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APPLYING STRATEGIC LAND MANAGEMENT FOR ENSURING FOOD SECURITY IN THE REGION

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Abstract

The article uses strategic management tools to show the relationship between the state of land relations in the region and the goals of ensuring food security. The relevance of the research is determined by the possibilities to use balanced scorecard in order to harmonize economic and non-economic goals of land management in agriculture in the framework of the provision of food security in the region. Achieving the goals of food security in the region depends on many factors, and the effectiveness of land relations at different levels of government plays an important role in this process. The aim is to systematize the strategic indicators of land management as a mechanism for ensuring food security in the region. The research methodology is based on the use of a balanced scorecard as a model for structuring the goals of land management at the level of state and municipal authorities in the region. A balanced scorecard for land management in the region was created to ensure food security, and a link between various areas of the regional governance system was established. The research methods made it possible to combine in one system both economic and non-economic guidelines for strategic management of land relations. The proposed system of balanced land management indicators makes food security strategy more transparent. The model can be used by regions to develop a model for land management in the framework of the provision of food security and organization of effective control of land management at the municipal level.

Keywords: Balanced scorecard, food security, land management, land resources, strategic maps

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1. Introduction

The basis of food security is agricultural production, the efficiency of which is determined primarily by the land suitable for agricultural use. Over the past 20 years, the foundations of a new land system have actually been created in Russia. This new land system is characterized by a new legislative and regulatory framework, variety of forms of land ownership, mixed and paid land us, provision of rural population with land plots and a new system of cadastre and registration of land rights. The system of land relations in the agrarian sector of economy that has developed over the years of reforms is characterized by a number of features, namely, the incompleteness of the process of the formation of the institute of land ownership, bureaucratic mechanisms to manage land, a decrease in the quality of land resources and insufficient financing of measures in the field of land use. The reasons for this state of affairs are largely explained by political, managerial and institutional spheres. This research is driven by the need to combine strategic land management landmarks in agriculture at the regional level in order to ensure food security through a balanced scorecard. It is assumed that the provision of food security at the regional level depends on the balance of strategic objectives of land management at the institutional level.

2. Problem Statement

The provision of food security, according to many researchers, is a strategic task, the solution of which depends on many factors (Shchetinina et al., 2019). One of these factors is the steady growth of the agricultural sector of economy. Land is the main means of production in agriculture, since without land it is impossible to conduct the reproduction process in the industry, and, therefore, to create food and raw materials (Shafeev, 2011). The use of land as the most important object of social and economic ties in society is a rather multifaceted and complex phenomenon.

The classical scheme of land relations assumes the presence of 3 subjects of these relations: a land owner, a tenant and a producer (a hired worker). Due to the peculiarities of its functioning, land is also an object of state regulation and public interests. The strategic goals of the subjects of land relations in agriculture are often multidirectional and contradict each other. One of the ways to resolve this contradiction can be the improvement of the mechanism of land management in agro-industrial complex (Kresnikova, 2017; Novikov & Panova, 2014). The authors believe that the achievement of food security goals is possible in case of a balance of external and internal interests of all participants in land relations, which, in turn, should be easily identifiable and understandable.

3. Research Questions

The subject of the research is the system of balanced indicators of land management as a model for the implementation of food security in the region. The balanced scorecard is a set of optimally selected indicators that reflect both financial and non-financial aspects of the activities of research objects. Grouping strategic indicators allows building a strategic map of the region, which connects the development guidelines of the regional system with internal business processes and individual actions at each level of management of the regional system (Kutsenko, 2015). During the development of a system of strategic indicators for land management in regional agriculture, three levels can be distinguished: state

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and municipal authorities, landowners and land users and population. The paper provides a balanced scorecard for institutional management, which is presented in the study by state and municipal authorities that implement land policy in the region in economic, organizational, technological, socio-political and environmental spheres.

4. Purpose of the Study

The aim of the study is to systematize the strategic indicators of land management as a mechanism for ensuring food security in the region.

5. Research Methods

The research methodology is based on the methodology of R. Kaplan and D. Norton, who developed the algorithm and formats for strategic maps based on a balanced scorecard (as cited in Myasnyankina et al., 2018). Initially, the technology was used to assess the strategy of organization, now more and more authors agree that the system of strategic indicators is universal and can be applied to any level of management (Alekseeva & Kuznetsova, 2017; Kutsenko, 2015; Masino & Rastov, 2015).

The idea of the method is in the fact that the balanced scorecard allows formulating and displaying effective ways of strategic development, coordinating strategic goals through a chain of cause and effect relationships (Kapitsa, 2012).

6. Findings

The region as a set of subjects of management was chosen as an object of research. The list of goals of land management at the level of state and municipal authorities is presented in Table 01.

During the determination of key indicators for each goal, we rely on the indicators of the Food Security Doctrine of the Russian Federation, the Economic Security Strategy of the Russian Federation for the period until 2030, the Development Strategy for the Orenburg Region until 2020 and for the period until 2030 and other national projects.

The balanced scorecard for state and municipal authorities is presented in Table 02.

Table 1. List of goals of land management in the region at the level of state and municipal authorities

Land administration level	Sphere of land management	Goal
State and municipal authorities	Economic sphere	Provision of food security of regional population
		Improvement of the prosperity of the region through the rational use of land resources
	Organizational and technological sphere	Improvement of the efficiency of land management in agriculture through the use of digital technologies
		Improvement of the institutional infrastructure to manage the market and non-market turnover of agricultural land
		Rational use of regional land fund
	Socio-political	Improvement of the quality of life of residents of the region through

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	sphere	the rational use of land resources
		Creation of the conditions for the effective use of land as the basis for the socio-political stabilization of society
		Intensification of the law in the field of environmental protection and environmental safety
		Decrease of man-made impact on land resources
	Ecological sphere	Reduction of the nature intensity of the regional economy
		Conservation of a favorable environment, biological diversity and natural resources in order to meet the needs of present and future generations

Table 2. Indicators of the achievement of land management goals in the region at the level of state and municipal authorities

Goal	Indicator
Food security of regional population*	The volume of produced food per capita in the region
	Prices for agricultural products
	Number of undernourished people
	Share of household expenditures on food in total expenditures
	Grain import dependence of the region
	Food import to export ratio
	Food stock level
	The share of domestic food supply in the total volume of goods in the domestic market of the region
	Total area of agricultural land in the region
Improvement of the prosperity of the region through the rational use of land resources	Gross regional product
	Investment in agriculture in the region
	Agricultural production
	The share of the agricultural sector in the regional economy
	Share of people employed in agriculture in the total number of people employed in the regional economy
	Growth rates of government expenditures on agricultural development
	Investment in agriculture in the region
	Land tax volume
	The volume of income from the use of state and municipal land property
Improvement of the efficiency of land management in agriculture through the use of digital technologies	Creation of a regional GIS land management
	Time spent on management decisions in the field of land relations regulation
	Register of passports of agricultural land plots
	The number of land plots in the region, information about which is included in the Unified State Register of Lands
	Provision of public services in the field of regulation of land relations in electronic form
	Availability of data centre
	Number of ICT specialists serving digital land management
	Share of costs for the development of digital land management technologies
Improvement of the	Number of legal acts adopted by state authorities and local authorities on the use and

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institutional infrastructure to manage market and non-market turnover of agricultural land	protection of lands and land plots in agriculture
	Number of initiated cases of administrative violations in agricultural land use
	Surveyed land area
	The number of control and measuring activities carried out to identify violations related to the use of agricultural land in the region
	The share of the shadow turnover of agricultural land
	Compliance with the norms of regional and municipal legislation in the field of land and related relations with the provisions of the Land Code of the Russian Federation
	Activity of participants in the regional land market
	Share of pledged agricultural land in the region
	Time spent on registration of ownership of agricultural land
Rational use of the regional land fund	The area of agricultural land involved in the production turnover
	Share of agricultural land in total land volume in the region
	Ploughness of agricultural land in the region
	Sown area of agricultural crops
	Grain yield
	The share of intensive crops in the structure of crops
	The amount of applied organic and mineral fertilizers per 1 ha of land
	Saturation of arable land with mineral fertilizers
	Compensation of costs associated with increasing soil fertility
	Quality score
Improvement of the quality of life of residents of the region through the rational use of land resources	Average per capita cash income in rural areas
	Indicators of differentiation of the population of rural areas by income level
	Proportion of the rural population living below the national poverty line
	Funding of programs aimed at rural areas development
Creation of the conditions for the effective use of land as the basis for the socio-political stabilization of society	Territorial integrity of the region
	Availability of regional and municipal programs in the field of territorial security
	The number of internal and external threats of a political, technogenic, economic, environmental nature
	Geographical location and natural characteristics of land resources
	The ratio of land ownership
	The share of citizens receiving income from the use of land resources in the region
	The amount of funds allocated for the development of rural settlements
Intensification of the law in the field of environmental protection and environmental safety	The number of identified objects of accumulated damage to the environment
	Availability of a regional green growth program
	The amount of payments for the negative impact on the environment
	Number of offenses in the field of environmental protection
Decrease in man-made impact on land resources	The share of areas with environmentally friendly technologies of all agricultural land
	The number of land plots with an adaptive landscape farming system
	Investment in organic farming technologies
	The amount of funds allocated for the reclamation of disturbed soils
	Number of agricultural land in need of improvement

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Reduction of the nature intensity of the regional economy	The total number of unsuitable land in the total agricultural land
	Consumption of natural resources per unit of production
	Volumes of emissions / discharges of pollutants and waste per unit of gross regional product
	The volume of pollution per unit of use of a natural resource, territory of pollution, number of population, final product
	Energy intensity of agricultural production
	Natural resource efficiency

*Note: Full list of food security indicators is given in the work of Zinkovskaya (2016).

7. Conclusion

In conclusion it is stated that it is obvious that the achievement of the goals of food security of the regional population depends on the achievement of intermediate goals of land management at the institutional level. The balanced scorecard made it possible to connect the strategic interests of the subjects of land relations and the food security of the regional population and to identify the cause-and-effect relationships between them. The provision of food security directly depends on the efficiency of land management at all levels, the rational use of the land fund by all participants in land relations, the productivity of agricultural production, which in turn depends on the qualitative and quantitative characteristics of the resources, as well as on compliance with the principles of environmental safety.

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