
Methodological Provision of Active Management of Economic Risk in Agrarian Business

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Abstract:

The article views main approaches to economic risks management. The article offers the algorithm of active management of aggregate economic risk, based on the use of complex of formalized and non-formalized calculation and analytical methods of reduction of uncertainty during decision making and aimed at reduction of probability of negative result of business risk situations by means of reasoned actions for timely adaptation to changing economic conditions. In the conducted research, the authors analyzed positive aspects and difficulties of practical use of the above methods under the conditions of modern stage of development of Russian agrarian business. The results of this analysis were the basis for formation and development of methodological provision of calculation and analytical components of active management of economic risks.

Key Words: risk management, agrarian business, economic risk, stress testing

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1. Introduction

An integral feature of business activities is economic risk. Risk management, besides following general regularities, possesses sectorial peculiarities. Thus, for agrarian business, specifics consists in direct influence of natural factor on its efficiency.

Use of probabilistic approach to evaluation of risk situations is complicated by information deficit and lack of frequency of external and internal conditions in agriculture. Due to that, receipt and effective use of accessible and reliable information plays an important role in risk management. That's why one of the main directions of formation and development of the system of risk management in the sphere of agrarian business is development of the complex of scientific and methodological provisions of its informational and analytical component, which nowadays does not conform to conditions of modern business activities.

That's why the main purpose of this research is to build an algorithm of active management of aggregate economic risk in agrarian business, aimed for reduction of probability of negative result of business risk situations by means of substantiated actions for timely adaptation to changing economic conditions, which determined its actuality.

2. Research methods

The object of the research – agrarian business structures of Stavropol Krai.
The topic of the research is economic risk and its management in the sphere of agrarian business.

Theoretical and empirical foundation of the research includes works of Russian and foreign scientists. The sources of information include regulatory acts of the Ministry of Agriculture of Stavropol Krai, statistical and analytical materials of the Federal State Statistics Service, territorial body of the Federal State Statistics Service in Stavropol Krai, Internet resources, and personal observations of the authors. At various stages of the research, comparative, analytical, and statistical methods of risk analysis were used, as well as methods of economic & mathematical modeling on the basis of use of modern computer technologies.

For approbation of the offered methodology, financial & economic documentation of agribusiness enterprises and rural municipal entities was used.

3. Research results

Risk management can be characterized as totality of methods, means, and measures which allow – with certain probability – forecasting risk events and taking measures

for exclusion or reduction of negative consequences of such events and for increase of probability of positive results of risk situations.

It should be noted that risk, as inseparable element of economic process, and specifics of measures for influencing it led to risk management being viewed as a separate type of professional activities.

The main tasks of businessmen who successfully manage risks are: determination of high risk spheres; evaluation of level of risk; analysis of acceptability of this level of risk for organization (entrepreneur); development – if necessary – measures for prevention or reduction of risk; when risk even has already taken place – taking measures for maximum possible compensation of damage.

Specific methods and means which are used during decision making and their implementation under risk conditions substantially depend on specifics of business activities, adopted strategy for achievement of set goals, specific situation, etc.

Only with acceptable correlation of feedback and possible losses, entrepreneur should make a decision as to implementation of a risky project. It should be noted that in each specific case, acceptability of the above correlation can be different and depends on many factors – goals and tasks of the project; policy, strategy, and tactics of entrepreneur in the sphere of risk and its property state (Ermasova N.B., 2009).

This principle also supposes comparison of the value of possible reduction of losses as a result of the taken measures, aimed at reduction of the level of risk or at transfer of risk to another person, with additional expenses for implementation of these measures.

During research of content of the viewed principles, methods of risk management (means of solving risks) are studied to some extent – the main of which are risk evasion, reduction of risk level, and taking risk.

Risk evasion means refusal from realization of event (project), connected to risk. This decision is taken in case of non-correspondence to the above principles (Mapp Jr. H.P., Hardin M.L., Walker O.L., Persaud T., 1979).

In our opinion, this method is the simplest and the most radical direction in the system of risk management. It slows evading possible losses and uncertainty.

At that, risk evasion means loss of profit. That's why with unreasoned refusal from event (project), connected to risk, there are losses from unused possibilities.

Besides, it should be taken into consideration that evasion from one type of risk may lead to emergence of other risks.

Reduction of risk level supposes reduction of probability and volume of losses. There are many various means for reduction of level of risk, depending on specific type of risk and nature of business activities.

Taking risk means leaving the whole or a part of risk (in case of risk transfer to another person) with entrepreneur, i.e., for his responsibility. In this case, entrepreneur makes a decision as to cover of possible losses by his own assets.

As a system of management, economic risk management also supposes conduct of a range of processes and actions which directly influence risk. They include: determination of internal possibilities of risk management, retrospective analysis, analysis of environment, quantitative and qualitative analysis, determination of level and value of risk, and selection of methods of risk management and means of its reduction. Simple scheme of the process of economic risk management is shown in Figure 1.

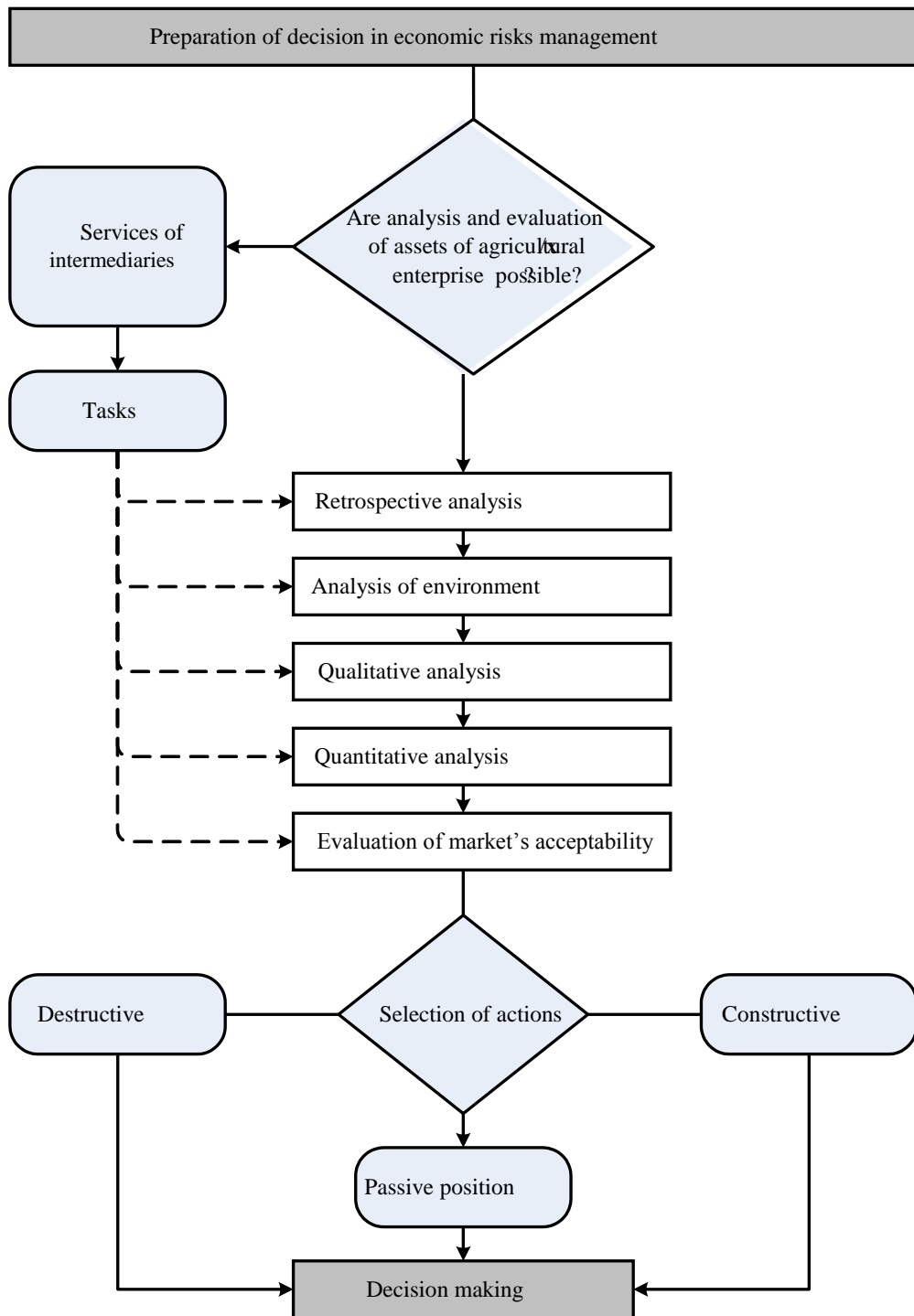


Figure 1. Scheme of the process of economic risk management

The main stage of preparation of decision as to risk management is analysis and evaluation of enterprise's state. This stage can be realized with own strength of enterprise and by involvement of third parties (intermediaries). The set of informational data which enterprise possesses and which are received in the process of preparation of realization of risky project is decisive during selection of the type of analysis. Due to lack of information, conduct of any of the offered types of analyses can be incomplete. In the process of risk management, special requirements are set for completeness and quality of information.

This is caused by the fact that lack of complete information is one of significant risk factors, and decision making under the conditions of incomplete information is a source of additional financial and other losses and, consequently, of profit reduction (Aimin H., 2010). With transition from one stage to another, the need for additional information is specified and information is collected and processed.

Based on expert evaluations, received as a result of own calculations or as a result of consulting services, entrepreneur or decision making person (DMP) passes to the next stage of economic risks management – selection of actions. At this stage, there are several variants of results; here it is necessary to determine which approach of risk management is acceptable. As a result of risk analysis, there appears a picture of possible risk events, probability of their appearance, and consequences. After comparison of the received values of risks with maximum allowable ones, the strategy of risk management and measures for prevention and reduction of risk are developed. We either use constructive approach to risk management with corresponding increases of probability for positive result, or reduce probability of negative result, applying destructive approach. In case of lack of clear certainty as to necessity for measures aimed at change of possible result of project realization, a strategy of passive position, i.e., taking risk without preliminary attempts for its change, is selected.

Depending on the tactics of economic risk management of the one responsible for the project, the necessary decision is made.

It should be noted that we viewed only the general scheme of the process of risk management. Nature and content of the above stages and works and the used methods of their performance largely depend on specifics of business activities and nature of possible risks.

The task of sustainable development of business can be solved by enterprises which conduct planned and systemic work as to reduction of economic risk level in their activities. Such behavior is called by certain researchers “business style of management” (Korshikova M.V., 2011; Zhang G., 2012), which consists in risk management function's inclusion into general system of enterprise management.

As was mentioned above, entrepreneurs should be able to choose alternative variant for each specific risky situations, so that final result of aggregate risk is acceptable and provides sufficient profit. It is from positions of aggregate risk that we conduct modeling in management of economic risks of agrarian production.

In our opinion, there are two main approaches to economic risk management:

- reduction and evasion from risks (active position);
- waiting and reaction for negative result for the purpose of reduction of its consequences (reactive position).

In our opinion, active management of economic risk reduces negative and increases positive consequences of development of risk situation, and this is possible only on the basis of regular formation and qualified use of informational and analytical potential of risk management. A significant negative quality of reactive position is presence of time lag from the moment of emergence of risk situation to the moment of influencing it. Scale of risks, managerial qualities of manager, and level of risk management development determine duration of this period and efficiency of stated influences. It is in this period that enterprise is subject to threat of suffering the largest losses. Actions of active position allow eliminating the stated drawbacks, and if it is impossible – reducing their negative consequences.

Therefore, the article offers an algorithm of active management of total economic risk which is presented in Fig. 2. It is based on the use of complex of formalized and non-formalized calculation and analytical methods which allow reducing the level of risk during decision making and their implementation.

Selection of the method for reduction of risk level is determined by informational, intellectual, and time resources of the system of risk management. Criteria and parameters of this choice depend on specific economic situation and on position and competence of entrepreneur.

Formalized calculation and analytical methods include: modeling, forecasting, evaluation of sustainability of results of business activities, factor and cluster analysis; non-formalized methods include: stress testing, method of hierarchies' analysis, and expert evaluations. Their use is aimed at forecast evaluation of risk situation and substantiation of selection of risk management methods (evasion, localization, diversification, compensation).

Special attention should be paid to requirement of sustainability of business activities. Almost all decisions in agrarian sphere are risky, as they are related to influence of various factors (natural, human, technical and technological, competition, etc.). Failure in these cases cannot be systemic and should not kick enterprise out of sustainable economic state.

Economic risk management in specific agrarian business structure should be viewed from systemic positions. This leads to necessity for study of management of aggregate economic risk of agrarian enterprise for a region and agro-climatic zone, a sub-system of which is the viewed enterprise of agribusiness.

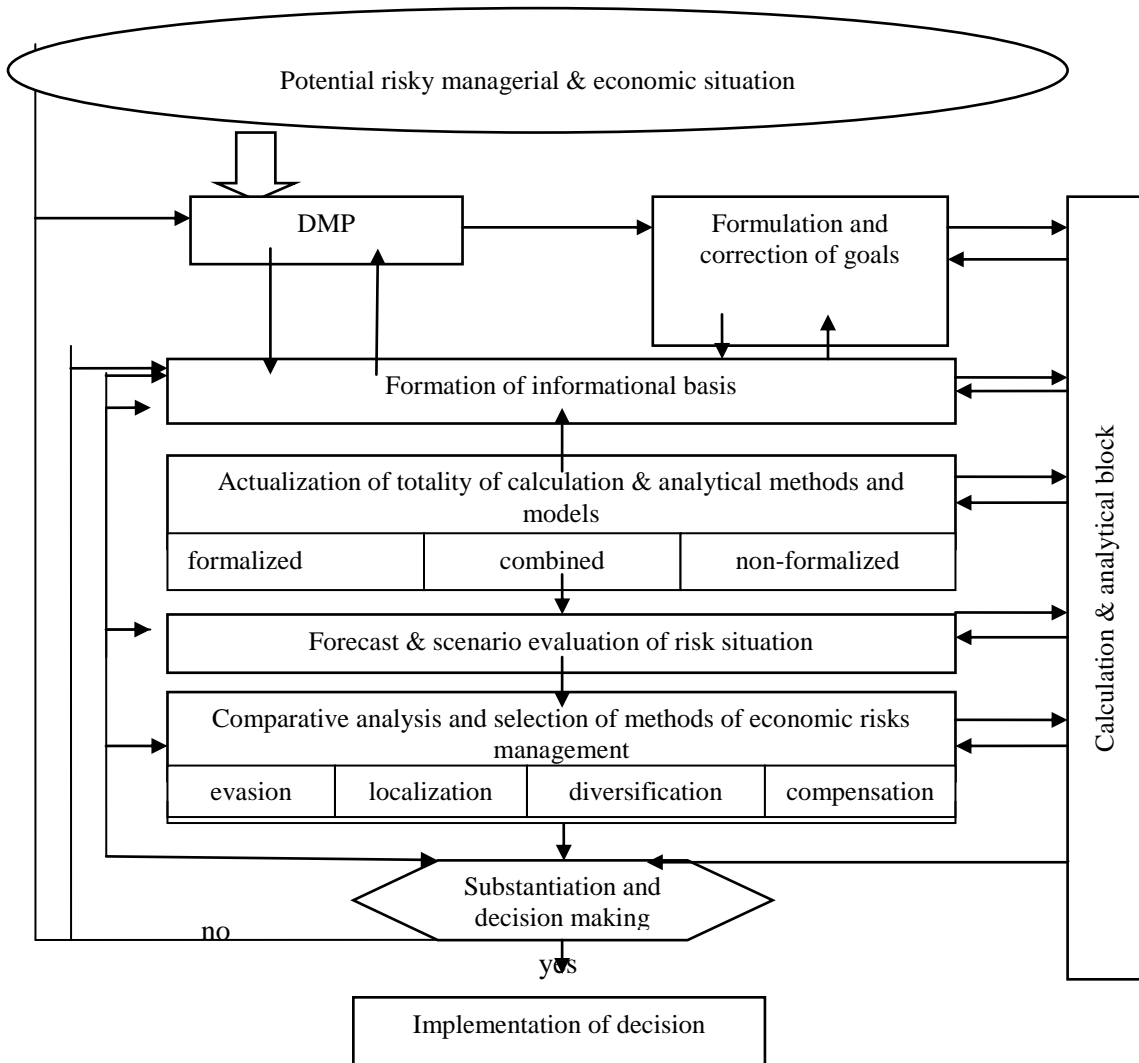


Figure 2. Algorithm of active management of aggregate economic risk

Under the real economic situations and influence of diverse factors of economic risk, various methods for its reduction can be used:

- *Methods of evasion*
- *Methods of localization*
- *Methods of risk diversification*

- Methods of risk compensation

Thus, based on comparative analysis of the above methods, it is possible to say that the most effective methods of economic risk management in agrarian business, in our opinion, is methods of risk diversification. Its main difference is distribution of total risk through unification with other partners, interested in success of common business. In some cases, it is possible to distribute total risk in time or as to stages of realization of long-term project or strategic solution, which is important for enterprises of agro-industrial complex and corresponds to its specifics.

Method of risk evasion is the most popular in economic practice, but it narrows the sphere of possible directions of gaining profit.

Method of risk compensation related to creation of special mechanisms of risk prevention is very labor-intensive and requires a lot of analytical work, which is not conducted at agrarian enterprises and which is impossible to conduct at small and medium enterprises due to limitation of assets.

Finally, method of risk localization is, unfortunately, popular only at large and perspective complexes which possess powerful HR and material & technical potential, as well as assets for its support and development, which is something agrarian business structures cannot afford.

Thus, during selection of specific methods of risk management, risk manager should be guided by the following principles: firstly, one should not risk more than is allowed by own capital; one shouldn't risk a lot for something small and it is necessary to forecast consequences of risk, including positive ones. The most important thing is that it is impossible to eliminate risks, as the very business activities suppose presence of risks.

An important condition is that risks in agriculture are risks of not only businessman but society on the whole. Risk management is very important from the point of view of provision of country's food security, as, firstly, all food products are vitally important resource and, secondly, their excessive import puts the state into dependent position as to exporting countries. This leads to necessity for state's participation in the processes of risk management in agrarian economics.

It is necessary to mention requirement to sustainability of efficiency of business activities. Its role is especially large in agriculture. Almost all decisions in agrarian spheres are risky, as they are connected to influence of various factors (natural, human, technical & technological, competition, etc.). A loss in these cases cannot be systemic and should not kick enterprise out of sustainable economic state.

Sustainability of production is treated as a system of achieving the purposeful results of economic activities, which are necessary for society, with minimal fluctuations of

their values, in case of change of external and internal conditions of production, with sufficient economic effectiveness and existing limited resources, which ensures extended reproduction, technical & technological progress, and observation of ecological requirements (Korshikova M.V., 2011).

While agrarian enterprise “swings” from side to side, it is subject to risk of bankruptcy, i.e., it is unsustainable – we deal with bad risk management. If negative influence of factors does not lead to large deviations, it is due to skillful risk management and is a consequence of sustainability provision. In our opinion, this allows using sustainability as an indicator of effective risk management.

It is aggregate risk that shows sustainability of economic activities, as it is almost impossible to make right decisions under conditions of risk – but management of aggregate risk should give positive result.

Any agrarian system is sustainable if it provides the desired level of production (Korshikova M.V., 2011). In order to lead own economic activities, offer new products and services, and implement new technologies, it is necessary to face risk of mistakes and failures.

Problems of sustainability are studied by many sciences and cover various spheres of life activities.

An important task of economic risks management is prevention of large losses. Evaluation of their possible volumes requires something more than use of probabilistic approaches. Its solution requires use of scenario approach on the basis of conduct of stress testing, which allows evaluating profit (loss) and level of enterprise’s effectiveness in case of unfavorable economic situation. Specifics of agrarian business requires conduct of corresponding adaptation and transformation of methodology, use in financial sphere.

Stress testing is a general term which unites group of methods of influence on economic state of business structure of unfavorable development of risk situation, determined as “exceptional but possible” (Kudryavtseva M.G., 2006).

We consider that “stress testing” can be presented – within our research – in the following way: evaluation of potential influence on results of economic activities of organization of a range of set changes in risk factors which correspond to exclusive but probable events.

3. Conclusions

At present, there is no systemic approach to economic risks management in agrarian business, which is primarily caused by underdevelopment of the risk management system. Decisions under the risk conditions are taken only on the basis of intuition

and experience of manager, which is often brought down to reaction to final result of development of risky satiation. Main causes of this situation include, besides insufficient scientific and methodological provision, low level of entrepreneurs' knowledge on real possibilities of use in practical activities of informational and analytical methods of economic risks management and, as a consequence, lack of strive for their use in everyday practical activities.

Economic risks management in agrarian business and its efficiency are characterized by significant heterogeneity. On the basis of results of analysis, it should be considered to be unsatisfactory for 40% of business structures, and rather high – for 27% of business structures. That's why for positioning of agrarian business structures as to level of development of risk management and determination of directions of its perfection, it is necessary to use classification of risk management systems which is based on the methodology of evaluation of aggregate economic risks which allows identifying average levels of management, thus eliminating extreme manifestations of entrepreneurial attitude towards risks.

A necessary precondition of rather high efficiency of economic risks management is regular analytically reasoned transformation of agrarian business activities according to change of parameters of business environment. Its calculation and expert substantiation should include conduct of stress testing for determining the characteristics of the worst development of risk situation, evaluation of main indicators of business activities, and evaluation of the level of risk management system development with further selection of methods of risk management. Thus, the conducted comparative analysis of 16 main indicators of agrarian business allowed determining their relative significance as 0.9 -15.8%.

Perfection of risk management in agrarian business should be performed on the basis of the following methodological provisions: active position in management and aggregate economic risk. The former allows going from a posteriori reaction to result of risk situation to a priori influence through realization of developed algorithm of active management of economic risks. The latter is based on systemic approach and is aimed at provision of final efficiency of business activities.

References

- Aimin H. (2010). Uncertainty, Risk Aversion and Risk Management in Agriculture. *Agriculture and Agricultural Science Procedia*, 1, 152-156.
- Dubofsky D.A. (2003). *Derivatives: valuation and risk management*. New York : Oxford University Press, 246-280.
- Ermasova N.B. (2009). Risk management of organization: practical guide. Dashkov and Co, 142-154.
- Korshikova M.V. (2011). Management of economic risk in agrarian business. Ph.D. thesis. Stavropol State Agrarian University. Stavropol, 31-56.
- Kudryavtseva M.G. (2006). What does stress test check? *Securities market*, 2, 54–56.

- Zhang G. (2012). The study on the early warning mechanism of agricultural management risk. Source of the Document Lecture Notes in Electrical Engineering, 113 LNEE, 1319-1326.
- Mapp Jr. H.P., Hardin M.L., Walker O.L., Persaud T. (1979). An analysis of risk management strategies for agricultural producers. Source of the Document American Journal of Agricultural Economics, 61 (5), 1071-1077.
- Gollisch S., Theuvsen L. (2015). Risk management in the farm supply sector - characteristics, challenges and implications. BERICHTE UBER LANDWIRTSCHAFT, 93.