

## ABSTRACT

The PhD thesis, **"STUDIES ON THE MODERN MANAGEMENT OF AGRICULTURAL SYSTEMS AND SUSTAINABLE RURAL DEVELOPMENT IN THE CONTEXT OF THE REGIONAL DEVELOPMENT STRATEGY 2014-2020"**, is divided into two sections and contains seven chapters. An introduction and conclusions are included at the beginning of each section.

The aim of the paper was to identify the way to approach sustainable development within regional development strategies, with the North-Eastern region as a case study, and to evaluate the way to implement strategic objectives, at the regional level and in the rural environment. The work thus focuses to identify new strategic proposals for ensuring a sustainable development of rural areas, by using a system of specific, quantifiable and representative indicators that allow, through econometric analyses, the evaluation of results and the projection of the evolution of the phenomenon of sustainable development.

At the European level, the concerns of incorporating the principles of sustainable development into the development strategies of the member states appeared with Agenda 21, but the approach was fragmented and the implementation of the policies lacked coherence in the field of trade, investments, technology and sustainable development. Currently, however, European countries are considered to be in the first place in the formulation and implementation of sustainable development strategies (SDD), focusing on the objectives of the European Sustainable Development Strategy, respectively: climate change and clean energies; sustainable transport; sustainable consumption and production; conservation and management of natural resources; public health; social inclusion, demography and migration; global poverty and challenges for sustainable development.

The first part of the PhD, the current state of knowledge regarding the modern management of agricultural systems in the context of different sustainable rural development strategies, is made up of two chapters and includes general information from the specialized literature.

The main objective of this first part is to present and highlight the main research from the country and abroad regarding sustainable development, along with the link between agricultural systems and sustainable rural development.

In the first chapter of the doctoral thesis, called **"The stage of research from the specialty literature from the country and abroad regarding the management of agricultural systems and rural development in a strategic context"**, general data on the management of agricultural systems and rural development in a strategic context are presented.

This chapter is structured in 7 subchapters in which introductory notions are presented regarding management elements of agricultural systems with implications for sustainable rural development and the history of sustainable rural development. Also in this chapter, a series of research studies from the country and abroad regarding sustainable development and the connection between agricultural systems and sustainable rural development were presented. Also presented is an evolution of sustainable development on a global, national, and regional level.

The management of agricultural holdings has an important role in sustainable rural development, being an essential element in ensuring the desired balance between economic efficiency and the rational use of production factors in accordance with environmental requirements.

From the research carried out by the specialists of some reputable economic and financial institutions, a very important conclusion for the general economic development of any country, including Romania, emerges: the higher the degree of rural development and the more balanced territorial distribution, the greater the general degree of economic development is higher. Between rural development

and general economic development, between the rural economy and the general economy of a country (regions, counties, zones, localities) there is a biunivocal conditioning relationship.

In the current conditions, when the conservation and protection of nature have gained increasing importance, a deep and comprehensive meaning is the achievement of a double objective: the protection of nature against the harmful aspects of the evolution of society, which have determined an intense process of destruction of the environment, and preserving the same natural setting to make it available to people for rest and recreation.

After the integration into the European Union, Romania adopted a national sustainable development strategy with 2013-2020-2030 objectives and established goals for the implementation of its own model of sustainable development that would generate high added value, bring knowledge and innovation in the range of time to maintain continuous improvement in quality of life.

In the second chapter "**Analysis of sustainable development and rural development in a strategic context**", research was carried out on the topic addressed by analyzing sustainable development and rural development in a strategic context.

Therefore, in the context of the EU Sustainable Development Strategy, an analysis was conducted to support the need for more research in the areas of contemporary management of agricultural systems and sustainable rural development in close relation to the characteristics of rural space.

The European funds additionally allocated to agriculture and rural development in our country, located at a consistent level, will have a series of favorable effects for Romanian farmers, the most important of which would be: increasing the competitiveness of agricultural producers who own medium and large farms, especially in the vegetable sector (direct payments being on the surface); reducing the financial efforts of farmers in the process of establishing crops, with a decrease in dependence on expensive bank loans; strengthening the economic viability of farms, with the possibility of applying innovation and modern, more sustainable technologies, with reduced environmental impact and the degree of production dependence on climate change.

Rural development was also analyzed in the context of the integration of sustainable development in strategic documents in Romania and reference was made to the main rural development priorities for the 2014-2020 financial programming period. Agriculture is the economic sector that benefited the most from Romania's entry into the European Union, especially through the PNDR 2014-2020 program, which was based on the provision of non-reimbursable funds to Romanian farmers in order to modernize and expand agricultural holdings.

A particularly important aspect of this chapter refers to the impact of measure 4.1 of the PNDR on agricultural holdings.

The second part of the doctoral thesis, the results of own research, is the most extensive and is divided into five chapters.

In chapter III "**The purpose and objectives of the research**", aspects regarding the purpose of the research, the specific objectives as well as the structure of it were presented.

The main purpose of the work is represented by the approach to sustainable or durable development and rural development in a strategic context applying the principles of modern management, using the dimension of sustainable or durable development at the global, European and Romanian level by capturing the evolution of the main technical-economic indicators.

In this context, the secondary purpose of the paper is to identify the implications of community support on the results, performances and technical efficiency of agricultural holdings in Romania, with special emphasis on the NE region. The obtained results will form the basis of understanding how

community financial support influences the performance of the sector at the macro and micro level and will allow the identification of the way in which the support needs to be oriented in such a way as to lead to the long-term development of Romanian agriculture.

Moreover, we have identified new strategic proposals for ensuring a sustainable development of rural areas, by using a system of specific, quantifiable and representative indicators that allow, through the interspace of econometric analyses, the evaluation of results and the projection of the evolution of the phenomenon of sustainable or sustainable development.

The objective of this work is to provide viable tools for evaluating the implications of community support mechanisms at the regional level and at the level of agricultural holdings by delimiting the set of necessary indicators and the methods necessary to quantify this influence.

In order to respond to the purpose mentioned in this work, we proposed: the evaluation of the evolution of agriculture and community allocations in the macro and micro economic context; the evaluation of the sources of income to estimate the influence of the subsidy through Pillar I; the evaluation at the level of case studies of the activity of the agricultural holdings that accessed funds through Pillar II by highlighting the evolution of their activity and the evaluation of the technical and scale efficiency of the agricultural holdings taken as a case study in the context of the subsidies allocated and the funds accessed.

The study took into account the analysis of the reporting documents regarding the application of the schemes and support measures for farmers - statistical reports and communications of the APIA to the EU Commission, regarding the requests for payment per area, the control of eligibility, the area determined for payment, the results of the control regarding compliance with the rules of eco-conditionality, the non-conformities found and the sanctions applied.

In chapter IV entitled "**Research methodology, materials and working methods**" the research procedure and the working methods used are presented.

The research procedure consisted of going through several stages related to achieving the proposed objectives, using tools and methods specific to economic research and agricultural management. The research stages refer to the following aspects:

- the study of the bibliography from the national and international specialized literature;
- gathering concrete information from the researched area;
- ordering, processing and presenting the results in a synthetic form (tables, figures, schemes);
- analysis and interpretation of results;
- the logical, rational interpretation of the concepts, phenomena and processes specific to the agricultural policy, as well as the determinations and conditions that take place within it;
- outlining some trends in both European and Romanian agriculture;
- developing a case study on the impact of integration on agriculture in the NE region, taking into account some specific indicators, taking into account the complexity and dynamics of European integration for the agriculture of this region.

The results obtained through the research undertaken can constitute models for farmers to develop their agricultural activity and perfect their technologies used, both in plant production and in animal husbandry.

Also, in order to achieve the established objectives, a series of indicators have been established through the association of which the impact directions of the integration process on agriculture can be highlighted. The set of indicators was selected starting from the identification and inventory of those quantifiable elements that can capture the impact of integration. These quantifiable elements have different

characteristics at the macroeconomic level than at the microeconomic level and require classification according to different criteria.

In chapter V, entitled **"Diagnostic analysis of agriculture and sustainable rural development during the period 2014-2020 in Romania"**, we present the diagnostic analysis of Romanian agriculture in the period 2014-2020, the diagnostic analysis of Romanian agriculture in the period 2014-2020, Support schemes and measures for Romanian agriculture in the period 2014-2020, Analysis of the economic performance of agricultural holdings in Romania.

Analyzing the size and structure of the agricultural land fund by categories of use in the Central and Eastern European context, we appreciate that Romania occupies the second place after Poland, i.e., it owns about 1/4 of the total agricultural area of the Central and Eastern European countries and 23% of the arable area. In the context of the European Union, Romania is in the first 6 places, occupying 11.3% of the agricultural area (6th place) and 12.6% of the arable area (4th place). A synthetic indicator that best expresses the Romanian agricultural potential is the agricultural area/inhabitant. From this point of view, Romania with 0.43 ha/place. it has a higher agricultural potential than Poland (0.23), Germany (0.14 ha/loc.), France (0.30 ha/loc.) and Spain (0.38).

In the vision of the new Common Agricultural Policy, the fulfillment of objectives such as the sustainable development of the agricultural sector, the maintenance of activity in disadvantaged areas and the provision of goods of public interest (motivation for financial support) is achieved by applying the conditionality system to some schemes and support measures for farmers. In the vision of the new common agricultural policy, the fulfillment of objectives such as the sustainable development of the agricultural sector, the maintenance of activity in disadvantaged areas and the provision of goods of public interest (motivation for financial support) is achieved by applying the conditionality system to some schemes and support measures for farmers.

NRDP 2014-2020 was an opportunity to address weaknesses, build on strengths and use opportunities, based on lessons learned and progress from NRDP 2007-2014. The objectives of the PNDR are in line with the priorities of the CAP and the Europe 2020 strategy, with an emphasis on increasing competitiveness and diversifying jobs in rural areas. The measures proposed to achieve the objectives are subject to the principles and objectives established in the relevant international conventions, European / national legislation, for the conservation of biodiversity, natural habitats and species of wild fauna and flora, protection against nitrate pollution, water management, pesticide use, quality maintenance air and soil, as well as reducing greenhouse gas emissions and adapting to the effects of climate change.

In chapter VI entitled **"Diagnostic analysis of agriculture and sustainable rural development during the period 2014-2020 in the north-eastern region"** the contribution of agriculture to the development of the economy of the N-E Region, socio-economic characteristics of the N-E Region in the period 2014-2020, the diagnostic analysis of the evolution of the agricultural sector in the period 2014-2020, the evolution of land and labor resources in the N-E Region, the analysis of the value of agricultural production in the N-E Region, indicators of results and efficiency of individual holdings of different sizes.

Although the North-Eastern region has a large area of agricultural land - 14.30% of the total agricultural area of the country, this resource cannot be effectively exploited, the productivity being low for all types of crops, due to the influence of the following factors: the relief, the low degree of capitalization of landowners and excessive fragmentation of productive land.

The agricultural land fund, at the level of 2019, for the North-Eastern region had an area of 2132400 ha, and if we analyze the categories of agricultural land use, we can see that the agricultural land with the largest area is registered in Vaslui county with over 402 thousand ha, and the smallest in Neamț county,

with approximately 284 thousand ha. Orchards occupy larger areas only in Iași county (5980 ha), but from the annual analysis of the area allocated to orchards in the mentioned county, a decrease of 26% is noted.

At the level of 2019, the contribution of agriculture to the regional GDP is 16%, higher than the national level (10.60%). It is observed that in 2019, the North East region contributes to the level of national agricultural production in the largest proportion (18.10%), still expressing the agricultural character of the regional economy. The total production achieved for the main crops in the N-E development region highlights variations in the total production achieved, a fact determined by different climatic conditions from year to year or changes in cultivated areas. The average production obtained per surface unit represents the indicator that reflects the level of applied technologies, the production capacity of the variety or hybrid used, as well as the influence of pedoclimatic factors, which in the NE region of Romania is one of the decisive factors in the realization of agricultural productions. The large decreases in the areas cultivated with plants for industrialization, sugar beet, early potatoes and corn are largely due to the lack of incentive measures for agricultural producers, but also to the aging population to cultivate demanding agricultural plants. In 2020, characteristic for the NE region is the fact that the agricultural area used is distributed between the three types of farms: "family" farms and commercial farms (which use 73.74% in the NE region of Romania and 57.15% in the NE region of Romania) and subsistence farms (which use 20.26% in the NE region of Romania and 26.48% in the NE region of Romania).

Chapter VII named **"Research on the modern management of agricultural farming in the north-east region in the context of the regional development strategy 2014-2020"** is structured in 3 sub-chapters: first presents a case study on the support for farmers in the North-East Region, the second subchapter contains a reference to the analysis of community implications on agricultural holdings in the North-Eastern region and in the last subchapter, the analysis of the performances of agricultural holdings in the North-East region (case studies) is presented, referring to agricultural holdings between 100 and 500 ha (S.C. AGROMAX DELENI S.R.L.), agricultural holdings between 500-1000 hectares (S.C. CLOROFILA S.R.L.), agricultural holdings between 1,000 -1,500 ha (S.C. CDM AGRO S.R.L.), holdings between 1,500 - 2,000 ha (S.C. AGRICOLA BEERSARSEN S.R.L.) and agricultural holdings over 2,000 ha (S.C. AGROIULIA S.R.L.).

In addition to the specific support from Pillar II (especially direct payments), the case studies benefited from European funds financed from FEADR through PNDR 2014-2019, Measure 4.1- Modernization of agricultural holdings.

The investments made by the agricultural holdings taken as case studies had, as goal, the development and modernization of the activity mechanization sector, by equipping them with high-capacity agricultural machinery, with a high technical level, characterized by increased productivity and a superior yield. Carried out through Measure 4.1, the investments were based mainly on the need to improve the economic-financial activity of the company, the evolutionary nature of economic processes presupposing the permanent renewal of fixed assets so that the current activity has an increased yield and low costs. At the same time, the aim was to ensure a 7

level of technology with agricultural machinery and equipment to the standards of the European Union, in order to offer companies real chances of competition in the market of agricultural products.

The case studies used to analyze the community implications on agriculture can be divided into three categories of agricultural holdings, according to the size of the area used as follows: agricultural holdings with an area of less than 500 hectares, agricultural holdings with an area between 500-1000

hectares; agricultural holdings with an area of more than 1000-1500 hectares, agricultural holdings with an area of more than 1500-2000 hectares and agricultural holdings with an area of more than 2000 hectares.

The last chapter "**Conclusions and proposals**" synthetically presents aspects related to sustainable rural development, which is a very important direction in the context of the regional development strategy 2014-2020 and Romania's alignment with this orientation benefits both the European Union as a collective body and our country as independent entity with a view to responsible economic development and environmental protection.

The modern management of agricultural systems and the strategic approach to the organization of specific activities represent concrete elements of approach to this sector of activity, representing an essential factor in increasing the performance of agricultural units and in creating a solid agricultural structure at the regional and national level.

The implications of community support on the results, performances and technical efficiency of agricultural holdings in Romania, and especially on the North-Eastern region, are concretely revealed. The support instruments influence the performance of the sector on a macroeconomic and microeconomic level and allow resources to be oriented in such a way as to lead to the long-term development of Romanian agriculture.

As a result of the study, it is recommended:

- continuous analysis of the correlation between the support given through the CAP instruments on the results of the farms at the regional and local level.
- encouraging the support of small farmers by providing a minimum level of support: an essential and very important fact for Romania.
- advocacy for the simplification of some rules, such as those regarding eco-conditionality to facilitate the activity of producers.
- supporting the maintenance of coupled direct payments in some sensitive sectors to encourage agricultural activity in different agricultural sectors.

At the end of the thesis, the bibliography is presented, which includes a number of 94 bibliographic references, both from Romania and abroad, as well as the list of published scientific works.