

**IOSUD – UNIVERSITY „DUNĂREA DE JOS” OF GALAȚI**

**Doctoral school of Fundamental and Engineering Sciences**



# **DOCTORAL THESIS ABSTRACT**

## **RESEARCH ON THE IMPACT OF THE APPLICATION OF SUBSIDIES AND AGRICULTURAL CREDIT ON THE DEVELOPMENT OF RURAL AREA IN REPUBLIC OF MOLDOVA**

**Phd Student,**

**Bondari (Șuparschii) Valentina**

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**Seria I 9 Nr.2**

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**Phd. Student,**

**Ec. Bondari (Șuparschii) Valentina**

<b>President</b>	Prof univ.dr.ing. Eugen-Cristian-Victor Rusu – U.D.J. Galați
<b>Scientific coordinator</b>	Prof univ.dr.habil. Turek Rahoveanu Maria Magdalena – U.D.J. Galați
<b>Scientific references</b>	Prof univ.dr.ing.habil. Silvius Stanciu – U.D.J. Galați Prof univ.dr.ing. Stelica Cristea – U.S.A.M.V. București Prof.dr.ing.habil. Razvan Teodorescu – U.S.A.M.V. București

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## ABSTRACT

The thesis is structured on two main sections:

Part I - Theoretical substantiation regarding the current state of knowledge in the field of agricultural financing of the Republic of Moldova.

Chapter 1. Policies on subsidizing agriculture and implications on the competitiveness of the sector in the Republic of Moldova.

Part II - Own research.

Chapter 2. Agricultural gaps in the profile of the regions of the Republic of Moldova

Chapter 3. Survey on the prospects for accessing an agricultural credit at the level of agricultural holdings in the Republic of Moldova

Chapter 4. The impact of the application of agricultural credit and subsidies on the sustainability of farms in the Republic of Moldova

Conclusions and proposals

*Keywords: rural area, regional agricultural gaps, subsidies, agricultural credit, European funding, impact research, farm performance.*

The topic of the doctoral thesis addresses a current issue, of great importance for Moldovan farmers, subsidizing and lending their farms, of different physical and economic dimensions, influences the development of agriculture and rural space in the medium and long term. In this context, the research conducted through this doctoral thesis "Research on the impact of the application of subsidies and agricultural credit on the development of rural areas in the Republic of Moldova".

Chapter 1 has as a starting point the objectives of agriculture and rural space in the Republic of Moldova, established through the ENPARD Program with the European Union, a financing plan containing annual public and national financial allocations, for development measures.

In the period 2012-2018, agriculture and rural areas in the Republic of Moldova have taken important steps towards integration into community structures. In Chapter 1 we looked at how the mechanisms of agricultural policy have changed, namely from the household support system, which did not ensure the expected restructuring, to the increase of economic performance and market competitiveness.

In our analysis we started from the objectives of the ENPARD Program which develops and deepens the orientations of the European policy with the following content:

- List of rural development programs that implement the measures and distribute the financial allocations by programs;

- Elements that ensure coordination with the National Fund for Rural and Agricultural Development (FNDRA), which is the main fund for subsidizing and supporting agricultural producers.

- Measures on SNDR Convergence are established in accordance with the SWOT analysis of the rural area

We also used statistical data for an analysis of the results obtained in rural development combined with the experiences of the ENPARD Member States on the market as the objectives have the same direction of agricultural and rural modernization and to increase competitiveness and economic efficiency. These results are:

- Strengthening the capacities of the institutions responsible for the implementation of agricultural and rural development policy by improving all measures;

- Improving the competitiveness of the agri-food sector by restructuring and modernizing it;

- Ensuring the sustainable management of natural resources;

- Improving living and working conditions in rural areas by increasing employment and income opportunities in rural areas.

The realization of the provisions of the European programs will lead to the transformation of the Moldovan agricultural producers into European producers. For this purpose, the necessary premises are:

- Fulfilling the commitments resulting from the Association Agreement;

- Transformation of a part of the agricultural holdings into units producing goods destined for the market;

- Compatibility of Moldovan agricultural products with European ones, in terms of quality and economic performance, through the efficient use of European funds.

We summarize that the main directions and objectives of agricultural policy in the Republic of Moldova are:

Market policy is supported by rural development policy so that farmers can produce according to demand and in this main way ensure income growth.

Rural development policy, which ensures the support of the restructuring of agriculture providing public goods in close connection with the rural environment and space, which requires ensuring coherence with European instruments and policies. At the same time, it contributes to the sustainable management of natural resources, to the increase of competitiveness in rural areas and to the economic and social cohesion.

- The Republic of Moldova will have to take decisive steps towards the completion of the structural reform, in close connection with the consolidation of the created institutions and the completion of the land reform. For this purpose, it is necessary to accelerate the process of transformation of peasant households, by selecting from the large number of semi-subsistence households, those that can produce for the market. It is necessary to form a system of viable

commercial family farms. The European medium-sized family farm sector will need to be created and strengthened.

- Reducing the excessively large number of farmers. Measures to reduce the able-bodied agricultural population, which are characterized by a low degree of employment (hidden unemployment), aim at creating diversified economic activities in rural areas. It will have to contribute to providing alternative incomes necessary for the maintenance of families and to the diversification of the rural economy. Small subsistence households will not receive community and national support. That is why their resources must be attracted through forms of European type organization: producer groups, agricultural cooperatives of different forms, etc. The implementation of the principle of development of "multifunctional agriculture" becomes for the Republic of Moldova an important path of economic development. An important role in reducing the number of farmers and the formation of the sector of family farms of economic dimensions is played by the merging of the territory of small peasant households.

- Increasing concerns for achieving performance in agriculture and rural areas in order to allocate public funds and organize agricultural structures, in the same direction as the community.

- The rational use of agricultural resources (land, capital and labor) must be estimated, analyzed and known at the level of all managerial structures;

- The objectives of technical and technological modernization in agriculture must be taken into account, as a basis for increasing agricultural productivity. This can ensure the success of the process of restructuring agriculture and increasing food self-sufficiency, pursued by all EU Member States. The dependence of food consumption on agricultural production of other EU member states is for the Republic of Moldova a great loss of material and human resources and a failure of integration into community structures. Increasing the administrative capacity of specialists and institutions and preparing farmers for accessing public funds.

- Application of social measures in rural areas, which do not affect the achievement of economic performance objectives. To this end, the farmers' pension system must be applied in the context of Moldovan realities. Measures to reduce rural poverty must be closely linked to budgetary constraints and the creation of new jobs by diversifying the rural economy.

In Chapter 2 we conducted a study on agricultural gaps in the profile of regions in the Republic of Moldova. This type of research aims to select a limited number of diagnostic features, meeting conditions of time stability, representativeness and accessibility of data. This approach becomes an important tool in the diagnosis of the rural area and a basis for the orientation of rural policies.

Economic regionalization is an indispensable stage in establishing sectoral development strategies and policies, which respond to particular needs and which allow the preservation of the individuality of each area. We conducted the study on the following regions:

North Region (Balti, Briceni, Donduseni, Drochia, Edinet, Falesti, Floresti, Glodeni, Ocnita, Riscani, Singerei, Soroca);

Center Region (Anenii Noi, Calarasi, Criuleni, Dubasari, Hincesti, Ialoveni, Nisporeni, Orhei, Rezina, Straseni, Soldanesti, Telenesti, Ungheni);

Southern Region (Basarabeasca, Cahul, Cantemir, Causeni, Cimișlia, Leova, Ștefan Vodă, Taraclia);

The U.T.A. Gagauzia.

#### Rural areas in the Republic of Moldova

	Rural		Population	
	thousands	%	thousands	%
Chisinau Region	75,7	9,1	832,6	23,51
North Zone	620,4	63,5	974,5	27,52
Center Area	842,2	80,2	1047,6	29,58
South Zone	386,1	73,2	525,9	14,83
U.T.A.Gagauzia	95,8	59,2	161,6	4,56
Total	1853,8	57,0	3541,3	100,00

Source: statistical data consultations

The agricultural potential of the regions is particularly high. However, the fragmentation of agricultural land, to which is added inadequate technical equipment, poor infrastructure and an aged and / or unskilled labor force to practice agriculture, make this potential poorly exploited.

Compared to the other areas (South, ATU Gagauzia), the North and Central Region are marked by its dependence on agriculture (30% of the average number of employees in agriculture at national level are included here) which shows the poor accessibility to investments where it persists. a higher level of development of agricultural potential.

Methodological approaches regarding the evaluation of development gaps between the regions of the Republic of Moldova we studied in detail the stage of development of agriculture in the rural area of the Republic of Moldova respectively of each region within it compared to a reference level - the regional average. The adopted method allows the quantification of the state of an economic process according to its real parameters of manifestation, which are expressed by a set of specific technical-economic indicators, doubled by data and information of a qualitative nature.

The study method we used multicritical and comparative which through successive evaluations and re-evaluations, depending on the quality or relevance of the selected indicators, a partial and then global characterization of the process under analysis is obtained - in this case regional gaps in agricultural development.

The multicriteria diagnosis method considers the following steps:

a) ensuring, normalizing and processing data and primary information on agriculture of the regions of the Republic of Moldova;

b) identification and determination of the content of the main indicators that will be used to quantify the stage of development of agriculture in a certain moment of time.

For the use in the analysis of the regional development of agriculture of the multicriteria diagnostic method, the available indicators were ordered in 10 groups or typologies or directions of analysis as follows:

- land use;
- the structure of the main practiced cultures;
- area on a holding;
- the level of the vegetal agricultural productions obtained;
- livestock;
- animal density;
- the park of tractors and agricultural machines;
- the availability of human resources in agriculture;
- the value of vegetable production;
- non-agricultural activities.

These indicators revealed imports on the following scale:

Importance coefficients / specific weights on criteria for calculation the global estimator of the development of regional agriculture in the Republic of Moldova.

#### Specific weight indicators

Specific	Weight indicators
Land use	0,1
Cultivated area	0,04
Crop production	0,09
Number of animals	0,11
Area on an individual holding	0,06
Tractor and agricultural machinery fleet	0,17
Human resources	0,05
Animal production structure	0,14
Non-agricultural activities	0,08
Animal density	0,16
Total	1,0

Source: own processing

We mention that although the multicriteria diagnosis method contains elements of a subjective nature, still through successive evaluations and re-evaluations significant quantifications of qualitative nature of the indicators used to create both an "aggregate" image of the development stage of a branch and to assess the level its competitiveness vis-à-vis another unit of reference (which may be another branch of the national economy or the same branch in another country, etc.).

We analyzed in detail each field of activity for each area, in one of these data we summarized the situation of agriculture and rural development, examining their significant proportion and importance for the national economy, as well as investment guidelines in the next period.

The results of the study allowed us some guidelines for reducing regional disparities, and we consider some aspects of rural development specified.

First of all, it is particularly important to increase employment in sectors other than agriculture. European experiences show that the formation of a non-agricultural rural economy depends on a number of factors that for the Republic of Moldova refer to:

- maintaining a market-friendly environment for the small peasant household (subsidized and / or credited, in some cases);
- making investments in public infrastructure: roads, water supply, communications and energy;
- investing in human capital through education so that the rural population is better prepared to work in fields other than agriculture.

Secondly, a better productivity of small and medium farms, we consider that the support should be oriented by:

- measures to support processing and non-agricultural activities, namely access to finance, a business-friendly business environment;
- an improvement of the contract and marketing infrastructure, on a contract basis;
- support for stimulating land transactions, simplification of contracting procedures.
- encouraging older landowners to lease agricultural land to encourage young people to take over and modernize the farm;
- European experience has shown that an extension of the system of leasing land or taking over by young productive farmers, through credit granting schemes, can be used for the purchase of agricultural equipment;

There will be an increase in the income of the families of entrepreneurs, it will generate jobs at regional level, thus contributing to the reduction of the agricultural labor force and to the non-agricultural rural development.

As a result of these measures, the added value of primary agricultural production and the support given to agricultural producers and producer groups that will participate in regional or national food quality schemes will increase.



We believe that supporting the merger of small households needs to be achieved by getting to know agricultural producers, producer groups, processors and traders and bringing them closer to financial service providers together with a professional training adopted for a significant development of the sector and reducing gaps. rural.

For small and medium-sized producers to help them become more viable, it is necessary to come closer to product processors through the participation of farmers in the contract chain. The integration of small farms into food chains is a fundamental and long-term change. European experience has shown that a large proportion of these farmers do not want or cannot make these changes. Under these conditions, they will either maintain their semi-subsistence character, creating only an additional income, or they will disappear, thus making possible the merger.

For most small farmers, they will become commercial, expand, improve their technologies and work together to meet the challenges of the vertical, processor-distributor-trader chains.

The financial system needs to be improved in order to meet the changing needs of the rural population. Progress is needed on the part of banks to increase financial flows for rural residents who turn to loans.

In Chapter 3 we conducted a survey on the prospects of accessing an agricultural loan at the level of agricultural holdings in the Republic of Moldova for the Center area, Ungheni region on a sample of 100 people (respondents being in the field of agriculture (farmers, administrators working in agriculture) and customer relationship managers in the field of lending to the analyzed sector.

Thanks to the research, it can be established whether the farmers here are followers of investments by accessing an agricultural loan and whether it is appropriate to open new agricultural businesses in the next period.

Through this marketing research, we aimed to obtain as many solutions as possible regarding the access to agricultural credit by farmers in the Republic of Moldova, at the same time what are the prospects of this banking product on the profile market. We want to find out answers about the purpose of using agricultural credit, as well as identifying the effectiveness of this product and their results, if the people who used them recommended them to other people, if they succeeded in developing business through these funds.

We have set out in the table below the main research objectives:

Basic aspects	Research questions	Research objectives
If the interviewed population uses an agricultural loan	1. To what extent does the population access the bank product?  2. What are the investments for which funding is requested?  3. What is the attitude of the	1.Determination of the measure in which farmers make investments in their activities  2. Measuring the attitude of farmers towards financing their investments

	population towards a profitable economic activity?	3.Knowing the reasons why farmers or potential farmers want a profitable economic activity
If the surveyed farmers do not want or do not intend to access an agricultural credit	<ol style="list-style-type: none"> <li>1. What is the proportion of respondents who do not want or do not intend to access an agricultural credit?</li> <li>2. For what reasons do the respondents do not want or do not intend to access an agricultural credit?</li> <li>3. To what extent do farmers invest in their activity for a successful agriculture?</li> </ol>	<ol style="list-style-type: none"> <li>1.Determine the proportion of respondents who do not wish or do not intend to access an agricultural credit</li> <li>2. Detecting the reasons that determined this result</li> <li>3.Measuring the attitude of respondents who do not want or do not intend to access an agricultural credit</li> <li>4. Determining the extent to which farmers make investments in their activity for a successful agriculture</li> <li>5. Determining the reasons why a part of the population does not access a source of funding</li> </ol>
If the interviewed population is informed on this topic	<ol style="list-style-type: none"> <li>1. To what extent is the interviewed population informed about the financing products?</li> <li>2. What are the sources of information?</li> <li>3. What is the proportion of the population that is informed?</li> </ol>	<ol style="list-style-type: none"> <li>1. Knowledge of the extent to which the interviewee is informed about the financing products</li> <li>2. Identifying sources of information on credit products in agriculture</li> <li>3. Detecting the proportion of farmers who are informed on this topic</li> <li>4. Knowing the reasons that led farmers to inform themselves</li> </ol>
What will be the investment intentions from an agricultural credit	<ol style="list-style-type: none"> <li>1. To what extent do farmers intend to invest with an agricultural credit?</li> <li>2. What are the reasons that determined the future credit intentions?</li> </ol>	<ol style="list-style-type: none"> <li>1.Determine the extent to which farmers intend to invest with an agricultural credit</li> <li>2. Knowing the reasons that determined the lending intentions</li> </ol>

	<p>3. To what extent do farmers intend to invest in agriculture?</p> <p>4. What are the reasons for future investment intentions?</p>	<p>3. Determining the extent to which farmers intend to invest in agriculture</p> <p>4. Identify the reasons for future intentions to invest with a loan</p>
<p>What will be the most important segment of interested farmers</p>	<p>1. What category of farmers choose an agricultural loan?</p> <p>2. What is the indicator that influences the choice of an agricultural credit for an investment?</p>	<p>1. Identifying the categories of farmers interested</p> <p>2. Identifying credit attitudes and preferences in relation to age, sex, profession, income</p> <p>3. Detection of the reasons that determined the farmer to invest with an agricultural credit</p>

The survey showed that for farmers and for the rural environment in particular, it is necessary to meet the investment needs of a physical, informational and know-how nature.

The transition to European agriculture meant the disintegration of state-owned collective farms had a negative impact on the competitiveness of the Moldovan agricultural sector. Sprayed farms and unconsolidated agricultural land, as well as production equipment and technologies, outdated processing, underdeveloped infrastructure, poor representation of non-agricultural activities in the rural economy, and restrictive access to capital (in terms of costs) make the start to make the most of a historic moment - opening a market of over 500 million consumers by signing the Agreement with the European Union - to be a difficult one.

Moldova needs investments and structural changes in economic sectors that have been around for decades, which require a well-cohesive vision from both the state and private sector actors.

In Chapter 4 using statistical data A.I.P.A., in the period 2006 - 2017 we analyzed the impact of financial support on the development of rural areas in the Republic of Moldova. It turned out to be uneven, because its distribution was as follows:

- In the period 2012-2017, 28% of the total was granted for the purchase of agricultural machinery and equipment, compared to 46.4% of the total in the period 2006-2011;
- In the period 2012-2017, 21% of the total was granted for the purchase of post-harvest and processing infrastructure, compared to 19% of the total in the period 2006-2011;
- In the period 2012-2017, 17% of the total was granted for the establishment of multiannual plantations, compared to 15% of the total in the period 2006-2011;
- 7% of the total was granted to support the lending of holdings, compared to 1% of the total in the period 2006-2011;

- 6.85% of the total was granted for risk insurance in agriculture, up from 3.8% between 2006 and 2011,

Thus, out of the 16 categories of subsidies, already implemented in the period 2012-2017, the largest increases were recorded to support three objectives:

- insurance of risks in agriculture and crediting in agriculture;
- supporting investments in land maintenance technologies;
- supporting investments in irrigation infrastructure, frost and hail protection systems.

1. If we follow the link between subsidy - credit, this relationship is strongly negative (-0.9), the variables are not dependent. Our explanation is that, from the point of view of the farmer receiving subsidies, an agricultural credit is not accessed for additional financing in the direction of extensive agriculture, through a merger of land. At the same time, from the point of view of the banking institution, we can appreciate that such a clientele is not eligible due to its size and size. In structure, in 2018, 75% of farms have  $\geq 10$  ha, and the average size of income / farm is  $\geq$  \$ 7500. The increase in the volume of loans granted shows an orientation towards traditional activities, and an increase in the added value of the products obtained could be achieved by encouraging organic farming. In order to mitigate this negative correlation, we propose an adaptation of subsidy measures based on the needs of farmers, while bringing banking institutions closer through micro-credit programs, adapted to the needs of farmers, to practice advantageous interest rates, for those who access subsidies and sells their products.

2. If we follow the link between GDP and GVA, this relationship is strongly positive, the dependence on agricultural, vegetable and animal production is evident in the formation of GDP. If we follow the situation at the level of the Eastern Partnership with the European Union, between the states, in 2017, Moldova has the lowest level of GDP / inhabitant - \$ 2000, compared to Belarus, \$ 5760 / inhabitant, Armenia \$ 3936 / inhabitant, Georgia \$ 3874 / inhabitant, Ukraine \$ 2536 / inhabitant (according to FAO, 2020). This negative result is explained by the economic changes of the last twenty years with changes in the proportions between economic activities in agriculture (12%), industry (21%), trade (14%), construction (10%) to the formation of GDP (National Bureau of Statistics, accessed 2020). In the gross agricultural production, the largest share belongs to vegetable production (70%) of which: cereals (27%), potatoes and vegetables (19%), fruits and technical crops (14%) and grapes (30%). Animal production accounts for only 25% of total agricultural production. The share of the population employed in agriculture is 50%, it also indicates a low labor productivity (St. Gotisan, 2008), compared to Denmark, the Netherlands or Luxembourg where the average area of an agricultural holding is 40 ha, and the population employed in agriculture is only 3%.

3. The correlation between the number of subsidized farms and GVA / farm is strongly positive, and for the Republic of Moldova the data show that 64% of farms are subsidized (5836 farms) and the average income from agriculture is \$ 980 / farm (FAO, 2020, NBS, 2020). In the Republic of Moldova we are talking about 16 forms of support from the national budget (AIPA, 2020), which if we compare it to 902214 total agricultural holdings, we estimate that it is not likely to produce favorable effects on performance due to small amounts returning / holding, respectively \$ 7,500 / farm, but also quite limited access to forms of support for individual

households. We find that large farms are favored, and on the other hand the amounts that benefit subsistence households play a role of social protection. In order to support the performance of farms, the system of support for agricultural producers, we appreciate that it needs clear objectives regarding the type of agriculture to be practiced and the expansion of medium-sized family farms, which should be the skeleton of commercial agriculture at European level.

4. Over 80% of the cultivated area of the Republic of Moldova is occupied by agricultural crops of which 24% wheat, 32% corn, 23.5 sunflower (NBS, 2018), low value products, which are exported as raw material to very low prices. The Republic of Moldova is also recognized for the export of alcoholic products (wines in this case) at the same time. The strong negative correlation between the production of maize (tonnes) and that of grapes (tonnes) shows a low competitiveness of the agricultural products (maize) sector compared to the wine sector. The Republic of Moldova has a well-developed wine industry, with tradition. The vineyards cover about 139.9 thousand hectares of land, most of which are privately owned. Currently, 191 wineries hold production licenses and produce 20-25 million decalitres of wine in bulk.

Our proposals are to improve this negative correlation, it could be achieved by improving market access for all agricultural producers, balanced and equitable, in order to have access to mass distribution and benefit from better promotion of their products.

These stages could be solved by financing the association, creating producer groups (currently operates the Association of Fruit Producers and Exporters Moldova Fruit, Association of Producers and Exporters of Table Grapes). We have identified a successful model that works in the United States of America and could be successfully applied in the Republic of Moldova. It is a food hub, a group of entities that manages the supply, storage, processing, distribution and marketing of products locally and regionally, and provides technical assistance to small farmers with whom they work in other vital aspects of their business - marketing, management farm, consultancy for the initiation of the farm, integration in value chains, in establishing commercial contacts with large distribution chains.

5. Subsidies - subsidized farms, this correlation is strongly positive, farmers are attracted to obtain subsidies, although in the last ten years, the value of the subsidy / farm has increased by 28% and farmers' interest in obtaining the subsidy has increased by 33%. By signing the Association Agreement with the European Union, this phenomenon will continue and succeed in producing transformations in rural areas by attracting young people to rural areas, maintaining existing ones who want to open businesses in rural areas. The renewal of generations of farmers is a long process that other European countries (Bulgaria, Romania) have experienced, but which has been hampered by the old mentalities of farm heads over the age of 65 in transforming subsistence and semi-subsistence farms into commercial holdings.

Our proposals include, a restructuring of subsidy mechanisms is necessary for all agricultural holdings in the Republic of Moldova to benefit from support. An analysis of the usefulness and adequacy of support is needed for a number of transformations needed in rural development: land consolidation, association of producers, creation of local brands in areas of potential.