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## Assessment of the effectiveness of the management of agricultural organizations in management accounting

### Оценка эффективности управления деятельностью сельскохозяйственных организаций в управленческом учете

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#### Abstract

The dynamic development of the agrarian sector of the Russian economy in recent years makes specific demands on agricultural organizations that require a quick response and decision-making based on strategic analytical approaches. Agricultural organizations can achieve the goals previously set during business planning, using reliable information support, tools for analytical actions and competent management decisions. Any managerial decision made in agriculture should be based on timely information analyzed, taking into account cost-effectiveness, practicality, profitability and efficiency. However, it is necessary to evaluate this business in the long term, taking into account the effectiveness of the management of the agricultural organization, for the development of the agricultural organization. In management accounting of agricultural production, the problem of a comprehensive assessment of the effectiveness of the management of an

#### Аннотация

Динамичное развитие аграрного сектора экономики России за последние годы, предъявляет специфические требования к сельскохозяйственным организациям, требующих быстрого реагирования и принятия решений на базе стратегических аналитических подходов.

С помощью надежного информационного обеспечения, инструментария для аналитических действий и грамотного принятия управленческих решений, сельскохозяйственные организации могут достичь ранее поставленные при планировании бизнеса цели. Любое принятое управленческое решение в сельском хозяйстве должно базироваться на своевременно проанализированной информации с учетом экономичности, практичности, доходности и эффективности. Вместе с тем для развития сельскохозяйственной организации необходимо оценить этот бизнес в

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organization (business) is not given attention, and the importance of evaluating a business is also underestimated.

The subject of the study is the improvement of management accounting in terms of a comprehensive assessment of the effectiveness of the management of agricultural organizations, based on available accounting documents for external and internal users.

The main objective was determined in accordance with the stated goal: to develop recommendations for improving the methodology of management accounting, to assess the effectiveness of management of agricultural organizations.

Performance management is an important financial and economic indicator of agricultural production. In this paper, various aspects of management accounting and analysis of the effectiveness of the management of agricultural production are analyzed. It is concluded that the proposed activities will be understood not only by internal users, but also external ones with the help of the developed methodology and management decisions on public documents.

**Keywords:** assessment, management accounting, performance.

## Introduction

Under the current situation in Russia, there is a need to give an objective assessment of the activities of domestic agricultural organizations and find ways to improve the management of agricultural production.

Many scientists are involved in questions of evaluating the management effectiveness of organizations and enterprises (Aganbegyan, Mikulsky, Shatalin, 1993; Bogatin, Shvandar, 2000; Lvov, 2003; Gilyarovskaya, 2008; Ilyin, Stankevich, Loban, 2005; Lyubushin, 2010; Trukhachev, Kriulina, Tarasenko, 2008; Shafronov, 2015). Some authors also focus on performance issues in management accounting and analysis (Gilyarovskaya, 2008; Savitskaya,

долгосрочной перспективе, с учетом эффективности управления деятельностью сельскохозяйственной организации. В управленческом учете сельскохозяйственного производства проблеме комплексной оценки эффективности управления деятельностью организации (бизнеса) практически не уделяется внимание, так же недооценивается важность оценки бизнеса.

Предметом исследования является совершенствование управленческого учета в части комплексной оценки эффективности управления деятельностью сельскохозяйственных организаций, на базе доступных документов бухгалтерского учета для внешних и внутренних пользователей.

В соответствии с указанной целью была определена основная задача: выработать рекомендации по совершенствованию методики управленческого учета, для оценки эффективности управления деятельностью сельскохозяйственных организаций.

Эффективность управления деятельностью является важным финансово-экономическим показателем производства продукции в сельском хозяйстве. В настоящей работе проанализированы различные аспекты управленческого учета и анализа эффективности управления деятельностью сельскохозяйственного производства. Сделан вывод о том, что с помощью разработанной методики и принятия управленческих решений по общедоступным документам, предложенные мероприятия будут понятны не только внутренним пользователям, но и внешним.

**Ключевые слова:** оценка, управленческий учет, эффективность деятельности.

2007; Sheremet, 2009). An integrated approach to assessing the effectiveness of management in management accounting received little attention, respectively, this area requires more in-depth research.

The interaction of agricultural entities is based on modern market relations and the state agrarian policy (Molchan, Frantsisko, Ternavshchenko, Ostae, Tinyakova and Markovina, 2020).

The regulatory mechanism of state regulation is implemented through a system of regulations that create the institutional environment for the implementation of the activities of agricultural organizations (Frantsisko, Ternavshchenko,

Molchan, Ostaev, Ovcharenko and Balashova, 2020).

The problems of organizing effective management accounting of agricultural production through the widespread use of economic methods, both production management and accounting and management methods and the development of their information functions, are very relevant and necessary (Kontsevoy, Ermakov, Rylova, Leoshko and Safonova, 2020).

One of the problems of managerial accounting in Russia is the assessment of the effectiveness of the management of agricultural organizations through the selection of a method for its assessment. It should be noted that the theoretical and practical significance and methods of assessing the effectiveness of agricultural management in management accounting are not sufficiently developed by leading scientists in the field of economics. At the same time, there is no single methodology for assessing the effectiveness of agricultural management in scientific journals.

### Methodology

In our opinion, an “assessment of the effectiveness of management of activities in management accounting” should meet the following criteria:

- objectivity;
- accuracy;
- accounting in the calculation of agricultural indicators (productivity, milk yield, etc.);
- assessment of both the production and financial activities of the agricultural organization;
- comparability of indicators, the availability of source information (reporting forms that are in the public domain and are not a trade secret);
- ease of calculation of estimated indicators (Ostaev, 2015; Ostaev, Klychova, Nekrasova, 2018).

The current methods were considered as a result of the studies, taking into account the above criteria in table 1 (Aganbegyan, Mikulsky, Shatalin, 1993; Bogatin, Shvandar, 2000; Lvov, 2003; Gilyarovskaya, 2008; Ilyin, Stankevich, Loban, 2005; Lyubushin, 2010; Petrakov, 2012; Savitskaya, 2007; Trukhachev, Kriulina, Tarasenko, 2008; Shafronov, 2015; Trukhachev, Kriulina, Tarasenko, 2008). Deficiencies of existing methods for assessing the effectiveness of management of activities, as applied to agricultural organizations, are identified. The disadvantages of the methods considered by us are also presented in table 1.

**Table 1.**

*The disadvantages of existing methods for assessing the effectiveness of management of agricultural organizations.*

No	Methodology and its essence	The disadvantages of the methods
1	“... The method of increasing the total resource by 1% growth in sales of products” (Aganbegyan, Mikulsky, Shatalin, 1993).	Indicators specific to agriculture are not taken into account. These methods can be the basis for calculating the efficiency indicator, but they do not provide a specific formula for assessing an agricultural enterprise.
2	The method of scoring (Bogatin, Shvandar, 2000; Lvov, 2003).	
3	Arithmetic mean weighted; (Aganbegyan, Mikulsky, Shatalin, 1993, Ilyin, Stankevich, Loban, 2005)	
4	Sum method; (Gilyarovskaya, 2008; Petrakov, 2012)	
5	Method of sum of places; (Lvov, 2003; Sheremet, 2009).	
6	“Distance method” for rating assessment of objects of analysis; (Ilyin, Stankevich, Loban, 2005; Savitskaya, 2007)	
7	A method for determining the share of the influence of intensification on the increment of production, taken as 100%; (Aganbegyan, Mikulsky, Shatalin, 1993; Lyubushin, 2010)	
8	The method of the sum of relative savings in production and financial resources (Lyubushin, 2010)	

**No Methodology and its essence**

Integral performance indicator. This is an indicator of return on assets. (Sheremet, 2009)

$$P/B = \frac{P}{N} \times \frac{N}{B} = \frac{P}{F+E} = \frac{1-S}{F+E} = \frac{1-(\frac{U}{N} + \frac{M}{N} + \frac{A}{N})}{F+E}$$

- 9 U / N - the cost of production, reflecting the complexity in cost form;  
 M / N - material consumption of products;  
 A / N - depreciation capacity of products;  
 F / N - capital intensity of production for fixed assets (non-current assets);  
 E / N - turnover of current assets.

- 10 The result of increasing the economic efficiency of activities taking into account the difference between results and costs (Trukhachev, Kriulina, Tarasenko, 2008).

The method of complex assessment of the organization. (Savitskaya, 2007)

$$A = N \times P \times \frac{P}{Z}$$

- 11 where, A – an indicator of a comprehensive assessment of the organization;  
 N – the volume of production in physical terms;  
 P – the value of the beneficial effect of a unit of production;  
 Z – the cost of production and consumption per unit of output.

Accounting for costs and results of operations in the current year compared to the previous period (Trukhachev, Kriulina, Tarasenko, 2008).

$$\text{The increase in the effect } OPE = PE_p + PE_{kp} + PE_{pr} + PE_s + PE_{sr} + PE_i$$

- 12 where PE<sub>p</sub> – the change in output in the stock-assortment expression;  
 PE<sub>kp</sub> – change in product quality;  
 PE<sub>pr</sub> – change in the use of labor resources;  
 PE<sub>s</sub> – change in the use of means of labor;  
 PE<sub>sr</sub> – change in the use of objects of labor;  
 PE<sub>i</sub> – change in production costs.

The calculation of the economic efficiency of the organization (Shafronov, 2015).

$$EP = \frac{OP}{ZR} \times \frac{CHP}{K}$$

- 13 where EP – the economic efficiency of the organization;  
 OP – the result of the activity (output);  
 CHP – net products;

**The disadvantages of the methods**

Return on assets does not cover all aspects of an enterprise.

In this indicator, the characteristic of the financial condition of the enterprise, i.e. There are no indicators of financial stability, solvency and liquidity.

Indicators specific to agriculture are not taken into account.

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This ratio is valid when calculating self-supporting efficiency, since the cost of production for the producer is the result of production, and the costs are the cost of the product, so an increase in the difference between them means an increase in income.

When calculating national economic efficiency, the result is consumer value, and costs are labor used in production. In this case, labor is reflected in value terms of production. The use value and the value of the goods are qualitatively different, therefore it is impossible to measure them.

The calculation of this performance indicator allows to evaluate the efficiency of production, but does not allow to evaluate the activities of the enterprise as a whole for example, financial indicators are not taken into account.

Indicators specific to agriculture are not taken into account.

The disadvantage of this indicator is that it estimates the change in current and non-recurring costs based on a number of preliminary calculations.

In the conditions of the market economy of Russia, it is almost impossible to accurately carry out. Indicators specific to agriculture are not taken into account.

Indicators specific to agriculture are not taken into account. Financial indicators are not taken into account.

No	Methodology and its essence	The disadvantages of the methods
	<p>K – the coefficient of consumer properties of products;            ZR – the cost of resources involved in creating the result of the activity.</p> $ER = \frac{OP}{ZR} \cdot \frac{(OP_i)}{(P_i)}$ <p>where OR – the volume of sales;            Ki – inflation rate;            Ss – the cost of production;            Fot – the value of fixed assets;            OS – current assets</p>	
	<p>Assessment of the economic efficiency of the organization (Bogatyn, Shvandar, 2000).</p>	
14	$E = \frac{\text{Revenue}}{\text{Sopl} + \text{Svneob} + \text{Sob}}$ <p>where, E – a comprehensive indicator of assessing the economic efficiency of the organization;            Sopl – expenditure on labor;            Svneob – average annual balances of non-current assets;            Sob – the average annual balances of current assets.</p>	<p>Indicators specific to agriculture are not taken into account. Financial indicators are not taken into account.</p>
15	<p>Integrated Performance Indicator (Eintr) (Lyubushin, 2010).</p> $E_{in} = \sqrt[3]{E \times E_{trud} \times E_{fin}}$	<p>The indicators characteristic for agricultural are not taken into account. It is reasonable to analyze the integrated performance indicator in dynamics, as only in this case it is possible to determine the pace of its change, and based on the results obtained, conclusions can be drawn about increasing or decreasing the effectiveness of the entire enterprise.</p>
	<p>Comprehensive assessment of effectiveness through growth rates (Lvov, 2003; Savitskaya, 2007)</p>	
16	$T_{ek.razv} = \sqrt{Tpr \times Toos \times Tfo \times Tzo \times Trent}$ <p>where <i>Tpr</i> – the growth rate of labor productivity;  <i>Toos</i> – growth rate of working capital turnover;  <i>Tfo</i> – capital productivity growth rate;  <i>Tzo</i> – growth rate (decrease) in cost-effectiveness;  <i>Trent</i> – the rate of increase (decrease) in the level of profitability of sales.</p>	<p>Indicators specific to agriculture are not taken into account. This only applies if the indicators are reduced to a comparable estimate.</p>
	<p>Assessment of the effectiveness of enterprises taking into account growth rates. (Trukhachev, Kriulina, Tarasenko, 2008)</p>	
17	$I_{prib} > I_{real} > I_{akt}$ <p>where <i>I<sub>prib</sub></i> – the growth rate of net profit  <i>I<sub>real</sub></i> – sales growth rate;  <i>I<sub>akt</sub></i> – the growth rate of the organization's assets.</p>	<p>This is not suitable for a comprehensive assessment of the effectiveness of an agricultural enterprise, most applicable for financial assessment. Indicators specific to agriculture are not taken into account.</p>
	<p>The competitiveness of the organization in terms of aggregate factor effectiveness (Ilyin, Stankevich, Loban, 2005).</p>	
18	$(E.f.s.): E_{f.s.} = \frac{Pu.ch.}{Fo.t. + A + Mz}$ <p>where <i>Pu.ch.</i> – conditionally net products for the calendar period; <i>Fo.t.</i> – wage fund of workers and employees; <i>A</i> – the accrued amount of depreciation; <i>Mz</i> – cost of materials and services acquired on the side.</p>	<p>This formula is most suitable for evaluating the production, and not the activities of the enterprise as a whole.</p> <p>Financial and agricultural-specific indicators are not taken into account.</p>



No	Methodology and its essence	The disadvantages of the methods
19	<p>Performance evaluation taking into account net income and average annual value of fixed assets (Petrakov, 2012).</p> $E = \frac{Du.ch. - P + A - (Kr + Vopf)}{OPF - OPFp - I}$ <p>where <i>Du.ch.</i> – the centralized net income of the organization;  <i>OPF</i> – the average annual value of production assets;  <i>P</i> – profit from sales;  <i>A</i> – the total amount of depreciation;  <i>Kr</i> – actually incurred expenses for capital repairs;  <i>V<sub>OPF</sub></i> – actual costs for the full restoration of fixed assets;  <i>F<sub>N</sub></i> – accumulation fund;  <i>OPF<sub>p</sub></i> – the average annual value of production assets, taking into account the value of fixed assets according to their initial assessment;  <i>I</i> – depreciation of fixed assets for the period of functioning of the organization.</p> $E = \frac{P1}{K + F + Pu.ch.}$ $E = \frac{P2}{K + F + Pu.ch. + Z}$ <p>where <i>P1</i> – the amount of profit for a certain period before tax;  <i>P2</i> – the same minus interest for the loan;  <i>K</i> – equity; <i>F</i> – financial reserve;  <i>Pu.ch.</i> – conditionally net profit (the difference between gross output, overhead costs and depreciation deductions);  <i>Z</i> – the sum of long-term loans and short-term debt.</p>	<p>In our opinion, this formula allows a greater degree to evaluate the efficiency of using fixed assets, but not a comprehensive assessment of the effectiveness of the enterprise.          Indicators specific to agriculture are not taken into account.</p>
20	<p>Performance evaluation for each type of resources used (fixed production assets, labor, material and financial resources) (Lyubushin, 2010).</p>	<p>Indicators specific to agriculture are not taken into account. It does not allow a comprehensive assessment of the activities of an agricultural enterprise.</p>
21	<p>The technique of static-dynamic performance evaluation (Petrakov, 2012).</p>	<p>Indicators specific to agriculture are not taken into account. It does not allow a comprehensive assessment of the activities of an agricultural enterprise.</p>
22	<p>Assessment of the effectiveness of enterprises, taking into account profit and cost (Ilyin, Stankevich, Loban, 2005).</p> $Eskh = (P/S) / (Pн/Sн) * K$ <p><i>P</i>, <i>Pн</i> – the actual and regulatory amount of profit  <i>S</i>, <i>Sн</i> – the actual and standard cost of production  <i>K</i> – coefficient showing the ratio of the actual volume of profit to the standard level.</p> <p>For crop production</p> $P_i = \sum S_i V_i D_i P_i - \sum Q_i C_i \rightarrow \max$ <p><i>S<sub>i</sub></i> – the optimal area of arable land occupied by the <i>i</i>-th food crop  <i>V<sub>i</sub></i> – the potential yield of the <i>i</i>-th crop based on available production resources  <i>D<sub>i</sub></i> – the proportion of marketable products of the <i>i</i>-th culture  <i>P<sub>i</sub></i> – the price of products of the <i>i</i>-th culture on the basis of the prevailing market conditions  <i>Q<sub>i</sub></i> – the volume of sales of the <i>i</i>-th culture  <i>C<sub>i</sub></i> – the estimated cost of production of the <i>i</i>-th culture</p> <p>For livestock</p> $P_i = \sum H_i P_{ri} D_i P_i - \sum Q_i C_i \rightarrow \max$ <p><i>H<sub>i</sub></i> – structured herd of animals of the <i>i</i>-th species; <i>P<sub>ri</sub></i> – potentially possible productivity of animals of the <i>i</i>-th species; <i>D<sub>i</sub></i> – the proportion of marketable livestock products; <i>P<sub>i</sub></i> – product price; <i>Q<sub>i</sub></i> – sales volume; <i>C<sub>i</sub></i> – estimated cost of production</p>	<p>It is not always possible to calculate the profit indicator for plant growing and livestock, due to the lack of information in the public domain.</p>

Grouped by Author

There is no generally accepted indicator for calculating the effectiveness of managing agricultural organizations in the economic literature.

## Results and discussion

Most methods, except the last, do not take into account indicators characterizing the agricultural sector. However, the indicators for calculating the effectiveness of managing the activities of an agricultural organization using this methodology are not all publicly available, which is a problem for external users when making decisions, if they are interested in this business.

In many existing methods, instead of the effectiveness of organizations, a complex considers the efficiency of production and the use of resources (Ostaev, Khosiev, Klychova, 2018; Ostaev, Khosiev, Kallagova, 2018).

Currently, most of the techniques applicable to assess the effectiveness of agricultural activities are based on cost and financial results (Ostaev, Klychova, Sokolovam, 2018). The planned economy of the USSR can be taken for

comparison, since its effectiveness could be estimated by comparing the plan established by the state and fact.

Based on the considered existing methods and their shortcomings, a management accounting methodology was developed (a comprehensive assessment of the effectiveness of managing the activities of agricultural organizations, enterprises). The developed management accounting methodology takes into account the different activities of the agricultural organization. At the same time, it is possible to make a calculation according to the management accounting method proposed by us only on the basis of the reporting of the agricultural organization, which is presented in the public domain.

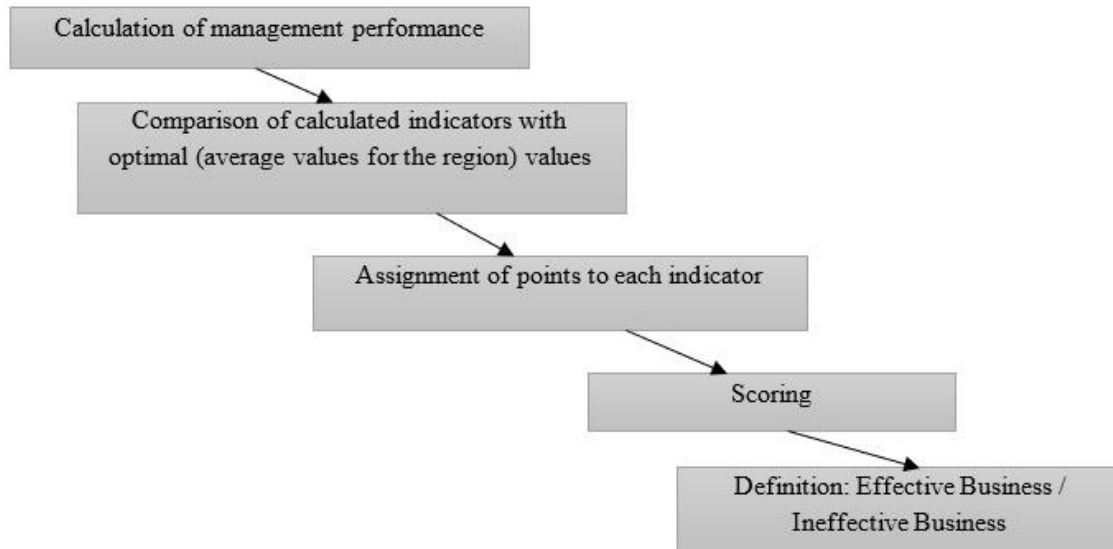
Agricultural organizations of Russia compile reports on specialized forms in addition to the 5 main reporting forms (table 2).

**Table 2.**

*Specialized forms approved by order of the Ministry of Agriculture of Russia*

No	The form	Name
1	Form No. 5-AIC	The number and payroll of agricultural workers
2	Form No. 7-AIC	Report on the sale of agricultural products
3	Form No. 8-AIC	Report on the costs of the main production
4	Form No. 9-AIC	Report on the production and cost of crop production
5	Form No. 10-AIC	Target Funding Report
6	Form No. 13-AIC	Production and cost of livestock products
7	Form No. 15-AIC	The presence of animals
8	Form No. 16-AIC	Product balance
9	Form No. 17-AIC	Report on agricultural machinery and energy

The stages of the management accounting methodology developed by us - an assessment of the management efficiency of an agricultural organization is presented in Figure 1.



**Figure 1.** Stages of management accounting methodology (assessment of the management efficiency of an agricultural organization)

We have proposed 10 indicators for a comprehensive assessment of the effectiveness of the management of an agricultural organization. In our opinion, these indicators

make it possible to most fully evaluate the management efficiency of an agricultural organization from different angles (table 3).

**Table 3.**  
*Indicators of management efficiency of the agricultural organization*

No.	Performance indicators	Purpose of the indicator
1	Livestock sales profitability (excluding subsidies)	Return on sales shows how much profit an enterprise receives from each ruble of products sold. Return on sales is an indicator of a company's pricing policy and its ability to control costs. Return on sales shows how much profit an enterprise receives from each ruble of products sold. Return on sales is an indicator of a company's pricing policy and its ability to control costs.
2	Crop sales profitability (excluding subsidies)	Return on sales shows how much profit an enterprise receives from each ruble of products sold.
3	Return on assets (excluding subsidies)	This ratio shows the financial return on the use of assets. Return on assets shows how many cents of profit from sales or net profit will bring one ruble invested in the assets of the organization. Return on assets also reflects the ability of assets to generate profits (Kislitsky, Gogolev and Ostaev, 2018).
4	Labor productivity	It characterizes the efficiency, effectiveness of labor costs. Economists link the growth of labor productivity with an increase in the manufacturability of production (Kontsevaya, 2017).



No.	Performance indicators	Purpose of the indicator
5	Return on assets	<p>It characterizes the efficiency of using fixed assets. The effective use of fixed assets allows to increase production volumes, reduce production costs, increasing labor productivity</p> <p>(Kovaleva, Rusetskiy, Okorokova, Antoshkina and Frantsisko, 2017). And this directly affects the increase in return on equity, profitability. The capital productivity ratio does not have a generally accepted normal value. Because the indicator is highly dependent on industry characteristics. For example, in capital-intensive industries, the share of fixed assets in the assets of the enterprise is large, so the ratio will be lower. If we consider the indicator of capital productivity in dynamics, then the growth of the coefficient indicates an increase in the intensity of use of equipment.</p>
6	Liquidity ratio	<p>Shows the company's ability to repay current (short-term) obligations at the expense of only current assets. The larger the ratio, the better the solvency of the enterprise. This indicator takes into account that not all assets can be sold urgently</p> <p>The ratio shows how independent the organization is from creditors. The smaller the coefficient value, the more the organization is dependent on borrowed sources of financing, the less stable its financial situation. This indicator depends on the industry, and more precisely on the ratio in the structure of the property of the organization of non-current and current assets.</p>
7	Autonomy ratio	<p>The higher the share of non-current assets (capital-intensive production), the more long-term sources are required to finance them, therefore, the share of equity should be higher (higher autonomy ratio)</p> <p>This comparison characterizes the financial stability of the organization. If the growth rate of equity exceeds the growth rate of borrowed, this indicates the strengthening of the financial stability of the enterprise. If the growth rate of borrowed capital is higher than the growth rate of equity, this can lead to financial instability, a high dependence of the organization on creditors.</p>
8	Growth rate of equity > Growth rate of borrowed capital	
9	Sales profit growth rate > Revenue growth rate	This indicator means an increase in production profitability.
10	Net profit growth rate > Pre-tax profit growth rate	This ratio indicates the correct tax system.

*Compiled by the authors*

Next, we consider the formulas for calculating the indicators and the optimal value (table 4). As the optimal values in management accounting, industry average and generally accepted values are used.

The generally accepted include:

- current ratio;
- Autonomy coefficient

**Table 4.** Calculation of indicators of the effectiveness of agricultural enterprise management for management accounting.

Nº n/n	Performance indicator	Calculation formula	Optimal value
1	Livestock sales profitability (excluding subsidies)	$\frac{V_{zh} - C_{zh}}{V_{zh}}$ Vzh- revenue from livestock sales Szh- the cost of livestock products	18,1
2	Crop sales profitability (excluding subsidies)	$\frac{V_r - C_r}{V_r}$ Vr- revenue from crop sales Sr- the cost of crop production	2,2
3	Return on assets (excluding subsidies)	$\frac{CHP}{A}$ CHP – net profit A – Asset value	20%
4	Labor productivity	$\frac{V}{CHr}$ V- revenue CHr - number of workers	1089
5	Return on assets	$\frac{V}{OS}$ V- revenue OS - fixed assets value	1,69
6	Current ratio	$\frac{Z + Ra + S}{Pt}$ Z – Stocks Ra – Receivables S- Cash Pt – Current liabilities	2
7	Autonomy ratio	$\frac{Ec}{Bp}$ Ec – Equity Bp – Enterprise Capital	0,7-0,8
8	Growth rate of equity > Growth rate of borrowed capital	$\frac{Ec_{ot}}{Ec_{pr}} > \frac{(Pt + Kd)_{ot}}{(Pt + Kd)_{pr}}$ Ec ot, Ec pr - Equity of the reporting and previous periods Pt ot, Pt pr- Short-term liabilities of the reporting and previous periods Kd ot, Kd pr – Long-term liabilities of the reporting and previous periods	-
9	Sales profit growth rate > Revenue growth rate	$\frac{P_{pot}}{P_{ppr}} > \frac{V_{ot}}{V_{pr}}$ Vot, Vpr - Revenue of the reporting and previous periods Ppot, Pppr – Profit from sales of the reporting and previous periods	-
10	Net profit growth rate > Pre-tax profit growth rate	$\frac{CHP_{ot}}{CHP_{pr}} > \frac{P_{not}}{P_{npr}}$ CHPot, CHPpr - Net profit of the reporting and previous periods Pnot, Pnpr - Profit before tax reporting and previous periods	-

Compiled by the authors

Next, we consider the forms and lines of public reporting necessary for the application of the

management accounting methodology developed by us.

**Table 5.**  
*Reporting forms necessary for the application of the developed methodology*

No	Name of indicator	Reporting form
1	Vzh – revenue from livestock sales	AIC -13
2	Szh – the cost of livestock production	AIC -13
3	Vr – revenue from crop production sales	AIC -9
4	Sr – the cost of production	AIC -9
5	CHP – net profit	Income statement
6	A – value of assets	Balance sheet
7	V – revenue	Income statement
8	CHr – number of workers	AIC -5
9	OS – the cost of fixed assets	Balance sheet
10	Z – stocks	Balance sheet
11	Ra – Accounts receivable	Balance sheet
12	S – Cash	Balance sheet
13	Pt – Current liabilities	Balance sheet
14	Ec – Equity	Balance sheet
15	Bp – Enterprise Capital	Balance sheet
16	Kd – Long-term liabilities	Balance sheet
17	Pp – Profit from sales	Income statement
18	Pn – Profit before tax	Income statement

These tables confirm that management effectiveness can be assessed using reports with open access status.

After calculation, each indicator is assigned a certain number of points. If the indicator is higher or equal to the optimal value, this is one point; if below it is zero. When the ratio is fulfilled, this is one point, and vice versa, if the ratio is not fulfilled, zero.

Next, we consider the total number of points. Effective management of the agricultural business is one in which the total number of points is from 6 to 10.

### Conclusions

The following are the advantages of the management accounting methodology developed by us: objectivity; financial indicators are taken into account; agricultural indicators are taken into account; all indicators are calculated on the basis of reporting forms that are publicly available; main indicators of resource efficiency, such as labor, fixed assets, are taken into account. Consequently, the proposed activities will be understandable not only to internal users but also to external ones, which is important for attracting

investments and concluding agreements with interested counterparties.

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