

# Cluster Participants Risk Management: Modern Approach and Aspects

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## ABSTRACT

The article presents current issues on risk control that are specific in the context of cluster interaction between organizations in modern conditions. External and internal factors leading to adverse consequences were studied. The relevance of the problem of improving the effectiveness of risk control of companies in the framework of cluster projects and interaction with business partners - contractors is shown. The tasks were solved in terms of developing methodological approaches to improving control measures to identify and manage specific risks that are typical for working in a cluster, taking into account the implementation of regional cluster policy, changes in legislation and the current economic situation. We have clarified individual risks in cooperation, prepared a methodological tool in the form of a "Problems and solutions" scheme, and formulated proposals for approaches to managing tax risks of organizations working within the functional scheme of the cluster.

**Keywords:** *clusters, management, risks, control, methods*

## 1. INTRODUCTION

Increased attention to issues of cluster development of the economy today leads to the appearance of a large number of works on this topic. The development of conceptual, methodological and instrumental aspects of cluster formation is a necessary basis that significantly determines the success of cluster structures. The authors also tried to contribute to the solution of such aspects, in particular, in [1,2,3,4].

At the same time, there are a considerable number of problems associated with managing risks arising in the formation of cluster structures that need to be addressed.

The last 5 years have been characterized by a tendency to reduce direct state funding for clusters and their participants at the Federal level and to stop funding in 2019. State support measures are implemented through separate state programs, and cluster members and specialized organizations can receive subsidies on applications as part of the General procedure for selecting applicants for subsidies. Previously, the focus of regional cluster policy on state-funded financing has changed to the need to independently address the issue of financing within cluster projects and financing individual cluster participants.

There is a growing need to take into account the emphasis on creating conditions aimed at reducing risks for the cluster projects being implemented and for the activities of

individual cluster participants in cluster development programs.

The risks of regional cluster policy and the risks of cluster participants are interrelated and have a mutual impact. Methods of risk management in the framework of regional government bodies and development institutions should take into account the effectiveness of the internal control system and risk management in clusters. Ways to manage risks within the cluster and its individual participants should take into account common risks in the implementation of regional cluster policy, the management of which depends on the effectiveness of the decisions of regional public authorities and development institutions.

## 2. FORMULATION OF THE PROBLEM

In the process of studying the scientific literature, regulations and reference documents in terms of risk management issues of regional cluster policy, the lack of consensus on the definition and classification of risks has been identified. The regional aspect of cluster risk management that affects the interaction between entities in the cluster is not sufficiently disclosed. The purpose of this study is to develop methodological approaches for cluster participants and specialized organizations to control risks in the context of cluster interaction, taking into account the implementation of regional cluster policy.

### **3. FEATURES OF EXISTING APPROACHES TO THE CLASSIFICATION OF ORGANIZATION RISKS IN A CLUSTER CONDITIONS**

In [5], Plotnikov offers a three-level classification of the main risks of implementing the cluster policy:

1. Risks associated with the external environment of the cluster.
  2. Risks associated with the activities of cluster entities.
  3. Risks associated with the activities of public authorities.
- This classification divides risks by their scope, creates prerequisites for their effective monitoring and distribution of functions for managing these risks.

Risks in group 1 have the same impact on the entire business community, not just on participants in regional clusters. Risks in group 2 are related to the activities of cluster entities as objects of cluster policy. Group 3 of risks includes those related to the activities of public authorities, i.e. subjects of cluster policy. These risks are specific and their content is determined by the direction of a particular cluster project, as well as at what level of the power hierarchy it is initiated.

Stepanov, using the general definition of risk as the probability of not achieving the set of goals, introduces 2 groups of risks [6]. Group 1 includes the risks of managing the territorial economy based on the cluster approach. Group 2 includes risks associated with the functioning of individual cluster structures. Special attention should be paid to risks that are specific to organizations that are part of a territorial cluster.

The activities of cluster member companies are influenced by industry risks and regional risks associated with the socio-economic development of the cluster's home region. In addition, there is a significant change in production and commercial risks – the probability of losses due to a number of reasons in the field of production and circulation.

As a result, in the process of functioning of the cluster, a system of risks is formed that affects the activities of its member organizations. The systematic risk of the cluster structure can be defined as the risk inherent in all enterprises within a certain cluster, and system-related relevant industry, manufacturing, commercial, regional risk, the degree of "innovativeness" of a cluster's functioning on the one hand, and the specific organization of the territorial cluster (based on the principles of industrial cooperation, both horizontal and vertical economic integration) on the other.

Uzbekova, Plekhanova and Shibanov distinguish such risks associated with the functioning of clusters as microeconomic risks – risks of cluster subjects, current and potential, risks of subjects outside the cluster, as well as macroeconomic risks and, in particular, regional risks [7].

In the work of Khannanova, related to the assessment and forecasting of risks of industry clusters in the process of its forming, a regional risk management model is presented, including structural and functional elements:

- diagnostics of cluster development risks in the region based on analysis of the state of the internal environment and the external environment (analysis of infrastructure, investment, production, financial, social risks, risks for cluster development strategies);
- strategic planning and risk assessment of clusters and sub-clusters (development of strategies, analysis of cluster advantages, assessment of socio-economic and other risks, calculation of resources, calculation of public expenditures for cluster support, etc.);
- managing the implementation of the cluster development strategy and forecasting the structural dynamics of risks (forecasting the risks of implementing the strategy, developing measures to reduce risks, assessing possible losses, etc.).

The peculiarity of this proposed regional model of risk management is the presence of external and internal organizational forms. External organizational forms are understood as independent specialized organizations that perform work on risk assessment in the regional economy and develop measures to protect against them. Internal organizational forms are understood as internal divisions of enterprises within regional industry clusters that are engaged in risk assessment and forecasting [8]. In turn, Litvinova, considering the specifics of implementing cluster policy in the Russian Federation, identifies industry, legal, operational and financial risks as the main risks of its implementation [9].

### **4. APPROACHES AND TOOLS FOR MANAGING THE RISKS OF CLUSTER MEMBERS**

In the course of the study, additional risks were identified that significantly affect the results of the cluster, the study of which is not sufficiently disclosed and is not shown in the scientific literature in a certain part. These include:

- risks of deterioration of the financial situation of the cluster participants as a result of the return of state subsidies if the targets are not met;
- risks of using false information that may lead to contradictions and conflicts between cluster members;
- tax risks of the members of the cluster;
- reputation risks of the members of the cluster and cluster project;
- risks of inefficient internal control system for cluster participants;
- risks of inefficient cooperation of cluster participants in cluster projects.

These risks are further considered in the context of their impact on cluster projects and other relationships within the cluster interaction. Along with the economic benefits and business opportunities from the use of subsidies, there is a potential risk of non-returning of state aid to the budget due to adverse business events. Existing business practice shows that this risk is underestimated, there are difficulties in view of the lack of elaboration of methodological approaches for assessing risks for

contractors as recipients of state subsidies, including participants in innovative and industrial clusters, as well as difficulties in choosing control procedures and controlled indicators for assessing risks in conditions of the need to respect the confidentiality of business relationships.

In order to ensure economic security, it is increasingly important to improve approaches to controlling the counterparty's risk assessment, taking into account the subsidy received, and checking its effectiveness in relation to the specifics of the business environment, taking into account the impact of various external and internal factors. Receiving state aid does not prohibit the use of credits and loans for their activities. At the same time, the conditions for granting a subsidy can clearly define the possibilities for its use. The possibility of paying off accounts payable through a subsidy must be indicated in the subsidy agreement.

Analysis of the scientific literature shows that there is insufficient elaboration of risk assessment issues for situations where enterprises return subsidies to the budget. Analysis of data on the provision of subsidies shows the presence of individual cases of their return for reasons of inappropriate or inefficient use. In the course of the study, a scenario approach is proposed to study the results of the impact of the return of subsidies on the activities of a cluster member. The need to control the reliability of reports on the basis of data verification using various sources is also determined. Existing mechanisms for collecting subsidies to the budget as a result of non-compliance with their terms of use entail negative consequences for organizations and increase risks for their creditors. The lender's internal control system should include reliable control procedures that allow identifying prerequisites for the return of subsidies, using information about the presence of claims from various sources, and using predictive models to assess risks.

Risk assessment control should take into account the significant impact of events on the counterparty's reporting indicators for the return of subsidies, for which it is necessary to use financial models with calculation capabilities for various scenarios for the counterparty's requirements as a tool.

There is a need to predict the results of deterioration of the counterparty's financial position due to the return of the subsidy and to assess the impact on the performance of obligations to repay accounts payable or other economic relations. Within the framework of current legislation and business practice, external and internal financial control is organized for infrastructure support activities for clusters in Russia and regions. At the same time, due to the underestimation of the importance of such control, overloading with work issues in the normal course of business, there may be situations of unpreparedness for inspections, the presence of gross financial and tax violations, and the presence of signs of corporate fraud.

To address these issues, modern risk control technologies are required when using state subsidies by cluster participants, using the experience of control and Supervisory bodies and corporate internal audit practices.

Different situations can occur in a cluster that lead to contradictions and conflicts between cluster members. The study identified a factor of unreliable data in reporting and other documentation that has a negative impact on management decision-making. Inefficient solutions may arise from overestimating the capabilities of contractors in the framework of cluster interaction. The declared obligations may be unfulfilled and have a negative impact on the achievement of target (planned) indicators for both individual cluster members and the cluster as a whole.

In this regard, it becomes urgent to optimize the mechanisms for increasing the quality and reliability of official and management reports between the cluster participants, taking into account the development of the digital economy. At the same time, taking into account the influence of potentially unreliable information as a factor in the occurrence of contradictions and conflicts between cluster participants becomes an additional tool for assessing the opportunities, real hidden problems of cluster participants and their contractors.

Based on this, we decided to consider an approaches to the formation of control procedures in the process of financial analysis of cluster participants reports in order to assess its reliability, to clarify the problems of using information about them for evaluation, to present a verification algorithm using test questions and available Internet resources to verify data about a cluster participant and its counterparties. The methodological tools for verifying the reliability of data in the complex can be presented in the form of the following interrelated approaches, including:

- examination of reporting forms using mathematical methods and analytical procedures;
- checking information on official commercial and non-commercial databases, conducting audits and inventories;
- inspection of the partner's location and premises;
- interviews with employees of different departments of the counterparty;
- study of materials of inspections of Supervisory authorities;
- establishing the reality of data based on security checks of the company or partners;
- collecting information from business partners.

The use of technologies for verifying the reliability of reporting data can help improve the economic security of organizations in the cluster that interact with each other and with other contractors. Providing the management of organizations participating in the cluster with verified up-to-date information about business partners is an evidence base for the organization's due diligence in order to protect its interests when interacting with tax and other regulatory authorities.

Regional cluster policy contributes to solving the problems of regional economic growth, including increasing tax revenues through the development of industrial and innovative clusters. From the point of view of legal entities participating in clusters, tax risks are defined as the probability of financial losses arising as a result of unplanned payments on claims of tax authorities within the framework of tax control. The comparative analysis of the

regulatory framework in the field of taxation in relation to organizations in the cluster shows that in Russia, the main attention is paid to reducing the tax burden when participating in regional projects and working in special economic zones.

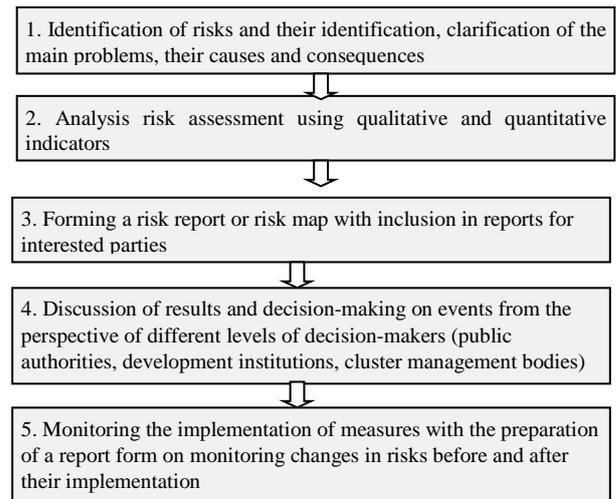
It seems reasonable to make changes to tax practice in the following aspects:

- from the point of view of tax administration, it is proposed to make clarifications in the regulatory documents regarding the wording of the criteria for selecting taxpayers for inspections, taking into account the sequential functional production "chains" with a clearly defined specialization of cluster participants.
- in order to ensure the tax security of cluster participants, it is necessary to present a specific cluster functional scheme to the tax authorities in order to justify the business goal of its participants from the point of view of their key competence and dedicated specialization, which can help to remove doubts about the need for a "chain of contractors" and reduce inefficient checks on formal criteria.
- from the point of view of improving tax legislation to reduce possible tax disputes, it is recommended to make additions to the corporate income tax in terms of specifying the conditions for including the services of specialized organizations that perform management and coordination functions in the cluster in expenses.

Currently, groups of companies are actively working in industrial and innovative clusters that form functional production chains of contractors and a significant amount of internal payments. This leads to the need to use mechanisms to protect the reputation of the cluster to counteract dubious transit operations.

Using the "know your customer" principle, banks may refuse to enter into a bank account (deposit) agreement with the client in accordance with the internal control rules if there are suspicions that such an agreement is necessary for performing operations for the purpose of legalizing (laundering) proceeds of crime or for financing terrorism. The credit institution may also terminate the bank account (deposit) agreement with the client if two or more decisions are made within a year to refuse to execute the client's order to perform the transaction. This can create new reputational risks for cluster participants, the cluster project, and the cluster itself. To work out the line of defence against emerging threats, a business game "Countering dubious transit operations" was developed, followed by testing in the educational process at the Siberian institute of management, a branch of the Russian Academy of national economy and public administration under the President of the Russian Federation, which can be used in organizations during strategic sessions.

As a methodological approach to methods of risk control at the level of cluster projects and regional cluster policy, an algorithm is proposed that includes the following areas (Fig.1):



**Figure 1** Algorithm of risk control at the level of cluster projects

The developed sample scheme for analyzing the risk management system used in the course of control based on the "Problems and solutions" method can be considered as a road map for solving the problems of improving the effectiveness of risk management in the framework of cluster projects and regional cluster policy (Fig.2).

This scheme can also be used in addition to the approaches to monitoring regional cluster policy used in practice.

## 5. CONCLUSION

The results of the study allow us to formulate the following conclusions.

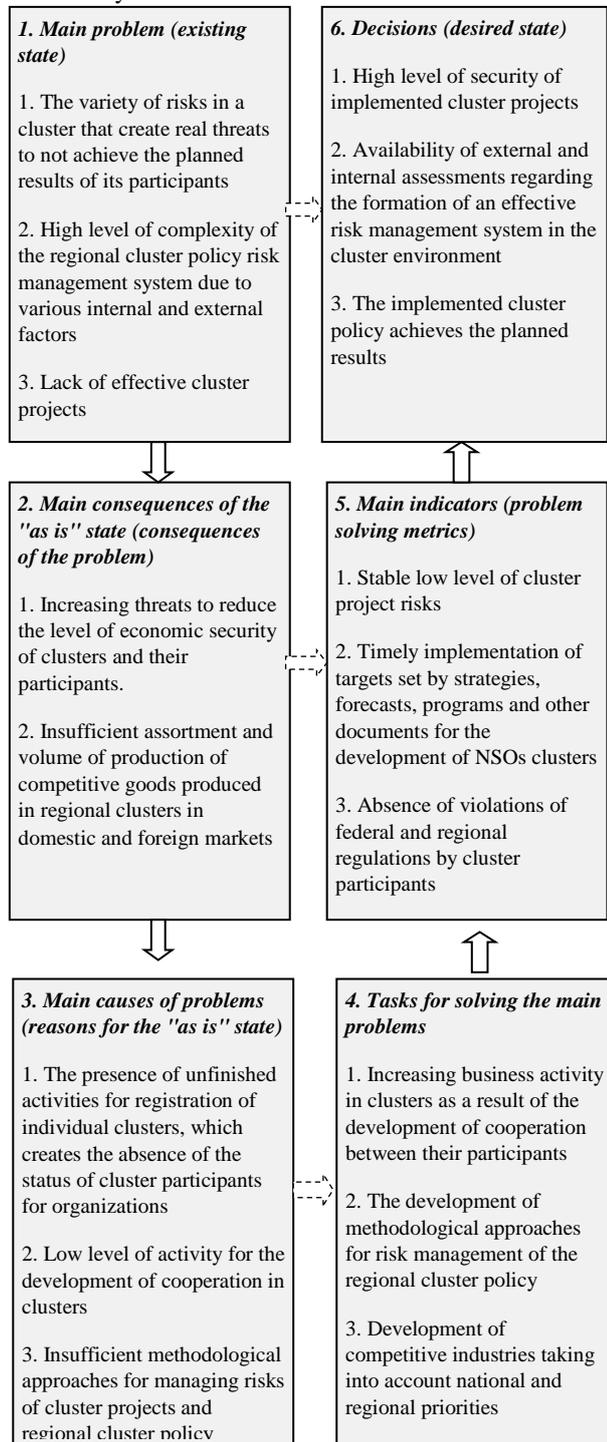
The activities of a cluster member or its government-funded contractors require qualitative analysis in order to assess the risks of returning subsidies received, effective algorithms for identifying these negative consequences, additions to credit risk assessment methods, and the use of a scenario approach with a comparative analysis of indicators before and after the return of a subsidy by a cluster member.

Taking into account the principle of reliability in the conditions of the cluster is a priority in control measures and in making economic decisions.

The creation of support mechanisms in terms of information and consulting assistance in the field of risk management of cooperative relations in clusters can become one of the areas of risk management of regional cluster policy and cluster projects. Control of tax risks of companies in the conditions of cluster interaction should take into account the specific functional features of transactions and their actual execution with the justification of the business goal in the interests of the cluster as a whole and separately for its participants.

Risk management of regional cluster policy can be implemented additionally through the examination of

functional schemes and cluster development programs with a focus on the risk management unit. The completeness of risk accounting and approaches to their management can be based on the types of risks presented in the study.



**Figure 2** Scheme for improving the risk management system for cluster projects and regional cluster policy based on the "Problems and solutions" method

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