4. Most residential premises in rural areas in the territory of radioactive contamination require modernizing (about 90%). Low is the level of household services for residents of contaminated areas, which is due to the decline of this industry. The income level of the rural population is low, and their differentiation is profound. The survey results show that the main sources of income are wages and pensions, but a significant part of the income (about 40% of) the population receives from the sale of forest products and subsidiary farming.

5. So, the ultimate goal of managing the territory of radioactively contaminated rural settlements should be to improve the quality of life of its population. Achieving this goal is possible by reforming medical services, restoring social infrastructure facilities and reviving the region’s economy.

References

ОЦЕНКА КАЧЕСТВА ЖИЗНИ СЕЛЬСКОГО НАСЕЛЕНИЯ НА ТЕРРИТОРИИ РАДИАКТИВНОГО ЗАГРЯЗНЕНИЯ

Проведен анализ социально-экономических параметров качества жизни сельского населения на радиоактивно загрязненных территориях. Рассмотрены демографические тенденции, уровень заболеваемости населения и удовлетворенности условиями жизни сельского населения на территории радиоактивного загрязнения. Определено, что доходы населения формируются в основном за счет пенсий и заработной платы, а низкий уровень доходов побуждает жителей к самообеспечению.

Ключевые слова: качество жизни, радиоактивно загрязненные территории, демографическая ситуация, жилищно-бытовые условия, уровень доходов.

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intensity of production determined the relevance of the problem under study. The development of a holistic scientific concept for the formation of a system for regulating the resource-saving development of the agro-industrial complex is an urgent scientific problem, the solution of which will allow to differentiate the emphasis in the use of regulatory mechanisms for effective use of resources and means of labor, and determine the objectives and nature of innovative resource-saving development of the agro-industrial complex.

2. The object of research and its technological audit

The author investigates the solution of the scientific problem of the formation of a resource-saving strategy in the agro-industrial complex to ensure the systemic action of the components of an active resource-saving policy aimed at overcoming the inertia of perception by national agricultural producers of the influence of driving forces on the part of the continental and world agrarian and processing spaces, which, unlike existing approaches, to find out the readiness of domestic agro-industrial complex to use the best experience of application an innovative chain of effective resource conservation and resource use.

3. The aim and objectives of research

The aim of research is substantiation of the features of development and presentation of examples of the implementation of the resource-saving strategy in the agro-industrial complex by the example of agricultural enterprises in Semenivka, Globynno and Novosanzhary districts of the Poltava region.

According to a specific aim, the following problems are consistently solved in the research:

1. Steady growth of the final results of the functioning of the country’s agro-industrial complex.

2. Implementation of the main directions of ensuring the country’s food security on the basis of strengthening the positions of domestic agricultural enterprises in international, national and regional food markets.

3. Use of the provisions of integrative mechanisms of the resource-saving strategy in the agro-industrial complex as an attractor of the intensification of agro-industrial production by optimizing the processes of resource use and resource efficiency in the form of interactive use of new progressive forms of organization of agricultural production and processing of agricultural products.

4. Research of existing solutions of the problem

Various aspects of the resource-saving strategy were studied by leading domestic and foreign scientists. The first and most significant author, opened the topic of resource-saving, was the current president of Kazakhstan N. Nazarbayev, who in his work [1] outlined the strategy of resource-saving as a fundamental direction of the country’s development. The following significant author in his work [2] investigated the specific features of implementing resource-saving measures at machine-building enterprises, the fundamental work on resource-saving belongs to the authors of the monograph [3], in which resource savings are investigated as a kind of economic relations. A number of authors [4–7] investigated resource conservation in the global or national dimension, or as a component of national policy. A separate interesting study is the work [2], in which the author explores resource conservation in the context of regional economic systems. The most involved in the study of the issue covered in this article are the works of the authors [8, 9] in which resource saving is considered at the level of the agricultural enterprise and the author’s article [4], in which the initial data of this study are provided.

5. Methods of research

The problem can be solved on the basis of the use of the dialectical method, which studies the most general connections of the system «nature – society» and the contradictions of these links, as well as the application of the evolutionary approach – gradual development, which is based on continuous, gradual quantitative change as one of the forms of movement in nature and society. Economic, mathematical modeling, that is, the construction of interrelated models, formalizes the resource-saving development of the entire agro-industrial complex, is an effective tool for the rationale of resource-saving innovative projects. The complex of such resource-saving models is an interrelated system of models describing various aspects of the resource-saving functioning of the agrarian economy and is aimed at solving a set of organizational, economic, technical, technological and socio-environmental problems.

The methodological essence of the proposed approach is finding the optimal balance between the resources spent for the implementation of the project (land, water, labor, material, energy, financial, etc.), quality characteristics of products or services (gluten and protein content in the grain, sugar content of beets, fatness of livestock, grade of meat, etc.), ecological safety of this project and its ability to reproduce the resource potential. The result of this search is often at the design stage provides significant resource savings.

6. Research results

According to the author's concept of the approach, the process of implementing legislative, organizational, scientific, industrial, technical and economic measures aimed at reducing the resource and energy intensity of production of products (works, services), reducing the losses of resources during their production transportation and storage, as well as the use of non-traditional energy sources should become the key element of the resource-saving strategy in the agro-industrial complex.

Sectoral strategy in the field of resource saving, according to the author, should be formed and implemented taking into account the following requirements: priority of increasing efficiency and the degree of use of consumed resources in the agro-industrial complex and attracting products of processing of agricultural products in the production of products of other industries, including fuel and energy; a combination of interests of the state, subjects and agrarian holdings and cooperatives; reduction of losses of primary resources in marketable products, reduction of environmental risks in the process of resource consumption; compulsory accounting of natural resources...
spent by agrarian enterprises as objects of property of the people of Ukraine; implementation of standardization of resource consumption and resource management processes in agro-industrial complex; administrative responsibility for wasteful use of resources and non-compliance with the requirements of state standards in terms of resource saving; strengthening of state control over compliance with environmental legislation and ensuring compliance with the requirements of the state environmental inspection; stimulation of efficiency of use of natural-climatic and power resources of branch and reduction of their losses.

The stimulating role of the state in ensuring the implementation of the resource-saving strategy must be implemented in all the main areas at the same time:

- radical improvement of tax, credit, monetary, customs and tariff policies, investment policy with the aim of creating and maintaining mutually beneficial cooperation between the state and agribusiness, forming prerequisites for sustainable growth of the agrarian economy, protecting domestic agricultural producers and the domestic market of agricultural products;
- changing the role and forms of direct economic regulation with a view to more closely linking the interests of different levels and business entities;
- improvement of the legislative policy aimed at creating a single and more or less stable legal space;
- development of state entrepreneurship in the agrarian sphere with the aim of directly influencing the state to manage agricultural enterprises, first of all they form the scientific and technological potential of the agrarian sector.

By its very nature, the agrarian economy is a socially-oriented market economy and, consequently, is the best conductor of the state policy of social and economic policy.

Finally, one can’t ignore the fact that it is inappropriate for Ukraine to abandon the development of its agriculture, which is a vital part of social reproduction. Its special role in the socio-economic development of society is determined by the production of food (including food for children, whose production in recent years has a special significance in the Poltava region) as the basis of human activity and the reproduction of labor, the production of raw materials for many non-food consumer goods and supplies production, reproduction of land as a necessary element of material production. The degree of development and the level of agricultural efficiency largely depend on the balance of the economy as a whole, the state budget and the budget of households.

At the same time, agriculture is one of the most resource-intensive industries. For example, to produce one calorie, a person receives from agricultural products consumes about 10 calories of energy. However, the problem of high intensity of agricultural resources is not only a Ukrainian problem. In the United States, for example, doubling yields was accompanied by a tenfold increase in energy consumption for mechanization and the use of chemicals. It is estimated that the average American farmer uses one million hectoliters of oil, about 40 billion kilowatt-hours of electricity, and 19 million tons of mineral fertilizers (in terms of nutrients) during the year [10].

![Diagram](fig. 1. The process of a resource-saving strategy development)
However, the industrialized countries opted for the progressive saturation of agricultural production systems of machines and technologies, along with improving the organization of production, more efficient use of all types of productive resources, including land and labor. The experience of these countries shows that an increase in the yield of the final product with the use of less raw materials, provided that the processing industries move to more advanced high-performance technology. For example, for the production of 1 ton of sugar in our country, 7.6 tons of sugar beets are being spent, as well as in Germany, France, Austria – 6.5–7 tons, 1 ton of starch – 8–9 tons of potatoes, as in some other countries – 5–5.5 tons – an efficient technology of processing raw materials can significantly reduce losses and increase the production of the final product [2, 11, 12].

One can’t ignore the fact that in recent decades environmental problems have deteriorated sharply, and this is due to the development of agricultural production. Thus, it is necessary to solve the problem of saving resources in the agricultural sector in the near future, in order to prevent large consequences. In many respects for these reasons, agriculture is chosen as an object for a more detailed study of the problem of resource-saving strategies.

Since at this stage the problem of improving the management of agricultural enterprises is directly related to the need to activate and strengthen the capacity of enterprises to overcome the chaotic internal state and external activities, to achieve greater predictability of their functioning, the role of strategic planning at the level of production can’t be exaggerated.

The essence of the transition to a resource-saving model for all sectors and areas of the agro-industrial complex is the same. But the ways, forms, conditions for its implementation have important specific features that, if ignored, can have serious negative consequences. These functions exist because of the specifics of each specific industry and development trends and, therefore, should be reflected in the mechanism of the resource-saving strategy. First of all, this refers to agricultural products, as a product of a special socio-economic system. Important structural elements in agricultural production, in addition to the existing ones, are climatic and biological factors: land, animals, plants, which, on the one hand, work according to the laws of nature, and on the other hand, limited and difficultly restored resources (soil fertility). This fact considerably complicates the mechanism of resource saving formation in the agricultural sector, as it should be aimed not only at maximum saving of materialized and living labor, but also on the rational use of land and biological potential, which is subject to continuous production coordination without violating environmental requirements and habitat destruction. The limited volume of natural features of resources (including land and biological potential) to meet the ever growing needs of society in agricultural production through increased production should be considered primarily in the choice of the direction of intensification of agricultural production.

Another important feature of agriculture that can’t be ignored in the formation of a resource-saving strategy, due to the specific nature of its transition to a resource-saving type of reproduction, is the fact that under the influence of the scientific and technological revolution and the deepening of the social division of labor in agriculture integrated with the supply of industries and spheres. The development of this progressive process of increasing the integration of agricultural production has led to the emergence of a qualitatively new subsystem of the economy – agriculture, covering all stages of the production of food products from the means of production for agricultural enterprises, the production of agricultural raw materials, processing and processing and bringing it to the consumer. Single attempts to reform the agro-industrial sector led to the destruction of the agro-industrial complex as an integrated system. Without restoration of its integrity, sustainable economic growth is impossible, therefore part of the resource-saving strategy should be focused on its restoration.

Summarizing the results of management and economic science based on specific features of agricultural enterprises, let’s propose the following effective resource-saving strategy for agricultural enterprises in the Poltava region (Fig. 2) [13].

The main idea of most of the individual measures proposed in our strategy is stimulation of the necessary behavior, leaving the details of individual events open and not making them mandatory. Thus, existing market mechanisms are unlikely to be violated.

Under the laws of the open market there should be no restrictions on entrepreneurial freedom, therefore the issue of the effectiveness of resource use should be spread by raising the awareness level and be integrated into the competencies and skills profiles of entrepreneurs [14]. In addition, environmental and/or resource-saving technologies are a derivative of the development of innovative and research processes of the enterprise that arise as part of a global movement towards sustainable agriculture [15, 16].

The strategy considers three synergetic components of the agro-industrial complex development [4]:

- Production efficiency: optimization of the productive use of natural resources (materials, energy and water);
- Environmental management: minimizing the impact on the environment and nature by reducing waste and emissions;
- Human development: minimizing risks for people and communities, and supporting their development.

Achieving the goal of the resource-saving strategy is carried out in the production process through the use of innovative activity, the latest technologies, better process control and entrepreneurial incentives. The environmental part of the resource-saving strategy includes the following activities: monitoring of the consumption of water and wastewater generation by taking into account all sources of use and discharge points; development of key performance indicators and level of monitoring performance; improvement of agricultural activities: manure processing with the study of the possibility of methane capture for heating, control of efficiency and establishment of a preventive maintenance program to control leaks, straits and overflows.

In the process of public discussion of the Poltava Development Strategy for the period until 2020, we proposed a resource-saving strategy in the form of its specific implementation areas, in accordance with operational objective 2.3. «Ensuring energy security, forming energy-efficient public, agrarian and industrial sectors» and 2.2. «Strengthening small and medium-sized enterprises (SMEs)», depicted in Fig. 3.
In the field of agricultural and food machinery it is necessary to establish the production of resource-saving equipment and equipment that allow combining various operations that have optimal reliability and accuracy. A sharp jump in the production of new generation equipment is possible on the basis of joint manufacturing with world leaders. Based on the results of effective cooperation, such an enterprise should receive the necessary economic benefits that facilitate the transfer of the whole technological cycle of works to domestic engineering. For the deep processing of waste, the introduction of biotechnology and the use of alternative forms of energy, mechanical engineering, it is necessary to organize in a short time the production of the necessary list of equipment.

Priority is the improvement of service and the use of resource-saving technologies in the repair of machinery.

In plant growing, the necessity of changing the traditional technological structure for resource and moisture-saving crop processing with minimal soil treatment is justified on the example of cereals. The most important factors to reduce the cost of grain production are an effective fertilizer system, integrated protection against weeds, diseases and pests, adaptive breeding and seed production. Studies conducted in one of the studied enterprises prove the possibility of obtaining an equivalent substitute for mineral fertilizers from manure using biotechnology.

The introduction of resource-saving technology of direct sowing of spring wheat with the introduction of biofertilizers provides a reduction in the cost per 1 hectare for the amount of 999.6 UAH compared with intensive, and the specific costs of work are reduced by 2.3 times, fuel – 1.7 times, mineral fertilizers – 3.7 and protective equipment – 3 times (approved in Semenovska district of the Poltava region). In general, due to the transition to resource-saving technologies, the cost of 1 ton of grain is reduced by 35 % and with an average annual sowing area of spring cereals in the region of about 832.7 thousand ha, the resource-saving effect will be 832 million UAH. In addition, there is a reduction in soil erosion and an increase in its fertility.

**Fig. 2.** The concept of a resource-saving strategy in the economic activities of agricultural enterprises
In animal husbandry, the priority direction of resource conservation is the transition to efficient feed production technologies and new optimized feeding rations that allow to increase productivity while reducing the unit cost of resources. The transition to energy saving technologies, the creation of an optimal microclimate in the cultivation of animals, can reduce energy costs by 35 %, and the use of bioenergy plants for the utilization of manure in biogas – to provide its own autonomous power supply of both livestock complex and other divisions of the economy. The bioenergy plant allows to receive energy by 70 % cheaper than that of external suppliers. As a result, due to a complex of resource-saving measures, the cost of pork is reduced by 29 %. The solution of the problem of effective processing of manure in biogas or biofertilizer has a special economic significance.

In the meat industry, the priority of resource-saving development remains complex processing of waste and optimization of the recipes for meat and sausage products. The organization of specialized meat-processing production provides an opportunity for deep processing of food and non-food waste. Resource-saving technology is the development of fodder flour and fat from non-food waste from slaughtering cattle, but even more potential for resource-saving is laid in the use of secondary raw materials for therapeutic and preventive purposes.

The introduction of an optimized multi-component recipe for sausages makes it possible to reduce the cost of products by 18 % while maintaining their quality characteristics (according to the Globin Meat-Processing Plant).

In the dairy industry, it is possible to achieve a high level of resource saving through reasonable concentration and modernization of the material and technical base. A significant reserve of resource savings is concentrated in the technology itself. Thus, in the production of butter, the least energy-intensive and capital-intensive technology
is recognized in the conditions of the enterprises of the Globin Oilservice Ltd. system to convert high-fat cream, which makes it possible to reduce the cost of the product by 12% and improve its quality characteristics.

It is effective to use the dairy products (primarily buttermilk and whey) for the production of sour milk drinks, it allows storing whole milk and using the secondary raw materials with maximum efficiency. The cost price of a sour-milk drink in this case is 30% lower than in traditional technology. Great prospects also have new energy-saving technologies for pasteurizing milk, reducing energy costs by 79%.

In the milling industry, the resource-saving resource is primarily the technology of flour production and the level of waste-free production. Optimization of technological regimes and minimization of losses makes it possible to reduce the resource intensity of flour-milling production by 10–12% (tested in «Yana» LLC, Svitlovodsk District, Kyrovograd Region). An indispensable condition for saving saving is also based on the concentration of the industry and the uniform loading of technological equipment. Domestic bakery production is characterized by very high energy intensity and due to the modernization of furnaces, as well as optimization of the multi-component baking bread recipe, it is possible to reduce its cost by 12%.

7. SWOT analysis of research results

Strengths. Increase of production efficiency, in particular optimization of productive use of natural resources (materials, energy and water); minimizing environmental impacts through reduced waste and emissions, and minimizing risks to individuals and communities, and supporting their development.

Weaknesses. Development of a special resource-saving strategy for the agro-industrial complex excludes from this chain other areas of the country’s economic complex. This is due to the fact that the introduction of resource-saving measures, although leading to savings in resources and ultimately cost-effective, requires at the initial stage considerable financial resources.

Opportunities. The creation of a special resource-saving strategy for the agro-industrial complex has already proved its effectiveness. The resource-saving strategy is based on the production of high-quality and safe agricultural products and related methods for the application of preventive environmental strategies for processes, products and services to increase efficiency and reduce risks to humans and the environment.

Threats. The volatility of the price situation in the external and internal food market can cause the refusal to invest in more expensive, although effective, resource-saving technologies.

8. Conclusions

1. Development of resource-saving processes in the agro-industrial complex will be facilitated by the creation, at various levels of government, of bodies coordinating issues of resource provision and resource saving. It includes an information-analytical group (employees of the economic service of the enterprise) and a sector of resource-saving projects. With the efforts of this service, effective measures are taken to switch to non-waste technologies for production of high-quality rye flour and to justify the resource-saving indicators of installed equipment, and innovative business projects are developed for the further development of the material and technical base of the processing industry created on the basis of this enterprise for further processing of products.

2. The proposals on resource-saving projects and improvement of the state structure of resource-saving management have already been reflected in the regional program for the development of the agro-industrial complex in the Poltava region.

3. Summarizing the above, it should be noted that due to a complex of organizational, economic and technical-technological projects, it is possible to dynamically develop the resource-saving potential of the regional agro-industrial complex. Further activities in this direction will lead to formation and effective functioning of a resource-saving mechanism for development of the agro-industrial complex.

References

creation and development of mobile internet, new communication services, as well as the state of the competitive environment in this market is growing rapidly. It can be assumed that a new market for communication services and Internet services has already been formed. Steady demand for access to Internet resources stimulates the rapid development of this market. Free access of new enterprises to this market causes an increase in competition. However, available scientific publications on the study of the problem of the state and directions of the market development for communication services and Internet services, as well as the state of the competitive environment in this market is clearly not enough. This explains the relevance of the study of this problem and, accordingly, the topic of the article.

2. The object of research and its technological audit

The object of research is the process of formation and development of the market of communication and Internet services in Ukraine, as well as the state of its competitive environment and the development trend. It should be noted that formation and development of the market under investigation occurs in the context of the convergence of information and communication technologies, the formation of global communications infrastructure, and the digitalization of the economy. These factors significantly affect the economic activity of communication enterprises and the organization of market institutions in Ukraine, which must be taken into account.

3. The aim and objectives of research

The aim of research is analysis of the results of economic activity of enterprises in the market of communication and Internet services in Ukraine in recent years, the trends in the activity of enterprises in the market of communication and Internet services, as well as the state of its competitive environment.