

UNIVERSITY OF AGRICULTURAL SCIENCES AND VETERINARY
MEDICINE „ION IONESCU DE LA BRAD” IAȘI
FACULTY OF AGRICULTURE

Ing. LIVIU BLENDEA

DOCTORAL THESIS

***RESEARCH REGARDING THE NATURAL
AGRICULTURAL EXPLOITATIONS OF
BRAȘOV COUNTY IN ORDER TO INCREASE
THEIR PROFITABLENESS***

- 2007 -



CONTENTS

Rezumat.....

Abstract.....

Introduction.....

Chapter. I RESEARCH STAGE, MATERIAL AND RESEARCH METHOD.....

1.1 Research stage regarding the agricultural exploitations in general and especially those of Brasov

1.2. Material and research method used.....

Chapter. II GENERAL CONSIDERATIONS REGARDING AGRICULTURE OF BRASOV COUNTY.....

2.1. The place of Brasov County within the country’s agriculture.....

2.2. Natural conditions of production in Brasov County.....

2.3. Economic and social-agrarian conditions of Brasov County.....

2.4. Delimitation of the natural zones of Brasov County and their characterization

2.5. Delimitation of the agro-economic zones of Brasov County and their characterization.....

Chapter. III THE SEIZIN IN BRASOV COUNTY.....

3.1. Situation before 1944.....

3.2. Situation between 1945 and 1949

3.3. Situation between 1949 and 1962.....

3.4. Situation between 1962 and 1989.....

Chapter. IV ORGANIZATION AND DEVELOPMENT OF FORMS OF COOPERATION IN THE AGRICULTURE OF BRASOV COUNTY AFTER 1991.....

4.1. Law no. 18/1991 and its effects.....

4.2. Appearance and evolution of new forms of agricultural exploitations made up by association and cooperation, dynamics and their social component.....

4.3. Seizin and its use.....

4.4. Endowment with permanent and circulating capital.....

4.5. Management of agricultural exploitations made up by association and cooperation in the context of durable agriculture.....

Chapter V ECONOMIC EFFICIENCY OF AGRICULTURAL EXPLOITATIONS OF BRASOV COUNTY

5.1. Results of production and economic components on types, natural and agri-economic zones.....

5.2. Correlation between size and profitableness.....

Chapter VI OPTIMIZATION OF SOME ACTIVITIES FROM THE AGRICULTURAL EXPLOITATIONS ON NATURAL ZONES IN ORDER TO INCREASE THEIR PROFITABLENESS.....

6.1. Optimization of production branches joint in Brasov County.....

6.2. Optimization of structure of use categories of the agricultural fields.....

6.3 Optimization of culture structure.....

6.4 Optimization of culture rotation.....

6.5. Optimization of agricultural exploitation dimension.....

Chapter. VII. – CONCLUSIONS AND PROPOSALS.....

7.1 Conclusions.....

7.2 Proposals.....

BIBLIOGRAPHY.....

The doctoral thesis called *Research regarding the agricultural exploitations on natural and agro-economic zones of Brasov County in order to increase their profitability* gathers 7 chapters and a bibliography made up of 222 references.

The paper presented as doctoral thesis has as objective the analysis of economic-financial results of agricultural exploitations of Brasov county taking into consideration the funds for increasing the agricultural production without further investments whose rational use will lead to a more complex use of natural, human and financial resources in order to increase their profitability.

In **INTRODUCTION** it is presented the fact that the privatization of agriculture in Romania was done according to the Law 18/1991 of which there resulted 4,4 million homesteads each made up of 5-16 plots under a hectare. Thus, on 8,4 million hectares of the agricultural surface (75%) there resulted over 4 million plots of 1-2 hectares each.

Taking into account the conditions, present possibilities, traditions of the Romanian agricultural sector, the mixed commercial agricultural exploitations have the greatest chances of meeting the requirements of the EU both from the quantitative, qualitative and economic-financial point of view.

Starting from the data of the agricultural census (RGA) of 2002, there will be applied different strategies on the two categories of homesteads identified in Brasov County: to those self-sufficient (about 3,4 million) there could be applied strategies such as life interests or early retirement, while to those of “semi-subsistence” (almost 1 million), a strategy of allocation of irredeemable sums for investment support and technology changes.

The production structures resulted after the land reform and as a consequence of the low adaptability of the agricultural exploitations (the majority are of subsistence) to the market requirements are inappropriate, do not ensure the rational land use and forming of a functional agricultural market. The low level of agricultural productivity is related to the existence of much unqualified and little paid labor force, with low degree of occupancy and mechanization.

The first chapter of the thesis called **RESEARCH STAGE, MATERIAL AND RESEARCH METHOD** has in view the analysis of different studies regarding the agricultural exploitations generally speaking and with special interest to Brasov County.

According to the results of the enquiry held by ISSE (213), in Romania there were at the end of 2005 4.256.152 agricultural exploitations, 5,1% less than in 2002, when their no was of 4.484.893. The private agricultural exploitations of 4.237.889, registered a decrease of 5,0% than in 2002, and unities with legal entities that unfolded agricultural activity registered a decrease of 19,4%, from 22.672 in 2002 to 18.263 in 2005.

The enquiry shows that less than a third of the agricultural exploitations in Romania reach the verge of the economic potential existing on a European level. More exactly, 29% of the agricultural exploitations, respectively 1.246.159 of the 4.256.152 existing exploitations in Romania reach the requirements to be an economic unit of European dimension (ESU).

Research in the domain of agricultural exploitation management favored, among others, the introduction on a large scale the electronic computer techniques with which there equipped the territory computing centers, research institutes and high education centers.

In the second subchapter there are presented the researches made by taking into consideration the specific of the natural geographical micro-zones existing on the territory of Brasov County. In the thesis there were delimited the actual natural micro-zones with their natural, social, economic, administrative and demographic particularities using the zonal method. This counted on direct observations on field, statistic documentation, graphic and especially cartographic representations.

The results of the comparisons made and the deflection from the standard level were expressed by absolute deviations (the difference between the actual level and the standard level) and by relative deviations (the percentage ration between the absolute deviation and the standard level).

Through analyses, there were obtained a series of results made up of a considerable amount of data that were put in tables and were graphically interpreted. Although, in certain cases, the graphic representations don't offer further information, they have the quality of presenting synthetically, suggestively and attractively the essential features of the phenomenon, ensuring at the same time a complex image on the existing interdependence relations.

The methodological system used in the paper in order to process the chosen information, the results' presentation and the conclusions' expression has had methods based on sociological and geo-economic study of the researched study, agricultural statistics, economic evidence, economic experiment, linear analysis and programming.

In the second chapter called **GENERAL CONSIDERATIONS REGARDING AGRICULTURE OF BRASOV COUNTY** there is made a short presentation of the agriculture of Brasov County according to the economic-social and pedo-climatic conditions.

According to the Monograph of Brasov County of 2000, as regards the global agricultural production, Brasov county occupies the 26th place among other counties of which the vegetal production – 32nd place and the animal production – 14th place. Of the cultures, potato occupies 3rd place of the country's counties, being the most representative culture for Brasov County.

In the second subchapter there are presented the natural conditions of production of Brasov county. The main characteristic of the Brasov County's relief is the large share held by the mountains, approximately 40%, the difference of 60% being held by the depressions and hills. The hypsometric amplitude is maximum – 2114 meters – in the south-western extremity of the county (2544 m at Moldoveanu peak and 400 m in Olt thalweg, at county's exit, a little down the river from Ucea de Jos).

Brasov county has a total agricultural area of 297426 ha, of which the public domain has 33,7% and the private domain has 66,3% of the total.

Of the private domain, 90,5% is held by the private personal domain and 9,5% is held by the private domain of the state.

The private personal domain holds 78,5% of the total arable fields of the county, 87,5% of the total hayfields, 70,6% of the total vines and orchards and only 28,4% of the total pastures.

As regards the structure of the cultures on the county, the share of the cereals is of 30-35%, the potato 15-20%, fodder plants 30-35%, other culture having lower shares: potato 2-3%, sugar beet 1-2%, vegetables 1-2%.

The effectives of the main animal species of the county are 63000 heads bovines, 275000 heads sheep and 82000 heads porcine.

On natural zones, the administrative situation presents itself as it follows:

a) The depression zone has 2 municipalities, 5 towns, 26 commune and 80 villages, of which 1 municipality, 4 towns, 16 communes and 30 villages in Brasov depression and a municipality, a town, 10 communes and 50 villages in Fagaras depression.

b) The hilly zone has a town, 12 communes and 44 villages;

c) The mountainous zone has a town, 5 communes and 16 villages.

On an average, there are 3,55 villages for each commune, but the number of villages for each commune differs a lot from one area to another of the county.

The diversity of the relief forms, the edafo-climatic conditions that are a consequence of this variety determines different conditions for agriculture in Brasov county. In terms of conditions, as well as the soil fertility and degree of favorability for the agricultural cultures and animal husbandry there are more agro-economic zones within the county.

An agro-economic zone is the area where the conditions for agriculture are similar. There are 9 agro-economic zones on the territory of Brasov County: Zone I – Brasov Depression – center, Zone II – Brasov Depression – South, Zone III – Brasov Depression N-V, Zone IV – Fagaras Depression – South, Zone V – Fagaras Depression, Zone IV – Fagaras Depression – North, Zone VII – Tarnave Plateau, Zone VIII – Hilly South-East, Zone IX – Mountainous.

Chapter II called **THE SEIZIN IN BRASOV COUNTY** presents in four subchapters the situation between 1944 and 1989.

In the first subchapter it is underlined the fact that for Brasov County, as well as for the whole Transylvania it is characteristic that fact that the largest part of the agricultural homesteads unfolded their activity on agricultural fields of property and only 2% leaseholds and 8,2% mixed system (property and leaseholds).

In Brasov County, the effects of the land reform were a little more reduced that the country average, on the one hand due to the fact that the number of those who had the right to be appropriated was more reduced and, on the other hand, the number of private properties of over 50 hectares was also much reduced in comparison to the counties in regions with plains.

The expropriations were done especially on political grounds, being expropriated about 1900 landowners, with a total area of 14000 hectares.

In Brasov County, at the end of the collectivization period there was consented the existence of 72 agricultural co-operative societies situated in the 45 localities (7 towns and 38 communes) of the total of 52 localities (9 towns and 43 communes).

The non-co-operative area comprised the towns Predeal and Victoria (with extremely small agricultural areas) and the communes of the mountainous zone: Bran, Moeciu, Fundata, Poiana Marului and Vama Buzaului.

The non-co-operative area represented 11,5% of the total surface of the county, 7,78% of the agricultural area of the county and only 1,8% of the arable area of the county.

Chapter IV: **ORGANIZATION AND DEVELOPMENT OF FORMS OF COOPERATION IN THE AGRICULTURE OF BRASOV COUNTY AFTER 1991** has five subchapters and presents elements related to the effects of Law no 18/1991, the appearance and

evolution of the new forms of agricultural exploitations made up by association and cooperation, the seizin of Brasov County and its use, endowment with permanent and circulating capital of the agricultural exploitations as well as aspects of agricultural exploitation management made up by association and cooperation in the context of durable agriculture.

The use structure of the field has changed substantially in the latest years. The surface of agricultural fields of private agricultural exploitations has risen from 15% in 1989 to almost 55% in 2002 of which an estimated proportion of 5% is cultivated in common, in different informal family associations without legal personality. The cooperative sector has totally disappeared: the agricultural co-operative societies of production (as well as certain state farms) have transformed into legal persons that today control approximately 45% of the agricultural land, including the private societies and the remains of the former state sector of Brasov County.

Thus, if in 1992 there were 140 agricultural companies, 26 commercial companies with agricultural profile and 282 family associations, in 2006 there were only 47 agricultural companies, 16 commercial companies with agricultural profile and 45 family associations as consequence of their liquidation.

On geographical zones, within the family associations there is a large share of potato culture in the depression zone and a large share of maize in the hilly zone, situation that can be explained by the suitability of these cultures to these areas.

As regards the agricultural companies, where the arable area has little diminished, the areas of the cultures in the period 2004-2006 remained relatively constant except the culture of sugar beet whose surface reduced by 50% because of the technological difficulties.

On geographical areas, the potato culture is better represents in the depression area, while in the hilly area there are better represented the maize, sugar beet and vegetable cultures.

As regards the structure of the cultures within the commercial companies, there is noticed the accentuated diminution of areas cultivated with maize (from 2141 ha to 775 ha) and especially to those cultivated with sugar beet (from 1426 ha to 340 ha). At the same time, although the arable area in the period 2004-2006 dropped with 41%, the area of fodder plants grew up from 2325 ha to 2600 ha.

On geographical areas, the average productions vary according to the degree of favorability for the analyzed culture in that specific area.

Thus, in the depression area, average productions are higher at potato and sugar beet cultures, while in the hilly zones, the average productions are superior at maize and often cereal cultures.

Comparing the average productions obtained in each of the three types of associative forms there can be stated that the average productions in agricultural companies and commercial companies with agricultural profile are superior to those obtained by the family associations.

Together with the appearance of avian influenza in the spring of 2006, the 3 farms that deal with chicken bred in the industrial scale on Codlea platform, meat production in Brasov County dropped with 30% in comparison with 2005. This situation extended to the population households of 8 localities where there were discovered avian influenza centers, and the chickens were euthanized.

The animal number of Brasov county that correspond to the 100 hectares is superior to the country's average. As regards sheep and goats, their indicator has a value of 84,3 heads/100 ha, for bovine being of 24,2 heads/100 ha, and for porcine of 112,2 heads /100 ha.

The development of animal husbandry, especially in the hilly and mountainous zones of the county has as main interest the income growth of the agricultural producers of these areas and equipping the animal husbandry farms with necessary machines, acquisition of animal strains, new constructions for modern shelters according to the European Union norms. Also it is important the promotion of activities that bring benefits (agro tourism, beekeeping, aquaculture, sericulture, fungus and medical plant cultivation, handicraft activities), the promotion of agri-food produce with local specificity (cheese in fir bark, buffalo cow cheese, Fagaras onion, rozinci wine, fir brandy also called fenyoviz).

In Chapter V, **ECONOMIC EFFICIENCY OF AGRICULTURAL EXPLOITATIONS OF BRASOV COUNTY**, there are analyzed a multitude of aspects of the results regarding production and economic situation on types of production, natural areas and agro-economic zones, as well as the correlation between the agricultural exploitation sizes and their profitability.

Even if we take into consideration that the evaluation of the unities was done according to the result indicators, there cannot be overlooked their "field of production", having in view their influence on their absolute dimension. Under these conditions – intensification and integration at the level of the unity – the obtained results are largely the effect of such processes. Keeping this in view, it seems natural the point of view according to which dimension has to be looked at as being specific to the exploitation that produces the agricultural products (not food products) or an enterprise.

The changes that took place in the social and economic structure of agricultural units are not only related to the growth of territory dimension, but especially to the growth of the concentration level of production. The increase of the number of large commercial exploitations is accompanied by the growth of their efficiency in comparison with the medium and small farms. These evolutions are reflected at the level of annual average income that is due to an annual average worker.

In Chapter VI called **OPTIMIZATION OF SOME ACTIVITIES FROM THE AGRICULTURAL EXPLOITATIONS ON NATURAL ZONES IN ORDER TO INCREASE THEIR PROFITABLENESS** there are presented aspects of the optimization of certain activities within the agricultural exploitations, such as production branches connection, use categories structure, culture structure, culture rotation, as well as aspects of agricultural exploitation dimension.

In the situation in which the agricultural exploitations have a complex profile, when in the production structure there are anticipated both activities in vegetal production and activities in animal husbandry production , the dimension of the effective can be determined according to the production structure and optimum connection between branches.

The presented mathematic models show the fact that in the process of production branches connection within an agricultural production, a special place is held by the criterion that influences the economic phenomenon presented.

The two variants obtained as a result of the optimization of culture structures according to the objective function of profit maximization were compared to the present situation and there could be noticed the following modification of agricultural culture structures:

- The value of objective function in the optimized variant reaches **88.760.336 euro** for the depression zone and **30.022.252 euro** for the hilly zone.
- Cereal grain fall as total share of the arable zone with almost 6 % in the depression zone and with approximately 68 % in the hilly zone, especially as a consequence of oat elimination from the culture structure in both zones fit the maximum limits imposed through negotiations with the European Union, especially at autumn wheat, grain wheat, sugar beet and autumn potato cultures.

In the last chapter of the thesis, **CONCLUSIONS AND PROPOSALS**, there are presented a series of theoretical and practical considerations after the investigation of specific processes and phenomena of the agricultural activity in Brasov County.

The transition in the Brasov county agriculture has determined fundamental changes, both at structure and infrastructure levels as result of abolition of socialist-cooperative property system and that of creation of private property on production means.

We consider that the simulation of structure optimum variants of production and optimum growth of agricultural exploitations in Brasov County represent one of the identification elements of concrete results regarding the auto financing potential of researched territory. Being known that fact that the specific area has a modest potential in agriculture in comparison with the national potential, but through rational redistribution of the same factors on the principle of opportunity costs, there can be obtained considerable results without financial effort from outside agriculture.