

## THE ROLE OF INVESTMENTS IN THE MODERNIZATION AND DEVELOPMENT OF THE VITIVINICULTURAL SECTOR

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### Abstract

*The paper presents the analysis of the investment flow in the vitivinicultural sector and the prospects for the development of the sector, and a SWOT analysis was developed to have a conjugate vision of the sector. The paper reflects the role and importance of investment in the modernization and development of the sector by increasing competitiveness, economic performance of enterprises, market growth and diversification. In Moldova, the vitivinicultural sector is at the heart of the harmoniously developed social and economic life, due to the favorable conditions, also wines can be considered as the visiting card of the Republic of Moldova. The methodology applied includes systemic analysis methods, quantitative and qualitative methods, economic and financial analyses specific to the production and marketing activity. The results of the research revealed the connection between investments in modernization-innovation and sustainable growth of the vitivinicultural sector through: improvement of technological processes, improvement of working and living conditions of the involved population, especially those in rural areas, effects of new technologies on the environment.*

**Key words:** vitivinicultural sector, investment, sustainable development, modernization, innovation

### INTRODUCTION

The vitivinicultural sector is the most important part of the agricultural sector, and the wine industry represents about 3% of the GDP and about 8% of the country's exports [6] and are exported to more than 70 countries. Wine is also strategically important for the positioning of the Republic of Moldova as a country, being the first reason why tourists visit the country. The image and position of Moldovan wine on foreign markets can help shape the way the Republic of Moldova is perceived in the world. Vine plantations occupy 7% of the total agricultural land in Moldova and 3.8% of the total surface of the country, demonstrating the highest density of vineyards in the world.

The wine sector is an important source of income for the country's population, especially for people living in rural areas. The development of this sector will reduce poverty in rural areas and improve living standards. For the development and modernization of the wine sector, investments and modern and efficient technologies are needed, this would

be one of the reasons why the population, especially young people, stay in rural areas.

Over the years, the wine sector has gone through several major crises with negative consequences. In order to recover the situation in the sector and its revitalization, several restructurings were necessary, adapting to the new paradigms and market development trends. Thus, in order to ensure a sustainable development, it is necessary that the modernization and development strategies of the wine sector are supported by concrete and well-motivated measures and actions, by coordinated and effective involvement both at the level of sectoral policies and at the level of the wine business. The modernization of the sector must be supported by investment strategies coupled with the need to modernize through modern techniques, technological development, digitization, innovations and also through the establishment of vineyards with new, productive and competitive varieties that will have an impact on the quality of the wine, which is the calling card of the country.

A solution regarding the restructuring and modernization of the viticultural sector can be through investments, subsidies being a tool applied by the authorities to stimulate this process. The authors, Timofti E. and Şargo [15] emphasize that: "the investments have a pronounced innovative character for the development of agriculture, which creates material conditions necessary for the promotion of technical progress and the results of scientific research in the field of agriculture, a fact that ensures the improvement of the means of production, of technologies, forms of production organization".

The aim of this research is to study and analyze investments aimed at modernization and development of the wine sector. At the same time, it was carried out the diagnosis of the wine sector from the economic and investment perspective to highlight the need and importance of implementing modern technologies.

## MATERIALS AND METHODS

The informational support for this work was the significant scientific publications, legislative acts and policy documents, reports and publications of the National Bureau of Statistics, Ministry of Agriculture and Food Industry, Reports of the National Office of Vine and Wine, Reports of the Agency for Intervention and Payments for Agriculture. Research methods such as: the documentary method, the synthesis method, the graphic and table method, as well as the analysis by the comparative method were used to create this article.

In order to identify the strengths and weaknesses within the wine sector, the authors applied SWOT analysis.

## RESULTS AND DISCUSSIONS

Studying and mapping a sector from an economic and investment perspective allows highlighting the existing investment potential, identifying intervention solutions that would accelerate development, orient businesses towards important investment objectives,

strengthen strategies calibrated to sustainable growth trends [14].

In this paper we applied SWOT-analysis method, which allows us to analyze the current situation in the winemaking sector (Table 1) in order to outline specific directions and measures aimed at the development and modernization of the winemaking sector [5].

Table 1. SWOT analysis of the vitivincultural sector

<b>Advantages</b>	Favorable climatic and pedological conditions for the development of the vitivincultural sector. The existence of the wine industrial potential. Rich traditions in the production of quality wine. Capitalizing on sloping land. High overall economic efficiency and satisfactory profitability. Making investments in the development of the sector. Ensuring a decent living in the rural area. Increasing the surface area of grapes. Entering new markets. <i>Wine Day</i> holiday. The emergence of new partners.
<b>Disadvantages</b>	Lack of a positive image formed. Varieties with low productivity. Increased competition. Price changes. Current production technologies do not allow the production of quality and competitive grapes for export. High costs of harvesting, storage and packaging. Lack of knowledge and experience in intensive production technologies. Modern technologies insufficiently applied. Lack of professional training and retraining of the workforce. Poorly developed tourist infrastructure.
<b>Opportunities</b>	Implementation of innovative technologies. The existence of the market. Implementation of modern technologies. Increasing the export of wines. Attracting personnel (national/international), financial resources regarding the development of the vitivincultural sector. Increasing interest in production in the vitivincultural sector.
<b>Threats</b>	Climate change. Migration of qualified young people. Price changes. Increasing taxes. Increased competition. Reduced capacities to access financial resources. Low capacity of the local business environment to make investments for development. The instability of the economic-political environment. Lack of an effective system of professional training and retraining of the workforce.

Source: Elaborated by the authors.

Effective cooperation between authorities and entrepreneurs in the wine sector is necessary for the modernisation and dynamic, balanced and sustainable development of the wine sector. The Ministry of Agriculture and Food Industry is an important component in promoting a balanced and sustainable policy leading to the development and modernization of the wine sector, aimed at strengthening the wine segment and promoting the Republic of Moldova as a wine country. Thus, MAIA's objective is "to modernize the wine sector, to solve structural problems in the wine industry and to contribute to the creation of favorable conditions for the production of quality wines (with protected geographical indication (PGI) and protected designation of origin (PDO))", thus contributing to increasing competitiveness on the internal and external market [9]. Thus, we can mention that the modernization and development of the wine sector can be remedied through investments. Also, in the National Strategy for Agricultural and Rural Development 2023-2030 is mentioned, through specific objective 1.1. "Actions to stimulate investments in the primary infrastructure of agricultural holdings for viable and competitive growth" which aims to stimulate investments to "modernize infrastructure and the agricultural production sector", "increase agricultural competitiveness and productivity in a sustainable way" [13]. Attracting investments in the wine sector will allow the modernization of qualitative and competitive production processes, which will be able to be aligned with EU standards. Following this research, authors can mention that a solution regarding the restructuring and modernization of the wine sector can be carried out through investments, subsidies being a tool applied by the authorities to stimulate this process. And to achieve these goals, it is necessary to find the most successful sources of financing.

The starting points that were the basis for the development of the research refer to the effects of investments on the modernization of the vitivincultural sector and its development. The importance of investments in the modernization of the vitivincultural sector, the re-technologization of production

processes, the transition to new forms of agriculture (intensive and super-intensive) is an indisputable necessity to ensure the development of this sector. Therefore, for the vitivincultural sector, investments represent an important strategy and the most effective method of reducing poverty in rural areas. The investment increases production productivity, increases the availability of food in the market and helps keeping prices low by making agricultural products more accessible to rural and urban consumers. Investments also reduce the vulnerability of the food supply to shocks, contributing to the stability of consumption. The vitivincultural sector has suffered and continues to suffer as a result of a long-term lack of investment at both the macro and micro levels [5, 6]. Thus, we can mention that the economic engine for achieving performance in the field is based on advanced technologies, the technological and digital modernization of the sector will generate both an increase in the quantity and quality of grapes, and the catalyst for performance and development are investments in the technological chain of the targeted field.

Agriculture is one of the last sectors to move towards modernization/digitalization. And the impact of environmental economic conjecture factors has emphasized the need to integrate modern technologies in the vitivincultural sector. The vitivincultural sector needs modern solutions for specific problems against which classical methods do not have the expected effect.

Aligning the vitivincultural sector with EU standards involves increasing the degree of modernization by procuring modern equipment, in order to obtain quality products, increasing competitiveness and integration on the global market.

In order to achieve these objectives, the enterprises in the vitivincultural sector are forced to find the most successful sources of financing, increasing the advantages of each type of financing and reducing their negative effects, is of major importance (Figure 1).

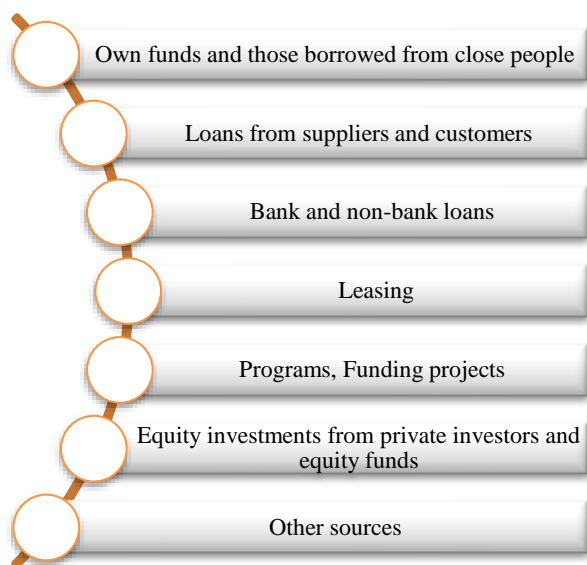


Fig. 1. Funding sources for the modernization of the vitivincultural sector  
 Source: Elaborated by the authors.

From the strategic point of view of the national economy, the wine sector is an important branch. Thus, we can mention that any financial support, both investments, subsidies and programs/projects, is an effort, a rationally managed expense in a set period of time, which generates for investors the achievement of added value as a result of modernization and development.

Agricultural subsidy is a government support given to farmers and agricultural enterprises to supplement their income, stimulate the delivery of agricultural products, as well as to influence the cost of these products. In the Republic of Moldova, subsidizing the agro-industrial sector and rural development is carried out on the basis of Law no. 276, "on the principles of subsidies in the development of agriculture and the rural environment" [8]. The subsidy process is regulated by the Regulation on the distribution of the means of the fund for subsidizing agricultural producers, which was approved by Government Decision no. 455/2017, [3]. Additionally, the financial resources allocated from the sources of the National Fund for the Development of Agriculture and the Rural Environment (NFDAR), the vitivincultural sector benefited from financial support through various projects and investment programs with external financing. Thus, from the sources of the "Filiera Vinului" Viticulture

Sector Restructuring Program, about 44.3 million euros were capitalized out of the total of 75 million euros available, and in the case of the Restructuring Program of the Horticultural Sector "Livada Moldovei" approximately 38.3 million euros were attracted from the total of 120 million euros available, the Grants Program for the Promotion of Moldovan Wine Export comes to support the diversification of export markets, with a budget of 13 million MDL [10].

The value of the NFDAR in the analyzed period 2017-2021 increased by about 3.2 times, or 1,072 mil. MDL, constituting about 63% of the total expenses allocated from the state budget for agriculture. During the given period, an increase of 1.4 times (or by 621.5 mil. MDL) was registered in the expenses for agriculture. FNDAMR, in 2021, constituted 1535 mil. MDL, with only 94.2% of AIPA being capitalized, i.e. 1446.4 mil. MDL (Figure 2) and 88.6 mil. MDL being uncapitalized [2].

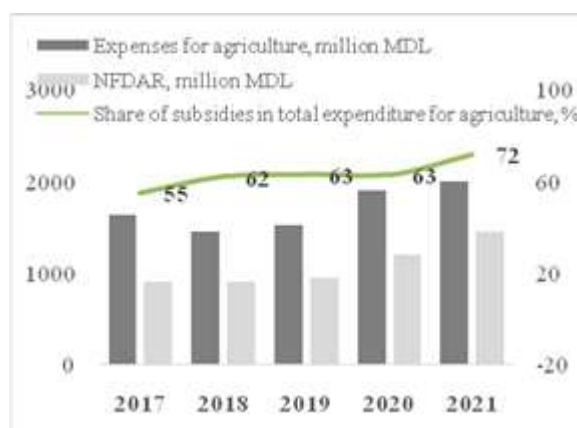


Fig. 2. Evolution of the subsidy fund for agricultural producers, in the period 2017-2021, million lei  
 Source: Elaborated by the authors [2, 11].

Following this analysis, we note that the allocations for the agricultural sector constitute 2.1% of the total expenses. Thus, in the period 2017-2020, these allocations registered an upward trend from 1.6 billion MDL to 1.89 billion MDL. In 2021, 2.0 billion MDL were provided for the agricultural sector. [1].

One of the most important measures to modernize the vitivincultural sector was the Vitivincultural sector Restructuring Program

"*Filiera Vinului*". For the realization of this Program, the European Investment Bank granted the Republic of Moldova a loan of 75 million euros, in the period 2011-2017, for the financing of 75 projects. For several reasons, this program was extended until the year 2020. Thus, during the period 2016-2020, investments of around 45.97 million euros were allocated, which constitutes a share of 38.31% of the total value of investments of 120 million euros. In this analyzed period, about 189 projects were approved for financing [9, 10, 6, 12]. During the analyzed period, investments in the vitivinicultural industry varied. In 2020, investments amounted to 404 million MDL, being 26.7% less compared to 2019 and by 15.4% more compared to 2018 (Figure 3).

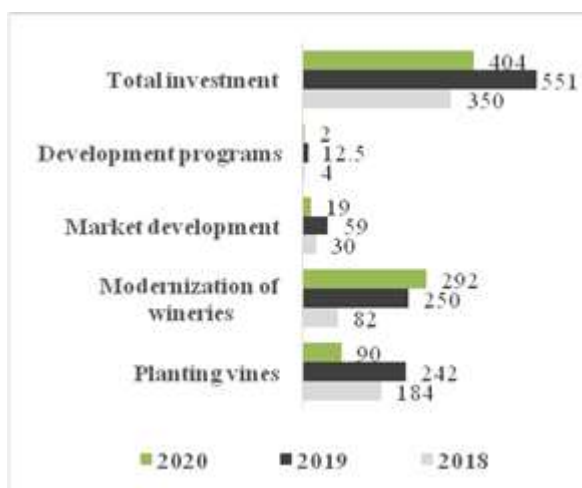


Fig. 3. Investments in the vitivinicultural sector by direction, mln. MDL in the period 2018-2020.  
 Source: Elaborated by the authors [9, 6, 10, 12].

In 2019, the wine sector attracted the most investments, worth about 551 million MDL, in 2020 the value of investments was 404 million MDL, being about 27% less compared to 2019. These investments were directed towards several branches of the wine sector, namely, about 292 million MDL were directed towards the modernization of wineries, and at the opposite pole are the development programs for which only 2 million MDL were allocated. 90 million MDL were allocated for planting vines with new and productive varieties and 19 million MDL were allocated for the diversification and development of markets (Figure 3) [12].

In order to solve the problems registered in the wine sector, actions and measures aimed at improving the investment activity are needed, namely, the subsidies in the wine sector must be oriented towards: efficient management, to implement the good practices of the partner countries; planting vines with new, productive and competitive varieties; diversification of export markets; the implementation of modern technologies throughout the value chain of the wine sector; encouraging and supporting winegrowers who want to invest in re-technology, modernization of the sector, including the establishment of small wineries and the development of wine tourism. Education and science that allow the transfer of knowledge and technologies to farmers/businessmen are also important for the wine sector. Natural calamities are becoming more and more unpredictable, complicated in form and proportion and costly in impact, therefore it is necessary to create a fund regarding risk insurance in the sector.

The first steps in the modernization of the vitivinicultural sector took place since 2006, making considerable progress. The first steps were taken towards the modernization of the Vine and Wine Law [7] and the creation of the National Vitivinicultural Organization (ONVV). In 2013 took place a structural reform of the sector setting new and transformational standards for quality, regulation and marketing. A number of innovative projects were supported by foreign donors, including the creation of a register of vineyards, modernization of facilities and equipment in laboratories and nurseries, support for small producers. These initiatives have provided a strong platform for the vitivinicultural sector to develop/modernize and adapt to climate conditions [12].

The most important role in the modernization of the vitivinicultural sector is played by the authorities, which ensure financing and the selection of priorities in the sphere of innovation, strategic planning, determining the list of goods and services that can become the object of a state order, creating self-organization mechanisms in the sphere of



innovation, promoting capital for participating in innovative projects.

In our view, *the implementation of modern technologies in the vitivincultural sector* represents a chance for the entire sector, having a major impact, coming to represent one of the defining elements of contemporary agriculture, bringing with it a transformation that will bring productivity, profitability and sustainability (Figure 4).

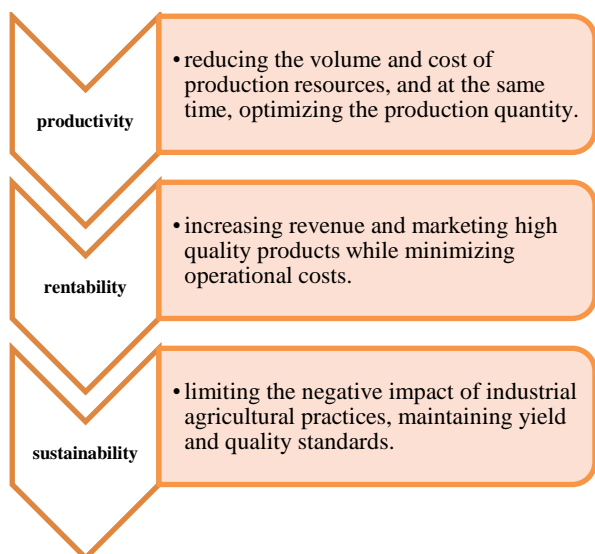


Fig. 4. Advantages of the modern technologies in the vitivincultural sector  
Source: elaborated by the authors [16].

However, it can be concluded that the modernization of the vitivincultural sector represents a significant and essential step for increasing the efficiency of agricultural activities, for increasing production and controlling costs, maximizing profits and protecting the environment. Thanks to the evolution of technologies and IT solutions that have taken place in recent years, they are able to manage the complete flow, starting from tracking specific activities in the vineyard to obtaining and commercialization of the wine. The modernization of the vitivincultural sector will bring major benefits throughout the different stages of the value chain. Everyone involved in the value creation chain, starting with winegrowers, supervisory authorities and ending with analytical laboratories, wholesale and retail distributors and even pubs and restaurants manage their data in digitized form [4].

Thus, we conclude that the level of development and modernization of the vitivincultural sector can be stimulated by investments, and investments for the vitivincultural sector are the key factor of modernization, development and sustainable economic growth, and through the correct use of investment resources, new places of work can be created, the yield per hectare can be increased, labor productivity and the quality of life in rural areas can be increased.

## CONCLUSIONS

The analysis of the importance of investments in the modernization of the vitivincultural sector, demonstrated that, *investments* in the retechnologization of production processes, the transition to the form (intensive and super-intensive) is an indisputable truth, a necessity of the time. Therefore, investments have an important role in promoting the modernization of the vitivincultural sector, namely of the technical progress by equipping economic objectives with machines, equipment, tools that lead to the improvement of technological processes.

The financing of the vitivincultural sector has increased significantly in recent years, especially due to funds allocated by external donors, programs and projects that support the development and modernization of the sector. It is important to note that with the increase in the volume of financing of the vitivincultural sector, the efficiency of the use of funds must also increase. And the implementation of the new programs, the strategic planning of investments and their prudent capitalization will drive modernization and increase the impact both at the business level and at the sector level.

The research shows that the modernization of the vitivincultural sector is still at a low level of maturity, but the recorded rates and the potential are increasing. The modernization of the vitivincultural sector through investments will strengthen and increase the recorded trends, will allow the timely capitalization of the existing potential will benefit already launched businesses ensuring the resilience of the value chain, through the improved yields

of the vineyards; increased productivity by exploiting digital data; using technologies such as artificial intelligence and reducing supply costs by implementing smart storage.

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