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PUBLIC ECONOMIC CONTROL OVER THE EFFICIENCY OF LAND RESOURCES MANAGEMENT

The article suggests the methods for assessing the efficiency of land resources management to ensure public economic control, both in a municipality and in a region as a whole. Based on the data obtained by this method, a mechanism has been developed to improve management efficiency.

Keywords: economic control; management; efficiency; land resources.

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ДЕРЖАВНИЙ ЕКОНОМІЧНИЙ КОНТРОЛЬ ЕФЕКТИВНОСТІ УПРАВЛІННЯ ЗЕМЕЛЬНИМИ РЕСУРСАМИ

У статті запропоновано методику оцінювання ефективності управління земельними ресурсами з метою забезпечення державного економічного контролю як муніципальної одиниці, так і регіону в цілому. На основі даної методики розроблено механізм підвищення ефективності управління.

Ключові слова: економічний контроль; управління; ефективність; земельні ресурси.

Форм. 5. Табл. 1. Літ. 10.

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ГОСУДАРСТВЕННЫЙ ЭКОНОМИЧЕСКИЙ КОНТРОЛЬ ЭФФЕКТИВНОСТИ УПРАВЛЕНИЯ ЗЕМЕЛЬНЫМИ РЕСУРСАМИ

В статье предложена методика оценки эффективности управления земельными ресурсами в целях обеспечения государственного экономического контроля как муниципального образования, так и региона в целом. На основе данной методики разработан механизм повышения эффективности управления.

Ключевые слова: экономический контроль; управление; эффективность; земельные ресурсы.

Problem statement. The current practice of economic control has no unified methods, which could be appropriate for municipalities of all kinds in assessing the efficiency of municipal land resources management.

The goal of this paper is to develop the methods to assess the efficiency of municipal land resources management to ensure the economic control function.

The analysis of existing methods. We will analyze the existing methods used to assess the efficiency of land resources management and reveal their drawbacks. Unfortunately, the methods suggested for assessment of land resources management efficiency by D.V. Naumchev (2010), E.A. Varlamova (2006), N.G. Filatova (2009), R.V. Zhdanova (2010), etc. appear too specific sometimes, so they do not allow examination of other efficiency aspects of management aimed at public economic supervision.

Key research findings. Management efficiency assessment methods are based on all types of land resources management (LRM) efficiency: economic, social, functional, and ecological. Based on the efficiency types, it is required to develop a complex of assessment indicators (Larionova and Rekhlitsskay, 2010).

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The methods provide both calculation of the integral indicator for all the types of efficiency and also calculation of the indicator for every specific efficiency type. Hence, a list of the municipal LRM efficiency indicators is suggested in the research. The list is arranged in 4 groups by to the efficiency types:

- a) economic indicators;
- b) social indicators;
- c) organizational and technical (functional) indicators;
- d) ecological indicators.

As economic indicators grow, functional efficiency increases (Napolskikh and Arzamastsev, 2013), and as a result, so do social and ecological efficiencies.

The economic efficiency of control-oriented land resources management can be calculated in 3 ways:

- a) calculation of economic efficiency of municipal LRM as a whole in monetary terms (ths RUB);
- b) calculation of economic efficiency of municipal LRM as a whole in relative terms of the total amount of land-related payments:
 - per head (ths RUB per person);
 - in relation to the area (ths RUB per ha);
- c) calculation of economic efficiency of municipal LRM and its structural components represented in the standardized manner.

Based on the calculation results, we build a trend line (Kolesnikova and Eskaeva, 2012) to find the expected amount of land-related payments in the future.

The per head results of economic efficiency assessment will show how well people are provided with the amount of land-related payments and will allow making an intermunicipal comparison, while the assessment results related to the area of a municipality will show the provision of the territory and will allow comparing million cities within federal districts (Maslihina, 2013).

The last calculation method is suitable for the remaining efficiency types, as it allows calculating the total efficiency indicator for structural components, which are multidirectional indicators expressed in different measures, so the total indicator allows bringing all of them to a unified scale and making their convolution. However, the normalization procedure requires either a data array for several municipalities or information available for a specific period (Baranov and Burkov, 2012).

The calculation of LRM economic efficiency represents the following sequence of operations.

1. Calculation of economic efficiency of municipal LRM as a whole in monetary terms:

$$EE_i = TLP = I_{LT} + I_{LS} + I_{PRIV}, \quad (1)$$

where TLP is the total land payments amount; I_{LT} is the income produced by land tax; the land tax coming to budget (ths RUB); I_{LS} is the budget income produced by leasing the land national and municipal property (ths RUB); I_{PRIV} is the budget income produced by selling the land in municipal property (ths RUB).

It represents the total amount of all land-related payments built within a municipality and coming to local budgets. This total amount consists of the income produced by land tax (Murzina, 2013), the budget income produced by selling the land-

making municipal property, and the budget income produced by leasing the land in national and municipal property.

2. Calculation of economic efficiency of municipal LRM as a whole in relative terms of the total amount of per head land-related payments:

$$EE_p = \frac{TLP}{N_p}, \quad (2)$$

where EE_p is the economic efficiency of municipal LRM as a whole in relation to population (ths RUB); N_p is the population size (number of people).

Calculation of economic efficiency of municipal LRM as a whole in relative terms of the total amount of land-related payments per unit of area:

$$EE_H = \frac{TLP}{S_{TERR}}, \quad (3)$$

where EE_H is the economic efficiency of municipal LRM in relation to the area (ths RUB per ha); TLP is the total land payments amount (ths RUB); S_{TERR} is the area (ha).

3. Calculation of economic efficiency of municipal LRM and its structural components represented in the standardized manner consists of the following stages.

First, based on the data obtained from the groups of indicators, we calculate the particular (standardized) effectiveness indicators for each of the indicator groups by applying the standardization formula where the higher the is indicator, the better efficiency we get:

$$E_i = \frac{I - I_{min}}{I_{max} - I_{min}}, \quad (4)$$

where E_i is the integral efficiency indicator; I is the municipality indicator for the reported year; I_{min} is the minimum value of the municipality indicator for the reported year; I_{max} is the maximum value of the municipality indicator for the reported year.

Then, we make calculations for all the LRM efficiency types (not only the economic one), we find the integral efficiency indicator of land resources management by applying the formula of weighted average arithmetic value with the selection of the weights of the indicator groups:

$$Ep_w = \sum_{j=1}^m Ep_j \times k_j, \quad (5)$$

where Ep_w is the particular effectiveness indicator of the activities performed by local self-government bodies; k_j is the importance coefficient of a specific indicator; n is the number of assessment indicators.

The weight of each group of the efficiency indicators of municipal LRM is shown in Table 1.

After calculating the integral efficiency indicator, we analyze the results. Depending on the goals of the research, the indicator can be calculated for a single municipality or for a group of municipalities in order to find the territories where land resources management efficiency is higher or lower.

Then, after the LRM efficiency indicator is calculated, we use the correlation-regression analysis to determine the most significant factors having effect on the

amount of land-related payments coming to the budget. Based on those factors, a municipal management mechanism will be developed in order to improve management efficiency.

Table 1. Weights of management efficiency indicator groups, author's development

Indicator groups	Group weight
Economic indicators	0.35
Social indicators	0.25
Functional indicators	0.20
Ecological indicators	0.20
Integral indicator	1

Conclusion. Hence, we suggest the assessment methods for land resources management efficiency to ensure the economic control over regional activities. Based on these methods, a mechanism to improve the land resources management efficiency has been developed.

This mechanism is expected to represent a complex of measures aimed at changing the factors producing the biggest effect on the land resources management efficiency. For each factor and efficiency type, the discrete specific tools of efficiency improvement are suggested.

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