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# Developing Risk Management Mechanism at Fat-and-Oil Industry Enterprises

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***Abstract* — The aim of the article is consideration of questions associated with the risk management mechanism formation at the Ukrainian fat-and-oil industry enterprises, modern scientific publications on this topical subject and developing risk management mechanism for fat-and-oil industry enterprises in Ukraine. It has been determined the principles of risk management. It has been offered the risk management procedure at the level of the fat-and-oil industry enterprises, which includes the following stages: identification and evaluation of risks, development and analysis of risk management methods, choice of risk management methods, application of the selected methods, monitoring of the results and risk management system improvement. It has been developed the risk management mechanism of fat-and-oil industry enterprises, which allows to distinguish the main components of risk management and to increase their overall efficiency, as well as to facilitate understanding of the risk management mechanism essence and structure, which, in turn, reveals the direction for its improvement.** (*Abstract*)

***Keywords— risk, risk management, framework, risk management framework, fat-and-oil industry*** (*key words*)**.**

## I. Introduction

Under the conditions of modern integration of Ukraine into world economy fat-and-oil industry became strategic branch of agro-industrial complex of Ukraine, which is developing rapidly and provides for inflow of currency from export of ready-made products to the budget of Ukraine. Under such conditions promoting functioning and development of industrial facilities in fat-and-oil industry became extremely up to date, what is impossible without effective risk management at fat-and-oil enterprises.

## II. Brief Literature Review

Topical issues of riskology and risk management at industrial facilities are reviewed in scientific publications of V. Vitlinsky [1], I. Verbytska [2], N. Kostiuchenko [3], V. Lukyanova [4], N. Strelbitskaya [5], V. Dykan and I. Posokhov [6]. Study of scientific publications on the issues of risk management framework at industrial facilities has revealed insufficient study of this topic. There are only few studies of this issue by such scientists as O. Rudich [7], Y. Tyleneva [8], T. Tsvigun [9-10]. Though the review of the above publications shows insufficient study of the topic. Therefore highly topical character of this issue and insufficient amount of scientific publications requires modern scientific researches and development of risk management framework using the case of industrial facilities, viz. enterprises in fat-and-oil industry.

The purpose of the article is to study the issues of developing risk management framework at industrial facilities and modern scientific publications on this topical subject and to offer a risk management framework for fat-and-oil industry enterprises in Ukraine**.**

## III. Results

Risk management at the level of fat-and-oil industry enterprises has to envisage the following principles:

- Risk management policy is to be of single, i.e. systemic character, that is to include standard operation procedures for frequent risk situations and a developed procedure for certain cases, including substantial time loss for managerial decisions taking;
- Economic expediency of input of resources for actions in course of risk management is to be proportionate to possible advantages received;
- The requirement of timeliness of actions is to be observed, which is characterized by constant analysis and forecasting of internal and external factors, which are constantly changing;
- Risk management is to be a part of and to flow organically from the overall company management, which is to be in line with general strategy of an enterprise. Though it should be pointed out in case of impossibility or choice of wrong method for its

realization, risk management services are to be the first ones to point to the fact;

- The source of risk events includes practically all processes both beyond and inside an enterprise, which involve all its staff to the risk management process, not only managerial personnel or risk management service;

- The subject of assessment of performance of an enterprise is to be not only performance of objectives for a certain period of time, but also evaluation of risk proneness of methods, used for objectives achievement. Inclination to choosing too risky methods for objectives achievement over a durable period of time can only lead to loss of resources at hand.

Complex approach to developing risk management system is to be integrated at three levels: strategic, operational and result calculation levels. Strategic level is connected with choosing general strategy of an enterprise positioning and depends on the aggregate of many factors, such as objectives, tasks and the stage of development of an enterprise, rate of change of market and the branch, economic cycle stage etc. Operational level is oriented at the flow of information and managerial decisions inside an organizational chart of an enterprise. It is a flexible multilevel structure (which functions include constant analysis, information supply, provision for all necessary actions and control of their performance) that is aimed at minimization of possibility of uncertain loss and is a part of managerial decision-making process at all the levels of an enterprise. The function of result calculation level is to develop logic algorithm for quantitative evaluation of risk load and its influence on financial stability of an enterprise, without being bound to its organizational chart. The link between the levels is provided by chain reaction due to necessity of changes in the risk management strategy, operations or tools under the influence of change in external and internal factors. Risk management stages are relatively isolated risk management processes, which are characterized by a certain set of actions taken and tools applied, level of implementation of management process, time for collecting and transmission of information.

Risk management procedure at fat-and-oil industry enterprises is complex and multilevel. Despite of the fact that in fact all the stages unfold practically simultaneously with the necessity of making quick managerial decisions, they can be conventionally divided and arranged in logic sequence due to necessity of risk management actions. The procedure contains interrelated logic stages:

- Risks identification and evaluation.

- Development and analysis of risk management methods.

- Choice of risk management methods.

- Application of methods chosen.

- Results monitoring and improvement of risk management system.

For full understanding of specific character of the above stages each of them should be analyzed separately.

1) Risks identification and evaluation is the most important and the most difficult risk management stage, as it anticipates constant analysis and accounting of external and internal factors, which are subject to initially uncertain changes. This stage is to be viewed as the process of revealing of the whole list of possible risk events, their classification, conditioned by their source of origin, and evaluation of dispersion of possible quantitative and qualitative influences at an enterprise. On the ground of classification expert panel is selected, which includes the most competent employees of an enterprise or external specialists. Particular difficulty of the stage lies in the evaluation of reliability and completeness of the selected data, correctness of understanding of signals from the environment, on which the efficiency of further effects depends to the greatest extend. Practically, the complete information basis for further managerial decision taking process is provided for at this stage. The repeated character of this stage even in case of viewing one risk situation is to be considered, as database is supplemented and updated with time.

2) The main task of the stage of development and analysis of risk management methods lies in finding the most effective instruments of influence on the risk or the consequences of its implementation. As in case of adaptive approach it is about the effect on the events, which may even not occur, the efficiency shall have the meaning first of all of the relation of resource input for management to possible loss of resources in case of risk event. Such restrictions are strongly varied due to the strategic tasks set and the condition of an enterprise at the moment of decision taking. In case of risk management after occurrence of risk events the efficiency shall have the meaning of liquidation of consequences of undesired events using the least amount of resources of an enterprise.

3) At the third stage, when choosing management method or an aggregate thereof, it is necessary to take the most reasonable approach, to appoint a person in charge of taking measures for management and determining criteria for evaluation of their efficiency. It is essential that all these components are fulfilled, as in time it shall give all the necessary data for analysis of activity of an enterprise. In case of hard budget limits, risk manager can omit some risks, e.g. because of insignificance of their impact, but this only implies passive management thereof.

4) Application of methods chosen lies in implementation of accepted changes in enterprise activity parameters and control of their implementation. In this process isolated managerial and technical decisions within the framework of approved risk management program are implemented.

5) The last stage – results monitoring – summarizes the results of processes of impact on the risk event or its consequences in form of feedback from risk management system, as well as provides data for improvement of business processes inside an enterprise. Within the framework of results analysis the risk manager is obliged to give his/her opinion to the efficiency of the management program chosen and its certain part, efficiency of organizing of processes of implementation of the method chosen by a person in charge, the correctness of selecting criteria for

results evaluation, the possibility of improvement of each stage and the possibility of standardizing management procedure for similar risk events. The result of the fifth stage is to provide structured information about the work done and recommendations on improvement of business processes, which is submitted to the highest governing body of an enterprise or a person in charge. It should be noted that in real production practice the stages may unfold simultaneously, return to previous stages, as well as omission of stages, e.g. in case of standardizing of actions for certain risk situation or their ignoring in case of insignificance of their consequences are possible. As a rule, return to previous stages occurs in case of revealing significant factors, which were not considered previously. Moreover, the aim of the last stage is the analysis of the whole system, which is why its results are to lead to changes in managerial decision taking process in future.

Understanding the fact that critical is not the risk, which is wrongly evaluated or which is wrongly managed [1]; [2]; [3], but the risk, which is undesired, makes us realize the necessity of searching for and development of new risk management concepts and framework. In our opinion, the sphere of risk management is to take more important part in the functioning of fat-and-oil industry enterprises and include new aspects and stages at the present stage of development of economics in Ukraine. Development and implementation of risk management framework at the level of an enterprise is to provide for effective risk management, which guarantees necessary stability and security from external and internal impacts. A complex risk management framework at fat-and-oil industry enterprises is required.

Conceptual principles of risk management framework at fat-and-oil industry enterprises as shown in Figure 1.

Risk management framework at fat-and-oil industry enterprises is to be based upon the following basic principles:

- adaptability – ability of the system to increase the efficiency of its work due to change in its parameters and characteristics by adapting to changes of the environment, risk management framework is to be flexible enough for quicker adaptation to the effect of endogenous and exogenous factors or to other peculiarities of activity (possibilities) of an enterprise;
- effectiveness – orientation on the achievement of planned figures and performance of tasks, consumption at all the stages of risk management framework application is to be covered by the total effect of its application, i.e. increase in earning power (level of profitability) of an enterprise;
- efficiency – achieving goals set with the least possible losses;
- system flexibility – ability to structural changes and quick managerial decision taking under conditions of rapid change in external and internal factors;
- multilevel character – rational decentralization and division by the levels of responsibility for the possibility taking decisions on the risks on the ground of necessary information provided and the analysis of general risk management structure;
- integration – implementation, allocation of functions and effective collaboration of risk management system with other organizational structures of an enterprise;
- personal responsibility, which gives right to optimizing risk management staff and to maximum use of personal competences. The main advantage of this is the possibility to shift the focus of activity of the risk management department to external and strategic risks, being the main source of critical risks, as well as to deliver its functions to external control and external audit service, which allows relieving risk management staff substantially and accelerating business processes.

Such an approach includes three levels of risk management implementation: top management level (where decisions on external and branch risks are taken), specialized substructures level (where decisions on substructure risk are taken), linear management level (at which decisions on personal risks are taken). Principal difference between the levels is reallocation of stages or risk regulation between enterprise structures, despite of identity of these stages. This need is predetermined by present conditions, when ‘operative risk management is to occur in place of their emergence’ [3]; [4]; [5]; [6].

Let us take a brief look at each these levels. The 1st level. For implementation of external and strategic risk management constant monitoring of environment of the enterprise and taking final decision by the top management of the company is required. For this purpose management stages are divided as follows: risk management department performs constant branch market monitoring and submits information. When strategic decisions are required, the situation is evaluated jointly, methods of implementations of decisions are chosen and the tasks for specialized substructures are set. Then the methods selected are implemented, results are monitored and the data are submitted to the Risk Management Department, on the ground of which the conclusion on efficiency of the measures taken is made. The 2nd level. At this level substructural risk management occurs. The first peculiarity lies in dividing risk identification from its evaluation. Risk management department provides for submission of information about emergence of internal risks on the ground of market situation analysis, the specialized substructures do the same by analyzing internal operation. The key peculiarity of the 2nd level lies in transfer of responsibility for taking decisions on basic stages or risk management to specialized substructures. The last stage is evaluation of actions of specialized substructures by Risk Management Department and submission of information to the top management. The 3rd level. At this level Risk Management Department performs the whole cycle of stages on personal risk management alone. Personal risks include qualification risks, loyalty risks, personnel risks and labor safety risks.

As a whole, when various levels are united, an aggregate organizational chart of operational risk management framework is received.

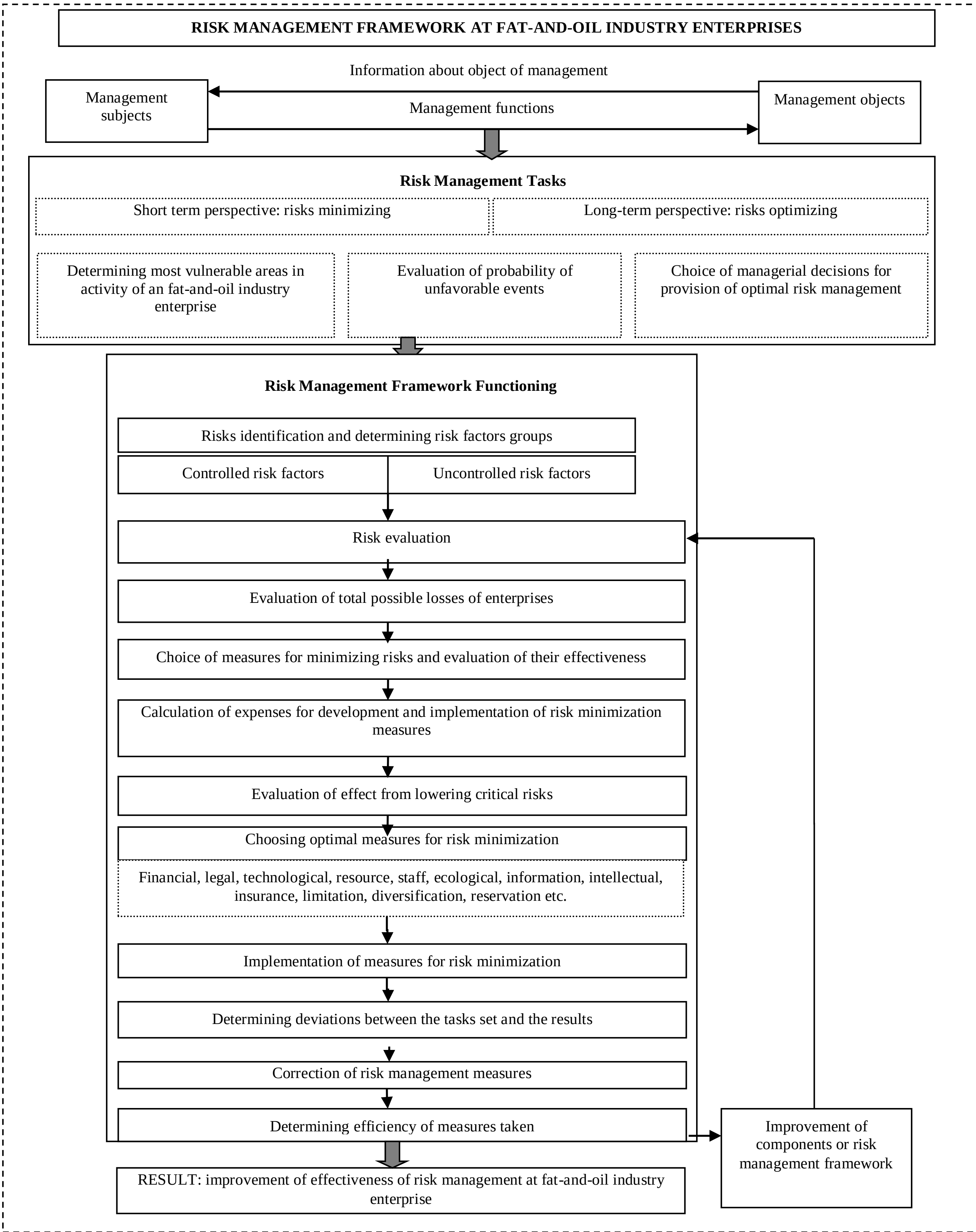


Fig. 1. Risk management framework at fat-and-oil industry enterprises

Source: Developed by the authors

Widening personalized responsibility by allocating of functions of monitoring and evaluation of managerial decisions, which are already taken by specialized substructures, should also be pointed out [7]; [8]; [9];[10].

Subjects of risk management framework affect the basic management objects with a glance to certain principles.

1) Awareness of risks acceptance, which provides for assuming by the subject of risk management of responsibility for managerial decision.

2) Possibility to influence the risks accepted. Risk portfolio should include only those risks, which can be influenced by the subject of risk management irrespective of their objective and subjective nature.

3) Correspondence of level of risks accepted to the level of earning power of an enterprise. This principle is essential in case of risk management, as the amount of risk management expenses should be compensated for by adequate earning power.

4) Compliance of risks taken with potential losses of an enterprise. Possible amount of financial losses when performing risk-bearing activities is to correspond to the capital, which is reserved for their covering. Otherwise risk event shall cause loss of a part of assets, which provide for operative or investing activity at an enterprise, i.e. reduces its earning power and development rate.

5) Considering time decay. The longer is the period of performing of certain activities, the higher is the possibility of a risk.

6) Correspondence to general strategy of an enterprise. The subject of risk management is to act according to general principles, criteria and approaches, determined by corporate strategy of an enterprise, which, in its turn, facilitates risk management coordination and organizing.

7) Considering the possibility of risk assignment. This principle provides that, unless it contradicts to the strategy of an enterprise, the inclusion of risks to risk portfolio is possible only if their assignment to the partners (in operation) or to external insurer (special insurance contract, letter of credit etc.) in full or in part is possible.

The above principles are principles for risk management framework development at an enterprise, which implementation allows for its effective and steady functioning. It should be pointed out, that these principles are to coordinate with general principles, objectives and tasks of management of an enterprise.

Risk management framework at fat-and-oil industry enterprises should also consider the following important aspects:

- stability – availability of sufficient sustainability, allowing risk management framework to function safely even under substantial changes of environment;
- compatibility – risk management framework is to be adapted for joint application with other risk management frameworks (measures) easily and quickly enough, whereas additional expenses for simultaneous functioning of various frameworks are to be covered by synergistic effect;
- Intelligibility – risk management framework should not be too difficult to make it possible for an enterprise to implement it as soon as possible with least possible costs.

Practical application of the article consists in testing the proposed mechanism of risk management at the enterprises of fat-and-oil industry of Ukraine, that will improve the effectiveness of risk management industry.

## IV. Conclusions

1. Authors have studied modern scientific publications on the issues of risk management framework development at industrial enterprises.

2. Risk management principles have been pointed out and a procedure for risk management at fat-and-oil industry enterprises have been offered.

3. Risk management framework at fat-and-oil industry enterprises has been developed and the most important aspects, which are to be considered in the risk management framework at fat-and-oil industry enterprises, have been pointed out.

4. As a whole, risk management framework allows pointing out main risk management components and raising their overall efficiency, as well as facilitating the understanding of the essence and the structure of risk management framework, what in its turn allows detecting direction of its improving.

5. Further scientific research trends include implementation of risk management framework of fat-and-oil industry enterprises at such fat-and-oil industry enterprises.

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