

Peculiarities of the preparation of pro forma income statements of companies in the agribusiness sector

Particularidades de la elaboración del informe prospectivo de rendimiento financiero en empresas del sector agrario

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Abstract

The article deals with the objectives of preparing a pro forma income statement in agribusiness companies, focusing on the economic aspects of its functioning. The authors propose and describe the structure of a system of information and analytical support of strategic management in agribusiness companies. Arguments are presented for the most suitable methods for this industry for preparing agribusiness companies' pro forma income statements. A pro forma income statement for an agribusiness company is prepared using various projection methods.

key words: projection, agribusiness sector, diagnostic model, trend, accounting statements, factor, financial performance

Resumen

En este artículo se presentan las tareas de elaboración de un informe prospectivo de rendimiento financiero en empresas del sector agrario, y se reflejan las particularidades económicas de su funcionamiento. Se propone y se describe la estructura del sistema de soporte de información y análisis de la gestión estratégica en las empresas agrícolas. Se argumentan los métodos para la elaboración del informe prospectivo de rendimiento financiero de las actividades de las empresas del sector agrario, que son los métodos más razonables para usar en esta rama de la producción. Esto permitió elaborar el informe prospectivo de rendimiento financiero en las actividades de empresas agrícolas, utilizando diversos métodos de pronóstico.

Palabras clave: pronóstico, sector agrario, modelo de diagnóstico, tendencia, contabilidad, factor, rendimiento financiero

1. Introduction

At the current stage of development of market relations, agribusiness companies often face various adverse processes occurring under the influence of external and internal factors, hindering their stable development and effective operation.

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In today's economic conditions, the problems of agriculture have become particularly important. In order to stabilise and develop agriculture, Russia is implementing the State Program for the Development of Agriculture and Regulation of Markets for Agricultural Products, Raw Materials and Food for 2013–2020 (currently extended until 2025). However, despite the positive trends from the program's implementation, there are many obstacles which slow the agribusiness sector's development. Imported products entering our market are very often cheaper and more competitive than domestic products. This leads to decreased economic growth in agribusiness, both for individual actors and the entire industry. In this regard, there is an objective need for a comprehensive review of existing problems inherent in the agribusiness sector and the development of steps to improve and modernise this sector.

Therefore, comprehensive consideration of theoretical and practical issues providing insight into the main theoretical and methodological aspects of predicting the performance of agribusiness is an important and relevant problem in modern conditions.

1.1. Literature Review

The issues of accounting and the development of a financial and management reporting system have been studied by such authors as N. S. Batyrova (2014), T. N. Gupalova (2015), O. V. Yefimova (2014), R. Kaplan (2005), D. Norton (2005), and L. I. Khoruzhy (2015).

The stages of development of the structure and content of reporting from the Middle Ages to the present day, including analytical reporting, have been studied by A. S. Andreenkova (2017), R. A. Bagdasaryan (2017), M. M. Gurskaya (2017), and M. I. Kuter (2017).

The peculiarities of the development of strategic management reporting have been studied by T. Yu. Druzhilovskaya (2005), I. A. Malsagov (2012), and A. S. Khusainova (2013).

The sectoral aspects of the development of a reporting system for agribusiness companies have been studied in depth by R. A. Alborov (2003), N. G. Belov (2013), E. A. Oksanich (2013), Yu. I. Sigidov (2013), and A. I. Trubilin (2013).

The methodology for drafting individual statements of companies in the post-reform period has been considered by the famous Russian researchers R. R. Azmitov (2008), V. G. Getman (2011), L. V. Dontsova (2001), V. B. Ivashkevich (2008), and M. L. Pyatov (2011).

The issues of evaluating the performance of companies were considered by N. M. Blazhenkova (2008), A. N. Pytkin (2008), G. V. Savitskaya (2016), and S. G. Cheglakova (2010).

2. Methodology

The purpose of the study is to explain the theory, the general procedure and the peculiarities of the preparation of pro forma income statements by agribusiness companies.

To achieve that goal, we must:

- consider and summarise the theoretical aspects of preparing pro forma income statements for agribusiness companies;
- define the main objectives of pro forma income statements for agribusiness companies and reflect the economic peculiarities of the agribusiness sector;

- describe the structure of the system of information and analytical support of strategic management in an agribusiness company;
- suggest and present arguments for the most effective methods for preparing a pro forma income statement for an agribusiness company;
- draft a pro forma income statement for an agribusiness company using various projection methods.

The following research methods were used in this article: economic, statistical, monographic, computational and constructive, balancing, and comparison methods.

3. Results

Sustainable development of agribusiness companies with complex financial and economic systems is achieved through an effective mechanism for management decision-making, which requires high-quality and timely projection information (Khoruzhy, Gupalova & Katkov, 2019).

In today's business environment, the formation of a conclusion on an organisation's efficiency is characterised by the need to analyse and account for the changing internal and external environments.

Projection of the financial performance of an agribusiness company is an important process that makes it possible to assess the success of its business operations, as well as to determine the direction of the company's subsequent development, with various paths for the development of the business (Platov, Zolotoreva & Platova, 2012). The degree of detail and the time horizon of financial projections depend on the needs faced by the company's management and the state of the internal and external economic environment.

The objectives of pro forma income statements for agribusiness companies include (Polozova & Bryantseva, 2014):

- monitoring the achievement of agricultural product sales and profit targets;
- assessment and projection of the impact of internal and external factors on sales of agricultural products and financial performance;
- identification and provision of a rationale for the reserves for increasing sales of agricultural products and profits;
- projecting utilisation of the identified reserves by agribusiness companies;
- optimisation of projected indicators of agricultural products' quality based on the maximum effect criterion, assuming minimum total expenses for the life cycle of this product;
- providing a business rationale for the creation and development of new products or the increase of quality and efficiency of agricultural products, within the scope of the resource base available for an agribusiness and the set priorities.

When preparing pro forma income statements, the sectoral characteristics of agribusiness companies need to be taken into account.

Agribusiness is distinguished by a variety of business types developed as a result of natural climatic and economic factors. It is of great social importance, providing households with food and supplying raw materials needed to produce consumer goods (Zimin, 2013).

The economics of agricultural production has the following specific features:

- a close relationship between economic and biological processes in agricultural production;
- the natural biological processes of development and growth of living organisms result in the cyclic seasonal nature of products made therefrom;
- agricultural production involves intensive use of natural resources, with land as the main production factor;
- weather conditions in which agribusiness companies operate have a significant impact on production.

The considered features also affect the development and operation of the accounting system in agribusiness companies, which depends on the organisation and specialisation of agricultural production.

Agribusinesses focus on profit generation, increased profitability and value growth, using equity and debt to fund development. Therefore, companies develop a staged performance projection cycle. The projection cycle can be presented as sequential stages (Fig. 1). The financial projection stages in an organisation can be presented as follows (Fig. 2).

The pro forma income statement of an organisation is used in the context of making strategic decisions, which, no doubt, should be justified by projected financial indicators describing the performance achieved as a result of the implemented strategy.

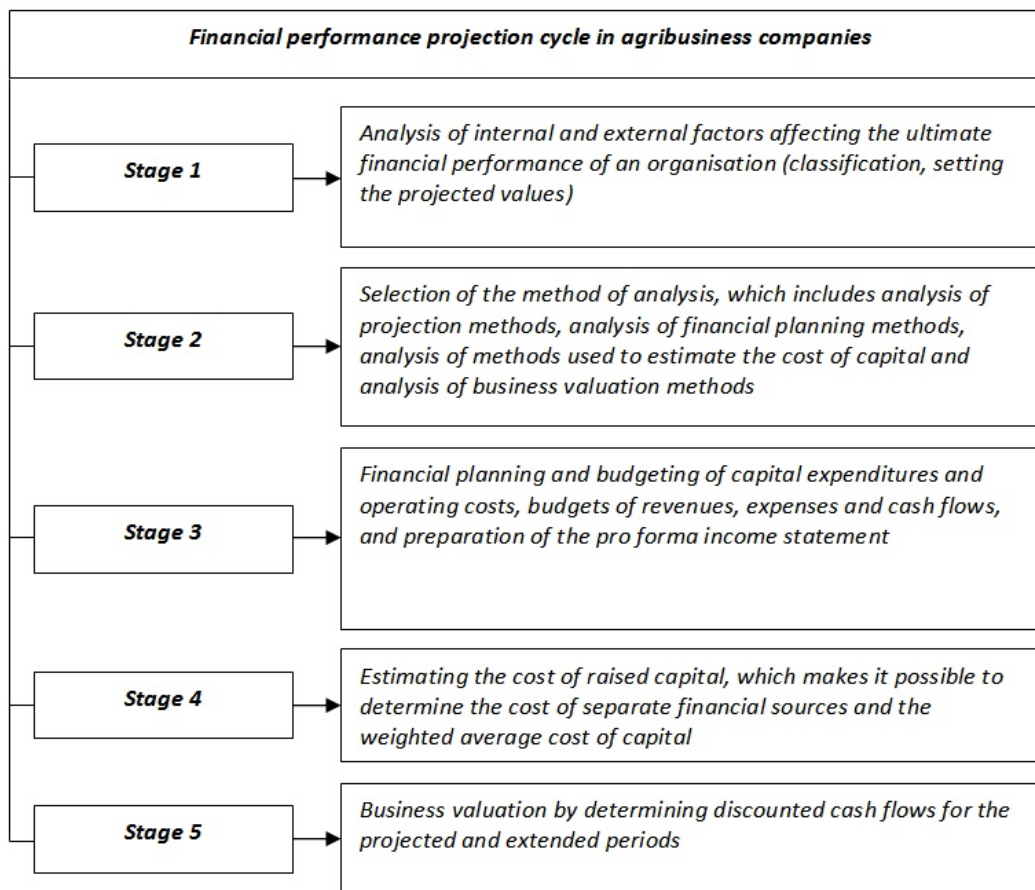
Pro forma income statements are important in that they provide information required by stakeholders about the performance of an agribusiness company.

Information and analytical support of the strategic management in an agribusiness company can be structured as a system (Fig. 3).

Pro forma income statements enable the management of agribusiness companies to make comparisons with performance in previous reporting periods. When estimating financial performance, such a statement may provide explanations of the nature, sources, and indicators of financial performance.

The structure of the pro forma income statement should include information on the projected revenues and revenues of a business entity for the reporting period, expenses incurred in connection with such revenues, and all periodic revenues and expenses which are not connected with specific kinds of production.

Figure 1
Financial performance projection cycle of an agribusiness company

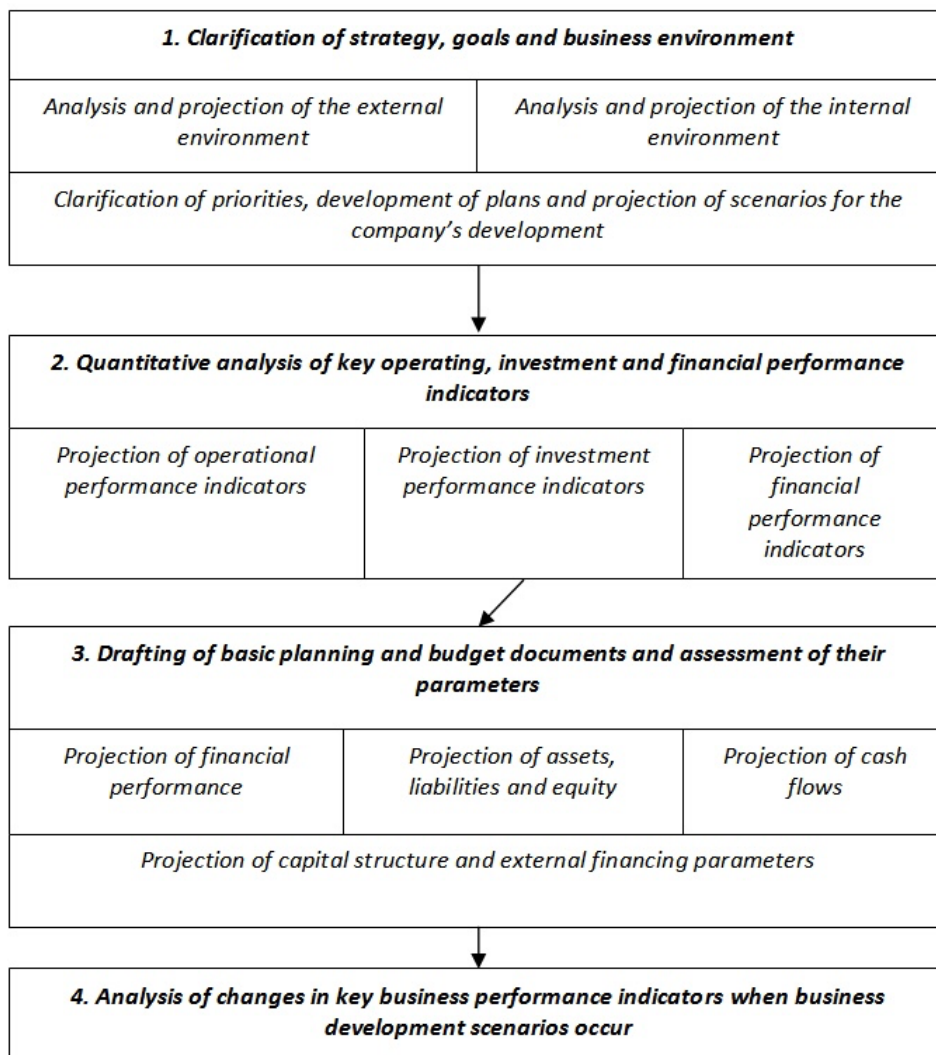


Source: the authors

Analysis of the indicators of a pro forma income statement makes it possible to determine the trend of organisation’s revenues and expenses; identify changes in the profit margin; determine the drivers of ultimate financial performance; and analyse the structure and changes in gross profit (loss), profit (loss) from sales, etc. (Platov, Zolotoreva & Platova, 2012).

In our opinion, the method of least squares (which makes it possible to project future values of any indicator based on its previous values) is the most effective method for drafting pro forma income statements for agribusiness companies.

Figure 2
Stages of financial projections



Source: the authors

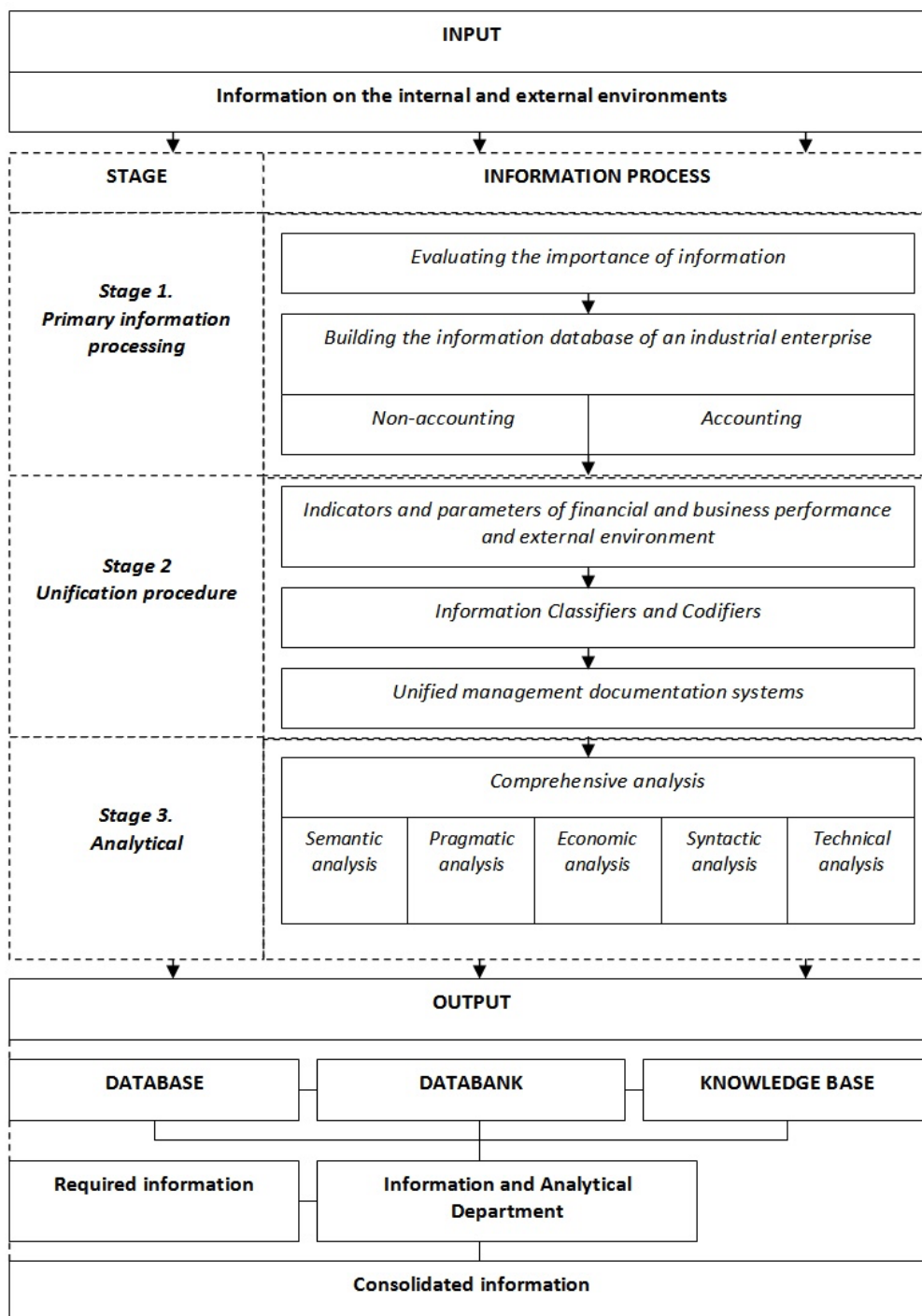
With the least squares method, a specific and reliable short-term projection can be obtained, which is an important tool for accounting for the seasonality of agriculture.

This method consists in finding the trend model parameters that minimise its deviation from the points of the initial time series. To make the projection as realistic as possible, it is recommended to use a linear function as a trend model in practical studies (1):

$$y = ax + b, \tag{1}$$

where y is a projected indicator;
a and b are coefficients;
x is the designation for time.

Figure 3
The structure of the system of information and analytical support of strategic management in an agribusiness company



Source: Karminsky, 2014, p. 78

For known values of x_i and y_i , a system of equations may be written as follows:

$$\sum_i^n y_i x_i = a \sum_i^n m x_i^2 + b \sum_i^n m x_i, \tag{2}$$

$$\sum_i^n m y_i = a \sum_i^n m x_i + n b, \tag{3}$$

If x denotes the year, taking 2018 as the starting point ($x = 0$) and y is the projected indicator, then for 2020 ($x = 2$) the system's solution is as follows (4):

$$Y_{2020} = \frac{Y_{2017} + Y_{2018} + Y_{2019}}{3} + Y_{2019} - Y_{2017}, \quad (4)$$

Extrapolation of the income statement using the least squares method is presented in Table 1.

Table 1
Pro forma income statement of an agribusiness company (least squares method)

Indicators	2017	2018	2019	Projections for 2020	Relative deviation as a % compared to 2019
Sales revenue	37,924	51,469	43,865	50,360	114.8
Cost of sales	31,170	48,508	37,390	45,243	121.0
Gross profit (loss)	6,754	2,961	6,475	5,118	79.0
Management expenses	1,269	1,236	1,273	1,263	99.2
Profit (loss) from sales	5,485	1,725	5,202	3,854	74.1
Other income	424	8	15	-	-
Other expenses	4,680	1,501	3,814	2,466	64.7
Profit (loss) before tax	1,229	232	1,403	1,129	80.4
Net profit (loss)	1,229	232	1,403	1,129	80.4

Source: the authors

According to this projection, in 2020, sales revenue will increase by 14.8%, and the cost of sales will increase by 21.0%. Other items, on the contrary, show a decline. Gross profit will fall by 21%, while profit before tax and net profit will decline by 19.6%, respectively. As the projected cost increase exceeds revenue growth, while management expenses remain practically the same, all this affects profit margin, which will decline by 25.9% in the projected year.

Projections can be made in a similar way for revenue, per unit costs and sales of agricultural products, and the gross profit for each type of agricultural product can be projected. This is a more efficient approach than projecting profits based solely on historic values.

Pro forma income statements for agribusiness companies can also be made using the more common method of the proportional relationship of indicators. When this method is used, the indicators in the income statement of an agribusiness company change in proportion to changes in sales.

In order to prepare a pro forma income statement, first of all, the base indicator for determining the projected values of other indicators in the statement needs to be justified. As a rule, sales revenue is used as such indicator; it is projected using modern methods (extrapolation, expert estimates, average annual growth rates, marketing studies, etc.).

When building the pro forma income statement of an agribusiness company:

- 1) items of interest for projection are selected;
- 2) the specific weight of these items in sales revenue is determined for each year of the initial analysed period (YB);

3) the selected values of Y for the subsequent projection of items in the financial performance statement are justified. This could be:

- the value of Y_{Bi} for the last reporting period;
- the value of Y_{Bi} for one year most typical for the company;
- the average value of Y_{Bi} for the entire analysed period (averages are deemed to smooth out fluctuations by years and in this sense are the most reliable for projections);
- the value of Y_{Bi} set taking into account the changes in specific weights if these indicators have a steady upward or downward trend, including according to a trend equation;

4) the projected values of individual items in the income statement are determined by multiplying the previously determined projected revenue by the respective specific weight.

$$P_{inn} = V_{np} \times YB_i, \quad (5)$$

Where P_{inn} is the projected value of individual items of the statement, RUB thousand;

V_{np} is the projected revenue, RUB thousand;

Y_{Bi} is the specific weight of individual items of the pro forma income statement in sales revenue for sales selected for projection, in fractions of a unit.

In our example, the projected revenue V_{np} was determined using the method of least squares and the specific weights of individual Y_{Bi} items were determined based on the average value for the analysed period.

Let us present the results of calculation of the pro forma income statement using the proportional relationship method (Table 2).

Table 2
Pro forma income statement of an agribusiness
company (proportional relationship method)

Indicators	Actual value, RUB thousand			Specific weight in revenue, %				Projected value of statement items for 2020
	2017	2018	2019	2017	2018	2019	average value	
Sales revenue	37,924	51,469	43,865	100	100	100	100	50,360
Cost of sales	31,170	48,508	37,390	82.00	94.25	85.24	87.85	44,241
Gross profit (loss)	6,754	2,961	6,475	17.80	5.75	14.76	12.15	6,119
Management expenses	1,269	1,236	1,273	3.35	2.40	2.90	2.84	1,430
Profit (loss) from sales	5,485	1,725	5,202	14.46	3.35	11.86	9.31	4,689
Other income	424	8	15	1.12	0.02	0.03	0.34	171
Other expenses	4,680	1,501	3,814	12.34	2.91	8.69	7.50	3,777
Profit (loss) before tax	1,229	232	1,403	3.24	0.45	3.20	2.15	1,083
Net profit (loss)	1,229	232	1,403	3.24	0.45	3.20	2.15	1,083

Source: the authors

Revenue is expected to grow by 14.8%; the cost of sales, by 18.3%; and management expenses, by 12.3% in the projected year. All other indicators are expected to decline, so gross profit will decline by 5.5%; profit margin, by 9.9%, and profit before tax and net profit are expected to decline by 22.8%. In general, projection of financial performance using the method of proportional relationship of indicators provided approximately the same picture as projection using the method of least squares.

4. Conclusions

We may conclude that the use of various methods of projecting the financial performance of agribusiness companies makes it possible to determine their strategic goals, which are formalized as desirable indicators which provide insight into the final financial positions; this makes it possible to determine the long-term business development vector and assess the performance of agribusiness companies. The presented methodology for preparing pro forma income statements in the agribusiness sector helps to improve the quality of the information base necessary for the effective strategic management of companies in this sector.

Bibliographic references

- Alborov, R.A. (2003). Concept for the development and methodology of accounting in agriculture. Moscow: Economics of Agricultural and Processing Enterprises.
- Batyrova, N.S. (2014). Information and analytical support of the sustainable development strategy of a company. *Auditor*, 4(230), 79–86.
- Belov, N.G. (2013). Sectoral aspects of accounting standardisation. *Accounting in Agriculture*, 1, 7–14.
- Getman, V.G. (2011). Urgent issues in improving accounting in Russia. *International Accounting*, 18(168), 2–5.
- Dontsova, L.V. (2001). Comprehensive analysis of accounting records. Moscow: Business and Service.
- Druzhilovskaya T.Yu. (2007). Harmonisation of financial statements: theory and Russian practice. Moscow: Accounting.
- Efimova, O.V. (2014). Formation of an indicator system for assessment and monitoring of the sustainable development of economic entities. *Innovative Development of the Economy*, 4(21), 42–47.
- Zimin, N.E. (2013). Diagnostics of the financial situation of an enterprise. Moscow: UMC TRIADA.
- Ivashkevich V.B., Azmitov, R.R. (2008). International Financial Reporting Standards as a condition for the improvement of the investment attractiveness of an enterprise. *Economic Integration Bulletin*, 5, 151–157.
- Kaplan, R.S., Norton, D.P. (2005). The balanced scorecard. From strategy to action. Moscow: Olymp Business.
- Karminsky, A.M. (2014). The information and analytical component of business. Moscow: Finance and statistics.
- Khoruzhy, L.I., Gupalova, T.N., Katkov, Yu.N. (2019) Putting in Place a System of Integrated Reporting in Organizations. *International Journal of Innovative Technology and Exploring Engineering (IJITEE)*, Volume-8 Issue-7 May, 748-755.

- Kuter, M., Gurskaya, M., Andreenkova, A., & Bagdasaryan, R. (2017) The early practices of financial statements formation in Medieval Italy. *Accounting Historians Journal*, 44(2), 17-25.
- Malsagov, I.A. (2012). Challenges of the development of strategic management sustainability reporting. *Transport Business of Russia*, 6-1, 230–234.
- Platov, V.Ya., Zolotoreva, S.E., Platova, O.V. (2012). *Strategic planning and management technologies*. Moscow: Delo.
- Polozova, A.N., Bryantseva, L.V. (2014). *Management review in sectors*. Moscow: KnoRus.
- Pytkin, A.N., Blazhenkova, N.M. (2008). Correlation between the efficiency and effectiveness of a business entity. *The Journal of Economic Theory*, 3, 133–139.
- Pyatov, M.L. (2011). Static balance theory as a method of presenting information on the financial situation of an organisation. *Accounting in Agriculture*, 4, 46–51.
- Savitskaya, G.V. (2016). *Comprehensive analysis of economic activities of an enterprise*. Moscow: Infra-M.
- Sigidov, Yu.I., Trubilin, A.I., Oksanich, E.A. (2013). *Accounting (financial) statements*. Moscow: Infra-M.
- Khoruzhy, L.I., Gupalova, T.N. (2015). *Challenges in creating a financial and management reporting system for agricultural organisations*. Moscow: Russian State Agrarian University–Moscow Timiryazev Agricultural Academy.
- Khusainova, A.S. (2013). *Problems of the methodology for preparing the financial and management statements of agricultural organisations*. Krasnoyarsk: Krasnoyarsk State Agrarian University.
- Cheglakova, S.G. (2010). The analytical capabilities of accounting in the assessment of financial sustainability. *Economic Analysis: Theory and Practice*, 7, 18–22.