

THE OPTIMIZATION OF AGRICULTURAL EXPLOITATION SIZE THORUGHT EFFECT TO ADAPT THE AGRO-ALIMENTARY SUPPLY TO THE DEMAND OF TRADE

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The paper has the purpose to approach a fundamental problem of the Romanian agriculture, that is the one of the intensive development as a result of a new phase of the vertical cooperation process, as well as to elaborate economical-mathematical models as being this a necessity of a optimum dimension of the agricultural holdings, rationalization of the production processes, of the specific consumes, of the economy of the labor force and the adaptation of the request of the agro-alimentary products to the requirements of the market. Under these circumstances, the project tries to demonstrate the importance of the optimum dimension of the agricultural holdings and the rationalization of the relationships between them along the economic chain, as a result of the coordination or orientation of the decisions regarding the production attained and its capitalization. In the context of the nowadays economic situation in the Nod-East region of Romania, the agricultural holdings need a change of attitude and strategy, in order to obtain a production at European standards, according to the requirement of the market.

The purpose of this paper is to promote the setting up of farms whose size allow the practice of a viable, sustainable agriculture, capable to apply the newest technologies and lead to profit and efficiency, to the economical and organizational consolidation.

As a consequence, the resizing of the agricultural holdings, the partnership between the producers, the integration of the agricultural production, the rural development, the consumers' constant request for agricultural and food products, the decrease of the deficit of the commercial balance for the agricultural products, the increase of the population's life standard, the safety of the food, all these are goals that have to be under the continuous attention of the authorities at central and local level.

Key words: *agro-alimentary integration, optimum dimension of the holdings, economical-mathematical model.*

MATERIAL AND METHOD

The research was done upon the factual conditions of increase of the economic efficiency of the agricultural holdings in the NE region of Romania, using the economic and mathematical methods for the optimization of the holding and production.

Also, was used diagnosis analysis over the past and the present situation of the agricultural holdings, for bringing to the management the main opportunities and threats of the agricultural unit and of the surrounding environment, which are to be used or eliminated through strategic projections.

RESULTS AND DISCUSSIONS

The purpose of the paper is the analysis of the economic and financial results, as well as the optimum sizing at the level of various types of agricultural holdings in the NE region, in the Romanian contemporary agriculture.

The rural area belonging to the NE Region from the administrative point of view gathers the characteristics of not less than 463 parishes and 2445 villages in the counties of Bacau, Botosani, Iasi, Neamt, Suceava and Vaslui, where an approximate of 2,171,838 inhabitants live, that is 56.6% from the population of the region. (*Romanian Statistic Yearbook, INS, 2004*).

Taking into account the fact that due to the weather conditions and the relief, the hilly and mountainous areas have often problems regarding the agricultural exploitation of the land, and the integration of the agricultural holdings as well as the optimization of their size and the correlation with their specialization, the agriculture represents, along with the zootechny, an important step for the economic development. (*Popa C., 2005*). The increasing economic efficiency in agriculture asks for the optimum sizing of the agricultural holdings as well as for the rationalization of the production processes and the specific consumes, of the economy of the labor force and the capitalization of the production in optimal conditions.

The problem of the rational size of the agricultural holding has been for a long time a subject to think about for the agricultural and general economists. In the years 1968/1968 the discussion reached its top, when the so called “European structural plans” were presented, belonging to Schiller, Höcherl and Mansholt, and when the council of the “wise” for the examination of the macroeconomic evolution was so critic regarding the agricultural structure.

At the same time, it could be interesting to have a look upon the size structure of the holdings in the USA, and for this purpose a lot of research was made by dividing the land in 144 areas, then 432 sub-regions, using the economic and mathematical methods for the optimization of the holding and production.

Models for the optimization of the production factors were elaborated in France, for the SW region of the country, that after were divided into sub-regions. The next studies included 21 regional units, and then 108 more regions.

In Russia, the research and the practical works for the settlement and the specialization of the production are elaborated in the Institutes of Agricultural Cybernetics. The main problems that are solved are the society’s need of certain products.

In Romania, after the year 1989 a lot of information about the integration, size and economic efficiency of the agricultural holding by optimizing the production factors appeared in the works of several researchers such as N.

Vasilescu, P. Magazin, P. Otiman, I. Fruja, C. Secieru, D.C.Popovici and many others.

Therefore the studies made at national as well as at international level had in view the aspect of the size optimization of the agricultural holding but without taking into account the agro-alimentary integration that can be the effect of the adaptation of the offer of the agro-alimentary products at the market's request.

Research was also done upon the factual conditions of increase of the economic efficiency of the agricultural holdings in the NE region of Romania, taking into account the human effort, the material and financial investment within the field of the agricultural holdings, as well as the main economic indicators (production costs, the gross result, the rate of the gross profit etc.) for the agricultural production, in order to elaborate the optimum sizing of the agricultural holdings.

The research of the technical and economic phenomena from many points of view, as well as the analysis calculations imply the operation with a range of methods as follows: the monographic method; methods used to study the structure of the phenomena in its elements and the relation of interdependence between them; analyzing methods of the characteristic phenomena of some homogenous units; the method of the statistic grouping; the graphical method; the partial budget method; the method of calculation of the correlations; methods to foresee the evolution of the phenomena; economic and mathematical optimization methods in order to increase the economic efficiency.

The results of the paper will be exploited and disseminated, by specific methods and means, so that they may reach the main beneficiaries – the agricultural holdings, the private producers, the consumers, the field specialists and experts, authorities, academic environment or any kind of specialists that are interested in having a production in safe and efficient conditions according to the EU requirements and the regulations.

The paper assures especially the promotion of the farms to be settled, whose size can allow the practice of a viable agriculture, sustainable, capable of applying new technologies and of leading towards profit and efficiency, and their economic and organizational consolidation.

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As a consequence, the resizing of the agricultural holdings, the partnership between the producers, the integration of the agricultural production, the rural development, the consumers' constant request for agricultural and food products, the decrease of the deficit of the commercial balance for the agricultural products, the increase of the population's life standard, the safety of the food, all these are goals that have to be under the continuous attention of the authorities at central and local level.

The studies underlined that in the NE Region there were some possibilities to increase the agricultural production, without other investments, whose reasonable use will lead to a more complete use of the natural conditions, of all the economic and social means, as well as to the increase of the economic efficiency of the agricultural holdings.

Therefore the integration is made by the system of the market mechanisms, which determine the economic sizing of the agricultural holdings and the rationalization of the relations between them along the economic chain, as a consequence of the coordination or orientation of the management decisions.

The results of the research will draw the attention upon the importance of the optimum sizing of the agricultural holdings according to its specialization, as well as the need of the reasonable identification of the production die in the NE Region. Eventually, a standard model of the holding groups will be made, according to the optimum size, which will allow the promotion and the practice of a technological flow according to the specialization of the holding, as well as the requirements on the market of the products. The results can be extended also for other regions having in view the size of the holdings and the characteristics of the area regarding the market request as well as the zoning of the production.

The contribution of the paper to the development of the information in the field, including the innovation, originality and complexity of the suggested solutions

Having in view the subject of the paper – The agro-alimentary integration of the NE Romanian region and the optimization of the size of the agricultural holdings as an effect of the adaptation of the agro-alimentary products to the market's request – we can say that we have to deal with a scientific as well as practical problem and it represents an actual issue for the EU and Romania. This approach wants to integrate the programmer and the papers for a lasting development, where the person is the main character, along with the ecology and the environment, and last but not least a rational exploitation of the resources.

It is well known the fact that the strategy of the countries with a developed agriculture in EU is to encourage and stimulate the producer that stands out thanks to their high quality and economic performance. If Romania wants to be part of the EU structures, the Romanian agriculture must be prepared in order to meet the standards. The criteria for the increase of the profit are based on the specialization of the production, on diminishing the expenses for a product, on the increase of the agricultural production having as main criteria the optimization of the size and of the structure of the holdings through an efficient use of the natural and economic resources. During its evolution, the agricultural exploitation, as a basic unit of the agriculture, gained not only scientific and technical discoveries, but also new ideologies, that stand at the basis of the organizational and management structure, creating efficient systems with a favorable juridical framework for its progress.

This approach was thought to be necessary because, in the present conditions, "learning from our past and from the past of the others" on one hand,

and “learning from the past and the future” on the other, we must assess in a realistic way the phenomena that take place in our country and abroad.

In all the countries with a high level of agriculture, the type of holding evolved from the subsistence farming to the commercial farm or agricultural holding, with high economic and technical efficiency. The agriculture from the NE region had some radical changes, starting with the reconstitution of the land's private property that became dominant after the issuing of the Law no.18/1991.

The agricultural holdings are seen as closed or partially open systems. Nevertheless, we have to look for a commercial agriculture, for the market. Under these conditions, all the efforts of the landlords and of the public authority are oriented towards the agricultural exploitation, by providing the necessary material and human energy, especially the family one's, imposing thus a certain dynamics, connecting it to the general way towards the progress, that all the economy wants.

The agro-alimentary integration of the holdings as well as their resizing have the role to mobilize all the means and resources in the agricultural activity and other collateral sectors, giving to the production process a sense of continuity, productivity and efficiency.

This issue can find an excellent solution within this paper, by elaborating and applying the following complex solutions: (1) analysis and proposal of a model for the optimization of some technical and economic indicators in the agricultural holdings at the level of the NE region, such as: the size and the physical situation of the static capital of the agricultural holdings; the efficiency of the investments and their recovery; the technical and the competitiveness level of the products; (2) setting a database for the evolution of the technical-economic indicators at the level of the individual holdings in the last years and the tendency for the future; (3) paper for the organization of the holdings and of the agricultural production in the future; (4) determination and analysis of the flexibility of the offer and consume rates for the main agricultural and agro-alimentary products; (5) paper a marketing association of the producers and processors in the NE region.

According to these goals, the marketing associations help its associated members to get bigger income by selling larger quantities of products, of a better quality and at a higher price.

With the help of the marketing association, larger quantities of products can be offered, that are then distributed, calibrated, deposited, processes, packed and transported directly on the market or sold in large quantities, on the basis of contracts agreed with the clients at good prices.

Obtaining the products through association means the reduction of the production expenses, as a consequence of the fact that large quantities of product are obtained, under conditions of high efficiency, due to the use in common of high technologies.

In view of the extrapolation of the main components of the dynamic series we selected and organized, in a personal vision, the most representative methods and techniques for provisional adjusting economic prevision – *the adjusted polynomial, the moving average, the exponential adjustment* – are based on the

idea that a prevision can be made in basis of a balanced sum of the past observations.

CONCLUSION

The paper we propose is unique due to at least three major components: a) it approaches in a modern and new way the management of the agricultural holdings; b) it is settled in a region little researched from the scientific point of view; c) continues some previous complementary research, that had in view the general development of the agricultural holdings from subsistence to commerce.

In order to optimize the size of the holdings as well as the project of the organizational and technologic structure flow of the capitalization and distribution system for the main agricultural products, we will use economic – mathematical models of lineal programming.

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