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## RISK MANAGEMENT AT THE ENTERPRISES OF AGROINDUSTRIAL COMPLEX

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**Abstract.** The article deals with the problem of risk management at agricultural enterprises, which is currently not given sufficient attention, although this issue is one of the most urgent during the crisis. In modern conditions, some agricultural enterprises are barely surviving and issues of risk assessment and management are becoming a priority. Enterprises of agro-industrial complex face a large number of risks every day and the result of the enterprise's activity largely depends on an adequate response to them. Unaccounted risks are very dangerous for the company. They lead to lower profits, losses and, in the worst case, to the bankruptcy of the company. This situation makes enterprises of agro-industrial complex vulnerable, especially in the current unstable economic situation. Some enterprises of agro-industrial complex, especially small businesses, are barely surviving, and proper risk assessment and management is of paramount importance. The purpose of this study is to try to optimize risks at the LLC «Iskra», which produces and sells agricultural products in Krasnoyarsk and in the Krasnoyarsk region. For this purpose, we studied: the financial condition of the enterprise, the main indicators of its activity, the main directions of risks for the enterprise, and proposed measures to reduce risks. As an informational basis, we used research by Russian scientists on the studied issue, statistical industry information, and reporting materials of the studied organization.

**Keywords:** risk assessment, management structure, unaccounted risks, financial condition of the enterprise, physical and economic risks, industry information, scoring analysis.

## УПРАВЛЕНИЕ РИСКАМИ НА ПРЕДПРИЯТИЯХ АПК

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**Аннотация.** В статье рассматривается проблема управления рисками на предприятиях АПК, которой в настоящее время не уделяется достаточного внимания, хотя в период кризиса этот вопрос является одним из самых актуальных. В современных условиях некоторые сельскохозяйственные предприятия балансируют на грани выживания и вопросы оценки рисков и управления ими становятся первоочередными. Предприятия АПК ежедневно сталкиваются с большим количеством рисков, и от адекватной реакции на них во многом зависит результат деятельности предприятия. Неучтенные риски весьма опасны для предприятия. Они ведут к снижению прибыли, возникновению убытков и, в худшем случае, к банкротству предприятия. Такая ситуация делает уязвимыми предприятия АПК, особенно в нынешней нестабильной экономической ситуации. Некоторые из предприятий АПК, особенно предприятия малого бизнеса, находятся на грани выживания, и правильная оценка рисков и управление ими приобретает первостепенное значение. Целью данного исследования является попытка оптимизации рисков на предприятии ООО «Искра», производящем сельхозпродукцию и реализующем ее в г. Красноярске и в Красноярском крае. С этой целью были изучены: финансовое состояние предприятия, основные показатели его деятельности, основные направления рисков для предприятия, предложены мероприятия по снижению рисков. В качестве информационной основы были использованы исследования российских ученых по изучаемому вопросу, статистическая отраслевая информация, отчетные материалы исследуемой организации.

**Ключевые слова:** адаптация, маркетинговые технологии, потребительское поведение, ключевые факторы, мониторинг.

*Problem definition in general form and its connection with important scientific and practical tasks.* At present, during the crisis, many enterprises, especially agricultural enterprises, are experiencing financial problems and pay close attention to saving money and finding reserves to replenish these funds. In this regard, the issue of risk reduction becomes important and becomes particularly relevant. Risks accompany all business activities and are very diverse [1-4]. Throughout the business, the entrepreneur is accompanied by the risk of profit loss and the risk of not receiving certain benefits. Such risks are commonly referred to as economic risks, since they are associated with financial, administrative, organizational, and other functions. The company's activities are affected by a large number of internal and external factors that need to be foreseen and taken into account. Risk is a danger, possible losses, which can be financial, material, labor and special.

Different researchers have different interpretations of the term "risk". N. Ryaskova, E. S. Stoyanova, M. G. Shtern

believe that "risk" is the probability of losses. Azarskaya M. A., Antonova N. A., Belov P. G., Belykh V. I., Polkovnikova S. G., Mayevsky F. V., Guzev Yu. N., Savenkova N. D. define "risk" as the probability of a negative event leading to financial losses. Kasyanenko T. G., Lvova M. V. believe that "risk" is the possibility of failure to achieve the set goal by an economic entity. The risks are very diverse. They usually analyze such risks as industrial, commercial, financial, natural, environmental, and political. Foreign scientists distinguish operational, market and credit risks. In recent years, credit risks have been increasingly analyzed at Russian enterprises, since almost all enterprises (in the agricultural sector) work with loans [5-7]. Other classifications are based on other attributes, such as external, internal, short-term, permanent, and so on.

The SWOT analysis made it possible to identify which risks the company should pay attention to in the first place:

- financial risk;
- commercial (sales) risks;

- production (technological) risks;
- climate (regional) risks;

The most dangerous for the company are financial risks, because they can lead the company to bankruptcy.

*Analysis of recent researches and publications.* Risk management issues have been considered by many Russian scientists, for example, T. D. Ekazheva, M. A. Odintsovo, K. V. Netsymailo, A. A. Kudryavtsev, I. B. Kotlovsky, G. Mangoldt, G. Markovits, N. V. Khokhlov, G. V. Chernova, and M. U. Elliott.

However, it should be noted that there is currently no single, comprehensive model that allows assessing risks in all areas [8-12]. In our opinion, to assess financial risks, it is advisable to use the model proposed by G. V. Savitskaya. This model allows for rapid diagnostics of the enterprise's financial condition and fairly accurately assesses the probability of enterprise's bankruptcy. This model was used to determine the financial condition of the limited liability company (LLC) "Iskra".

To analyze the financial position of the LLC «Iskra», the parameters of financial risk assessment were determined. These included: financial stability risk, insolvency risk, investment risk, and credit risk. Calculations have shown that the highest value is the risk of reducing the financial stability of the enterprise.

The logit regression model developed for diagnosing the risk of bankruptcy, used for agricultural enterprises, has the form of the following formula 1.1

$$Z = 1 - 0.98 \times 1 - 1.8 \times 2 - 1.83 \times 3 - 0.28 \times 4, \quad (1.1)$$

where 1 is the share of equity in current assets;

2 is the working capital turnover ratio;

3 is the coefficient of financial independence of the enterprise;

4 is the return on equity, %.

Result estimation:

- if  $Z = 0$  or lower, the company is assessed as financially stable;

- if  $Z = 1$  and higher, then the organization belongs to a high-risk group.

In the calculation result of the logit regression model for diagnosing the bankruptcy risk Z-account to December 2019 for the LLC «Iskra» made of 1.22 from which we can conclude that the company is financially very stable and at risk of bankruptcy, although not in a very high degree.

Based on the results of the analysis, we can talk about the following shortcomings of the LLC «Iskra»:

- reduced sales revenue, reduced labor productivity;
- increase in production costs;
- increase in losses and decrease in the company's payback;
- lack of own working capital;
- decrease in financial stability indicators;
- deterioration of business activity;
- decline in solvency.

These shortcomings increase the likelihood of financial risks related to solvency and financial stability, as well as the risk of bankruptcy.

*Formation of the article goals.* Justifying the expediency of risk analysis and management, it should be emphasized that enterprises of agro-industrial complex are subject to constant risks and their range is very wide. In this article, special attention was paid to financial risks, since their impact on the activities of the LLC «Iskra» is most significant.

Work with risks in the enterprise should be carried out systematically, but at present, risk management is not given enough attention and this work is episodic [13-16]. Most often, businesses consider the risks in sufficient detail when trying to take out a loan from a bank to confirm their creditworthiness. In conditions of uncertainty, it is advisable to apply in addition to insurance four main methods of risk management, such as:

- risk elimination;
- risk reduction;
- risk taking;

- risk transfer.

Such a detailed risk analysis is practically not carried out at enterprises of agro-industrial complex. However, identifying risks is not the ultimate goal of the analysis. The final stage of the study should be the proposal of measures to reduce the risk of loss for financial stability at the LLC «Iskra».

*Presentation of the main research material with full justification of the scientific results.* The analysis revealed the following shortcomings of the company's activities that increase financial risks:

- reduction in sales revenue,
- increase in production costs,
- increase in losses and decrease in the company's payback,
- lack of own working capital,
- decrease in financial stability indicators,
- deterioration of business activity and solvency indicators.

These shortcomings increase the likelihood of financial risks related to solvency and financial stability, as well as the risk of bankruptcy [17-20].

To manage the risks and reduce the risks of the enterprise, the following measures should be taken:

- implementation of measures to reduce financial risks and increase financial stability;
- conducting an event to increase financial results - increase sales;
- increase of business activity and solvency of the enterprise due to planning and control of calculations.

These measures will increase the efficiency of the enterprise, increase its financial stability and reduce the financial risks of the enterprise.

The proposed risk management and mitigation measures for the LLC «Iskra» are presented in table 1.

Table 1 - Measures to improve risk management and reduce them at the LLC «Iskra»

Identified performance shortcomings	Proposed risk management and mitigation measures
Problems with financial stability, high financial risks	It is proposed to conduct a scoring analysis of buyers to reduce credit risks
Decrease in sales revenue and financial results	Development of own sales networks by organizing work with large retail chains and creating their own retail outlets in Krasnoyarsk will increase product sales and financial results
Deterioration of business activity and solvency	Planning and monitoring calculations will increase the business activity and solvency of the enterprise and reduce the risks of bankruptcy and loss of financial stability

Consider these events in detail. In order to reduce the credit risk, it is recommended to conduct a scoring analysis of customers at the LLC «Iskra». The LLC «Iskra» often ships products to customers with deferred payment (on the terms of a commodity loan), which increases the company's credit risks.

The LLC «Iskra» is a reliable and well-established buyer, that is, this enterprise can be provided with a commodity loan (installment payment).

To check the supplier's scoring analysis, a rapid check is performed, which can result in the following results:

- the organization is showing positive activity;
- the organization has undergone major changes (change of management, significant reduction in employee salaries, problems with paying taxes and counterparty debt, etc.);
- the organization has stopped its activities or may soon be liquidated.

Each counterparty check is completed by generating a report.

For scoring (assessment of the counterparty's reliability), the solution provides analytical data on counterparties in the form of reports:

- financial analysis shows the structure of assets, net assets, property, liquidity, profitability, financial stability of the counterparty and a rating assessment of its financial condition;

- licenses displays a list of licenses received by the counterparty from various licensing authorities;

- general analytics - provides a description of actual and statistical information on enforcement proceedings against the counterparty company (the number of works initiated, the amount recovered, etc.), statistics on arbitration cases and government contracts, as well as key indicators of accounting statements.

As a result of conducting a scoring assessment of the company's customers, the LLC «Iskra» will reduce the company's financial risks and in the long term will affect the improvement of the company's financial condition.

The main risks in the organization of sales and trade network of agricultural products are:

- low purchasing power of the consumer (to produce expensive products efficiently only by pre-order);

- ever-growing competition;

- violation of technology or sanitary standards;

- failure to meet delivery deadlines leads to product damage;

To reduce these risks, it is necessary to constantly monitor the quality of products, the competitive market, prices and demand for products.

Currently, most of the products of the LLC «Iskra» are sold under state contracts to municipal enterprises of Zelenogorsk and Krasnoyarsk (kindergartens, schools, colleges and other organizations), as well as under contracts concluded in stores in Zelenogorsk.

To expand the sales market and organize its own retail network, it is planned to sell products on the market of Krasnoyarsk. As the volume and product range increases, the sales market can be expanded to other cities of the Krasnoyarsk region.

It is offered to the LLC «Iskra» the organization of 3 enterprise outlets in Krasnoyarsk. To open retail outlets, it is planned to rent small retail areas on the territory of markets and shopping complexes in Krasnoyarsk.

The company can also enter into supply agreements with major retail chains (supermarkets) for the supply of meat and dairy products, vegetables and semi-finished products.

The creation of retail outlets will allow the company to gradually enter the Krasnoyarsk market and increase the company's sales volume.

We have proposed the following measures to manage risk and reduce it at the enterprise:

- conducting customer scoring analysis;

- expansion of the company's retail network in Krasnoyarsk;

- planning and control of payments with suppliers and buyers.

To perform scoring analysis, you need to purchase DIRECTUM software - "counterparty verification", which simplifies the work of the analyst.

The cost of conducting a scoring analysis for the year will amount to 627 thousand rubles. As a result of the customer scoring analysis, according to the head of the company, accounts receivable are expected to decrease by approximately 20%.

The organization of the scoring analysis will allow the company to reduce financial risks and improve the state of the company's accounts receivable, as well as affect the growth of sales revenue.

Expansion of the company's retail network in the Krasnoyarsk market.

In order to improve the financial position of the LLC «Iskra», it is advisable to expand the company's retail network and sales market in the Krasnoyarsk market. The organization of 3 retail outlets of the enterprise is offered. To open retail outlets, it is planned to rent small retail areas (about 20 sq. m.) on the territory of markets and shopping

complexes in Krasnoyarsk.

Opening retail outlets and expanding the retail network will allow the company to increase sales of products. These measures will increase revenue by increasing sales of products and will affect the increase in financial results.

Planning and monitoring payments with suppliers and customers.

Changing payments with suppliers – getting discounts (an average of 3%) and deferred payment for the purchase of goods (tools, materials), as well as for the services of transport companies will reduce the cost of production and commercial expenses of the enterprise.

The organization of the scoring analysis will allow the company to reduce financial risks and improve the state of the company's accounts receivable, as well as affect the growth of sales revenue. Opening retail outlets and expanding the retail network will allow the company to increase sales of products. Also, these measures will increase revenue by increasing product sales and will affect the increase in financial results, which will increase the efficiency of the enterprise and its financial stability and solvency [21-23]. Reviewing the terms of contracts at the enterprise will reduce the company's expenses, which will affect the increase in the company's equity and improve its financial condition. Planning and monitoring calculations will increase the business activity and solvency of the enterprise and reduce the risks of bankruptcy and loss of financial stability.

The proposed measures will improve the financial results of the company and its efficiency, which will affect the overall improvement of the financial condition and reduce financial risks [24,25].

As a result of the calculations, we can say that the proposed measures to reduce the risks of the enterprise are effective for the enterprise and will allow it to achieve its goals.

*Conclusions of the study and prospects for further research in this area.* After analyzing the nature and directions of risk reduction, we can conclude that in practice a variety of risk management methods are used, while the organization's risk management should take into account the possibility of using these methods in each specific enterprise. In accordance with the industry where the company operates, and taking into account the presence of internal and external factors, the company needs to develop its own risk management strategy that will achieve positive results and reduce risk.

The result of the analysis revealed the following deficiencies activities of the LLC «Iskra»: reduction in activity; increased production costs; the decrease in the financial result: increase in loss and loss activities; deterioration in the financial condition of the enterprise: the lack of working capital, the deterioration in business activity and a reduction in pay; insufficient development of own sales networks. Measures to manage and reduce risks at the LLC «Iskra»: conducting customer scoring analysis, expanding the company's retail network in Krasnoyarsk, planning and monitoring settlements with suppliers and customers.

The organization of the scoring analysis will allow the company to reduce financial risks and improve the state of the company's accounts receivable, as well as affect the growth of sales revenue.

Opening retail outlets and expanding the retail network will allow the company to increase sales of products. Also, these measures will increase revenue by increasing product sales and will affect the increase in financial results, which will increase the efficiency of the enterprise and its financial stability and solvency.

Reviewing the terms of contracts at the enterprise, taking into account the in-depth analysis of contractors, will increase their efficiency and improve the financial condition of the enterprise. Planning and monitoring calculations will increase the business activity and solvency of the enterprise and reduce the risks of bankruptcy and loss of financial stability. As a result of the calculations, we can say that the



proposed measures to reduce the risks of the enterprise are effective for the enterprise and will allow it to achieve its goals.

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