Risk management in the export activities of agricultural enterprises

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Abstract. The success of any enterprise, including agricultural in modern conditions, is achieved only by conducting a competitive struggle. That is why enterprises are forced to take actions to improve the efficiency of their work. Increasing efficiency allows you to increase the competitiveness of enterprises. In turn, a competent increase in competitiveness increases profits and strengthens the company's position in the market. In this article, as a result of the analysis, a project for the development of the organization has been developed, on the basis of which a production program will be formed that contributes to improving the efficiency of activities.

1. Introduction
The research in the field of improving the performance of the agro-industrial complex, quite justifiably can be called constantly relevant. The need for such research arises every time when the economic situation in the market changes or more competitive organizations appear. All of the above influences the significance of the research and determines the goals and objectives of the research.

The purpose of the study is to develop recommendations for improving the efficiency of the enterprise.

In the process of studying theoretical materials, analyzing the positive and negative aspects of the enterprise activity, on the example of which it is supposed to develop measures and recommendations for improving the organization’s activities, the following tasks were set.

1. Analyze the indicators of the economic activity of the enterprise under study;
2. Develop recommendations for improving the company's activities;
3. Evaluate the effectiveness of recommendations for improving the activities of the enterprise under study.

The object of consideration is the activity of the organization LLC "Tashtyp Bakery" in the village of Tashtyp in Siberia in Russia.

2. Materials and methods
The goal of increasing the economic efficiency of enterprises should be determined by the increasing degree of restrictions on production resources: labor, materials, nature, and finance [1-4]. The economic benefits of a company depend on various types of management decisions, in particular:
• to assess the level of using certain costs types (resources) in order to obtain an economic result of production (within a country, region, industry, enterprise);
• for economic justification of the best options for production solutions in the field of processes management of innovation activation, investment activity, introduction of new equipment, technology, improving the organization of production and labor.

Thus, the increase in the economic efficiency of the enterprise has a multi-sided, complex impact on the economy of the enterprise, which ensures its profitability and sustainable economic growth [5-9].

LLC "Tashtyp Bakery" is a small enterprise, the main activity of which is the production of bakery and confectionery products.

The company employs a total of 38 people.

The amount of the company's property in 2020 is 8 million 410 thousand rubles. Most of the company's assets are represented by current assets.

The company operates primarily on its own capital created through its activities, referred to as retained earnings (uncovered loss) in the amount of 6 million 88 thousand rubles. The company also has an authorized capital of 277 thousand rubles. In the total structure of sources, retained earnings have a size of 95.5%.

According to the financial stability data in 2020 the company is in a financially stable position due to the receipt of revenue in the amount of 41 million 936 thousand rubles and, accordingly, net profit in the amount of 2 million 771 thousand rubles

The main indicators of financial and economic activity of LLC "Tashtyp Bakery" for 2017-2020 are shown in table 1.

Table 1. The main indicators of financial and economic activity of LLC "Tashtyp Bakery".

| Indicators                        | 2017       | 2018       | 2019       | 2020       | 2020 as a percentage of 2017 |
|----------------------------------|------------|------------|------------|------------|-------------------------------|
| Revenue from sales of products, million rub. | 33 306     | 35 067     | 33 927     | 41 936     | +25.9                         |
| Gross profit, million rub.       | 3 528      | 2 902      | 1 789      | 3 884      | +10.1                         |
| Net profit( loss), rub million   | 3 006      | 1 472      | 1 212      | 2 771      | -7.8                          |
| Total assets, million rub.       | 6 101      | 5 787      | 6 525      | 8 410      | +37.8                         |
| Current assets, thousand rub.    | 25         | 9          | 0          | 0          | -                             |
| Other non-current assets, thousand rub. | 0         | 0          | 0          | 0          | -                             |
| Other liabilities, thousand rub. | 0          | 0          | 0          | 0          | -                             |
| Current liabilities, thousand/ million rub. | 901       | 556        | 1 730      | 2 045      | +127                          |
| Long-term liabilities, thousand rub. | 0          | 0          | 0          | 0          | -                             |
| Equity, incl., million rub.      | 5 201      | 5 231      | 4 794      | 6 364      | +22.4                         |
As you can see from table 1, during 2017-2020, LLC "Tashtyp Bakery" has a gradual increase in revenue from sales of products (+25.9%), other operating income, but, despite this, there was a decrease in net profit (-7.8%). It can also be seen that the gross profit index mainly tended to decline, although it subsequently exceeded the 2017 figure in 2020, but not significantly (+10.1%). There is also an increase in the company's short-term liabilities, the growth of which in comparison with 2017 amounted to +1 million 144 thousand rubles (+127%). Their increase is due to the need to attract additional funds for production.

3. Results

Through the monitoring of the Tashtyp district market and in general for all sale points of the company's products in the Republic of Khakassia, it turns out that there is an opportunity to gain a foothold in the niche of flour confectionery products. This niche is poorly developed and has a weak competitive position [10-15].

Negative point in the enterprise is that after the analysis of financial - economic activities of the organization, it became clear that though the organization is effective in achieving the welfare of the owners and workers of the organization as at present and the near future, gets a number of factors that could adversely affect the organization as a whole [16-20]. These include the following:

Economic. According to the information of the company's suppliers, in 2021, the price of the supplied flour used in the company's activities is expected to rise. This is due to the increase in grain prices in the country. According to the article in the online magazine "Breadproduct" the situation is as follows: "At such prices for grain, about 15 thousand rubles/t and flour about 17 thousand rubles/t, mills on each ton of flour incur losses of up to 4 thousand rubles. In connection with the increase in prices for wheat grain in Russia, bread should also rise in price. The cost of bakery products, according to forecasts, can grow by at least 8-12%. The baking industry in the current season has already faced a significant increase in prices for rye flour, associated with a decrease in rye production in Russia. Now the enterprises face a new problem – the rise in price of wheat flour. Moreover, the price of bread depends not only on the price of grain, it is also necessary to consider the production costs for the production of flour and its delivery to the bakery enterprise, the tariffs of natural monopolies such as electricity, water, etc., as well as the shipment of finished products to retail chains, etc.

In 2020, the company received revenue of 41 million 936 thousand rubles, which is certainly more than the revenue of 2018 by 8 million 9 thousand rubles. Last year, it amounted to 33 million 927 thousand rubles. However, despite the good revenue last year, this year, due to the current situation, much lower revenue is expected due to an increase in a number of costs. This situation can push the company into financial dependence on creditors [21-25].

The peculiarities of the mountainous taiga area, the weak development of the local infrastructure and the small population of the Tashtyp district - 15 thousand people in 2018, impose a restriction on the organization in terms of its choice of developing new markets. The only direction for the company to enter new markets is only the northern direction, which connects the district with another part of the republic by the federal highway M-54.

As already mentioned, although the company holds a large part of the local market, manufacturers from other regions are gradually beginning to enter it. Among them, the following manufacturers can
be distinguished: "Abakan Bakery"; "Aleshin Plant"; "Abaza Bakery"; "Food Askiz Industrial Plant", etc. At the moment, their market share is insignificant, but they still pose a threat in the future.

In order to improve the efficiency of the activities for LLC "Tashtyp Bakery", the following action is proposed - to attract additional capital for the creation of a confectionery shop at the enterprise, equipped for the production of flour confectionery products.

According to the proposed action, the process of implementing an increase in the efficiency of the enterprise will look like this:

1. Additional capital in the amount of 2 million rubles will allow the company to increase the amount of its own funds, which in turn will allow the company (if it is impossible to invest its own funds) to carry out the necessary expansion at the enterprise.
2. The funds received will be used for the construction of a confectionery shop with an area of 50 m² on the basis of the enterprise, which will increase the production of the existing range of flour confectionery products and introduce new types of products. The creation of the workshop project will be carried out by the organization LLC "Abakan-Project" due to the conclusion of a construction contract with the latter in the amount of the funds received.
3. The company will organize a system for promoting new products to the market. To do this, LLC "Tashtyp Bakery" will need to develop an advertising campaign. Since the organizational structure of the management of this organization does not provide for a marketing department, the organization should contact an advertising agency that professionally organizes events to promote products.
4. At the established workshop, in accordance with the main document under the main number 10.71 "Production of bread and flour confectionery products, cakes and pastries of short storage", the existing range of flour confectionery products will be expanded. The company is considering the option of producing cakes for short-term storage, cookies and new types of buns with various fillings.
5. To work in the new shop to the existing staff, the company will hire 3 more new employees with the profession “a baker of confectionery products” and a salary of 25-35 thousand rubles, depending on the class and length of experience.

An important point in this event, not inferior in importance to the construction of the workshop, is the required equipment. The company LLC "Tashtyp Bakery" in this situation is considering the option of buying equipment from the plant that offers the best combination of price and quality - the “Infel” plant. The plant specializes in the production and sale of equipment for food enterprises. The company is located in the city of Chelyabinsk, so the delivery of the equipment will be carried out by a railway transport company. The extra charge for delivery, according to the policy of the “Infel” plant, usually does not exceed 2% of the order amount. Based on the order amount in the amount of 548,500 thousand rubles, the percentage of payment for delivery from this amount will be 10 thousand 970 rubles.

The list of required equipment is presented in table 2.

| Equipment type       | Short characteristic                                      | Quantity, pcs. | Costs  |
|----------------------|----------------------------------------------------------|----------------|--------|
| The jigging machine MB-120 | Capacity: 160kg/hour or 1300 kg/shift; Hopper capacity: 20 liters; Weight: 120 kg. | 1              | 189 000       |
| Rack oven HPE-750/3C | Capacity: 48 kg/hour – cookies, 110 kg/hour-cupcakes; Capacity of sheets: 6 pcs.; Weight: 440 kg. | 1              | 80 000        |
| MP-500 Flour Sifter | Capacity: up to 550 kg/hour; Hopper capacity: 22 liters; Weight: 40 kg. | 1              | 34 000        |
Cream-beating machine MIX-20  
Capacity: 80 l/h; Bowl capacity: 20 liters; Weight: 90 kg.  
1 48 000

Cream-beating machine MIX-10  
Capacity: 40 l/h; Bowl capacity: 10 liters; Weight: 60 kg.  
1 29 500

Hammer crusher Molot-200  
Capacity: up to 60 kg/hour; Weight: 30 kg.  
1 39 000

Foot dispenser DF-50  
Capacity: up to 70 kg/hour or up to 700 doses/hour; Hopper capacity: 10 liters; Weight: 20 kg.  
1 39 000

BSF-501 cutting knife and BS-4525 heat chamber  
Packing speed: up to 30 cartons per minute; Carton dimensions: up to 500x350x230 mm; Weight: 90 kg.  
1 90 000

TOTAL  
- 8 548 500

The equipment listed in table 2 will allow you to effectively organize the production of flour confectionery products. Its advantages include the following:

1. The total electric power consumption of the line at the rated mode does not exceed 31 kW;
2. The estimated productivity of this line for the production of confectionery products is up to 50 kg/hour of finished products;
3. The mass of the confectionery shop is 900 kg;
4. The ability to work with four employees;
5. The warranty period for the workshop is 2 years. The service life is 15 years.

The direction of costs for the implementation of the proposed event as a whole is indicated in the table due to the optimal price-quality ratio.

### Table 3. Costs related to the implementation of the event.

| Cost item | Amount |
|-----------|--------|
| 1 | |
| The conclusion of the contract for construction with the "Abakan – Project" million rub. | 1 000 000 |
| Purchase of raw materials for the production of new types of products, thousand rub. | 50 000 |
| Purchase of equipment for the workshop, thousand rub. | 548 500 |
| Advertising campaign, thousand rub. | 50 000 |
| Other expenses (unforeseen situations) | 351 500 |
| TOTAL | 2 000 000 |

Thus, according to table 3, an amount equal to 2 million rubles will be required for the implementation of the project according to the cost items.

### Discussion

Consider the projected economic effect from the introduction of the confectionery shop at the company “Tashtyp Bakery”. It is expected that from the implementation of these measures, revenue from sales of products will increase by an average of 20%. Since in 2020, the amount of revenue from the sale of
products of the studied organization amounted to 41 million 936 thousand rubles, after the implementation of these measures, the organization of LLC "Tashtyp Bakery" will receive an additional profit of 57 million 95 thousand rubles (41 million 936 thousand +36.15 %).

The economic effect from the introduction of the confectionery shop at the company "Tashtyp Bakery" is presented in table 4.

Table 4. The economic effect of the introduction for the confectionery shop.

| Key indicators                                      | Before the introduction of the event | After the introduction of the event | Absolute growth | Growth rate, % |
|----------------------------------------------------|--------------------------------------|-------------------------------------|-----------------|----------------|
| Revenue from sales of products, million rub.        | 41 936 000                           | 57 095 864                          | 15 159 864      | +136.15        |
| The cost of production, million rub.                | 30 454                               | 45 654                              | 15 200          | +149.91        |
| Net profit (loss), million rub.                     | 2 771                                | 4 540.3                             | 1 769.3         | +136.1         |

According to table 4, it follows that with the implementation of this measure, the production costs of LLC "Tashtyp Bakery" will increase by 49.91%, and sales revenue by 36.15%, which gives an increase in net profit in the amount of 1.769.3 million rubles.

Thus, the proposed measures in the field of stimulating the sales policy of LLC "Tashtyp Bakery" will ensure an increase in the efficiency of the enterprise in the long term.

Therefore, the effectiveness of this event is defined as the ratio of the income from the event to the costs and will be 125.06 (57 095 864/45 645 000).

The costs and results of the measures implemented in the activities of LLC "Tashtyp Bakery" to improve its efficiency are presented in table 5.

Table 5. Costs related to the implementation of the event.

| Name of event                                                                 | Costs  | Result  | Efficiency, % |
|-------------------------------------------------------------------------------|--------|---------|---------------|
| Creation of a confectionery shop aimed at improving the efficiency of the enterprise, million rubles. | 2 000 000 | 57 095 864 | 28.53         |

As can be seen from table 3.7, we can conclude that the cost of this event will amount to 2,000,000 million rubles. The effectiveness of the implementation of these measures in the activities of LLC "Tashtyp Bakery" is expressed as the ratio of the total costs for all activities to the total results and will amount to 28.53.

Next, it is necessary to evaluate the effectiveness of measures to improve the organization’s activities of LLC "Tashtyp Bakery". This assessment is carried out by comparative analysis and calculations of the main performance indicators of LLC "Tashtyp Bakery" before and after the implementation of the recommendations.

The evaluating the effectiveness of the activities is based on the use of the following indicators that reveal the effectiveness of the project's activities:

1. Annual rate of return on invested capital;
2. The payback period and the efficiency ratio.
It is necessary to consider each of these indicators separately and draw conclusions about the overall efficiency of the enterprise.

The annual rate of return is calculated as the ratio of net profit to invested capital \([26-31]\).

5. Conclusion

The study of methods for assessing the effectiveness of the enterprise development showed that most of them are reduced only to the assessing the overall effectiveness of the activity, or to individual elements of the activity. In this connection, a new methodology for evaluating the efficiency of the enterprise was developed, which includes the assessment of all the main elements of the logistics system using various qualitative and quantitative indicators. The proposed methodology includes an assessing the efficiency of the enterprise by its main functions, namely: supply, distribution, warehousing, transportation, inventory management, as well as the overall profitability and profitability of the enterprise.

Also, as part of improving the efficiency of the enterprise, the following measures are proposed:

- sync function through the development and implementation of organization for the enterprise functioning;
- implement a stock management system that allows you to determine the optimal size of the stock (necessary for uninterrupted production + insurance stock);
- make decisions based on the calculation of the optimal size and frequency, based on the needs of end users (for example, production sites) and total operating costs;
- simulate the supply chain using simulation or VR technologies, implement a balanced motivation system based on the KPI assessment and related to the company's expenditure budget.

We get a payback period of 5.3 years, equal to about five years and three months. The efficiency coefficient is 0.2. Based on the fact that the enterprise belongs to the industrial type, and the standard value of the capital investment efficiency indicator for industry is 0.16, it can be determined that the indicator 0.2 means a positive profitability of this event.

The main share of the working capital of LLC "Tashtyp Bakery" is formed at the expense of its own funds. However, they are not enough to improve the efficiency of the enterprise. Thus, one of the ways to increase the economic efficiency of the organization under study is to increase the share of working capital at the expense of borrowed resources by increasing the production of products at the expense of the confectionery shop created with these funds. Weak borrowing policy does not allow the company to develop. Therefore, it is necessary to review the options for working with borrowed funds.

Thus, for the effective management of the organization of the investigated enterprise, LLC "Tashtyp Bakery", it is necessary: to effectively organize the work of the created shop in order to ensure an increase in profit growth and thereby begin to get out of financial dependence on borrowed funds presented in the form of an investment loan.

References

[1] Shaporova Z E and Tsvettsykh A V 2019 Indicators for assessing the sustainable rural development in the region IOP Conference Series: Earth and Environmental Science 548(2) 022044
[2] Mikhalev A S, Tynchenko V S, Kukartsev V V, Korpacheva, L N, Kukartsev V A and Rozhkova A V 2020 Storage and analysis of natural resources information in various territories Journal of Physics: Conference Series 1661(1) 012181
[3] Trofimova S A, Trofimova I B and Gotsko L G 2020 Food security structure and agribusiness IOP Conference Series: Earth and Environmental Science 548(2) 022035
[4] Koloskova Y, Dalisova N and Shaporova Z 2019 The role of human capital in the development of agribusiness IOP Conference Series: Earth and Environmental Science 315(2) 022103
[5] Rozhkova A and Stepanova E 2021 Improving the Competitiveness of Poultry Farms in the
Krasnoyarsk Region of Russia. E3S Web of Conferences 247 01026

[6] Boyko A A, Kukartsev V V, Tynchenko V S, Korpacheva I N, Dzhioeva N N, Rozhkova A V and Aponasenko S V 2020 Using linear regression with the least squares method to determine the parameters of the Solow model Journal of Physics: Conference Series 1582(1) 012016

[7] Trofimova S A, Trofimova I B and Gotsko L G 2019 Some areas of agribusiness participation to ensure food security of the Yenisei Siberia IOP Conference Series: Earth and Environmental Science 315(5) 052066

[8] Stepanova E V, Dalisova N A and Karaseva M V 2021 Engineering centers for the innovative development of the regional agricultural enterprises IOP Conference Series: Earth and Environmental Science 677(2) 022085

[9] Stepanova E and Rozhkova A 2020 Resource Saving Technologies for Rapeseed Cultivation at the Regions of the Russian Federation E3S Web of Conferences 161 01075

[10] Stupin A O, Kukartsev V V, Tynchenko V S, Kukartsev V A, Cherepanov A I and Rozhkova A V 2020 Management modelling of the natural resources extraction station by agency modelling means Journal of Physics: Conference Series 1661(1) 012196

[11] Zinina O V, Dalisova N A and Olentsova J A 2020 Dynamics and structure of manufacturing bread and bakery products in the Krasnoyarsk region IOP Conference Series: Earth and Environmental Science 548(2) 022028

[12] Zinina O V and Olentsova J A 2021 Modern methods of evaluating the efficiency of agricultural enterprises IOP Conf. Ser.: Earth Environ. Sci. 677 022038

[13] Nezamova O A and Olentsova J A 2021 Problems and prospects of agro-industrial complex in the Krasnoyarsk region IOP Conf. Ser.: Earth Environ. Sci. 677 022034

[14] Rozhkova A and Olentsova J 2020 Development of New Technological Solutions for the Dairy Industry E3S Web of Conferences 161 01086

[15] Yakimova L A, Streltsova A V, Koloskova J I and Shaporova Z E 2019 State support development of agricultural consumer cooperation in the Krasnoyarsk Territory IOP Conf. Ser.: Earth Environ. Sci. 315 022099

[16] Rozhkova A 2020 Bank’s personnel as a tool for improving its competitiveness ACM International Conference Proceeding Series 3444530

[17] Dalisova N A, Sharopotova A V and Karaseva M V 2020 Value and role of the strategic management in the development of agricultural enterprises IOP Conference Series: Earth and Environmental Science 548(2) 022102

[18] Kondrashev A, Nikitenko M, Trofimova S, Trofimova I and Gotsko L 2017 The arctic states’ strategies and the northern regions’ food security Economic Annals-XXI 162(11-12) 32-7

[19] Rozhkova A V and Dalisova N A 2021 Risk management in the export activities of agricultural enterprises IOP Conf. Ser.: Earth Environ. Sci. 677 022048

[20] Stepanova E 2020 Innovative development of the export oriented regional agro-industrial cluster ACM International Conference Proceeding Series 3444479

[21] Shalaeva D S, Kukartseva O I, Tynchenko V S, Kukartsev V V, Aponasenko S V and Stepanova E V 2020 Analysis of the development of global energy production and consumption by fuel type in various regions of the world IOP Conference Series: Materials Science and Engineering 952(1) 012025

[22] Stepanova E V 2020 Strategic directions for the development of agricultural exports in the regions of the Russian Federation IOP Conference Series: Earth and Environmental Science 548(2) 022098

[23] Antamoshkina O I, Kamenskaya N V and Olentsova J A 2020 The problem of choosing a consumer segment in the agro-industrial complex IOP Conference Series: Earth and Environmental Science 421(2) 022056

[24] Stepanova E V 2021 Strategic guidelines for the development of the agricultural cluster in the region IOP Conf. Ser.: Earth Environ. Sci. 677 022084

[25] Nezamova O A and Olentsova J A 2021 The role of marketing in increasing competitiveness of
the region ACM International Conference Proceeding Series 3444481
[26] Eremeev D V, Boyko A A, Kukartsev A V, Rozhkova A V, Mylnikova E V and Korpacheva L N 2020 The use of mathematical calculations to determine the feasibility of borrowing in the planning period Journal of Physics: Conference Series 1582(1) 012027
[27] Rozhkova A V 2021 Features and problems of lending to agricultural enterprises IOP Conf. Ser.: Earth Environ. Sci. 677 022045
[28] Zinina O V, Dalisova N A and Olentsova J A 2021 Ways to enter the international farm market, considering the possibilities of state support IOP Conf. Ser.: Earth Environ. Sci. 677 022037
[29] Dalisova N A and Grishina I I 2019 Personnel training as a factor in the formation of the export potential of the agro-industrial complex of the region IOP Conference Series: Earth and Environmental Science 315(2) 022072
[30] Nezamova O and Olentsova J 2021 The role of digital marketing in improving the efficiency of the product distribution system of agricultural enterprises in the Krasnoyarsk Region E3S Web of Conferences 247 01027
[31] Zinina O, Dalisova N and Olentsova J 2020 The importance of strategic analysis for agricultural holdings in the innovative development of the agricultural sector ACM International Conference Proceeding Series 3444480