Crisis management of forestry enterprises

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Abstract. The reduction in the production of most types of forestry enterprises products indicates the presence of crisis manifestations in their activities, which predetermines the need for crisis management. Studying the work of the forest complex enterprises, factors that have a direct impact on the occurrence of crisis manifestations have been identified. The classification of specific factors on the basis of synchronization has been made, which made it possible to determine leading, coincident and lagging factors for determining the boundaries of crisis management: preventive crisis management, crisis management and restorative crisis management. It has been established that the diagnosis of crisis management should be based on basic indicators of crisis manifestations and their metrics. Allocated intervals and boundary values of metrics characterize the state of the enterprise’s economy from the standpoint of the development of crisis manifestations. The identified indicators and metrics enable to simplify analytical procedures and to determine the boundaries of crisis manifestations. To ensure the sustainability of forestry enterprises, taking into account the peculiarities of their functioning, managerial influences have been formed within the framework of crisis management. The obtained results open new areas of research.

1. Introduction

In the conditions of a modern market economy, the activity of enterprises is associated with the uncertainty of socio-economic development, thereby increasing the likelihood of crises in the functioning of economic entities of any industry segments.

The crisis of the enterprise is a set of events that threaten the goals of activity, viability or its very existence [1]. A crisis is a natural phenomenon in the life activity of any enterprise. The resources expended on detecting crisis phenomena in the system of an economic entity will be significantly lower than the required expenditures remove an enterprise from the conditions of an already formed crisis and eliminate its consequences [2].

However, the severity of crisis can be mitigated if one predicts its occurrence in time, and crisis management enables timely recognition of crisis trends. Thus, the most important task of crisis management is to prevent a crisis caused by management errors and to ensure their most painless passage in conditions of objectively occurring crises [3].
Modern scientists define the essence and tools of crisis management in different ways. So, A.S. Saakov believes that crisis management is based on the methodology and organization of problem solving in the context of the organization’s crisis functioning [4].

I.K. Larionov defines crisis management as a system of management measures to diagnose, prevent, neutralize and overcome crisis phenomena and their causes at all levels of the economy [5].

Interesting is the study A.N. Ryakhovskoy and S.E. Kowan, who use the term “crisis management” to understand this type of management, in which controlled processes of preparing for a crisis, its forecasting, preventing crises, ensuring the functioning of systems in times of crisis, mitigating the negative effects of crises occur in economic systems of different levels and the use of crisis factors for development [3].

A common feature of most studies is consideration of the theory and methodology of enterprise financial management under the conditions of bankruptcy. When significant developments to solve forecasting problems, crisis prevention, reasonable recommendations for improving state regulation are presented, the legal framework for analyzing bankruptcy procedures is being developed [6-9]. At the same time scientists there is no unequivocal idea of the content of crisis management at the micro level to determine its boundaries, taking into account industry characteristics, in the works of well-known. In modern conditions, little attention is paid to the issues of crisis management of forestry enterprises, which makes the ongoing study extremely relevant.

Abroad, attention is also paid to the technology of crisis management. So, Nelu Mocanu (Tomis University, Constanta, Romania) proposes the use of a system of complex situation monitoring at the enterprise, which enables to distinguish the crisis at the initial level and start preparing the company to prevent the crisis at the right time [10].

The study of Eric Hansen, Casper Claudi Rasmussen and Erlend Nibakk, is quite interesting. They investigated the work of 89 US forestry companies and found that a stronger customer orientation for forestry companies takes place during the crisis, as this leads to increased innovation and improved product development. In addition, the allocation of resources for the development of the external market during financial recessions can be a strategy for creating innovations [11].

Finnish scientists Teyo Ritteri, Tara Peltola and Lina A. Leskinen argue that it is necessary to analyze choices and preferences regarding components of scientific ideas and to identify the links between these options and developing social discourses, social norms, rules of government, power relations and partnerships, as well as historical events to fully understand what economic sustainability in forestry means [12].

Thus, there are many opinions of Russian and foreign scientists on the tools of crisis management. However, the type of crisis management strategy depends on the specifics of involved activity and the resources. At the same time, most of the problems of branches and complexes of the national economy in the context of the state of their activity and sustainability are reflected in the state of enterprises. The forest complex of Russia, included in the list of eight major industrial complexes of the country, is not an exception [13].

The purpose of the article is to substantiate theoretical positions and develop practical recommendations on the formation of managerial influences within the framework of crisis management to ensure the sustainability of forest complex enterprises, taking into account the peculiarities of their functioning.

2. Experimental part
An analysis of the development of forest industry enterprises in the Voronezh Region has been made as the part of the study.

During the study, methods of comparison, comparison and observation have been used in the following parts:
- Analysis of the state and development of forestry enterprises of the region;
- Consideration of the theoretical foundations of crisis manifestations in forestry enterprises;
- Desk research, including development of crisis management program.
To determine the causes of the crisis, the expert method Delphi was used. This method is used in foreign practice. Thus, the Delphi method was used by scientists from Finland Anne Toppinen, Axel Rõhr, Satu Pätäri, Katja Lähtinen, Ritva Toivonen in the study of the future of wooden high-rise construction in the forest bioeconomy [14]. Scientists Elias Hurmekoski (Finland) and Hanne K. Sjolie (Norway) used the results of a study of qualitative scenarios, including the Delphi method, to develop scenarios for the forest sector model [15].

Thus, this method is applicable for forestry enterprises of the Voronezh region. It was used to identify the main factors influencing the onset of a crisis.

The factors that determine the occurrence of crisis situations has been selected by logical method as a result of the work of an expert group consisting of managers and economists from forestry enterprises. The prioritization method has been used in order to systematize the factors and establish their significance to determine the crisis of the enterprise, which enables processing of logical analysis of material factors and scoring their mutual influence.

Methods of financial and economic analysis have been used to determine the metrics of crisis manifestations (in particular, traditional, statistical, economic and mathematical ones). The method of generalization has been used to process the information received by data summarizing and grouping.

Questions of economic analysis in the forest sector have also been considered by the scientists of the United States of America and France. Edward B. Barbier, Philippe Delacote, Julien Wolfersberger conducted an economic analysis of the forest transition, which describes the change in long-term land use trends for a country or region from a period of net loss of forest area to net income [16].

Claire Montagné-Huck, Marielle Brunette conducted a study of how economic analysis solves the problem of the adaptation of human economic activity, taking into account the various natural hazards that affect forests [17].

3. Results and discussion
The forest complex consists of the two main economic areas: forestry and timber industry [18].

The total revenue of forest enterprises in Russia amounted to 1.4 trillion rubles in 2016, contribution to GDP - 0.5%, number of employed people - 500 thousand people (0.8% of employment in the economy).

Russia possesses the largest forest resources in the world both in terms of the area of wooded land (about 800 million hectares) and in standing stock (about 24% of the world total). However, the place of the Russian timber industry complex in the world is much more modest [19].

Let us analyze the data of the Federal State Statistics Service in the Voronezh Region on the main indicators of the activities of the enterprises of the forestry complex of the Voronezh Region in order to clarify the need for crisis management (Table 1).

According to the data in Table 1, the reduction in the production volumes of most types of products indicates the presence of crisis phenomena in the activities of forestry enterprises in the Voronezh Region.

Crises are inevitable in the development and activities of any enterprise. At the same time, the crisis should be viewed as an objectively necessary and unavoidable process, creating the possibility of both liquidation and intensification of enterprise development.

The development of a crisis includes a certain sequence of stages: a crisis symptom, a crisis situation, a crisis process. It can be considered that overcoming crises is a controlled process. The success of management depends on the timely recognition of a crisis situation, the symptoms of its occurrence [20].

Effective crisis management involves the identification of factors affecting the crisis development of forest enterprises in the Voronezh region.
Table 1. Volumes of production of the main types of forest products in the Voronezh region.

| Indicators                                           | 2010 year | 2013 year | 2014 year | 2015 year | 2016 year |
|------------------------------------------------------|-----------|-----------|-----------|-----------|-----------|
| Reforestation, thousand hectares                     | 1.1       | 2.7       | 2.7       | 2.6       | 2.3       |
| - including planting and forests planting            | 1.0       | 2.2       | 2.5       | 2.5       | 2.1       |
| Thinning of forests and sanitary felling, thousand ha| 2.1       | 1.9       | 1.7       | 1.9       | 2.5       |
| Lumber, thousand cubic meters                        | 38.4      | 20.2      | 14.2      | 15.7      | 18.5      |
| Window blocks, thousand square meters                | 0.4       | 0.1       | 0.1       | 0.1       | 0.0       |
| Door units, thousand square meters                   | 46.4      | 42.6      | 38.5      | 55.3      | 48.6      |
| Parquet, thousand square meters                      | 8.4       | 0.1       | 0.0       | 1.5       | 5.2       |
| Newspapers (copies of conditional circulation in 4-lane calculus), million pieces | 598.4      | 443.8      | 413.8      | 405.9      | 384.0      |
| Books and pamphlets (printouts), million pieces      | 27.7      | 44.4      | 69.0      | 87.7      | 93.9      |
| Tables, thousand pieces                              | 41.0      | 80.9      | 40.7      | 35.8      | 33.3      |
| Chairs, thousand pieces                              | 28.3      | 28.4      | 29.4      | 26.9      | 2.9       |
| Arm-chairs, thousand pieces                          | 3.1       | 5.2       | 1.1       | 0.9       | 0.7       |
| Cabinets, thousand pieces                            | 158.1     | 189.2     | 162.8     | 128.4     | 99.0      |
| Sofas, couches, ottomans, thousand pieces            | 0.5       | 4.7       | 3.7       | 4.0       | 3.2       |
| Wooden beds, thousand pieces                         | 51.1      | 50.1      | 39.2      | 31.0      | 20.3      |
| Sofa beds, thousand pieces                           | 5.5       | 4.4       | 2.0       | 1.7       | 1.6       |

The study of all factors determining crisis situations is rather difficult. The Delphi expert method has been used in order to limit their number. The factors that determine the occurrence of crisis situations has been selected by logical method as a result of the work of an expert group consisting of managers and economists from forestry enterprises, which are presented in Table 2.

Identifying the factors that have a direct impact on the occurrence of crisis manifestations in forestry enterprises presents some complexity due to their diversity. Therefore the method of prioritization has been used to identify crisis manifestations and to systematize them and establish significance. Thus, sixteen factors have been selected out of all external and internal factors, which are the most important ones for the forecast of crisis manifestations: a decrease in the level of real incomes of the population; increase in prices for energy resources, fuel; increase in the number of competing enterprises; an increase in the share of substitute products; reduction in the rate of construction; increase in the share of finished products in stocks in warehouses; increase the cost of manufacturing products; reduction in output; reduction of investment and innovation activity of the enterprise; reducing the cost of product promotion; decrease in assets liquidity; increase in the share of borrowed capital; slowdown in turnover of current assets; decrease in profitability of sales; increased financial risk; decrease in the level of the monetary component in the revenue.
Table 2. Factors of occurrence of crisis situations of forest industry enterprises.

| Group of factors | Factors                                                                 |
|------------------|-------------------------------------------------------------------------|
| External factor   |                                                                         |
| 1. General economic factors | 1. The decrease of the volume of national income  |
|                   | 2. Inflation growth.                                                   |
|                   | 3. A slowdown in the payment turnover.                                  |
|                   | 4. Increase in tax and excise rates.                                    |
|                   | 5. Decrease in the level of real incomes of the population.             |
|                   | 6. Increase in the number of organizations with financial crisis.       |
|                   | 7. Increase in energy and fuel prices.                                  |
|                   | 8. Rising unemployment.                                                |
| 2. Market and government factors | 1. Reducing the capacity of the domestic market.                        |
|                   | 2. Increase in the cost of credit resources.                            |
|                   | 3. The emergence of a very large number of intermediaries.              |
|                   | 4. Reduction of state support for domestic producers of goods.         |
|                   | 5. Instability in the exchange rate (currency appreciation).            |
|                   | 6. The increase in the number of companies competing                    |
|                   | 7. Increase in substitute goods (substitutes).                         |
|                   | 8. Reduction of construction rates.                                    |
| Internal factor   |                                                                         |
| 1. Operational (management) factors | 1. Deterioration of accounting for the forecast and changes in external factors. |
|                   | 2. Reduction of the level of use of production and auxiliary areas.    |
|                   | 3. Deterioration of contractual relations with suppliers and consumers of products |
|                   | 4. Increased overhead and non-core costs.                               |
|                   | 5. Reducing the efficiency of production management.                   |
|                   | 6. The growth of labor discipline violations.                           |
|                   | 7. Reducing the quality of accounting and reporting system.           |
|                   | 8. Irrational (external and internal) production cooperation.          |
| 2. Production factor | 1. Increase in the share of finished products in stocks in warehouses. |
|                   | 2. Reducing the level of fixed assets use.                             |
|                   | 3. Increase in the share of obsolete and worn-out fixed assets.        |
|                   | 4. The decrease in labor productivity.                                  |
|                   | 5. Increase in prices for raw materials, components, energy costs.     |
|                   | 6. Growth in the volume of work in progress.                           |
|                   | 7. The increase in the cost of production.                             |
|                   | 8. The decline in output.                                              |
| 3. Investment and marketing factors | 1. Reducing the level of investment attractiveness.                  |
|                   | 2. Reduced diversification of the product range                        |
|                   | 3. Reduction of investment and innovation activity of the enterprise.  |
|                   | 4. Loss of the won positions in the traditional markets.              |
|                   | 5. Reducing the competitiveness of products.                           |
|                   | 6. Reducing the effect of marketing to promote products.               |
|                   | 7. The decrease in the efficiency of the method of pricing for products |
|                   | 8. Lack of capital to modernize production.                            |
| 4. Financial factor | 1. The liquidity of the assets.                                       |
|                   | 2. The increase in the share of borrowed capital.                      |
|                   | 3. Slowing the turnover of working capital.                            |
|                   | 4. Growth of accounts receivable.                                      |
|                   | 5. The increase in accounts payable.                                   |
|                   | 6. Reduced return on sales.                                            |
|                   | 7. Increased financial risk.                                           |
|                   | 8. Decrease in the level of cash component in revenue.                 |

Each company is a subject to the laws of cyclical development of the entire socio-economic system, which can be characterized from the standpoint of periodic fluctuations of specific factors. In
addition, it is necessary to determine whether a particular indicator has the property to outpace the general dynamics or it is late in comparison with the main course of the business cycle. There are three types of parameters on the basis of synchronization according to the classification of the National Bureau of Economic Research of the United States of America [21]:

1. Outrun indicator - reaches a maximum or minimum before approaching a peak or lowest point.
2. Matching indicator - varies according to fluctuations in economic activity.
3. Slow indicator - reaches the maximum or minimum after the peak or lowest point.

On this basis, the classification of specific factors of forestry enterprises has been made (Table 3).

Table 3. Distribution of specific factors that determine the occurrence of crisis manifestations on the basis of synchronization at forestry enterprises of the Voronezh Region.

|                | Outrun | Matching | Slow |
|----------------|--------|----------|------|
| General economics | 1      | 2        | 3    |
| 4. Increase in tax and excise rates. | 1. The decrease of the volume of national income  
2. Inflation growth.  
3. A slowdown in the payment turnover.  
6. Increase in the number of organizations with financial crisis.  
7. Increase in energy and fuel prices. | 5. Decrease in the level of real incomes of the population.  
8. Rising unemployment. |
| Marketing | 1. Reducing the capacity of the domestic market.  
2. Increase in the cost of credit resources.  
3. Reduced demand for products.  
5. Instability in the exchange rate (currency appreciation). | 6. Increase in the number of competitors. |
| 4. Reduction of state support for domestic producers of goods.  
7. Increase in the share of substitute goods (substitutes).  
8. Reduction of construction rates. | 1. Deterioration of accounting for the forecast and changes in external factors.  
3. Deterioration of contractual relations with suppliers and consumers of products  
4. Increased overhead and non-core costs.  
5. Reducing the efficiency of production management.  
7. Reducing the quality of the accounting and reporting system. | 2. Reduction of the level of use of production and auxiliary areas.  
6. The growth of violations of labor discipline.  
8. Irrational cooperation (external and internal) in production. |
| Management | 1. Increase in the share of finished products in stocks in warehouses.  
3. Increase in the share of obsolete and worn-out fixed assets.  
6. Increase in the volume of work in progress.  
7. The increase in the cost of production.  
8. The decline in output. | |
| Production | 2. Reducing the level of use of fixed assets.  
4. The decrease in labor productivity.  
5. Increase in prices for raw materials, components, energy costs. | |


**Investment and marketing**

1. Reducing the level of investment attractiveness.
2. Reduced diversification of the product range.
3. Reduction of investment and innovation activity of the enterprise.
4. Loss of the won positions in the traditional markets.
5. Reducing the competitiveness of products.
6. Reducing the cost of product promotion.
7. The decrease in the efficiency of the method of pricing of products.
8. Lack of capital to modernize production.

**Finance**

1. The liquidity of the assets.
2. The increase in the share of borrowed capital.
3. Slowing the turnover of current assets.
4. Growth of accounts receivable.
5. The increase in accounts payable.
6. Reduced return on sales.
7. Increased financial risk.
8. Decrease in the level of cash component in revenue.

Also, the distribution of specific factors for the occurrence of crisis manifestations of the studied enterprises on synchronization basis of can be represented as a graph (Figure 1).

**Figure 1.** Distribution of specific factors on the basis of synchronization.

This distribution will enable forest industry enterprises to:
- Predict the appearance of crisis symptoms and take appropriate measures of preventive crisis management by allocating priority outrun indicators;
- Identify crisis situations, to use crisis management by identifying priority matching indicators;
- Identify the crisis process, use restorative crisis management by identifying priority slow indicators;

Thus, the study has identified the most significant factors from among those that are ahead of the development of crisis situations that coincide with the development of crisis situations and are delayed.
The identified factors are the basis for the formation of a crisis recognition system, which includes a set of indicators, their metrics and diagnostic procedures that enable the forest complex enterprise to determine its position in the business environment. In metrics we will consider technically or procedurally measured values characterizing the control object as metrics. Indicators provide information on changes in the socio-economic system of the enterprise.

The idea of the influence of objective and subjective factors on the economy of a forest complex enterprise, as well as the determination of the direction of this influence, will enable to obtain basic indicators of crisis manifestations. Their isolation from the totality of indicators of state and development is aimed at simplifying analytical procedures and allows us to establish cause-and-effect relationships between types of crisis management and crisis manifestations.

The basic indicators of crisis manifestations reflect the development of an enterprise from the standpoint of the possibility of a crisis, and their quantitative expression is metrics.

Synchronization of subjective and objective factors determining the crisis development of an enterprise has enabled to identify, respectively, the advanced, coincident and retarded basic indicators of crisis manifestations, as well as their metrics (Table 4).

| Table 4. Basic indicators of crisis manifestations and their metrics for forestry enterprises. |
|---------------------------------------------------------------|
| **Metrics**                  | **Indicator**                                                                 |
|---------------------------------|-------------------------------------------------------------------------------|
| **External outrun indicators**                  |                                                                 |
| The level of competitiveness of goods on the background of the proposed substitute goods | The decrease in the level of goods supply                                   |
| Share of substitute goods        | Increasing number of competitors and reducing market share of the company's products |
| **Internal outrun indicators**                  |                                                                 |
| Growth rate of sales             | Decrease in revenue from the sale of products (works, services)               |
| Financial independence ratio (autonomy) | Increase in the share of debt capital                                           |
| Financial leverage               | The positive effect of financial leverage                                     |
| The turnover ratio of current assets | Slower turnover of current assets                                              |
| The level of cash component of revenue  | Decrease in the level of cash component in revenue                            |
| **External matching indicators**                  |                                                                 |
| The price index for energy        | Increase in energy and fuel prices                                            |
| **Internal matching indicators**                  |                                                                 |
| The coefficient of investment activity | The decrease in investment activity of the enterprise                          |
| The share of advertising expenses in the total amount of business expenses | Reduction of product promotion costs                                          |
| The total solvency ratio of the enterprise | The liquidity of the assets                                                  |
| **External slow indicators**                  |                                                                 |
| The index of the real income of the population | Decrease in the level of real incomes of the population                         |
| The market share of the enterprise  | Increase in the number of competitors, decrease in market share               |
| **Internal slow indicators**                  |                                                                 |
| Share of finished products in sales revenue | Increase in the share of finished products in stocks in warehouses            |
| Cost share of revenue             | The increase in the cost of production                                         |
| Rate of change in output          | The slowdown of volume of production                                           |
| Profitability of sales            | The reduction of profitability of sales                                         |
Thus, the proposed system of basic indicators of crisis manifestations makes it possible to identify crisis symptoms, crisis situations and the crisis process on the basis of changes in metrics and complements the process of basic monitoring of the activities of forest enterprises of the Voronezh region.

Sustainable economic growth of the enterprise is ensured by the following internal basic indicators of crisis manifestations: the effectiveness of the core business (metric - product sales profitability ratio); formed capital structure (metric - financial autonomy ratio); the ability of an enterprise to pay its term obligations in the presence of liquid assets (metric - an improved solvency ratio); asset composition policy (metric - asset turnover ratio).

The performed calculations, evidentiary transformations of formulas and dependencies has enabled us to identify the intervals and boundary values of metrics that characterize the state of the enterprise’s economy from the standpoint of the development of crisis manifestations (Table 5).

Table 5. Ranges of change of base indicator metrics for identification of crisis manifestations in the economy of forest complex enterprises.

| Metrics                       | Change interval | Standard |
|-------------------------------|-----------------|----------|
| The coefficient of autonomy   | <0.2            | 0.2-0.39 | 0.4-0.5 | >0.5 |
| Total solvency ratio          | <0.9            | 0.9-1.1  | 1.1-1.5 | >1.5 |
| Profitability of sales        | <0.12           | 0.12-0.15| 0.15-0.18| >0.18 |
| Turnover of working capital   | <2.0            | 2.0-3.0  | 3.0-5.0 | >5.0 |

Interpretation: Crisis process; Crisis situation; Crisis symptoms; Stable equilibrium.

The ranges of changes in basic indicators metrics, presented in Table 5, reflect the development of crisis manifestations in the economics of forestry enterprises and differ from the optimal values of the corresponding economic coefficients calculated by traditional methods. Such a gradation of coefficients allows us to diagnose crisis manifestations in the early stages and evaluate their scale in the near future.

4. Conclusion

Crisis management (in this work) is a set of tools for monitoring the financial and economic activities of an enterprise using a selected system of indicators and metrics, detecting crisis symptoms, diagnostic methods, identifying the state of the economy and forecasting its development, as well as managerial effects of a preventive, localization and stabilization nature.

The identified indicators designated crisis metrics are necessary for continuous monitoring, diagnostics of the state of the subsystems of the forest complex enterprise and forecasts of its development in order to provide protection against crises. The resulting system of identification and forecast of the economic condition can be called a crisis management system of a forest complex enterprise. This system is based on certain principles:

1. Constant readiness for possible violations of the development of the enterprise's economy.
2. Monitoring and diagnosis of crisis symptoms in the enterprise.
3. Forecasting the development of the enterprise based on the identified basic indicators of crisis manifestations and metrics.
4. Timeliness of response to the appearance of crisis symptoms in the development of the enterprise.
5. The adequacy of the response of the enterprise to the occurrence of crisis situations.
6. The elimination of the crisis processes in the activities of the enterprise.

These principles serve as the basis for organizing crisis management (by type: preventive crisis management, crisis management, restorative crisis management) of forestry enterprise with the threat of all types of crisis manifestations - symptoms, situations and process.
The basis of the considered principles of crisis management is a certain variant of managerial influences that ensure the sustainability of forestry enterprises. The main stages of this security are:

1. Prevention of the onset of crisis symptoms (absence of crisis symptoms as a result of diagnosing and predicting the development of an economic entity) by maintaining the stable functioning of all subsystems of the enterprise.

2. Prevention of crisis situations: minimization of possible losses and ensuring sustainable development of the enterprise through targeted management of subsystems with crisis symptoms (the appearance of crisis symptoms, the possibility of a crisis situation).

3. Preventing crisis situations from developing into a crisis process by localizing and compressing crisis subsystems while stimulating the development of locomotive and leading enterprise subsystems (a crisis situation, the possibility of a crisis process forming).

Each stage of provision of the sustainable development of the enterprise corresponds to certain mechanisms of managerial influences which are subdivided (in management practice) into operational, tactical and strategic ones (Table 6).

**Table 6. Managerial impacts within the framework of crisis management in order to ensure the sustainability of forestry enterprises.**

| Types of crisis management | Management Impact Portfolios for Crisis Management |
|---------------------------|---------------------------------------------------|
| 1. Prevention of the onset of crisis symptoms (preventive crisis management) | The portfolio of strategic decisions. Long-term perspective of solutions aimed at the sustainable functioning of all subsystems of the enterprise |
| 2. Preventing the development of crisis symptoms in a crisis situation (crisis management) | Tactical solutions portfolio. Medium-term nature of management decisions made in enterprise subsystems with crisis symptoms in order to minimize potential losses and ensure economic sustainability |
| 3. Minimizing the effects of crisis situations, preventing escalation into a crisis process (restorative crisis management) | Portfolio of operational decisions. Short-term nature of decisions to assess the effectiveness of the impact on the development of the enterprise. Localization and compression of crisis subsystems while stimulating the development of leading |

In order to prevent the onset of crisis symptoms, it is necessary to develop a portfolio of strategic management decisions, which is an offensive strategy in the development of an enterprise, ensuring the optimization of the necessary parameters of subsystems, subordinate to the goals of accelerating its economic development.

Preventing the development of crisis symptoms in a crisis situation involves the development of a portfolio of tactical solutions that mainly apply to those subsystems of the enterprise in which crisis symptoms have occurred. The tactical portfolio of managerial decisions, using separate protective measures, in the preferential form is an offensive tactic aimed at changing the unfavorable development trends of individual subsystems and ensuring the sustainable development of the enterprise.

A portfolio of operational solutions is being developed to minimize the effects of crisis situations, to prevent escalation into a crisis process. Operational decisions perform a regulatory function directly in the course of the enterprise. Priority and urgent problems are solved with their help. Such decisions are made in the process of daily monitoring of the state and development of the enterprise's economy and require constant monitoring by the head.

Thus, the portfolio of management decisions within the framework of crisis management is the choice of optimal options for ensuring the sustainability of the development of forestry enterprises, taking into account the characteristics of their activities and a set of basic indicators of crisis
manifestations. The proposed stabilization measures are universal means of solving the problems of forestry enterprises.

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