the health of its employees, the population and consumers of products;
- to ensure the use of land plots for their intended purpose.

In its activities, the farm can use leased land of legal entities and individuals, as well as land owned by the founder and members of the farm on private property rights.

During the term of the land lease, the farm pays the established land taxes. Rent for the use of land is paid both in kind and in cash. The amount of this payment is established by the lessor and the lessee in the lease agreement.

Farm "Viktoriya-92" is obliged to the state to carry out a set of land protection measures, which are provided for by the Land Code of Ukraine. Land returned to the lessor must be in a condition suitable for agricultural use.

The main financial indicators of the farm "Viktoriya-92" in 2020-2022 are shown in table 2.1.

Table 2.1 - The main financial indicators of the farm «Viktoriya-92» in 2020-2022

Indicators	The value of the indicator by years (thousand hryvnias)			Growth rate, %,	
	2020	2021	2022	2021/ 2020	2022/ 021
Net income from product sales	95907,4	218671,2	195436,1	228,0	89,4
Other operating income	1380,1	4913,8	2740,6	356,0	55,8
Other income	125,4	184,0	350,6	146,7	190,5
Total income	97412,9	223769,0	198527,3	229,7	88,7
Cost of goods sold	73392,0	108481,9	115200,0	147,8	106,2
Other operating expenses	5901,4	7169,8	9013,7	121,5	125,7
Other expenses	3202,5	3291,2	10937,6	102,8	332,3
Total costs	82495,9	118942,9	135151,3	144,2	113,6
Financial result before tax	14917,0	104826,1	63376,0	702,7	60,5
Net profit	14917,0	104826,1	63376,0	702,7	60,5

In 2021, compared to 2020, there was an absolute increase in the amount of other operating income of the farm by 3,533.7 thousand hryvnias, while the growth rate was 228%. In the following year, this indicator decreased by 2,173.2 thousand hryvnias, while the growth rate was equal to 89.4% of the level of the previous year.

At the same time, there was a stable growth of other incomes of farm "Viktoriya-92". In 2021, compared to 2020, the growth rate of this indicator was 146.7%, and in 2022 it was 190.5%. The growth of the total amount of income in 2021 was equal to 229.7%, and in the following year their amount decreased by 25,241.7 thousand hryvnias, or by 11.3%.

In accordance with changes in the net income of the farm "Viktoriya-92", the cost of its sold products fluctuated in 2021. The increase in the value of this indicator in 2021 in absolute terms amounted to 35,089.9 thousand hryvnias, and the growth rate was equal to 147.8%.

In 2022, an increase in the cost of goods sold was observed by another 6,718.1 thousand hryvnias to the previous year. At the same time, the growth rate was equal to 106.2%.

Other operating expenses and other expenses of the farm "Viktoriya-92" increased in 2021-2022. The amount of total expenses in 2021 increased by 36,447.0 thousand hryvnias, and the growth rate was 144.2%. In 2022, the absolute increase in expenses was 16,208.4 thousand hryvnias, and the growth rate was equal to 113.6%.

The net profit growth rate in 2021 was 702.7% in 2021 and 60.5% in 2022 compared to the previous year.

Therefore, the main financial indicators of the farm "Viktoriya-92" in 2021 improved significantly compared to the previous year. In 2022 some deterioration of them was observed, although at the same time the enterprise worked profitably.

The structure of operating costs of the farm "Viktoriya-92" in 2022 is shown in Fig. 2.1.

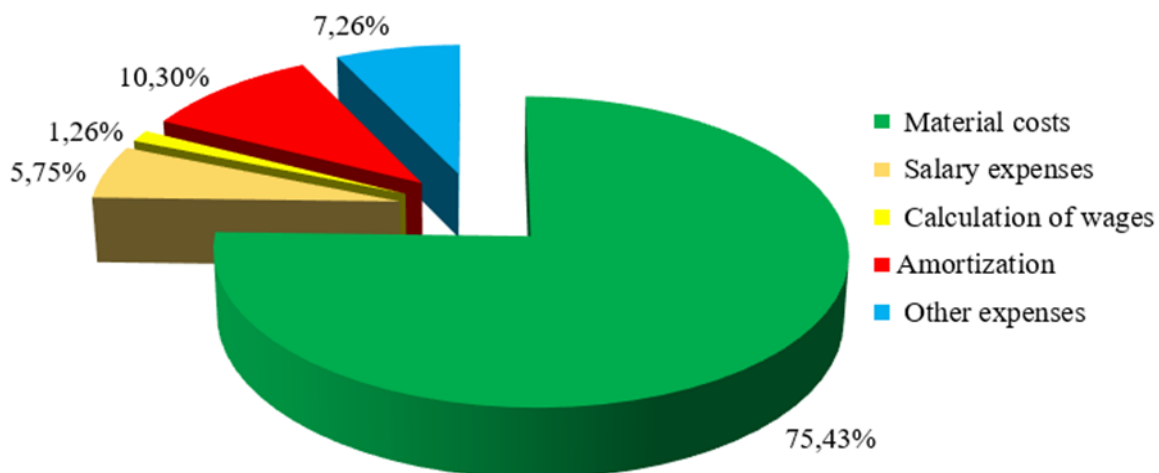


Figure 2.1 - The structure of operating costs of the farm "Viktoriya-92" in 2022

It can be seen from the figure that in 2022, material costs occupied the largest share in the structure of operating costs of the farm "Viktoriya-92", which amounted to 75.43%. The second place was taken by amortization, the third by other expenses, the fourth by salary expenses, and the fifth by calculation of wages.

## 2.2 Analysis of fixed assets and land resources of the farm «Viktoriya-92»

Among the production resources of the farm, an important role belongs to its main funds, because they are involved in the production processes.

Consider the dynamics of fixed assets of the farm "Viktoriya-92" in 2020-2022 (Fig. 2.2).

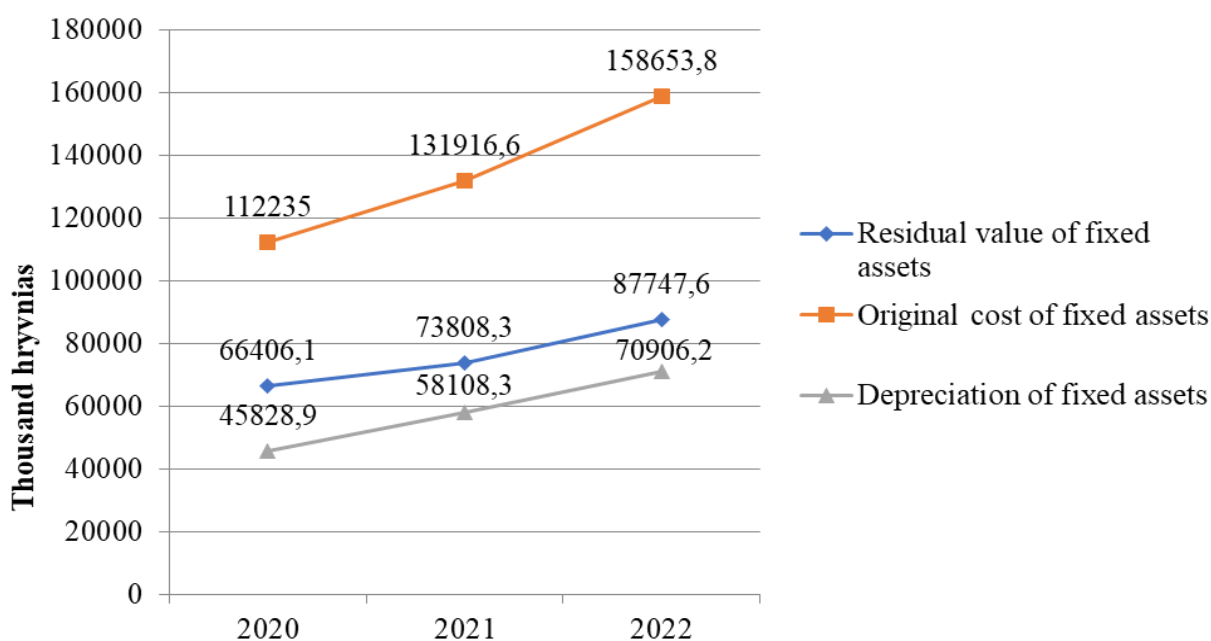


Figure 2.2 - Dynamics of fixed assets of the farm «Viktoriya-92» in 2020-2022 (the end of the year)

From the data in Fig. 2.2, it can be seen that the original and residual value of the main production assets increased in 2020-2022. In particular, the original value of fixed assets during this time increased by 41.3%, and the residual value - by 32.1%. This is positive and indicates the improvement of the resource provision of the farm by the means of agricultural production. The amount of depreciation of fixed assets also increased during this period (by 54.7%).

Let's also consider the dynamics of indicators characterizing the state of fixed assets of the farm "Viktoriya-92", namely suitability coefficient and depreciation coefficient during 2020 - 2022 (Fig. 2.3).

From fig. 2.3 we can see that the value of the suitability coefficient of the fixed assets of the "Viktoriya-92" farm in 2020-2022 exceeded the value of the depreciation coefficient. Therefore, the state of fixed assets of this enterprise is quite good. In the studied period, there was a drop in the suitability coefficient and an increase in the depreciation coefficient, which is a negative trend for farm. This was mainly due to a slowdown in the commissioning of new fixed assets.



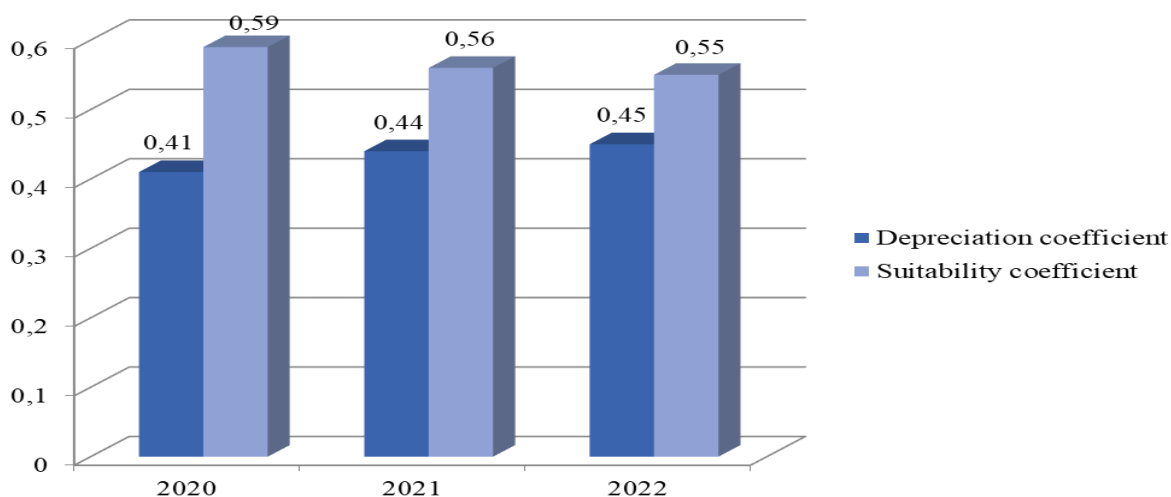


Figure 2.3- Dynamics of indicators of the state of fixed assets of the farm "Victoria - 92" in 2020 - 2022

To analyze the movement of the main productive assets of the farm «Viktoriya-92», we use the following indicators: coefficients of renewal, disposal, increase of fixed assets.

The coefficient of renewal of fixed assets (Kr) characterizes the intensity of renewal of fixed assets. It is calculated as the ratio of the value of fixed assets received during the year to the value of fixed assets at the end of the year:

$$Kr_{2020} = 12345,9 / 112235,0 = 0,11;$$

$$Kr_{2021} = 26383,3 / 131916,6 = 0,20;$$

$$Kr_{2022} = 36490,4 / 158653,8 = 0,23.$$

As a result of the analysis of the value of the coefficient of renewal of fixed assets of the farm «Viktoriya-92», it can be seen that it has significantly increased in 2020-2022, which is positive.

The coefficient of disposal of fixed asset characterizes the level of intensity of withdrawal of fixed assets from production. It is calculated as the ratio of the value of fixed assets, which were eliminated during a certain period, to their value as of the beginning of this period. Let's find the value of this coefficient (Kd) in the Viktoriya-92 farm in 2020-2022:

$$Kd_{2020} = 8139,4 / 108028,5 = 0,07;$$

$$Kd_{2021} = 6602,0 / 112235,0 = 0,06.$$

$$Kd_{2022} = 9753,2 / 131916,6 = 0,07.$$

The coefficient of growth of fixed assets (Kg) is intended to determine the level of their change at the enterprise. It can be found as the ratio of the growth value of fixed assets to their value at the beginning of the period:

$$Kg_{2020} = 4206,5 / 108028,5 = 0,04;$$

$$Kg_{2021} = 19691,6 / 112235,0 = 0,18;$$

$$Kg_{2022} = 26737,2 / 131916,6 = 0,20.$$

The coefficient of growth of the fixed assets of the enterprise took positive values and steadily increased in 2020-2022.

Graphically, the coefficients of renewal of fixed assets and the coefficient of disposal of fixed asset are displayed in Fig. 2.4.

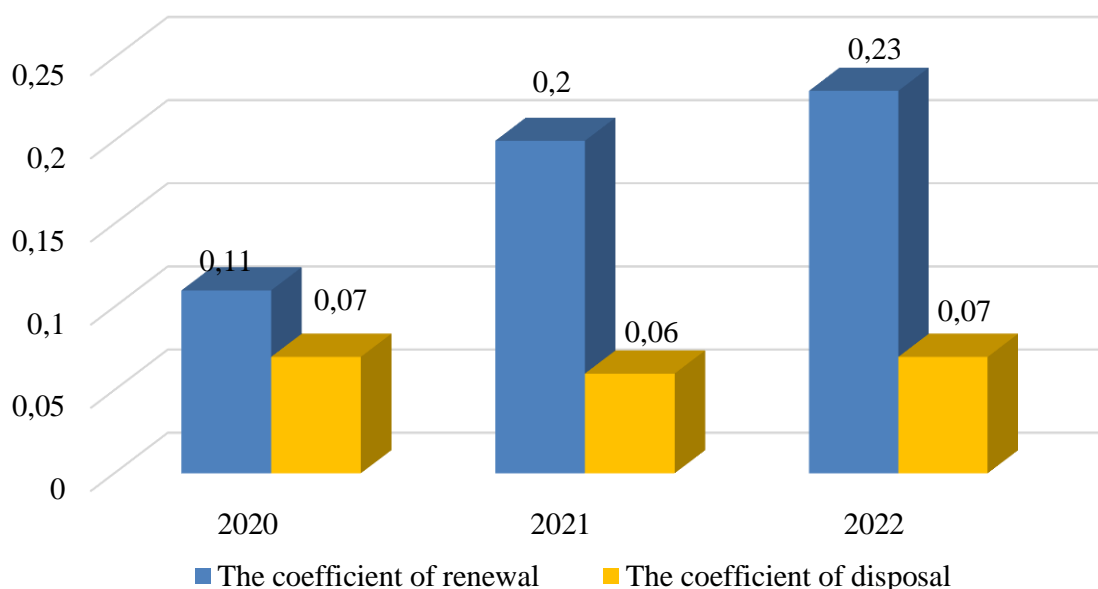


Figure 2.4 - Indicators of the movement of fixed assets of the farm «Viktoriya-92» in 2020-2022

From fig. 2.4 it can be seen that the coefficient of renewal of fixed assets of the farm "Viktoriia-92" grew during 2020-2022. The coefficient of disposal of fixed assets decreased slightly in 2021, but increased in the following year.

Therefore, the farm "Viktoriia-92" actively updated its fixed assets, due to which their condition significantly improved.

In order to characterize the efficiency of fixed assets the use of at the farm, we used the following indicators:

- ratio of fixed assets to number of employee;
- the fixed asset turnover ratio;
- ratio of fixed assets to capital employed;
- ratio of net profit to fixed assets.

The calculation of these indicators is given in table 2.2.

Table 2.2 - The indicators of efficiency of fixed assets use of the farm

Indicators	2020	2021	2022	Growth rate, %	
				2021/2020	2022/2021
1	2	3	4	5	6
1. Average annual of fixed assets, thousand hryvnias	69957,1	70107,2	80777,9	100,2	115,2
2. Net sales, thousand hryvnias	95907,4	218671,2	195436,1	228,0	89,4
3. Average number of employee	49	55	64	112,2	116,4
4. Average annual of capital employed	150529,3	214200,4	333212,3	1,42	1,56
5. Net profit, thousand hryvnias	14917,0	104826,1	63376,0	702,7	60,5

Continuation of table 2.3

1	2	3	4	5	6
6. Ratio of fixed assets to number of employee, thousand hryvnias/ employee (line 1/ line 3)	1427,7	1274,7	1262,2	0,89	0,99
7. The fixed asset turnover ratio (line 2/ line 1)	1,37	3,12	2,42	2,28	0,78
8. Ratio of fixed assets to capital employed (line 1/ line 4)	0,46	0,33	0,24	0,71	0,73
9. Ratio of net profit to fixed assets (line 5/ line 1)	0,21	1,49	0,78	7,09	0,52

From the data in the table. 2.2 we conclude that in 2020-2022, the ratio of fixed assets to the number of employees in the farm fell. This is explained by the fact that although the value of the main production assets increased during this period, the number of employees increased at an even greater rate.

The fixed asset turnover ratio, which shows how much output was produced by the enterprise for 1 hryvnia invested in fixed assets, increased significantly in 2021, but fell in 2022. The ratio of fixed assets to capital employed steadily decreased in 2020-2022 due to a significant increase in the average annual of capital. The ratio of net profit to fixed assets increased as much as seven times in 2021, and decreased in the following year, which is negative and indicates the deterioration of the financial performance of the use of fixed assets.

Therefore, the most effective use of the fixed asset was carried out by the farm in 2021. In 2022, this efficiency decreased.

The composition of land plots of the farm "Viktoriya-92" in 2022 was as follows:

- arable - 3198,8 hectare;
- pastures - 278,7 hectare;
- haymakers - 4,8 hectare.

The total land area of the farm "Viktoriya-92" in 2022 was 3482,3 hectare.

The structure of farm «Viktoriya-92» land in 2022 in percentages are shown in fig. 2.5.

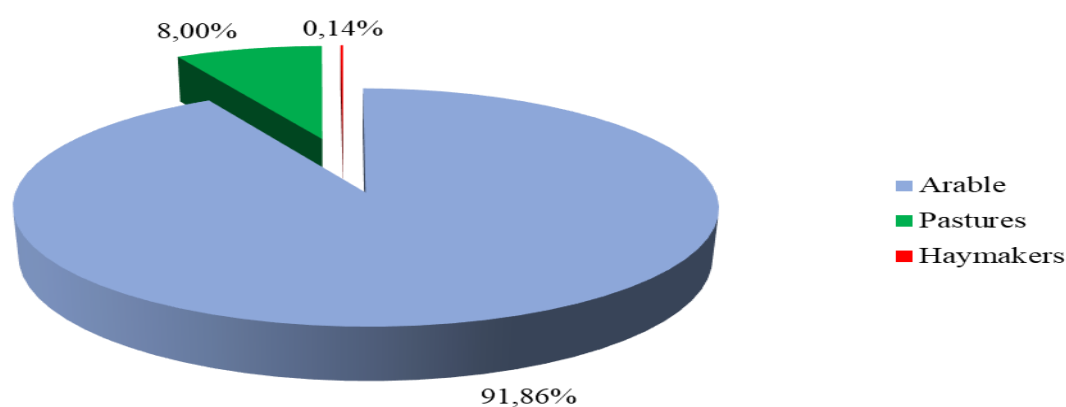


Fig. 2.5 - The structure of farm «Viktoriya-92» land in 2022

According to the data of fig. 2.5, the share of arable land in the land structure of the farm "Viktoriya-92" in 2022 was 91.86%, haymakers - 8.0%, and the remaining 0.14% was the area of pastures.

### 2.3 Analysis of material and labor resources of the enterprise

It is important to conduct an analysis of the use of material resources of farm «Viktoriya-92». Summarizing indicators of the efficiency of the use of material resources are:

- material turnover ratio;
- ratio of material costs to the cost of manufactured products;
- the specific weight of material costs in the cost structure of the enterprise.

Material turnover ratio is defined as a fraction of the cost of manufactured products divided by the amount of material costs. This indicator (MR) characterizes the output of products (services) from each monetary unit of consumed material resources:

$$MR=Q/CM, \quad (2.1)$$

де Q – production volume in monetary units;

CM – material costs.

We calculated this indicator in 2020-2022:

$$MR_{2020} = 95907,4/63590,1 = 1,51;$$

$$MR_{2021} = 218671,2/ 89187,3 = 2,45.$$

$$MR_{2022} = 195436,1/93688,4 = 2,09.$$

We calculated the ratio of material costs to the total cost of manufactured products. It shows how much material costs are incurred for each monetary unit of production volume:

$$MC = CM/Q. \quad (2.2)$$

$$MC_{2020} = 63590,1 / 95907,4 = 0,66;$$

$$MC_{2021} = 89187,3 / 218671,2 = 0,41.$$

$$MC_{2022} = 93688,4 / 195436,1 = 0,48.$$

We calculated the specific weight of material costs in the structure of operating costs (SW), expressed as a percentage. In 2020-2022, this indicator was equal to:

$$SW_{2020} = 63590,1 / 79293,4 \times 100\% = 80,2;$$

$$SW_{2021} = 89187,3 / 115651,7 \times 100\% = 77,1;$$

$$SW_{2022} = 93688,4 / 124213,7 \times 100\% = 75,4.$$

The results of the calculations of indicators of the efficiency of material resources use at the farm «Viktoriya-92» are given in table 2.3.

Table 2.3 - Indicators of the efficiency of material resources use at the farm «Viktoriya-92»

Indicators	2020	2021	2022	Growth rate, %	
				2021/2020	2022/2021
1. Production volume, thousand hryvnias	95907,4	218671,2	195436,1	228,0	89,4
2. Material costs, thousand hryvnias	63590,1	89187,3	93688,4	140,3	105,0
3. Operating costs, thousand hryvnias	79293,4	115651,7	124213,7	145,9	107,4
4. The specific weight of material costs in the structure of operating costs, %	80,2	77,1	75,4	96,1	97,8
5. Ratio of material costs to the production volume cost of manufactured products (line 2/ line 1)	0,66	0,41	0,48	62,1	117,1
6. Material turnover ratio (line 1/ line 2)	1,51	2,45	2,09	162,3	85,3

As the data in Table 2.3 show, the specific weight of material costs in the structure of operating costs during 2020-2022 was constantly decreasing, namely from 80.2% to 75.4%.

In 2021, compared to the previous year, ratio of material costs to the cost of manufactured products decreased. This indicator shows that in 2021 it accounted for 0.41 hryvnias material costs for each hryvnia of the produced products. This is by 0.25 hryvnias. less than in 2020. In 2022, the ratio of material costs to the manufactured products increased by 0.07 hryvnias, and its growth rate was 117.1%.

On the contrary, material turnover ratio increased significantly in 2021, its growth rate was 162.3%. In 2022, its value fell by 14.7%.

The above-mentioned indicators indicate a decrease in the specific consumption of material resources of the enterprise in 2021 and its some growth in 2022.

An important aspect of the study of the company's activity is the analysis of the supply of labor resources. The dynamics of the number of employees of the farm "Viktoriya-92" is shown in fig. 2.6.

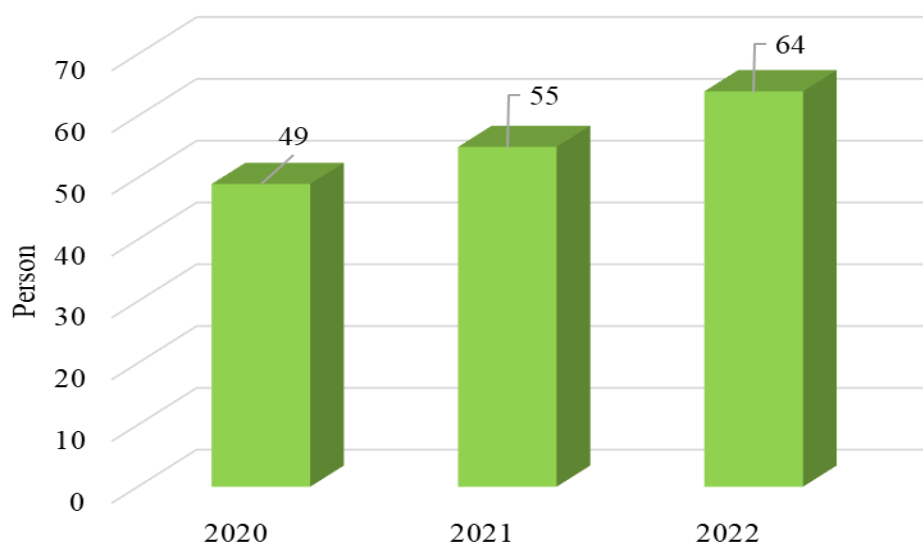


Figure 2.6 - Dynamics of the number of employees of the farm "Viktoriya-92"

Analysis of the dynamics of the number of employees of the farm "Viktoriya-92" shows that over the past three years the company has constantly increased the



number of its employees. In particular, in 2021, compared to the previous year, the number of personnel increased by 6 people, and in 2022 - by another 9 people.

We will analyze the structure of the company's employees shown in Fig. 2.7.

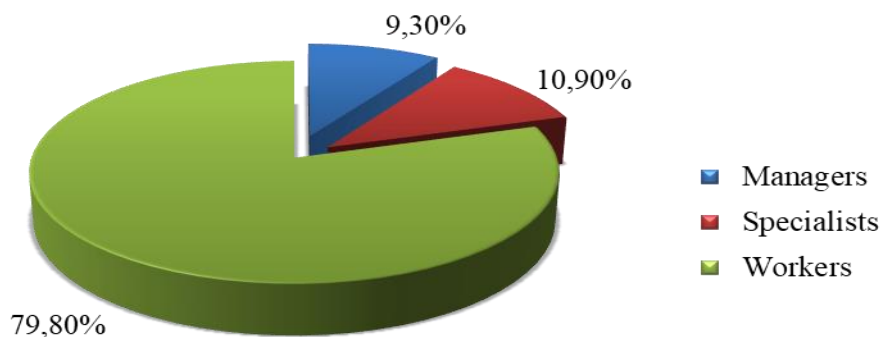


Figure 2.7 – The structure of workers of the farm "Viktoriya-92" by their types

So, the share of managers in the overall structure of the farm "Viktoriya-92" was 9.3%, specialists - 10.9%, and workers - 79.8%.

Indicators of the efficiency of the use of labor resources include:

- annual production of products by one employee, which is defined as a share of dividing the volume of production by the number of employees;
- specific time spent on manufacturing products;
- the share of labor costs in the total cost of manufactured products.

The calculation of these indicators is given in Table 2.4.

Table 2.4 - Indicators of the efficiency of labor resources use of the farm "Viktoriya-92"

Indicators	2020	2021	2022	Growth rate, %	
				2021/2020	2022/2021
1. Wage labour, thousand hryvnias	4586,4	5742,0	7142,4	125,2	124,4
2. Labour productivity (average annual output per worker), thousand hryvnias/ employee	1957,3	3975,8	3053,7	200,0	76,8
3. Ratio of labor costs to the cost of manufactured products	0,05	0,03	0,04	60,0	133,3

As we can see from Table 2.4, in 2021, the average annual output per worker increased by two times, which is positive and indicates an improvement in the use of labor resources of the farm "Viktoriya-92". Also, in this period there was a drop in ratio of labor costs to the cost of manufactured products which is positive. In 2022, the efficiency of the use of labor resources of the farm "Viktoriya-92" decreased due to a drop in production volumes.

## CHAPTER 3

### RECOMMENDATIONS

#### **3.1 Recommendations as for introduction of cultivation of a new variety of barley**

In order to improve the use of production resources of the "Viktoria-92" farm, we suggest using a new variety of spring barley "Variant", which is characterized by increased productivity.

Barley is one of the most common agricultural crops in agriculture. In the world structure of cultivated areas, barley ranks fourth after wheat, rice and corn, and in Ukraine it is second only to winter wheat. Such a wide distribution of barley is connected with its universal use. This is one of the main fodder crops. It has a balanced amino acid composition compared to other cereals, so it is suitable for fattening almost all farm animals. Barley grain is the main raw material for the production of beer, etc.

The instability of the gross production of spring barley grain in the economy of the farm in recent years was due to the significant impact of yield fluctuations. The reasons for low yield can be: the influence of unfavorable natural conditions, some violations of cultivation technology, namely: lack of scientifically based crop rotation; poor soil cultivation; lack or insufficient amount of fertilizers; low level of use of plant protection products; incorrect formation of the variety composition without taking into account the biological and technological features and requirements of the variety.

Barley seeds should have high germination, germination energy, growth strength, weight typical for the variety, etc. An important indicator of seed sowing quality is also its high purity from weed seeds and other impurities.

We propose to introduce the cultivation of a new variety of spring barley "Variant", which will make it possible to increase the yield of this grain crop. Direction of use of this variety of barley: grain, fodder.

This variety is medium-ripening, resistant to shedding, lodging, disease damage, and drought. Potential yield of 75-80 centner per hectare, high protein content. A feature of the variety is the high fodder qualities of the grain.

The stages of the technological process of growing barley are shown in fig. 3.1.

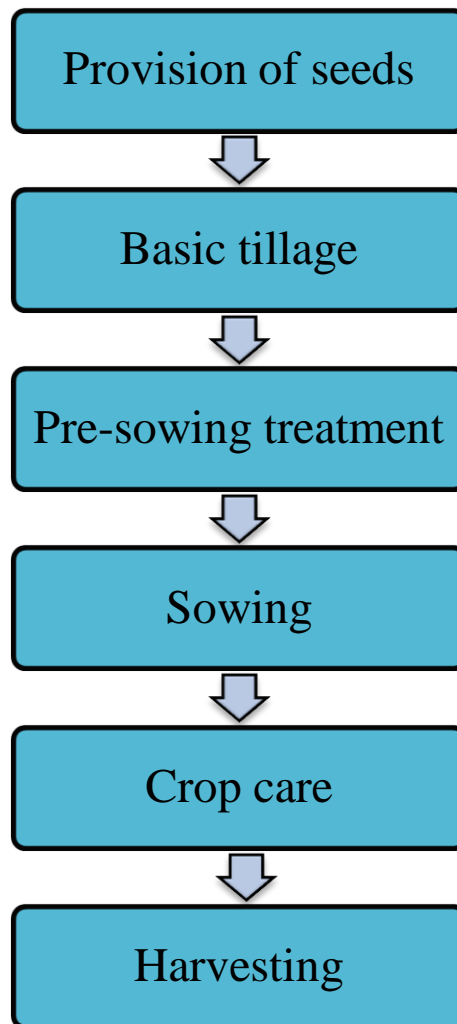


Figure 3.1 - Stages of the technological process of growing barley

When growing a new variety of barley «Variant», it is necessary to establish optimal technological measures that ensure obtaining a guaranteed harvest. It is necessary to introduce a new, improved technology for growing spring barley in the farm. It should provide for the creation of conditions under which the potential opportunities of culture are fully realized. Thanks to this, the quality indicators of barley grain will improve and its yield will increase. In particular, this is a clear

observance of agrotechnical measures, the terms of their implementation, and the use of the best predecessors.

Based on the conditions of the farm, its mechanized equipment, as well as taking into account the best experience of other farms in growing and harvesting the spring variety of barley, it is advisable to develop a promising mechanized process of growing and harvesting the barley variety. At the same time, factors affecting the technological process of growing this crop should be taken into account. To create optimal conditions for the growth and development of barley in different climatic zones, soil cultivation is used depending on its properties, sowing, predecessors and weeding.

Timely and high-quality tillage of the soil for sowing spring barley of the «Variant» variety should improve nutrition, preserve water reserves, reduce weediness of crops, prevent damage to plants by diseases and pests, create conditions for the appearance of friendly seedlings and the formation of a good harvest. Techniques of the main tillage of the soil, which are carried out in autumn under spring barley, include:

- disking (after the predecessor of corn);
- plowing to a depth of 20-22 cm.

We expect that the use of «Variant» barley seeds will provide the farm with a high and friendly yield, intensive formation of the root system, bush node and vegetative shoots. This will increase resistance to adverse winter conditions.

Uniformity of sowing belongs to the main agrotechnical requirements, which must be observed by the farm when sowing barley. It is also necessary to achieve a certain depth of wrapping the seeds in the soil prepared for sowing. This depth depends on the moisture content of the soil at the time of sowing and its physical properties, the biological characteristics of the plants and the size of the seeds.

Before the start of sowing, according to the technology of growing winter wheat in all zones of Ukraine, in a few days, seeds are treated with moisture (10 liters of water per 1 ton of grain) against various diseases, as a result of which crops produce a larger harvest.

Crop care plays a significant role in the technological process of growing and harvesting winter wheat. Observance of measures that increase the winter resistance of crops, careful care of crops are aimed at increasing the viability of plants and improving the formation of productivity.

The fight against weeds in the system of plant care occupies an important place, it is carried out in accordance with zonal scientifically based farming systems.

To obtain the planned harvest, it is necessary to apply both mineral and organic fertilizers in accordance with the planned application rates. With the increase of the harvest, when fertilizers were applied to all predecessors, grain quality indicators improved significantly. The large positive effect of fertilizer on wheat productivity is due to the fact that the soil contains nutrients in a poorly soluble form, and the physiological activity of the root system is not high enough. Therefore, the use of fertilizers for wheat ensures fairly high crop growth on all types of soil.

We will calculate the projected direct costs for the cultivation of spring barley of the «Variant» variety at farm «Viktoriya-92» (table 3.1).

Table 3.1 - Calculation of projected costs for the cultivation of spring barley at the farm "Viktoria-92"

Name of technological operations	Amount of expenses, thousand hryvnias
Purchase of barley seeds, its delivery	685,1
Basic tillage	316,5
Pre-sowing cultivation	100,4
Seed etching	47,4
Sowing	83,4
Purchase of fertilizers, their application	473,5
Purchase, application of herbicides and insecticides	84,6
Harvesting	169,6
In total	1960,5

Application of mineral fertilizers has a positive effect on winter hardiness, growth and development, accumulation of useful substances, more efficient use of water and grain products.

Caring for barley crops also includes the fight against plant pests (in particular, mice) and their various diseases.

The total gross harvest of grain "Variant" barley for 200 hectares of crops is calculated using the formula

$$GH = Pr \cdot S; \quad (3.1)$$

де Pr – productivity centner per hectare;

S – the area of crops, hectare.

$$GH = 75 \times 200 = 15000 \text{ centner, або } 1500 \text{ tons.}$$

Since the predicted price of "Variant" barley is UAH 4,614 per ton, then the net sales  $NS$  we calculate according to the formula

$$NS = To \cdot P; \quad (3.2)$$

$$Ns = 1500 \times 4,6 = 6921,0 \text{ thousand hryvnias}$$

Then the profit (Pr) of the farm, obtained from the cultivation of a new variety of barley, will be:

$$Pr = Ns - Pdc; \quad (3.3)$$

$$Pr = 6921,0 - 1960,5 = 4960,5 \text{ thousand hryvnias}$$

Indicators of the economic efficiency of the "Variant" barley cultivation project are given in Table 3.2.

Table 3.2 – Indicators of the economic efficiency of growing spring barley of the "Variant" variety

Indicators	Unit of measurement	Indicator value
1. Barley cultivation costs	thousand hryvnias	1960,5
2. Predicted yield	centner per hectare	80,0
3. Gross collection of grain	ton	1500,0
4. Projected revenue from the sale of barley	thousand hryvnias	6921,0
5. Profit from growing barley (based on taking into account direct costs)	thousand hryvnias	4960,5

So, according to the data in the table. 3.2 we draw conclusions about the economic feasibility of introducing the cultivation of spring barley of the "Variant" variety by the farm, as the profit from the cultivation of barley (on the basis of taking into account direct costs) will amount to 4 million 960.5 thousand hryvnias.

### **3.2 Recommendations as for diversification of the farm's activities**

In order to improve the use of the available resources of the farm, we suggest that he diversify his activities. For this purpose, we suggest introducing quail breeding in the farm. The fodder base for this can mainly be provided at the expense of grain grown on the farm.

The dietary and even medicinal properties of quail eggs are well known. After all, these eggs contain many useful substances, and they do not have cholesterol. The increased content of vitamins, minerals and essential amino acids with regular consumption of eggs leads to their accumulation in the body, and, therefore, to an increase in the immune defense of the body.

Quail eggs are in demand because they strengthen immunity, normalize the activity of the gastrointestinal tract, cardiovascular system. Constant acute respiratory



diseases are a problem for many families. The root cause of recurring and long-lasting diseases is, as a rule, lowered immunity. It is the intake of quail eggs that can reduce the frequency of acute respiratory infections in people who often get sick up to 5 times. And even if a person does get sick, the disease will progress much more easily.

Quails do not get sick with bird flu, are able to breed and lay eggs in very limited conditions of keeping, guaranteeing their owner a high profitability of the business.

Quails have long been popular. Their eggs are used not only for medical and culinary purposes, but also as raw materials in perfumery. In addition, they can be stored three times longer than chicken eggs.

Quails start laying at the age of two months, but their productivity drops by a year, so the bird needs to be updated. It is profitable to trade not only final products, but also young animals. In addition to eggs, birds actively produce droppings, so that effective fertilizer is produced.

Quails do not get sick with bird flu, can breed and lay eggs in very limited conditions of keeping and guarantee their owner a high profitability of the business.

Domesticated female quails have lost their brooding instinct, so artificial egg incubation is used to produce young. The incubation period of quail eggs is 17 days (for chickens - 21 days). The presence of an incubator on the farm will make it possible to increase the livestock and, accordingly, update your herd.

A significant advantage of quail breeding is compact production. We predict that the total area of the premises of the quail farm will be 150 square meters. It will include premises that will be used for:

- keeping quails;
- incubation of birds;
- keeping chickens;
- storage and preparation of fodder.

The forecasted capital costs for the organization of quail breeding are given in the table. 3.3.

Table 3.3 – Projected capital costs for the introduction of quail farming

Type of expenses	Sum, hryvnias
1. Construction of a birdhouse	352313,1
2. Summarizing communications	70462,8
3. Arrangement of space heating	15750,0
4. Purchase of cages for quails, drinkers, feeders	103500,0
5. Purchase of an incubator	24300,0
6. Brooders for raising quail chicks	14805,0
7. Inventory for working and cleaning the poultry house	2250,0
8. Refrigerators and freezers for storing quail products	96300,0
9. Capacity and equipment for storage and transportation of compound feed (tanks, barrels, carts, etc.)	4592,3
In total	684273,2

So, the projected capital costs for organizing quail breeding will amount to 684,3 thousand hryvnias.

Successful breeding of poultry requires compliance with the correct composition of feed and a constant temperature. To keep quails in the room, it is necessary to maintain a temperature of about 16-22°C throughout the year, as well as a relative humidity of 60-70%. If you violate the mode of keeping quails, the bird will start to get sick.

The amount of forecasted current costs for raising quail by the farm is shown in the table. 3.5.

Table 3.5 – Estimated current costs of quail breeding by the Viktoriya-92 farm

Type of expenses	Sum, hryvnias
1. Purchase of quails	54000,0
2. Fodder	445050,0
3. Costs for product packaging	135000,0
4. Lighting, heating of premises	57870,0
5. Expenses for workers' wages	267300,0
6. Calculation of wages	100237,5
6. Veterinary service	22950,0
7. Depreciation	73438,2
8. Sales expenses	139500,0
In total	1295345,7

So, the total current expenses of the farm for raising quail will amount to 1295,3 thousand hryvnias.

An important task of the farm when raising quails is to establish the sale of products. Therefore, it is necessary to study the sales market, to establish work with trade networks. Most often, quail eggs are sold in stores and supermarkets. Also, quail meat is constantly supplied to restaurants. You can also try to establish sales in children's homes, sanatoriums, holiday homes. After all, they have medicinal and dietary properties. Part of the farm's products can be distributed among regular private customers.

The expected financial and economic results of the enterprise from the production and sale of quail products are shown in table 3.6.

Table 3.6 – Expected financial and economic results of the "Viktoriya-92" farm from the introduction of quail production, thousand hryvnias

Indicators	Sum, th. hryvnias
Net income from services	1995,8
Full production cost	1482,3
Profit from ordinary activities before taxation	513,5
Income tax from ordinary activities	92,4
Net profit	421,1

We will calculate the amount of cash flow of the proposed project. Annual depreciation will amount to 73.4 thousand hryvnias.

The calculation of discounted cash flows from project implementation is given in Table 3.7.

Table 3.7 - Calculation of discounted cash flows from the introduction of quail production, thousand UAH

Years	Net profit, thousand hryvnias	Depreciation, thousand hryvnias.	Cash flow, thousand hryvnias.	Discount factor (R=20%)	Discounted cash flow, thousand hryvnias.
$i$	$NP_i$	$A_i$	$CF_i=NP_i+A_i$	$1/(1+R)^i$	$CF_i/(1+R)^i$
1	421,1	73,4	494,5	0,8333	412,1
2	421,1	73,4	494,5	0,6944	343,4
3	421,1	73,4	494,5	0,5787	286,2
4	421,1	73,4	494,5	0,4823	238,5
5	421,1	73,4	494,5	0,4019	198,7
In total					1478,9

From the data in this table, we conclude that the present value of future cash flows is 1 million 478.9 thousand hryvnias.

We will calculate the net present value of the project from the introduction of quail production. For this, we will use the net present value (NPV) indicator. It is found as the difference between the sum of the present value of future cash flows of this project and its initial investment:

$$\text{NPV} = 1478,9 - 684,2 = 794,7 \text{ thousand hryvnias.}$$

Since  $\text{NPV} > 0$ , the project can be accepted.

For a more detailed assessment of the efficiency of capital investments, we will calculate the profitability index:

$$\text{RI} = 1478,9 / 684,2 = 2,2.$$

Since  $\text{PI} > 1$ , we accept the project.

The discount payback period is the period for which the initial investment is recouped. According to our calculations, the initial investment will be recouped in 1 year and 7 months.

The results of the calculations are summarized in Table 3.8.

Table 3.8 – Indicators of the efficiency of capital investments of the project of introducing the production of quail products by the farm

Number of order	Indicator	Unit of measurement	Indicator value
1	Initial costs	thousand hryvnias	684,2
2	Project period	years	5
3	Net present value	thousand hryvnias	794,7
4	Profitability index	-	2,2
5	Discounted payback period	years	1,8

The results of the analysis of the performance indicators of the implementation of this project showed that it is advisable to accept the project for the implementation of quail production, since its net present value is 794.7 thousand hryvnias, the profitability index is 2.2, and the discount payback period is 1.8 years. As we can see from the above results of the analysis of the efficiency indicators of the implementation of this project, it is advisable to accept the project of implementation of quail production.

### **3.3 Recommendations as for implementation of the processing of agricultural products of the farm**

Currently, farm "Viktoriya-92" produces agricultural products and provides agricultural services. We propose to process the products of this enterprise by setting up the production of bakery products and their sale.

The technological process of manufacturing bakery products includes the following stages:

- 1) reception and storage of raw materials;
- 2) preparation of raw materials;
- 3) preparation of dough;
- 4) dividing the dough into pieces and proofing it;
- 5) baking bread;
- 6) storage and release of bread.

Flour should be stored in containers or bags. Before submission to production, if necessary, separate batches are mixed to improve baking properties, sifted through sieves to separate foreign impurities and passed through a device for removing impurities. Salt is stored in bags or in bulk in a separate room. Pressed yeast is stored in the refrigerator. They are crushed before use. In a special yeast mixer, a yeast suspension is prepared in warm water, which is used to prepare the dough.

Water is stored in cold and hot water tanks. Before preparing the dough, cold and hot water are mixed in a certain proportion to bring it to the required temperature.

Sugar is stored in bags. When preparing for production, it is dissolved in water and filtered. Solid fats are stored in boxes or barrels, liquid fats are stored in containers. Before use, solid fats are melted and filtered through sieves of a certain size. Liquid fats and oils are also filtered.

Batches of flour in certain proportions are fed into the equipment for kneading. Bakeries use kneading machines with rolling bowls. Dough, sourdough, and foam are mixed in bowls. After kneading, the dough is taken to special chambers for fermentation. The use of a mechanized dough preparation process is of great importance.

The dough from the dough enters through the receiving hopper into the machine for dividing the dough, after which the rounded pieces of dough enter the conveyor cabinet for pre-proofing. The final proofing of dough blanks is carried out in closed conveyor cabinets. Duration of exposure is 30-100 minutes at a temperature of 40-45 degrees Celsius.

The quality of bakery products is regulated by regulatory and technical documentation for these products. Quality indicators are laid down in relevant standards or technical conditions and must be fulfilled unconditionally.

Bread is evaluated by organoleptic characteristics, such as appearance, correctness of shape, color of the upper crust, state of the crumb, and looseness, taste, smell, as well as by physicochemical indicators, such as moisture, acidity, porosity. The content of sugar and fat is also checked, if they are provided for in the recipe. The crumb of the bread should be well baked, elastic, not brittle, evenly fluffed. The taste and smell should be characteristic for each type of product.

One of the important consumer qualities of bread is its freshness. Changes in the quality of bread during storage are associated with the aging of its high polymers — proteins and starch.

To implement the production of bakery products, it is necessary to purchase technological equipment and equipment, which includes: molding machine, dough kneading machine; dough sifter; stand for automatic measurement of flour, dough divider; food cooking boiler; steam boiler; convection oven; stamping machine and

others. Initial costs of the project for the purchase of equipment will amount to 855.6 thousand hryvnias.

The expected financial and economic results of the enterprise from the introduction of production and sale of bakery products are shown in table 3.10.

Table 3.10 – Expected financial and economic results of the enterprise from the introduction of production and sale of bakery products, thousand hryvnias.

Indexes	Thousand hryvnias
Net income	1227,3
Production cost	1010,1
Profit before tax	217,2
Tax	39,1
Net profit	190,9

We will calculate the amount of cash flow, taking into account that the project implementation period will be 5 years.

The calculation of discounted cash flows from project implementation is given in Table 3.11.

Table 3.11 - Calculation of discounted cash flows from the implementation of production and sale of bakery products, thousand hryvnias.

Year $s$	Net profit, thousand hryvnias	Depreciatio n, thousand hryvnias.	Cash flow, thousand hryvnias.	Discount factor ( $R=20\%$ )	Discounted cash flow, thousand hryvnias.
$i$	$NP_i$	$A_i$	$CF_i=NP_i+A_i$	$1/(1+R)^i$	$CF_i/(1+R)^i$
1	190,9	171,1	362,0	0,8333	301,7
2	190,9	171,1	362,0	0,6944	251,4
3	190,9	171,1	362,0	0,5787	209,5
4	190,9	171,1	362,0	0,4823	174,6
5	190,9	171,1	362,0	0,4019	145,5
Всього					1082,7



So, the present value of future cash flows is 1082,7 thousand hryvnias.

Let's calculate the net present value of the project of implementing the production of bakery products:

$$NPV = 1082,7 - 855,6 = 227,1 \text{ thousand hryvnias.}$$

Since  $NPV > 0$ , the project can be accepted.

For a more detailed assessment of the efficiency of capital investments, we will calculate the profitability index:

$$PI = 1082,7 / 855,6 = 1,27.$$

Since  $PI > 1$ , we accept the project.

It is also necessary to determine the discount period of payback as the period for which the initial investment will be returned. Calculations showed that the initial investment will be recouped in 3.5 years.

We summarize the results of the calculations in Table 3.12.

Table 3.12 - Indicators of the efficiency of capital investments of the project of introducing the production of quail products by the farm

Number of order	Indicator	Unit of measurement	Indicator
1	Initial costs	thousand hryvnias	855,6
2	Project period	years	5
3	Net present value	thousand hryvnias	227,1
4	Profitability index	-	1,27
5	Discounted payback period	years	3,5

The calculation of the net present value of the project of implementing the production of bakery products showed that it will be equal to 227,1 thousand

hryvnias, the profitability index is 1.27, and the discount payback period is 3.5 years. Therefore, it is advisable to implement the project of implementing the production and sale of bakery products.

## **CHAPTER 4**

### **OCCUPATIONAL HEALTH AND SAFETY IN EMERGENCIES**

#### **4.1 Occupational health at work**

When the health of the employees are not held with great importance, it leads to the slowdown of productivity thereby costing the organization in resources, time and even financially.

Occupational health should be very important in the setting up of the work environment/space , making sure there are no threats to the employee's health and also setting up resources and plans to combat in cases where those risks/threats cannot be prevented/avoided. As when such things are not put into consideration it puts the organization in unavoidable legal and financial situations.

Occupational health is about how work affects a person's health and how someone's health affects their work. Occupational health's main aim is to promote and maintain the health and wellbeing of employees, with the aim of ensuring a positive relationship between an employee's work and health. Having access to specialist occupational health practitioners is key to unlocking the benefits for employees and organizations.

Confidentiality and consent are central to the relationship between occupational health professionals and employees, and it's essential that employers uphold the legal and ethical guidelines surrounding that confidentiality. The factsheet concludes with a look at pre-employment health queries and what is legally permissible.

Businesses/ Organizations must recognise that managing employees' health is just as important as controlling financial and capital resources.

The objectives of occupational health in the workplace are to:

- develop a healthy workplace culture, contribute to the business' success and assist with compliance requirements;

- provide early intervention to help prevent workers from being absent for health reasons;
- help improve opportunities for people to recover from illness while at work;
- promote individual health and wellbeing and enhance employee wellbeing and engagement;
- ensure healthy workplaces to protect people from harm.

An employer might want to use occupational health to help:

- when an employee is struggling with their physical or mental health;
- make the right reasonable adjustments for disabled people at work;
- when an employee has been off sick for a long time or is returning to work after sickness absence;
- reduce the amount of time people need to take off sick;
- keep to other health and safety regulations;
- control risks to mental health, such as too much pressure at work, bullying and harassment.

Occupational health could be through the employer's own occupational health service or an outside agency. When an employee's health could affect their job or be affected by the work they do, their employer can ask them if they'll agree to an assessment with an occupational health adviser.

The occupational health adviser carries out an assessment of the employee and reports back to the employer. This can help the employer understand what their employee needs to: feel better, return to work, do their job, avoid anything that could cause further health or absence issues.

The occupational health adviser might ask the employee about: their health; any treatment they're having; any concerns they have about returning to work. Sometimes the occupational health adviser might need to get more information from the employee's doctor. In this case, the employee should be told the reason and asked to sign a consent form.

The following elements are components of an effective Occupational health management system. The scope and complexity of the system may vary, depending on the size and hazards of the workplace and the nature of the work performed.

1. Management leadership and commitment.

Leadership and commitment by senior management provides the vision, establishes policy, sets goals, and provides resources to lead and support the implementation of the occupational management programs and system.

2. Safe work procedures and written instructions.

Safe work procedures and practices ensure that everyone in the organization knows their responsibilities and are able to perform their duties adequately and efficiently. There should be safe work procedures on an organizational level, such as how to conduct a risk assessment, as well as on a worker level.

3. Health and safety training and instruction.

Everyone in the workplace — from senior management to frontline workers — needs to understand their responsibilities when it comes to implementing and maintaining a healthy and safe workplace. Senior management should understand their role in establishing policies and continually driving the OHS management system and programs. Employers must ensure that workers are trained, qualified, and competent to perform their tasks. Supervisors must provide adequate instruction and oversight to workers so they can safely perform their work. And workers need to work safely, according to how they were trained.

4. Identifying hazards and managing risk. Managing the risk in the workplace includes identifying hazards, assessing the risks those hazards present, and controlling the risks to prevent your workers from getting injured.

5. Inspection of premises, equipment, workplaces & work practices. Workplace inspections can help to continually identify hazards and prevent unsafe working conditions from developing.

6. Investigation of incidents. Conducting incident investigations helps identify immediate, and root causes of unsafe conditions. It also identifies ways to prevent similar incidents from happening in the future. The Occupational Health and Safety

Regulation has specific requirements for incident investigation documentation and reporting that employers are required to meet.

7. Program administration. Regularly assessing how well the organization is doing when it comes to meeting its health and safety goals is essential to improving your occupational health management system. Maintaining accurate records of Occupational health management system activities will provide useful information to help continually improve.

8. Joint health and safety committee & representatives. Joint health and safety committees and health and safety representatives assist the organization by bringing together employers and workers to jointly identify and resolve health and safety issues in your workplace. They also participate in developing and implementing Occupational health management system.

9. Occupational health and safety programs. Occupational health and safety programs are an essential part of OHS management system.

10. System audit. The auditor reviews key aspects of your OHS management system to ensure that its quality and effectiveness meet the expectations of the COR program standards and guidelines.

#### **4.2 Organization of civil safety at the enterprises**

Paying attention to the safety development of corporate employees is a necessary measure for corporate economic development. The sustainable environmental strategy of enterprise development can well control the risk factors that endanger the occupation of enterprise employees, and it is conducive to the health and safety development of enterprise employees and enterprises. If the enterprises focus on economic interests and ignore the safety and health of employees, resulting in an increase in the occupational morbidity rate of employees. Occupational insecurity of corporate employees will reduce the work efficiency of employees. In turn, it will affect the economic development of the enterprise.

Every enterprise should take the safety of their workers/ employees serious because the employees are the heart and soul of every organization/enterprise, and when their safety is compromised, they do not work efficiently and they often tend to be absent thereby slowing down the goals of the enterprise or even causing a financial setback.

Civil safety can be defined as a set of actions and measures undertaken to ensure that citizens of a community are secure from harm, injury, danger or risk. In this case they are actions taken by an enterprise to ensure the safety of its employees and secure them from harm, injury and danger. It also provides training and assessment services to increase people's health and safety, knowledge and abilities.

The director of the company is responsible for civil safety readiness and organization in a company. The employee's safety can be improved by setting up a civil safety system to help prevent and manage the risks.

The purpose of the civil safety system:

1. To help the directors, if the extreme situations are imminent or they have already emerged, to avoid them or to incur as less damage as possible.
2. To maintain peace, to preserve the life, possessions of his or his employees and environment.
3. To ensure the optimal use of the company's material resources if extreme situations are impending or they have already emerged.
4. To prepare the employees for hands-on actions, if the extreme situations are impending or they have already emerged.
5. To warn and inform the employees about the impending or emerged extreme situation, possible outcomes, outcome removal means and safety measures.

Though there has been an overall improvement in the workplace where employee health and safety are concerned, hazards continue to pose a major threat (slips and falls, musculoskeletal disorders, falling objects, loud noises, vibrations).

Many of these threats can be controlled with appropriate mitigation measures but require a proactive approach to address the risk before it leads to an accident. Therefore, to bring down safety incidents, companies need to establish standard

operating procedures related to potential hazards and sensitize employees to the associated risks. Additionally, the employees should be trained to look out for safety observations and must have a readily available digital tool to report the same to the safety team.

II. An extreme situation is a state, which forms due to the environmental, technical, ecological, social reasons or actions of war and it conditions a quick and huge danger to the human lives or health, possessions, environment or it causes death, injury or material losses.

The reasons of extreme situations:

1. Environmental reasons are clear changes of climate conditions, which cause elemental disasters (a very heavy storm, squall, freezing rain, snow storm, heat wave), mass forests and peat bogs fires, geologically dangerous phenomenon, very dangerous or mass epidemics (humans, animals, plants);

2. Technical reasons are various technological processes' malfunctions, which cause fires, explosions, chemical and radioactive pollutants get into the environment, buildings collapse, various vehicle accidents occur, energetics (electricity, heat, gas, utility's emergencies) and other extreme events specific to industrial objects and communications occur;

3. Ecological reasons are those, which produce the changes in the condition of the land, atmospheric composition and characteristics and in hydrosphere's condition (pollution of the environment's air, water and soil; nuclear accident, pollution with oil products);

4. Social reasons are mass riots and unrests, theft of electronic data or malfunction, taking a person hostage, diversions, acts of terrorism, mass influx of foreigners, as well as actions of war in the territory of Lithuania or a neighbour country;

5. Other extreme event is a high flammability, a dangerous find, the destruction of a cultural object, the disorder of people's health, changes in psychological condition, cases of death due to the contamination, poisoning or physical conditioning.



It is the duty of the management of enterprise to ensure that all employees undergo civil safety trainings and classes to enable them avoid risk, harm and danger. The type of trainings required varies for different business industries/field, civil safety training exercises include fire safety training, First aid training, training in the safe use of equipments, hazards and their control measures, proper handling and working with chemicals,etc.

The paperwork produced as part of the risk assessment is intended to assist organizations to communicate and manage the risks in their business. For most this does not need to be a complex exercise – just note the main points down about the significant risks and what was concluded. Arrangements should be established and maintained for preventive and corrective actions resulting from safety management system performance monitoring and measurement, safety management system audits and management reviews. These arrangements should include:

- identifying and analysing the root causes of any non-conformities with relevant occupational safety regulations and/or OSH management systems arrangements;
- initiating, planning, implementing, checking the effectiveness of and documenting corrective and preventive action, including changes to the occupational safety management system itself.

## CONCLUSIONS

The farm «Viktoriya-92» operates in the field of agricultural production. In particular, it grows wheat, barley, corn, etc.

In 2021, compared to 2020, there was an absolute increase in the amount of other operating income of the farm by 3,533.7 thousand hryvnias, while the growth rate was 228%. In the following year, this indicator decreased by 2,173.2 thousand hryvnias, while the growth rate was equal to 89.4% of the level of the previous year.

At the same time, there was a stable growth of other incomes of farm "Viktoriya-92". In 2021, compared to 2020, the growth rate of this indicator was 146.7%, and in 2022 it was 190.5%. The growth of the total amount of income in 2021 was equal to 229.7%, and in the following year their amount decreased by 25,241.7 thousand hryvnias, or by 11.3%. The net profit growth rate in 2021 was 702.7% in 2021 and 60.5% in 2022 compared to the previous year. Therefore, the main financial indicators of the farm "Viktoriya-92" in 2021 improved significantly compared to the previous year. In 2022 some deterioration of them was observed, although at the same time the enterprise worked profitably.

Dynamics of fixed assets of the farm «Viktoriya-92» shows that the original and residual value of the main production assets increased in 2020-2022. This is positive and indicates the improvement of the resource provision of the farm by the means of agricultural production. The amount of depreciation of fixed assets also increased during this period.

We spent the dynamics of indicators of the state of fixed assets of the farm "Victoria - 92" in 2020 – 2022. It showed that the value of the suitability coefficient of the fixed assets of the "Viktoriya-92" farm in 2020-2022 exceeded the value of the depreciation coefficient. Therefore, the state of fixed assets of this enterprise is quite good. In the studied period, there was a drop in the suitability coefficient and an increase in the depreciation coefficient, which is a negative trend for farm. This was mainly due to a slowdown in the commissioning of new fixed assets.

An analysis of the use of material resources of farm «Viktoriya-92» was conducted by us. In 2021 the efficiency of material resources use at the farm «Viktoriya-92» increased, and in 2022 fell. Analysis of indicators of the efficiency of labor resources use of the farm "Viktoriya-92" showed that the average annual output per worker increased by two times in 2021, which is positive and indicates an improvement in the use of labor resources of the farm "Viktoriya-92". Also, in this period there was a drop in ratio of labor costs to the cost of manufactured products which is positive. In 2022, the efficiency of the use of labor resources of the farm "Viktoriya-92" decreased due to a drop in production volumes.

In order to improve the use of production resources of the "Viktoria-92" farm, we suggest using a new variety of spring barley "Variant", which is characterized by increased productivity. Profit from growing barley (based on taking into account direct costs) - 4 million 921 960,5 thousand hryvnias.

In order to improve the use of the available resources of the farm, we suggest that he diversify his activities. For this purpose, we suggest introducing quail breeding in the farm. The fodder base for this can mainly be provided at the expense of grain grown on the farm. It is advisable to accept the project for the implementation of quail production, since its net present value is 794.7 thousand hryvnias, the profitability index is 2.2, and the discount payback period is 1.8 years. As we can see from the above results of the analysis of the efficiency indicators of the implementation of this project, it is advisable to accept the project of implementation of quail production.

We propose also to process the products of this enterprise by setting up the production of bakery products and their sale. The expected financial and economic results of the enterprise from the introduction of production and sale of bakery products are shown in slide. The calculation of the net present value of the project of implementing the production of bakery products showed that it will be equal to 227,1 thousand hryvnias, the profitability index is 1.27, and the discount payback period is 3.5 years. Therefore, it is advisable to implement the project of implementing the production and sale of bakery products.

## REFERENCES

1. Nazaruk, O. (2016). The content of category «industrial resources of the enterprise» in economic research. *Scientific Bulletin of the Uzhhorod National University*. 6 (2). p. 116-118.
2. Skybinska, Zoriana; Gryniv, Tetiana (2019). Analysis of material resources usage of the company. The institute of accounting, control and analysis in the globalization circumstances. *International scientific journal*. Issue 3-4, p. 68-78.
3. Matrosova, L. M.; Noskova, S. A. (2011). Theoretical foundations of the concept "production resources of the enterprise" and their classification. *Economic Herald of Donbass*. 2(24). p. 207-21.
4. Gaponenko, O.; Mashchenko, M.; Klimenko, O.; Stepanenko, N.; Sergienko, O. (2021). Management of the production resources of enterprise based on financial motivation of the personnel: theoretical aspect. №1 (36). URL: <https://fkd.net.ua/index.php/fkd/article/view/3110/3160>
5. Yemelyanov, O.; Petrushka, T.; Symak, A. (2022). Efficiency indicators of production resources use as diagnostic tools of the enterprises' economic activity. *Economy and society*. (36). URL: <https://economyandsociety.in.ua/index.php/journal/article/view/1146/1104>
6. Rina, R. (2018). Financial Incentives: The Impact on Employee Motivation. *Academy of Strategic Management Journal*, 17/6. URL: <https://www.abacademies.org/articles/financial-incentives-the-impact-on-employee-motivation-7728.html>
7. Basu, S., & Kiernan, M. A. (2016). Simulation modeling framework to optimize programs using financial incentives to motivate behavior change. *Medical Decision Making*, 36 (1), 48—58.
8. Health Service (HSE). (2022, March). Management referral (information for employees) - Staff site. [healthservice.ie](https://www.healthservice.ie). Retrieved November, 2022, from

<https://healthservice.hse.ie/staff/benefits-and-services/occupational-health/management-referral-information-for-employees/>

9. Robbins, S. (2014). *Organizational behavior: Concepts, controversies, and applications*. San Diego: San Diego State University: Prentice Hall International. URL:

[https://www.academia.edu/21939735/ORGANIZATIONAL\\_BEHAVIOR\\_CONCEPTS\\_CONTROVERSIES\\_APPLICATIONS\\_Seventh\\_Edition](https://www.academia.edu/21939735/ORGANIZATIONAL_BEHAVIOR_CONCEPTS_CONTROVERSIES_APPLICATIONS_Seventh_Edition)

10. Aziri, J. (2019) Employee Motivation Incentives and Their impact on the Organization's Productivity. *Texila International Journal of Management*, 5/2. URL: [https://pdfs.semanticscholar.org/ceb7/bb6265c47987aa5c7053f513051a5a865ee8.pdf?\\_ga=2.1](https://pdfs.semanticscholar.org/ceb7/bb6265c47987aa5c7053f513051a5a865ee8.pdf?_ga=2.1)

11. Uzonna, U. R. (2013) Impact of Motivation on Employees Performance: A Case Study of CreditWest Bank Cyprus. *Journal of Economics and International Finance*, 5 (5), 199—211.

12. Zotkina, N. S., Kopytova A. V., & Neklyudova M. Yu. (2017). Labor motivation management tools: concept identification. *Science*, 9 (3). Retrieved from <http://naukovedenie.ru/PDF/51EVN317.pdf>.

13. Makushkin, S. A. (2019). Company's personnel motivation. *Revista ESPACIOS*, 40. Retrieved from <http://www.revistaespacios.com/a19v40n40/a19v40n40p23.pdf>.

14. Lesinskyi V., Yemelyanov O., Zarytska O., Symak A., Koleshchuk O. Substantiation of projects that account for risk in the resource-saving technological changes at enterprises. *East. Eur. J. Enterp. Technol.* 2018. Vol. 6(1). P. 6–16.

15. Lesinskyi V., Yemelyanov O., Zarytska O., Symak A., Petrushka T. Devising a Toolset for Assessing the Potential of Loan Financing of Projects Aimed at Implementing Energy-Saving Technologies. *East. Eur. J. Enterp. Technol.* 2021. Vol. 4(13), P. 15–33.

16. Ganesh K., Mohapatra S., Anbuudayasankar S. P., and Sivakumar P. (2014). *Enterprise resource planning: fundamentals of design and implementation*. Springer. 170 p.

17. Jacobs, R., & Chase, R. (2013). *Operations and Supply Chain Management: 14th Edition*: McGraw-Hill Higher Education. 1317 p.
18. Gupta, S., & Starr, M. (2014). *Production and Operations Management Systems*: Boca Raton. CRC Press. 512 p.
19. Shvachych Gennady, Kholod Elena (2017). Research of the enterprise profitability strategy. *Baltic Journal of Economic Studies*, 3(5), p. 451-456.
20. Alarcón S. and Sánchez M. Business strategies, profitability and efficiency of production (2013) *Span J Agric Res*. 11(1), p. 19-31. URL: [https://www.researchgate.net/publication/260124733\\_Business\\_strategies\\_profitability\\_and\\_efficiency\\_of\\_production](https://www.researchgate.net/publication/260124733_Business_strategies_profitability_and_efficiency_of_production)
21. Edward B. Barbier (2019). *Natural Resources and Economic Development*. 2nd edition. Colorado State University. URL: <https://www.cambridge.org/core/books/natural-resources-and-economic-development/100F4B191D2AE661FE5E442CA7025924>
22. Stoyanova, T.A., Koev, S.R., Stoyanov, P.P., Zhyvko, Z., & Laptiev, V. (2019). Strategic Management of the Personnel Development of Industry Companies. *Academy of Strategic Management Journal*, 18(3). URL: <https://www.abacademies.org/articles/strategic-management-of-the-personnel-development-of-industry-companies-8241.html>
23. Bratton, J., & Gold, J. (2017). *Human resource management: Theory and practice*. Palgrave. URL: <https://www.macmillanihe.com/page/detail/human-resource-management-6thedition/?k=9781137572592&loc=uk>
24. Collings, D.G., Wood, G.T., & Szamosi, L.T. (2018). Human resource management: A critical approach. In *Human Resource Management* (pp. 1-23).
25. The Institution of Occupational Safety and Health (IOSH). (2016.). Occupational health management in the workplace. *Occupational health management in the workplace*, 13(2), 28. Retrieved November 15, 2022, from <https://iosh.com/media/4975/occupational-health-management-in-the-workplace-advice-guide.pdf>

26. Drobyazko, S. (2018). Personnel management as element of the economic safety system of business. *Year of Public Reconstruction*, (4), 210-218.
27. Hilorme, T., Honchar, O. (2020). Model of energy saving forecasting in entrepreneurship. *Journal of Entrepreneurship Education*, 22(1S). URL: [https://www.researchgate.net/publication/340105358\\_MODEL\\_OF\\_ENERGY\\_SAVING\\_FORECASTING\\_IN\\_ENTREPRENEURSHIP](https://www.researchgate.net/publication/340105358_MODEL_OF_ENERGY_SAVING_FORECASTING_IN_ENTREPRENEURSHIP)
28. Hilorme, Tetiana; Honchar, O.; Chorna, Maryna; Karpenko, Lidiia; Milyavskiy, Michail; Drobyazko, Svetlana (2018). Innovative model of enterprises personnel incentives evaluation. *Academy of Strategic Management Journal*. 17(3). URL: <https://www.abacademies.org/articles/Innovative-model-of-enterprises-1939-6104-17-3-228.pdf>
29. Durmanov, A., Bartosova, V., Drobyazko, S., Melnyk, O., & Phillipov, V. (2019). Mechanism to ensure sustainable development of enterprises in the information space. *Entrepreneurship and Sustainability Issues*, 7(2), 1377-1386.
30. Brewster, C. (2017). The integration of human resource management and corporate strategy. *Policy and Practice in European Human Resource Management*. 22-35. URL: <https://www.scirp.org/reference/referencespapers?referenceid=2258750>
31. Bakhodirovna, K. S. (2023). The Main Directions for Improving the Efficiency of the Enterprise. *International Journal on Economics, Finance and Sustainable Development*, 5(1), 27-30. Retrieved from <https://journals.researchparks.org/index.php/IJEFSD/article/view/3873>
32. Dayan, R., Heisig, P., & Matos, F. (2017). Knowledge management as a factor for the formulation and implementation of organization strategy. *Journal of Knowledge Management*, 21(2), 308-329.
33. Tulung, J.E. (2017). Resource availability and firm's international strategy as key determinants of entry mode choice. *Jurnal Aplikasi Manajemen*, 15(1), 160-168.
34. Sviatnenko, V. (2020). Improvement of the enterprise management system. *Technology Audit and Production Reserves*, 3(4(53)), 28–31.