# Realization of Investment Processes in the Agricultural Sector of the Digital Economy

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#### Abstract:

The purpose of the article is to study the theoretical aspects of the investment processes implementation in the agricultural sector of the digital economy.

The theoretical aspects of the organization, implementation and management of investment processes in the agricultural sector from the position of domestic and foreign scientists are studied. The subject, object and the goals of the investment process implementation in the agricultural sector, as well as the influencing factors, and the necessity of this activity fulfillment have been determined. The peculiarities of the investment process in the agricultural sector, connected with the specifics of agricultural production, its dependence on weather conditions, on the natural and zonal features of the production area have been highlighted, and the definition of the "investment process" concept was determined.

The sources of investment resources in the agricultural sector were determined, their division into external (borrowed, loan, state) and internal (own funds, operating results, occasional) sources was made. The classification of investment resources in terms of their division according to the method of their receipt and the method of payment for the use of resources was specified.

The study of the theoretical aspects of the investment processes implementation in the agricultural sector is the basis for further research and offering the measures to activate them.

**Keywords:** investment process, agricultural sector, investment resources, activation program, investment process indicators, digital economy, security, institutionalization.

JEL Classification: P28, O2, O5, R1, R11.

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### 1. Introduction

The process of investment resources formation in the agricultural sector relates to the distinctive features of agricultural production, which is characterized by a delayed reaction to the events held. Despite the significant attention of scientists to the problems of investing in the agricultural sector, the problems of the investment process activation in the agricultural sector in the context of resource provision in this sphere, as well as government stimulation of the investment process development in the agricultural sector of the digital economy remain poorly elaborated. The theoretical and practical significance of this problem, the insufficient elaboration of its individual issues, have determined the choice of the research topic.

# 2. Literature Review

The research of theoretical and methodical aspects of economic security is being carried out by domestic and foreign experts and scientists (Azoulay, 2010; Breidinger, 2006; Brown *et al.*, 2006; Sutnata and Byrd, 2007; D'Agostino, 2008; Murray and Grybeste, 2007; Friesz, 2007; Sullivaut, 2007; Burkaltseva *et al.*, 2016; Burkaltseva *et al.*, 2017; Gruzd, 2006; Varnaliy *et al.*, 2016; Simchenko and Tsohla, 2016; Synigovets, 2001; Plakhtiy, 2004; Pushkar, 2009; Simchenko *et al.*, 2016).

Considering the analysis of the economic security digital aspects (Burkaltseva *et al.*, 2017; Varnaliy *et al.*, 2016; Simchenko *et al.*, 2016), domestic and foreign specialists and scientists are engaged in the implementation and management of investment processes (Azoulay, 2010; Breidinger, 2006; Brown *et al.*, 2006; Sutnata and Byrd 2007; D'Agostino, 2008; Murray and Grybeste, 2007; Friesz, 2007; Sullivaut, 2007; Burkaltseva *et al.*, 2016; Burkaltseva *et al.*, 2017; Gruzd, 2006; Varnaliy *et al.*, 2016; Simchenko and Tsohla, 2016; Synigovets, 2001; Plakhtiy, 2004; Pushkar, 2009; Simchenko *et al.*, 2016).

Other scientists such as Gusak (2010), Reshetov *et al.*, (2016), Lavruk (2011), Linda (2010), Dudin and Lyasnikov (2015), Mochalina (2013), Reshetov (2015), Dudin *et al.*, (2013) have devoted their works to the problems of investment processes development and improvement in the agricultural sphere.

In the domestic and foreign literature, the investment process is considered from various positions. According to the point of management, systems approach, at the micro and macro levels. These scientific papers are of great interest for research; however, they do not pay attention to the necessity for resource support of investment processes.

# 3. Methodology

The research is based on the dialectical method of scientific cognition, the method of reality cognition in its contradictions, integrity and development, as well as the systematic and institutional approach to studying and building the organization of investment flows formation ensuring the growth of investment activity of the agricultural sector in terms of the digital economy. The concept of institutionalism comprises of two aspects: "institutes" – norms, behavior traditions in society, and "institutions" – the fixations of norms and traditions in the form of laws, organizations, and authorities. The point of the institutional approach is to include institutional approach, the society is considered as a certain institutional structure that accumulates the social experience of society and the state, a system of established laws, relationships and traditions, relations and mentality.

From the point of view of the institutional approach, the understanding of how the institutional system operates, requires the consideration of very complex interrelations between society and institutions. The relationships between society and institutions are determined by a set of institutional restrictions that determine the way of the social system functioning. Institutions are the key to understanding the relationship between society and economics, politics, law and the impact of these relationships on the development. Eventually, institutions are fundamental factors of the different systems functioning in the long term.

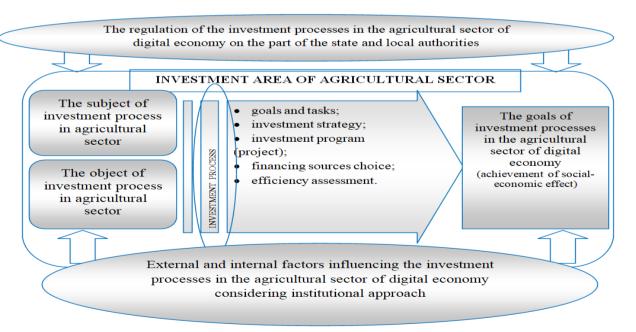
# 4. Findings

The investment process in the agricultural sector is proposed to be defined as "a consistent, continuous process of planning, financing and implementing investment activities aimed at achieving economic and social effects in the agricultural sector, regulated by the state and subjected to the influence of external and internal factors in the development of the agricultural sector." (Gusak, 2010; Valenčík and Červenka, 2016). Figure 1 presents the investment process implementation in the agricultural sector. The investment process in the agricultural sector of the digital economy has its own characteristics and must meet certain criteria in accordance with current trends in this sphere development. Because of the conducted analysis of modern economists' researches, we have outlined the features of implementing and intensifying investment processes in the agricultural sector:

- besides the economic, the social effect must be achieved (Moskal, 2001);
- for effective development of the agricultural sector, this process must be carried out continuously and continuously whenever possible (Moskal, 2001);
- the agricultural sector requires significant financial investments from various sources (Linda, 2010);
- the efficiency of the investment resources use in the agricultural sector depends on the total efficiency of its operation (Absava, 2002);

- seasonality of the resources uses and cash receipts (Sykhoryko, 2006);
- relatively slow capital turnover, that affects the income decline (Sykhoryko, 2006);
- the products of domestic agriculture and its processing do not have free wide access to the world market (Sykhoryko, 2006);
- reduction of intangible assets investment, that most commonly are the result of innovative developments (Abramonich, 2008);
- imperfection of the land legislation and incompleteness of the land reform process (Korschik, 2010);
- investment resources in the agricultural sector ensure economic growth and qualitative renewal of fixed assets on a fundamentally new, competitive basis (Ruban, 2009);
- due to investment resources, the progressive structural changes in agricultural production are carried out, which affect the most important branches of specialization (Ruban, 2009);
- with the help of investments, the achievements of scientific and technical progress are realized and the increase in the production efficiency is carried out on this basis both at the micro- and macrolevel (Ruban, 2009).

Figure 1. Realization of investment process in the agricultural sector



**Source:** composed by authors.

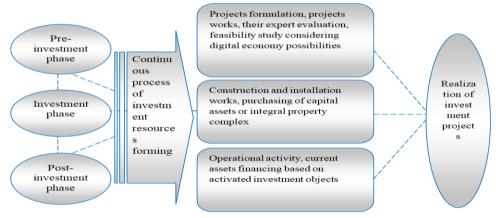
For providing an efficient and continuous investment process that ensures efficient production development, and promotes intensive development of the agricultural sector, it is necessary to maintain a certain level of resources to have a possibility for

implementation of all the stages of activities to achieve the set goals and the desired effect.

The fundamental condition for the investment activity implementation and the activation of the investment process in the agricultural sector is the formation of investment resources, which is necessary at all stages of its life cycle for economically effective progressive development of production. To achieve the intensive production development, the process of forming investment resources must be continuous, deterministic and regulated. The investment process cannot be carried out without sufficient investment resources needed to finance the investment project or activity (Figure 2). The formation of investment resources is unbalanced in dependence to the stage of the project life cycle and its implementation stage. In most cases, the poor balance is associated with the uncertainty of the funding amount from external sources, while own internal sources of resources are more predictable and form the basis for the continuity of this process (Zeldner, 2000; Krupa *et al.*, 2015a; Krupa *et al.*, 2015b). In our opinion, the effective organization of the investment resources forming process ensures:

- continuous investment activity with the possibility of the planned investment projects implementing to the full extent;
- the most effective use of financial resources coming from various sources for investment purposes;
- the advance in the profitability and financial stability of the activity spheres, realizing investment projects and developing various production directions in the agricultural sector.

Figure 2. Organization of investment resources on the different stages of investment project realization



**Source:** composed by authors.

The process of investment resources organization in the agricultural sector relates to the peculiarities of agricultural production, which is characterized by a delayed reaction to the events held. As Zeldner (2000) notes in his monograph, this is connected not only with the rupture of the working cycle and the production period, but also with the length of the recovery period for soil fertility, reproduction of elite animals, etc.

In our opinion, the investment resources organization in the agricultural sector can be characterized as a long-term and risky process, carried out with the implementation of a certain activity, which will contribute to the future welfare gain. Blank (2001) represents investment resources as "all forms of capital attracted for investing in objects of real financing and financial investment". This definition covers the investment activity of an individual enterprise and involves the use of financial resources for investment. Sokolov (2002) in his research defines investment resources as "economic resources that are in some form (material, non-material, financial) and can be invested, if necessary, in any investment object in order to achieve the investment goal". This definition is a bit contradictory, involves investing only economic resources, whereas investment resources are a broader concept that includes not only economic but also other types of resources, such as labor, natural, intellectual, while the author notes non-material form, which includes innovation, human capital, information, etc.

Dufenyuk (2004) proposes the definition of investment resources as "monetary, material and non-material values that are used by the business entity (investor) in the process of investing them in investment objects to generate profit or achieve a social effect". However, this definition does not cover such an important element of investment activity, as financial instruments, securities. Also, the author identifies the business entity with the investor, which is not entirely true; he should have divided these two concepts, considering that they do not always coincide. Perekrest (2007) in her research notes that "major part of scientists under investment resources understand all types of money and other assets that are attracted to invest in investment objects". And the author also offers her definition of the investment resources concept as "a complex of financial, material, non-material and labor resources that are attracted to invest in investment objects" (Perekrest, 2007). This definition doesn't track the purpose of investment, although the forms of attracting investment resources are fully defined.

Oleksandrenko (2009) studies the structure of investment resources sources in the region and defines them as "cash or assets that are their equivalents, labor resources, production and non-productive non-current assets and natural resources that are invested in regional objects or can be used in the form of resources to support investment processes during all stages of their implementation at the regional level and are located both in the region and outside it and are attracted for investment objectives realization". This definition completely reflects all possible forms of attracting investment resources, and what kind of effect can be achieved by realizing investment goals. In addition, the definition reflects only the process of

forming investment resources at the regional level and cannot be applied to other structural units.

Stepanenko (2001) in his research gives own interpretation of the investment resources concept and defines them as "the means by which the allocation of the aggregate social product part is made, that without disrupting the objective (natural) proportionality of social production can be directed to the development of the socioeconomic system as a whole and the realization of specific investment projects, in particular, with a goal of obtaining an economic effect". This definition does not give an idea of which exactly means are used to implement specific investment projects, in which form they are involved. The goal of obtaining an economic effect is also underlined, but it remains unclear whether this is the only purpose of the investment resources formation, either it is a priority, or it is on the same level with other effects achieved.

Given the shortcomings of the considered definitions of the term "investment resources", we will highlight the concept of this category, including the specifics of the investment resources formation process in the agricultural sector of the economy. "Investment resources are financial, material and monetary resources that are continuously attracted from various sources interacting with the agricultural sector to implement the investment process in order to increase production efficiency in this area, to achieve economic and social effects" (Mochalina, 2013).

The modern economic literature considers many sources of resources that are needed for implementation of investment processes in the agricultural sphere; each of them is of great importance. The structure of these sources is given in Figure 3. It should be noted that different types of resources sources for the implementation and activation of investment processes may have different impact on the investment activities carried out. External resources sources for investment processes implementation in the agricultural sector can be defined as channels and technical support for obtaining resources (digital and organizational information support) based on the developed and implemented measures to realize investment projects aimed at improving production efficiency, which are characterized by a low degree of probability and are difficult to predict.

Internal resources sources for investment processes implementation in the agricultural sector are the result of this sector activity, and depend on its effectiveness and profitability, and can be predicted basing on the results analysis of the previous activities for attraction, development and obtaining the necessary effect in investment projects implementing aimed at improving production efficiency in the agricultural sector.

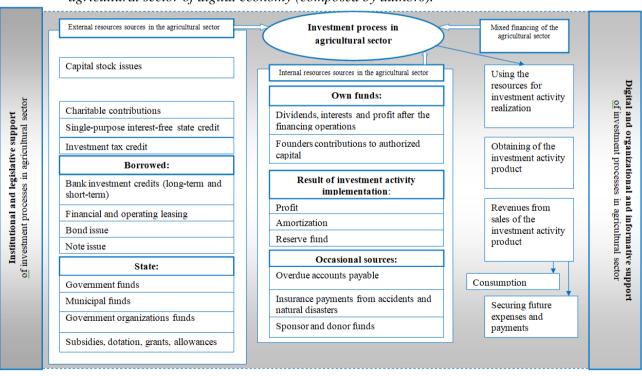
Internal and external resources sources are interrelated. Thus, an increase in the one element volume of the resource structure that provides investment processes in the

agricultural sector helps to expand the opportunities for growth of other elements, with the subsequent increase of the agricultural sector overall efficiency. Capital investments in the agricultural sector are carried out by means of several sources, which can be divided into private, state (budgetary funds) and external (foreign investors' funds) sectors according to the form of the funds ownership. In relation to the investment activity subject, these sources can be divided into external sources (coming to the subject not because of own economic activity) and internal (formed at the subject of the activity).

#### 5. Discussion

When classifying investment resources, the classification developments presented in the papers of Blank (2001), Schlossberger (2016), Vorobyov and Vorobyova (2004), Peresada and Mayorova (2002), the investment resources classification presented in the researches of Dufenyuk (2004), Perekrest (2007), Oleksandrenko (2009), as well as by Gudz (2007) the financial resources classification, investments classification in papers by Abramovich (2008) and Vivchar (2004), Palka (2009) classification of investment activity sources in the research of Silakova (2009) as well as the classification shown in Figure 4.

Figure 3. Resources sources for investment processes implementation in the agricultural sector of digital economy (composed by authors).



Credits to investment activity Short-terms By terms Medium-terms Long-terms Credits for construction and land development By objects Credits for purchasing of buildings. constructions, equipment and land Financial leasing Single By mode of provision Credit line Guaranteed (reserved) Secured By economic security Unsecured (blank credit) Risk-free Low-risk Bv risk level Medium-risk High-risk Venture With fixed rate By interest type With variable rate

Figure 4. Bank investment credits classification

**Source:** Composed by authors according to data (Blank, 2001; Vorobyov and Vorobyova, 2004; Peresada and Mayorova 2002).

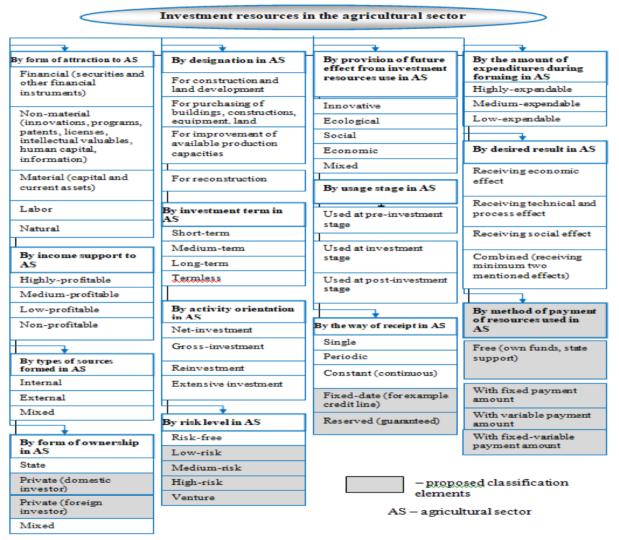
With fixed-regulated rate

According to the completed analysis of published sources, we propose a classification of investment resources of the agricultural sector according to fourteen classification criteria. Thus, when classifying according to the risk level, most authors suggest a division of investment resources and investments into risk-free and ones with risk. We propose an additional division of risk investment resources into low-risk, medium-risk, high-risk and venture, as a different risk degree determines the process specifics of investment resources forming.

When classifying investment resources by ownership, it is proposed to classify resources (obtained from private sources) into the resources of domestic and foreign investors. Both types refer to private bunds, but their formation processes are significantly different and have their own features. When classifying investment resources by the way they are received, it is proposed to add to the elements available in the literature such elements as urgent ones – that is, such resources that can be received at a certain time and in strictly defined amounts (a clear example of

this investment resources kind is the credit line), and also reserved or guaranteed resources – that is, those that can be obtained at certain period or under certain circumstances, in particular if certain conditions of contract are satisfied.

Figure 5. Classification of investment resources entering the agricultural sector.



*Source:* Composed by authors (Mochalina, 2013).

Such classification element is proposed, as a method of payment for the resources use. When providing resources for usage, the investor always wants to get some effect from it. As a rule, it consists in a certain amount of payment for the use of these investment resources. Based on calculating, charges and payment for the resources use, such classification elements as a fixed payment amount, variable payment amount, fixed- variable payment amount (or mixed, when the payment

amount is divided into parts, one of which is fixed, the other is variable, or payment is divided by term — when to a certain period the payment is fixed, and after it — variable or vice versa). It should also be noted that investment resources can be used for free. These include own funds, state support, which is carried out on a free and irrevocable basis, as well as charitable contributions). The proposed classification is presented in Figure 5.

The process of investment resources forming is a complex system where many elements interact, reflecting various sources of their receipt. In our opinion, the most effective is the analysis of each element separately with further systematization to obtain a coherent perception view. The element-by-element approach allows us to identify the most promising sources of resource formation, which are becoming more and more popular and accessible. In addition, it will provide an opportunity to identify those elements and resources sources with great potential that require attention from both investment activity subjects and government authorities, due to poor levels of development. Thus, the investment process in the agricultural sector is a complex system, subject to the influence by many internal and external factors and regulated by the state. In addition, the implementation of investment processes is impossible without the availability of the necessary level of investment resources that can enter the agricultural sector from a variety of sources. And only effective interaction of resources and implemented processes will allow the effective production in the agricultural sector.

#### 6. Conclusion

Effective organization of the investment resources formation process in the agricultural sector of the digital economy provides:

- continuous investment activity with the possibility of the planned investment projects implementing on a full scale;
- the most effective use of financial resources coming from various sources for investment purposes;
- profitability and financial stability increase of the activity spheres, realizing investment projects and developing various production directions in the agricultural sector.

The process of investment resources forming in the agricultural sector relates to the peculiarities of agricultural production, which is characterized by a delayed reaction to the events held. The basis for the effective implementation of the investment process is a sufficient resource amount for production (technical support for the resources obtaining (digital and organizational and information support)), therefore, one of the main objectives for the implementation and activation of the investment process is to provide the necessary amount of investment resources that can come to this sphere from various sources, and to monitor their use.

Sources of investment resources in the agricultural sector are divided into external (attracted, borrowed, state) and domestic (own funds, operational results, episodic) sources with a specification of the investment resources classification in terms of their division by the way they are received and by the payment method for the resources use. The study of the theoretical aspects of the investment processes implementation in the agricultural sector is the basis for further research and measures proposal for their activation in the digital economy with the application of various tools.

#### 7. Further Research

The study of the theoretical aspects of the investment processes implementation in the agricultural sector is the basis for further research and proposals for measures to activate them.

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