DOI: 10.12731/2658-6649-2025-17-6-2-1582 **EDN: FDAVDX**
UDC 346.5

Original article

ESSENTIAL CHARACTERISTICS OF THE REGULATORY FRAMEWORK FOR MANAGING THE FORMATION OF A NEW TECHNOLOGICAL STRUCTURE IN AGRICULTURAL SECTOR

M.A. Kholodova, M.N. Kabanenko, O.A. Kholodov, O.A. Zubareva, S.Sh. Muradova

Abstract

Background. The article discusses the issues of methodological formation of the regulatory framework for managing the formation of a new technological structure in agriculture. It is proved that in the modern period of the revival and formation of the national strategic planning system, methodological and methodological approaches, algorithms and methods for calculating indicators (standards, standards) of production and economic activity in the agricultural sector, allowing to substantiate strategic guidelines for the development of individual sub-sectors in the short, medium and long term, are missing, outdated or do not correspond to modern economic conditions.. The necessity of timely updating of the central link of the regulatory framework - the system of norms and regulations, as well as updating the methods of its development is argued.

Purpose. The main goal of this article is to substantiate the role and significance of the essential characteristics of the regulatory framework for managing the formation of a new technological order in the agricultural sector in the strategic planning system.

Materials and methods. The work uses works of modern authors such as I. S. Belik, S. E. Demidova, E. V. Zhiryaeva, A. V. Kalina, V. V. Krivorotova et al., when highlighting issues of state regulation of the economy, much attention is paid not to the system of norms and regulations, but to macroeconomic indicators that determine the contour of the development of the national economy, based on set priorities and strategic goals, and including interrelated thresholds of targets

that must be achieved within the framework of the established organizational and economic mechanism of management and existing at the disposal of financial, logistical, labor and other types of resources.

The theoretical and methodological basis and methodological approaches to the formation of a system of norms and regulations in agriculture at the corporate level in a planned economy are studied in sufficient detail in the works of R. A. Korenchenko, T. D. Kurkin, N. I. Prok, V. F. Nesterov, I. N. Soldatov, etc. The issues of the formation of the regulatory framework as a tool for long-term and long-term policy planning are studied in sufficient detail in the works of L. B. Shabanova et al. The development of annual operational planning at the corporate level is highlighted in the works of M. A. Bashin, V. K. Bekleshov, V. I. Belotserkovsky, A. A. Zvyagina.

Methodological approaches adapted to the market economy are highlighted in the publications of M. I. Bukhalkov, N. F. Gaivoronskaya, V. V. Garkavogo, G. V. Grigorieva, V. Ya. Kavardakov, V. V. Kuznetsov, A. V. Derevyankin, A. F. Zakharov and others.

Results and conclusion. The regulatory framework for managing the formation of a new technological structure in the agricultural sector is focused on the development of target indicators or thresholds for key strategic planning documents based on progressive scientifically based values that allow the formation of objective and achievable indicators of the strategic development of the industry at all levels of government (federal, regional, territorial, corporate). In this regard, it is within the framework of the formation of the regulatory framework for strategic planning that the concept of state regulation of agriculture is being developed, which allows economic methods to reorient the business entities of the agricultural sector to develop certain industries, carry out technical and technological modernization, digital transformation of production, etc. At the same time, the system of norms and regulations within the framework of the regulatory framework of management acts as an assessment measure, a reference indicator that contributes to the speedy transition of agricultural producers to a new technological order.

Keywords: system of norms and regulations; regulatory framework; agriculture; technological structure; strategic planning

For citation. Kholodova, M. A., Kabanenko, M. N., Kholodov, O. A., Zubareva, O. A., & Muradova, S. Sh. (2025). Essential characteristics of the regulatory framework for managing the formation of a new technological structure in agricultural sector. *Siberian Journal of Life Sciences and Agriculture*, *17*(6-2), 524-542. https://doi.org/10.12731/2658-6649-2025-17-6-2-1582

Научная статья

ОСНОВНЫЕ ХАРАКТЕРИСТИКИ НОРМАТИВНО-ПРАВОВОЙ БАЗЫ УПРАВЛЕНИЯ ФОРМИРОВАНИЕМ НОВОГО ТЕХНОЛОГИЧЕСКОГО УКЛАДА В АГРАРНОМ СЕКТОРЕ

М.А. Холодова, М.Н. Кабаненко, О.А. Холодов, О.А. Зубарева, С.Ш. Мурадова

Аннотация

Обоснование. В статье рассматриваются вопросы методологического формирования нормативно-правовой базы управления формированием нового технологического уклада в сельском хозяйстве. Обосновывается, что в современный период возрождения и становления отечественной системы стратегического планирования методологические и методические подходы, алгоритмы и методики по расчету индикаторов (нормативов, стандартов) производственно-хозяйственной деятельности в аграрном секторе, позволяющие обосновать стратегические ориентиры развития отдельных подотраслей на краткосрочную, среднесрочную и долгосрочную перспективу отсутствуют, устарели или не соответствуют современным условиям хозяйствования. Аргументирована необходимость своевременного обновления центрального звена нормативной базы - системы норм и нормативов, а также актуализации методик ее разработки.

Цель. Основная цель данной статьи – обосновать роль и значение сущностных характеристик нормативно-правовой базы управления формированием нового технологического уклада в аграрном секторе в системе стратегического планирования.

Материалы и методы. В работе использованы труды современных авторов, таких как И. С. Белик, С. Е. Демидова, Е. В. Жиряева, А. В. Калина, В. В. Криворотова и др., освещая вопросы государственного регулирования рыночной экономики, большое внимание уделяется не системе норм и нормативов, а макроэкономическим показателям, которые образуют систему индикативного стратегического планирования, выступая в качестве ориентира, меры, критериального показателя развития и функционирования экономики, ее подсистем и объектов, параметров, определяющих границы, пороговые значения, в частности, в рамках которых технологические звенья, организационные механизмы, финансовые, материально-технические потоки и потоки

трудовых ресурсов направлены на реализацию национальных целей и приоритетов. Индикаторами могут быть финансовые, социальные, производственные показатели, а также показатели структуры экономики, эффективности и т. д.

Теоретические и методологические аспекты формирования структурных элементов нормативной базы применительно к внутрихозяйственному планированию в административно-командной экономике взяты из работ Р. А. Коренченко, Т. Д. Куркина, Н. И. Прока, В. Ф. Нестерова, И. Н. Солдатова и др. Вопросы формирования нормативной базы как инструмента долгосрочного и перспективного планирования политики достаточно подробно изучены в работах Л. Б. Шабановой и др. Вопросы развития годового оперативного планирования на корпоративном уровне освещены в работах М. А. Башина, В. К. Беклешова, В. И. Белоцерковского, А. А. Звягиной.

Методологические подходы, адаптированные к рыночной экономике, освещены в публикациях М. И. Бухалкова, Н. Ф. Гайворонской, В. В. Гарькавого, Г. В. Григорьевой, В. Я. Ковалева, В. В. Кавардакова, В. В. Кузнецова, А. В. Деревянкина, А. Ф. Захарова и др.

Результаты и заключение. Нормативно-правовая база для управления формированием нового технологического уклада в аграрном секторе ориентирована на разработку целевых индикаторов или пороговых значений ключевых документов стратегического планирования на основе прогрессивных научно обоснованных величин, позволяющих формировать объективные и реализуемые показатели стратегического развития отрасли на всех уровнях управления (федеральном, региональном, территориальном, корпоративном).

В связи с этим именно в рамках формирования нормативной базы стратегического планирования разрабатывается концепция государственного регулирования сельского хозяйства, которая позволяет экономическими методами переориентировать хозяйствующие субъекты аграрного сектора на развитие определенных отраслей, осуществлять техническую и технологическую модернизацию, цифровую трансформацию производства и т.д. При этом система норм и нормативов в рамках нормативно-правовой базы управления выступает в качестве меры оценки, эталонного показателя, способствующего скорейшему переходу сельскохозяйственных товаропроизводителей на новый технологический уклад.

Ключевые слова: система норм и правил; нормативная база; сельское хозяйство; технологическая структура; стратегическое планирование

Для цитирования. Холодова, М. А., Кабаненко, М. Н., Холодов, О. А., Зубарева, О. А., & Мурадова, С. Ш. (2025). Основные характеристики нормативно-правовой базы управления формированием нового технологического уклада в аграрном секторе. *Siberian Journal of Life Sciences and Agriculture*, *17*(6-2), 524-542. https://doi.org/10.12731/2658-6649-2025-17-6-2-1582

Introduction

Exploring the complex and multifaceted process of forming a modern scientific methodology of the strategic planning system in the agricultural sector, it should be pointed out that the process of technical re-equipment of agriculture annually increasingly requires the adaptation of laws, principles, methods and methodologies for the development of planning and forecasting documents to the conditions of the formation of a new technological order in order to substantiate the most effective directions for the implementation of state policy in areas of technical and technological modernization of the industry, to increase its economic efficiency of production and economic activity and competitiveness.

It follows from the large economic dictionary that, regardless of the type of economic system, the "norm" as an economic category was and remains "a guiding principle, a rule, a model, a recognized mandatory order, an established measure, an average value of something", determining the proportions between the elements of the process of social production (labor resources, machinery, technologies etc.) [1; 2].

The standard is a calculated value, a quantitative scientifically based value, the content and form of manifestation of something, for example, in the agricultural sector, the seeding rate per unit area of million pcs/ ha, kg/ha or feed consumption per 1 head of EKE cattle, etc.

According to Nobel laureate D. North: "Economics It cannot develop without norms and rules that are established by society and accepted by all. Without them, it will be a gangster economy, when everyone is trying to deceive each other...".

From a practical point of view, norms and regulations are unified long-term source data used in strategic planning of the agricultural sector development, both for the development of forecasts and analysis, regulation, distribution, exchange and control over the functioning of agricultural sub-sectors at all levels of management. Therefore, rationing continues to be a key tool for strategic planning of sectors of the national economy, including agriculture, acting as a measure of the effectiveness of economic and technical and technological development, competitiveness at all levels of government.

The system of norms and regulations, which combines a set of methodological approaches, methodological techniques, automated calculation algorithms and scientific substantiation of an ordered set of reference qualitative and quantitative characteristics of agricultural development, is a regulatory management framework that can be used to unify non-standard tasks.: - a comprehensive analysis of the current situation in the agricultural sector, substantiating the optimal agricultural structure and its resource potential, stimulating the intensity of

the implementation of innovative biological, technical, technological, organizational processes in priority sub-sectors; - scenario forecasting of production and socio-economic parameters of agricultural development, taking into account the current level of technological development; - calculation of thresholds for agricultural producers' needs for machinery, material and technical resources, seed stock, labor, financial resources, as well as cost standards for the implementation of various technologies for cultivating crops and raising farm animals in order to increase the efficiency of production and economic activities of business entities, increase the competitiveness of agricultural products on national and global markets, ensuring the food security of the state; - state regulation of the industry by creating conditions that stimulate the accelerated transition of the industry to domestic machinery and technologies, seed material, etc. For example, due to the significant dependence of the industry on imported technologies, machinery, and seeds in the face of sanctions pressure, a new version of the country's Food Security Doctrine came into force in January 2020, which contains a new regulatory indicator for the provision of agricultural production with seeds of domestic breeding at a level not lower than 75.0%.

The work uses works of modern authors such as I. S. Belik, S. E. Demidova, E. V. Zhiryaeva, A. V. Kalina, V. V. Krivorotova et al., when highlighting issues of state regulation of the economy, much attention is paid not to the system of norms and regulations, but to macroeconomic indicators that determine the contour of the development of the national economy, based on set priorities and strategic goals, and including interrelated thresholds of targets that must be achieved within the framework of the established organizational and economic mechanism of management and existing at the disposal of financial, logistical, labor and other types of resources.

The theoretical and methodological basis and methodological approaches to the formation of a system of norms and regulations in agriculture at the corporate level in a planned economy are studied in sufficient detail in the works of R. A. Korenchenko, T. D. Kurkin, N. I. Prok, V. F. Nesterov, I. N. Soldatov, etc. The issues of the formation of the regulatory framework as a tool for long-term and long-term policy planning are studied in sufficient detail in the works of L. B. Shabanova et al. The development of annual operational planning at the corporate level is highlighted in the works of M. A. Bashin, V. K. Bekleshov, V. I. Belotserkovsky, A. A. Zvyagina.

Methodological and methodological approaches adapted to the market economy are presented in the publications of M. I. Bukhalkov, N. F. Gaivoronskaya, V. V. Garkavogo, G. V. Grigorieva, V. Ya. Kavardakov, V. V. Kuznetsov, A. V. Derevyankin, A. F. Zakharov and others [3-9].

Results

The detailed classification of the above approaches allowed us to form a modern model of the regulatory framework for management in agriculture within the framework of the formation of a new technological order, consisting of three key elements: a subsystem of development and creation; a subsystem of updating and improvement; a subsystem of implementation. Thus, the first element of the model is based on the concept of metrological standardization, reflecting the vector of modern technological and scientific-technical policy in the agricultural sector, the target parameters of which act as a guideline, an assessment measure. The second element is focused on the development of unified progressive methods, automated algorithms for calculating scientifically based values of the functioning and development of the industry. The third element involves the application of the developed system of norms and regulations in practice in the process of industry management at all levels of management in the formation of strategic planning documents and the implementation of activities planned in them. It should be noted that the connecting central link between the above-mentioned elements of the proposed model is a system of norms and regulations, which is a well-structured multiple set of calculated values that are closely interrelated, having a single methodological and methodological basis for development and updating, contributing to accelerated logistical modernization of agriculture in the implementation of key management functions: planning and forecasting, organization, accounting and monitoring. It is important that the calculated reference values being developed, their qualitative and quantitative characteristics reflect the average indicators of the prevailing industrial and economic conditions of the economy, are universal, consistent, comparable across industries and intersectoral sectors in order to ensure Decree of the President of the Russian Federation dated November 8, 2021 No. 633 "On approval of the Fundamentals of State Policy in the field of strategic planning in the Russian Federation" [4].

It should be noted that the norm is a function of the norm, therefore it has a validity period [5; 7], which is determined by the limit values of regulatory factors (1):

$$y=f(x)=\sum_{i=1}^{n} x, \quad (1)$$

where y – norm;

x_i - is the standard, the calculated value of the factor.

For example, the standards for the need for agricultural machinery, approved by the Ministry of Agriculture of the country in 2009, in terms of natural agricultural zones and types of individual machinery have lost their relevance, since the period of validity of the standard is limited to 10 to 15 years due to the rapid expansion of production capabilities of new high-tech agricultural machinery. In

particular, currently, for the southern regions of the country, the regulatory requirement for wheeled tractors, taking into account the traction class and the energy intensity of modern machines, depending on the technology of crop cultivation, can range from 4.57 reference units per 1,000 hectares with intensive technologies to 2.97 reference units per 1,000 hectares with zero tillage technology (against the outdated standard of 7.6 reference units units per 1000 ha). This example shows that the introduction of modern high-tech machinery and equipment into agricultural production requires a review and adjustment of the existing regulatory framework for agricultural management within the framework of the formation of a new technological structure, which will subsequently allow to objectively determine the existing need for agricultural machinery and form target indicators for the technical and technological modernization of the branch of regional government programs. It should be noted that specialized scientific organizations are engaged in the development and formation of the regulatory framework for management, whose task is to update norms and standards in a timely manner, as well as to update methodological recommendations and algorithms for their calculation, on the instructions of the Ministry of Agriculture of the Russian Federation. The implementation of the developed system of norms and regulations is completed by the process of developing planning and forecasting documents at all levels of management. The development of a regulatory framework for managing the formation of a new technological order in agriculture involves timely updating of the system of norms and regulations, as well as updating methodological recommendations and algorithms for their calculation in accordance with current legislation, and is based on the following principles: − the principle of innovation, which strengthens the trends of innovation and the introduction of advanced technologies; − the principle of unity of use of methods and algorithms for the development of reference quantities; − the principle of comprehensive coverage or articulation of a multidimensional approach to all functions and levels of management of technical and technological modernization and digital transformation of agricultural sectors; − the principle of continuity and continuity; − the principle of compliance of regulatory products with the strategic goals of technical and technological development and digital transformation of agriculture, socio-economic development and national security of the state; − the principle of flexibility and adjustment; − the principle of efficiency and effectiveness.

The active influence of the state on the processes of technical and technological modernization and digital transformation of the agricultural sector, which form the fundamental basis for conducting competitive agricultural production, allows us to consider the regulatory framework as an economic regulator of the

development of the agricultural sector in the context of the formation of a new technological order. The modern regulatory framework for managing the formation of a new technological order acts as a tool for developing and filling in the content of key strategic planning documents (Fig.1), in connection with which:

- the structural elements of the system of norms and regulations are determined based on its functions: economic foresight and forecasting, identification of the resource potential of the industry during the transition to a new technological order and growth reserves; methodological support for planning the processes of technical and technological modernization of the industry; regulation of the processes of technical and technological modernization; stimulating the introduction of innovations and digital technologies; effective redistribution of resources and results; formation of industry development targets, etc.;

- the stability and effectiveness of the regulatory framework are ensured by observing the totality of the principles of its organization: consistency, adaptability, unity, innovation, multi-aspect, long-term, etc.;

- continuity and consistency of the system of norms and regulations are ensured through their universal use in the sectoral and intersectoral cross-section, as well as in interconnection at all levels of management;

- various types of resources, individual progressive target indicators of technical, technological and digital transformation of agriculture, government levers and regulators, etc. can act as objects of rationing.;

- to ensure the principle of long-term sustainability, it is advisable to use a regulatory approach in the development of long-term, medium-term and short-term planning and forecasting documents.;

- ensuring methodological unity is achieved by coordinating such elements of methodological support as: strategy development and goal setting, possible development trajectories, development concepts and models, planning and forecasting methods, predictive models, probable development scenarios, assessment of the feasibility of strategic plans, the structure of strategic plans and their content, etc.

According to scientists, including N. F. Gaivoronskaya, G. V. Grigorieva, V. Ya. Kavardakov, V. V. Kuznetsov and others, the regulatory framework for managing the formation of a new technological order, which includes a large number of norms and standards, will be effective and viable if the normative indicators are systematized according to certain criteria. In particular, an enlarged model of the regulatory framework of sub-sectors of the agricultural sector for the development of indicators of long–term federal and regional strategies, programs, projects of technical and technological modernization of agriculture using intensive and energy-saving technologies may consist of five enlarged groups of norms and standards (Table 1).

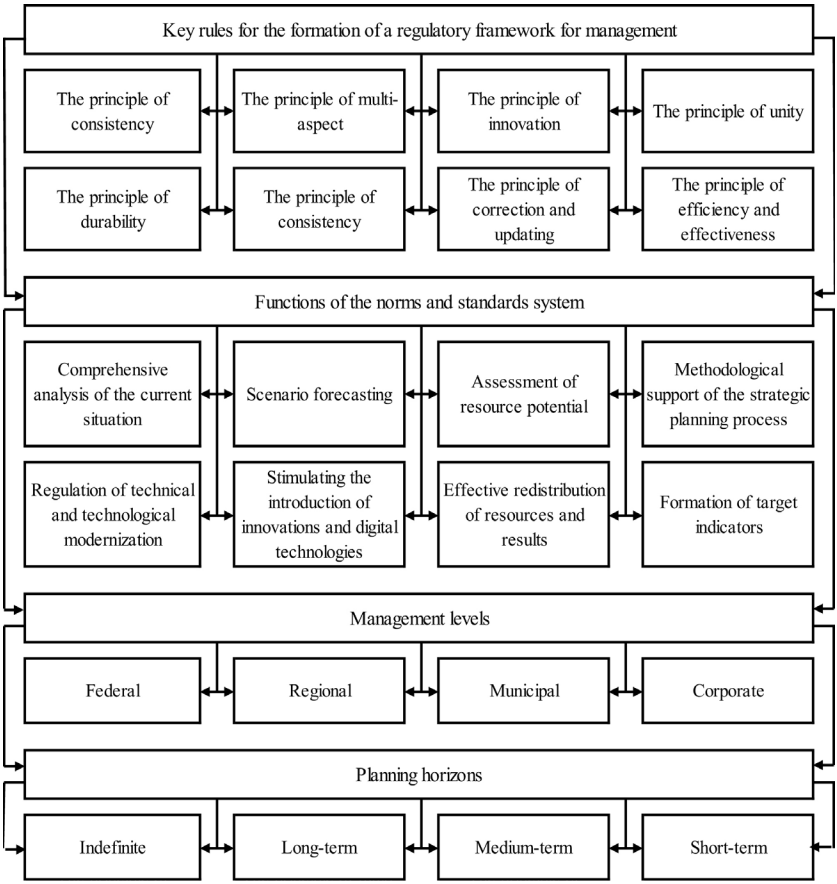

Fig. 1. Essential characteristics of the regulatory framework for managing the formation of a new technological order in the context of civilizational and scientific and technological transformations
Source: developed by the authors

In [4-6], special attention is paid to the technological development of the industry, which acts as the most important subsystem of crop and livestock production and involves a continuous process of replacing outdated technologies with improved or new technological solutions, when developing a regulatory framework for managing the formation of a new technological order in agriculture.

Table 1.

The structure of the regulatory framework model for the development of indicators of long-term federal and regional strategies, programs, projects of technical and technological modernization of agriculture

An enlarged group	The content of the elements of the regulatory framework of the enlarged group
Basic norms and regulations	Agricultural lands and their qualitative characteristics; livestock of farm animals; availability of labor, material, financial resources, agricultural machinery; production losses of products, etc.
Production standards and regulations	Seeds and planting material; forage production; means of mechanization, chemicalization, fertilizers, plant protection; veterinary services; use of labor, material and financial resources, enterprises.
Effective norms and regulations	Gross agricultural production; productivity; animal productivity; cost of production; profitability; labor productivity; resource efficiency; product quality, etc.
Regulatory internal rules and regulations	Remuneration; estimated prices; solvency; financial stability; efficiency of capital use; marketability of products, etc.
Regulatory external rules and regulations	Taxes, payments and deductions; prices, tariffs, duties; bank interest rate on loans; compensation, insurance payments, amount of state support; social benefits; depreciation

Source: calculated by the authors according to the data of the Ministry of Agriculture of the Rostov region

The main results of technological development are: increasing crop yields, productivity of farm animals; reducing labor, energy and material resources for production; improving the quality of products; reducing costs; increasing profitability and competitiveness of production.

Research has shown that, in general, the system of standards for state regulation of the agricultural sector can be classified according to three main characteristics (Fig. 2): developed by state structures and mandatory, developed by state and public structures as development benchmarks, developed by market participants as development benchmarks.

At the same time, each economic entity (agricultural producer, processor, realizer, intermediary, investor, etc.), as well as authorities at all levels should rely on this specific classification, which represents the regulatory framework for managing the formation of a new technological order.

In addition, the formation of a new technological structure in agriculture involves the development of a system of norms and regulations at the state level, represented mainly by enlarged macroeconomic indicators, normative indicators of technical modernization of agriculture, determining the effectiveness of its functioning, competitiveness, and the pace of transition to innovative tracks.

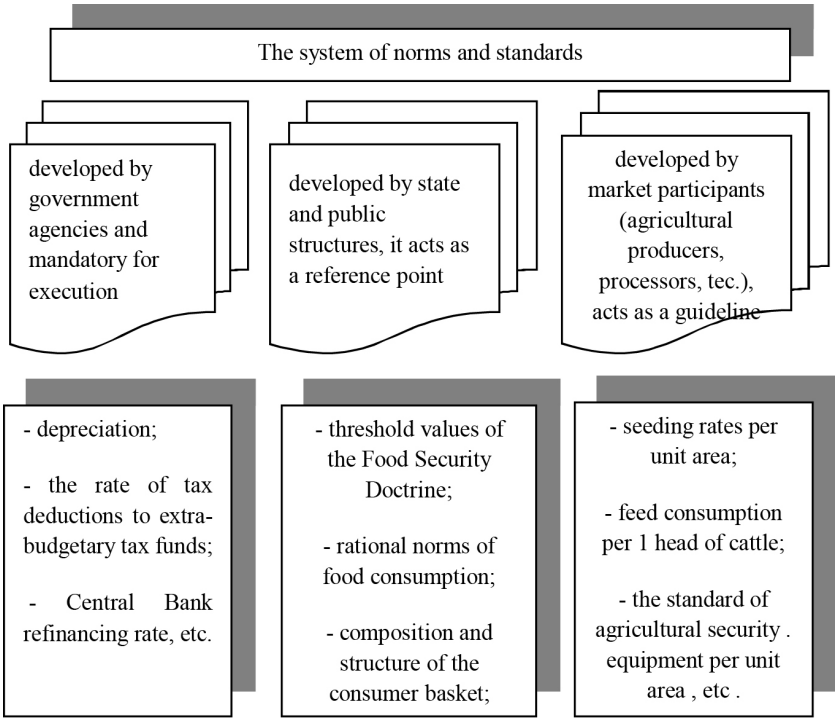

Fig. 2. Species classification of the system of norms and standards.
Source: [5, 6]

The achievement of the target aggregated indicators of agricultural development, laid down in key strategic planning documents, including government programs, is carried out through such instruments of state regulation as budget support, tax holidays, preferential bank interest rate and others.

Macroeconomic indicators include indicators of the complex qualitative dynamics of technical and technological modernization of the agricultural sector, including: the volume of production of the main types of agricultural products in value terms, labor productivity, labor stock, the number of high-performance jobs, etc., as well as indicators having a "threshold" or "limit" value, for beyond which there may be a threat of crisis phenomena and national security.

An example of individual indicators determining the normative (threshold) values of food security in the Russian Federation and relevant international databases is given in Table 3.

Let's pay attention to such an indicator as "Government expenditures on R&D in agriculture", reflecting the industry's ability to innovate and progress (Fig.3). If the value of this indicator is below the threshold of 2.0% of GDP, then this fact indicates a gradual degradation of the industry. In the domestic agricultural economy, this indicator leaves much to be desired.

Table 3.

Normative (threshold) indicators of food security of the Russian Federation and related indicators international databases

Indicator	Individual indicators according to Doctrine 2020	Food and Agriculture Organization of the United Nations (FAO)	Global Food Security Index (GIPI)
Food independence	Self-sufficiency: compliance of domestic consumption with the volume of production of agricultural products, %	Stability: insignificant specific weight of food imports in the consumption structure, %	Affordability: low level of tariff rates for food imports
Economic accessibility	Compliance of the actual established diet with the recommended norms of a healthy lifestyle	Availability: sufficiency of food, provision of food products containing protein of animal origin. Low obesity rate among economically active population, %	Quality and safety: availability of recommendations of the Ministry of Health on healthy nutrition within the country, taking into account its balance
Physical accessibility	Development of market infrastructure, %	Access: availability of paved roads and railways, development of logistics infrastructure	Availability: the level of funding for scientific research in the agricultural sector, in % of GDP; development of transport infrastructure
Quality and safety	Certification and veterinary supervision in the field of food	Usage: the level of drinking water availability,%; availability of accessible sanitary and hygienic conditions, %	Quality and safety: proportion of residents with free access to drinking water, %

Source: [10]

For example, if the value of such an aggregated indicator as "The level of financing of scientific research in the agricultural sector", demonstrating the processes of material and technical modernization of agriculture, turns out to be below 1% of GDP, then there will be no high-quality intensive economic growth in the industry.

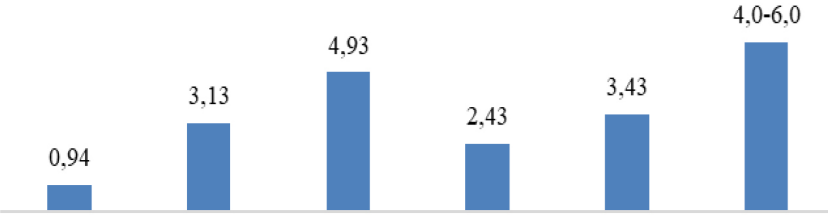

Fig. 3. Threshold values of government expenditures on R&D in agriculture in Russia and abroad, %
Source: [10]

Conclusion

In the process of establishing a new technological structure in agriculture, accompanied by increased sanctions pressure from Western countries, the regulatory framework of management serves as the main tool for developing targets for key strategic planning documents at all levels of government from federal (macroeconomic) to corporate (microeconomic). Currently, there is an increasing need to develop, improve and update methods and algorithms for calculating a system of progressive regulatory indicators that make it possible to predict the existing need for agricultural machinery, fertilizers, seeds, technologies and justify target indicators for the technical and technological modernization of the industry of federal and regional government programs, as well as business plans of agricultural producers.

The formation of the regulatory framework for management in the context of the formation of a new technological structure in agriculture is the final stage in the formation of the national strategic planning system in the agricultural sector of the economy. The core of the regulatory framework is a system of progressive regulatory indicators that serves as an assessment criterion, a control indicator, a lever and a regulator that stimulates the accelerated transition of the industry to a new technological order.

Conflict of interest information. The authors declare that they have no conflict of interest.

References

1. Krivorotov, V. V., Kalina, A. V., & Belik, I. S. (2019). Threshold values of indicative indicators for diagnosing the economic security of the Russian Federation at the present stage. *UrFU Journal. Series: Economics and Management*,

18(6), 892–910. https://doi.org/10.15826/vestnik.2019.18.6.043. EDN: https://elibrary.ru/JRQDEP

2. Sannikova, M. O., & Providonova, N. V. (2023). Supporting technical and technological development as a factor in building Russia's food potential and that of its regions. *Economics of Agricultural and Processing Enterprises*, *(7)*, 24–29. https://doi.org/10.31442/0235-2494-2023-0-7-24-29. EDN: https://elibrary.ru/ITFHKP
3. Derevyankin, A. V., & Zakharov, A. F. (2022). Formation of an enterprise's regulatory framework in crop planning. *Agro-Industrial Complex: Economics, Management*, *(12)*, 61–66. https://doi.org/10.33305/2212-61. EDN: https://elibrary.ru/ACZIOR
4. Derevyankin, A. V., & Zakharov, A. F. (2023). Methodological foundations for justifying modern organizational and technological regulations, standards, and norms for innovative development in crop production. *Agro-Industrial Complex: Economics, Management*, *(7)*, 63–75. https://doi.org/10.33305/237-63. EDN: https://elibrary.ru/NCWLGO
5. Tarasov, A. N., Kavardakov, V. Ya., & Semenenko, I. A. (2016). *System of norms and standards for strategic forecasting of technological development in animal husbandry in the Russian Federation: Monograph*. Rostov-on-Don: FSBSI VNIIEiN; Publishing House LLC «AzovPrint». 148 pp.
6. Kuznetsov, V. V., Tarasov, A. N., Gayvoronskaya, N. F., Egorova, O. V., Grigorieva, G. V., & Bakhmut, A. S. (2016). *Strategic forecasting of agricultural sector development based on a system of norms and standards: Monograph*. Rostov-on-Don: FSBSI VNIIEiN, Publishing House LLC «AzovPrint». 144 pp. ISBN: 978-5-4382-0278-3. EDN: https://elibrary.ru/WTJQMV
7. Kuznetsov, V. V., Tarasov, A. N., Gayvoronskaya, N. F., et al. (2017). *Forecasting parameters of innovative development in agricultural sectors: Theory, methodology, practice: Monograph*. Rostov-on-Don: FSBSI VNIIEiN, Publishing House LLC «AzovPrint». 157 pp. ISBN: 978-5-9500499-5-8. EDN: https://elibrary.ru/ZHSRMP
8. Svechnikova, T. M. (2019). Improving the validity of labor norms in agriculture. *Moscow Economic Journal*, *(8)*. https://doi.org/10.24411/2413-046X-2019-18064
9. Kuznetsov, V. V., et al. (2018). *Innovative technological development of crop production: Theory and methodology: Monograph*. Rostov-on-Don: VNIIEiN Branch of FSBSI FRASC; Publishing House LLC «AzovPrint». 236 pp. ISBN: 978-5-6041618-7-6. EDN: https://elibrary.ru/YNNVNJ
10. Vlasova, V. V., Gokhberg, L. M., Ditkovskiy, K. A., et al. (2024). *Science. Technologies. Innovations: 2024: Brief statistical compendium*. Moscow: ISSEK HSE. Retrieved from: https://issek.hse.ru/mirror/pubs/share/886073380.pdf

11. Sagatgareev, R. M., Mazhara, E. N., Fomina, E. A., et al. (2019). Production capacities of Russian agricultural organizations: Assessment and forecast. *Journal of Environmental Treatment Techniques*, *7*(3), 522–530. EDN: https://elibrary.ru/CPNFSB
12. Uzun, V., Shagaida, N., & Lerman, Z. (2019). Russian agriculture: Growth and institutional challenges. *Land Use Policy*, *83*, 475–487. https://doi.org/10.1016/j.landusepol.2019.02.018
13. Raskaliyev, T. H., Yesmagulova, N. D., & Digilina, O. B. (2019). Integration and development of the dairy regions in the Eurasian Economic Union: Trends, problems and prospects. *Economy of Regions*, *15*(2), 547–560. https://doi.org/10.17059/2019-2-18. EDN: https://elibrary.ru/TBBFJK
14. Lee, D., & Zereda, L. *Agricultural investment and productivity in developing countries*. Retrieved from: https://www.fao.org/3/x9447e/x9447e05.htm
15. Slozhenkina, M. I., Gorlov, I. F., Kholodova, M. A., Kholodov, O. A., Shakhbazova, O. P., & Mosolova, D. A. (2020). Beef and dairy cattle breeding: Development trends of small agribusiness in conditions of state support. *IOP Conference Series: Earth and Environmental Science*, *548*, 082037. https://doi.org/10.1088/1755-1315/548/8/082037

Список литературы

1. Криворотов, В. В., Калина, А. В., & Белик, И. С. (2019). Пороговые значения индикативных показателей для диагностики экономической безопасности Российской Федерации на современном этапе. *Вестник УрФУ. Серия: Экономика и управление*, *18*(6), 892–910. DOI: https://doi.org/10.15826/vestnik.2019.18.6.043. EDN: https://elibrary.ru/JRQDEP
2. Санникова, М. О., & Провидонова, Н. В. (2023). Поддержка технико-технологического развития как фактор наращивания продовольственного потенциала России и её регионов. *Экономика сельскохозяйственных и перерабатывающих предприятий*, (7), 24–29. DOI: https://doi.org/10.31442/0235-2494-2023-0-7-24-29. EDN: https://elibrary.ru/ITFHKP
3. Деревянкин, А. В., & Захаров, А. Ф. (2022). Формирование механизма нормативной базы предприятия при планировании растениеводства. *АПК: Экономика, управление*, (12), 61–66. DOI: https://doi.org/10.33305/2212-61. EDN: https://elibrary.ru/ACZIOR
4. Деревянкин, А. В., & Захаров, А. Ф. (2023). Методические основы обоснования современных организационно-технологических регламентов, нормативов и стандартов для инновационного развития отрасли растениеводства. *АПК: экономика, управление*, (7), 63–75. DOI: https://doi.org/10.33305/237-63. EDN: https://elibrary.ru/NCWLGO

5. Тарасов, А. Н., Кавардаков, В. Я., & Семененко, И. А. (2016). *Система норм и нормативов стратегического прогнозирования технологического развития животноводства Российской Федерации*: монография. Ростов н/Д: ФГБНУ ВНИИЭиН; Изд-во ООО «АзовПечать». 148 с.
6. Кузнецов, В. В., Тарасов, А. Н., Гайворонская, Н. Ф., Егорова, О. В., Григорьева, Г. В., & Бахмут, А. С. (2016). *Стратегическое прогнозирование развития отраслей сельского хозяйства на основе системы норм и нормативов*: монография. Ростов-на-Дону: ФГБНУ ВНИИЭиН, Изд-во ООО «АзовПечать». 144 с. ISBN: 978-5-4382-0278-3. EDN: https://elibrary.ru/WTJQMV
7. Кузнецов, В. В., Тарасов, А. Н., Гайворонская, Н. Ф., и др. (2017). *Прогнозирование параметров инновационного развития отраслей сельского хозяйства: теория, методология, практика*: монография. Ростов н/Д.: ФГБНУ ВНИИЭиН, Изд-во ООО «АзовПечать». 157 с. ISBN: 978-5-9500499-5-8. EDN: https://elibrary.ru/ZHSRMP
8. Свечникова, Т. М. (2019). Повышение обоснованности норм труда в сельском хозяйстве. *Московский экономический журнал*, (8). DOI: https://doi.org/10.24411/2413-046X-2019-18064
9. Кузнецов, В. В., и др. (2018). *Инновационно-технологическое развитие растениеводства: теория и методология*: монография. Ростов-на-Дону: ВНИИЭиН-филиал ФГБНУ ФРАНЦ; Изд-во ООО «АзовПринт». 236 с. ISBN: 978-5-6041618-7-6. EDN: https://elibrary.ru/YNNVNJ
10. Власова, В. В., Гохберг, Л. М., Дитковский, К. А., и др. (2024). *Наука. Технологии. Инновации: 2024*: краткий статистический сборник. М.: ИСИЭЗ ВШЭ. URL: https://issek.hse.ru/mirror/pubs/share/886073380.pdf
11. Sagatgareev, R. M., Mazhara, E. N., Fomina, E. A., et al. (2019). Production capacities of Russian agricultural organizations: assessment and forecast. *Journal of Environmental Treatment Techniques*, *7*(3), 522–530. EDN: https://elibrary.ru/CPNFSB
12. Uzun, V., Shagaida, N., & Lerman, Z. (2019). Russian agriculture: growth and institutional challenges. *Land Use Policy*, *83*, 475–487. DOI: https://doi.org/10.1016/j.landusepol.2019.02.018
13. Raskaliyev, T. H., Yesmagulova, N. D., & Digilina, O. B. (2019). Integration and development of the dairy regions in the Eurasian Economic Union: trends, problems and prospects. *Economy of Regions*, *15*(2), 547–560. DOI: https://doi.org/10.17059/2019-2-18. EDN: https://elibrary.ru/TBBFJK
14. Lee, D., & Zereda, L. *Agricultural investment and productivity in developing countries*. URL: https://www.fao.org/3/x9447e/x9447e05.htm
15. Slozhenkina, M. I., Gorlov, I. F., Kholodova, M. A., Kholodov, O. A., Shakhbazova, O. P., & Mosolova, D. A. (2020). Beef and dairy cattle breeding: development trends of small agribusiness in conditions of state support. *IOP Conference*

Series: Earth and Environmental Science, *548*, 082037. DOI: https://doi.org/10.1088/1755-1315/548/8/082037

AUTHOR CONTRIBUTIONS

The authors contributed equally to this article.

ВКЛАД АВТОРОВ

Все авторы сделали эквивалентный вклад в подготовку статьи для публикации.

DATA ABOUT THE AUTHORS

Marina A. Kholodova, Chief Researcher of the Department "Agricultural Economics and Standards"
Federal Rostov Agricultural Research Center
1, Institutskiy Str., Rassvet Village, Rostov Region, 346735, Russian Federation
kholodovama@rambler.ru

Mikhail N. Kabanenko, Associate Professor of the Department "Organizational Systems Management"
Southern University (IMBL)
33A/47, Mikhail Nagibin Str., Rostov-on-Don, 344068, Russian Federation
kabanenkomn@mail.ru

Oleg A. Kholodov, Professor of the Department "Analysis of Economic Activity and Forecasting"
Rostov State University of Economics (RINH)
69, Bolshaya Sadovaya Str., Rostov-on-Don, 344000, Russian Federation
9034332466@mail.ru

Olga A. Zubareva, Associate Professor of the Department "Economics and Commodity Sciences"
Don State Agrarian University
24, Krivoshlykova Str., Persianovski, Rostov region, 346493, Russian Federation
1, Gagarin Sq., 1, Rostov-on-Don, 344000, Russian Federation
zhorina.olga@rambler.ru

Safura Sh. Muradova, Associate Professor of the Department "Organizational Systems Management"
Southern University (IMBL)

33A/47, Mikhail Nagibin Str., Rostov-on-Don, 344068, Russian Federation
ssh.muradova@mail.ru

ДАННЫЕ ОБ АВТОРАХ

Холодова Марина Александровна, главный научный сотрудник отдела «Аграрная экономика и нормативы»
Федеральный Ростовский аграрный научный центр
ул. Институтская, 1, п. Рассвет, Ростовская область, 346735, Российская Федерация
kholodovama@rambler.ru

Кабаненко Михаил Николаевич, доцент кафедры «Экономика и товароведение»
Южный университет (ИУБиП)
пр. Михаила Нагибина, 33А/47, г. Ростов-на-Дону, 344068, Российская Федерация
kabanenkomn@mail.ru

Холодов Олег Андреевич, профессор кафедры «Анализ хозяйственной деятельности и прогнозирования»
Ростовский государственный экономический университет (РИНХ)
ул. Большая Садовая, 69, г. Ростов-на-Дону, 344000, Российская Федерация
9034332466@mail.ru

Зубарева Ольга Александровна, доцент кафедры «Экономика и товароведение»
Донской государственный аграрный университет
ул. Кривошлыкова, 24, п. Персиановский, Ростовская область, 346493, Российская Федерация
zhorina.olga@rambler.ru

Мурадова Сафура Шиховна, доцент кафедры «Управление организованными системами»
Южный университет (ИУБиП)
пр. Михаила Нагибина, 33А/47, г. Ростов-на-Дону, 344068, Российская Федерация
ssh.muradova@mail.ru

Поступила 01.07.2025
После рецензирования 30.08.2025
Принята 16.10.2025

Received 01.07.2025
Revised 30.08.2025
Accepted 16.10.2025