ABSTRACT

Thesis entitled „**Studies on the organization and effectiveness of plant organic farms in the hilly area of Bacau county**“ is divided into seven chapters plus an introduction, a list of 283 bibliographic titles and five annexes.

The Introduction states that important branch of agriculture as the economy has solved one of mankind's global problems, major acute lately, namely, food security and environmental population. Ensuring world food problem is possible after that date, but the concern of specialists and faces not only preserving the environment.

To find solutions to establish a balanced relationship between nature and society approach to agricultural production in recent years, attempts to reduce and to stop environmental degradation processes.

Practicing organic farming system, widespread, may be a solution to tackle the major problems of environmental degradation facing mankind. Organic farming has experienced a rapid expansion in the last period and due to favorable cyclical factors: people's awareness of the need to develop sustainable agriculture, consumer demand for healthier food.

Worldwide since the beginning of XXI century, farming has been practiced for more than 17 million hectares in 120 countries, reaching over 35 million hectares today in 154 countries.

The European Union in the past decade, farming has seen a rapid expansion, but still remains a small proportion, about 4,3 % of total agricultural land.

Organic farming in Romania is in the early 2000s, the small area, representing only 0.12% of agricultural area and reached almost 2% in 2009. In Bacau ecological system is used in only 0,23 % of arable land.

Romania has an advantageous position in terms of agricultural resources, potential is not exploited properly place they occupy a country's agriculture economy in gear.

EU agricultural policy to a more natural farming, shows that is needed to promote organic agriculture as one of solutions for protecting and preserving our environment.

Organic development strategies must take into account the general features of agriculture and integration requirements of market economy.

Chapter I deals with the concept of organic farming, organic content and history. Important role of maintaining ecological balance is now a priority assigned to agriculture for sustainable development policies

The concept of organic farming is now well defined and there is a universally accepted definition in the world.

Addressing the concept of organic farming in this paper is as defined by the Food and Agriculture Organization (FAO) and World Health Organization (WHO), the European Council Regulations on organic production and the Romanian legislation in the field.

The literature has not given a clear definition of organic agriculture, it is often confused with organic farming and organic farming because organic terms, organic, organic is used with the same meaning.

Also in literature there are many interpretations about what organic farming. Definition of organic farming can not be separated from the agricultural ecology. Organic farming is a method of agricultural production primarily to protect the planet's biosphere and natural resources. Organic farming system preclude the use of chemical fertilizers, synthetic pesticides and herbicides. Principles on which organic farming are universal, but the techniques used are adapted to the climatic conditions, resources and local traditions.

The world's alternative agriculture systems (rational agriculture, integrated farming, organic farming or organic, permaculture, organic farming) appeared fragmented their theorizing was influenced by specific conditions of different regions of the world.

There were three main current that have shaped today's organic farming: Rudolf Steiner, biodynamics agriculture and Albert Howard and farming, Rusch - Muller and farming.

In Chapter I, are presented and correspondence between different types and alternative farming systems. The following are specified characteristics and organic content.

Chapter II, the status and trends of research in organic agricultural production. Organic farming system (organic, biological), is one approach, one need against pollution phenomenon.

The term ecology was first introduced by German biologist Ernst Haeckel in 1866. Research on alternative farming systems have existed in all states, because conventional farming systems have brought in addition to benefits and changes of natural ecosystems.

Based on bibliographical sources, different approaches are alternatives to intensive agriculture and chemicalize.

Sustainable agriculture (organic, organic, biological), seeks conservation of natural resources and environmental protection indefinitely, eating healthier foods and produce sufficient quantities of food.

In Romania in the interwar period the foundations of research in plant ecology. Lately, studies and research in Romania on approach to organic farming have taken a major.

The promotion of organic farming experience demonstrates the viability of this alternative, although among agricultural specialists were conflicting discussions on the farming system perspective.

Organic crop area worldwide is increasing, from 15.8 million hectares in 2001 to almost 35 million hectares in 2008. In Europe organic cultivation areas have equally spectacular growth. In 1985 the area was 0.1 million hectares and reached approximately 8.2 million hectares in 2008.

International demand for organic products is increasing in the last decade, but is only 1-2 % of total sales of agricultural products.

The turnover of organic farming worldwide was 46 billion in 2007, up 10% over 2006, and in Europe reached 15.4 billion euros, with 15% more than in 2006. In 2008, global organic sales were 53 billion and Europe reached 18 billion.

International statistics show that cross-food sector increased by 15% globally in 2009 compared with 2008. Increases in this sector are sustained and if we refer to the year 2003, when sales totaled 23 billion, we see an increase of 100 %.

And in Romania, areas planted green had the same trend, increasing from 17,438 hectares in 2000 to almost 240,000 hectares in 2009, representing 2% of total agricultural area. Organic production potential is estimated at 15-20 % of agricultural area.

In Bacau area used organic rose from 0.5 hectares in 2002 to 436 hectares in 2008.

In Part-II, their research: results and their interpretation in **Chapter III**, showing the purpose of research objectives, study material and research methodology.

Changes in Romania after 1990 included the Romanian economy and agriculture industries. Ownership has changed, there have been significant organizational changes, changes occurred in the derivation of agricultural production and equipped with mechanical performance. With all these changes in Romanian agriculture faces major problems.

The current situation shows a decline further, due to decreased agricultural production in most sectors of the total, due to internal and external demand and diversifiend food quality.

Economic and social progress in the contemporary world is between the other, in close correlation with the development of agriculture, with its ability to meet basic food requirements of the population, and those raw materials to consumer gods industry.

Romania has a significant agricultural potential and comparative advantage of natural resources. The main internal factors that affected and affects the production and marketing of agricultural products, causing agricultural trade deficit of the balance are excessive land fragmentation, lack of integrated production, distribution and marketing, production volume of the swing and not least the lack of information amongst farmers market.

Structural imbalances in the Romanian agricultural sector are high, requiring immediate correction to solve them. The rapid expansion in recent decades, organic farming systems is the effect of favorable cyclical factors, including: awareness of society on the need to develop sustainable agriculture, the emergence of consumers willing to pay more for healthier food.

Romanian farmers have the opportunity to promote a number of organic products with low share in the European Union, organic products for labor-intensive, such as fruits, grains, vegetables oilseeds, etc.

At this time of human civilization, more and more, I agree that natural resources are limited and consumption needs and are constantly increasing. Solving the quantity-quality dualism can be resolved by the new concept of sustainable development of agriculture, a concept that includes organic farming.

Research topic taken purpose is to highlight the advantages and disadvantages of organic plant and animal farms, which are multiple and complex and takes place on a very broad spectrum of interests as follows: lower inputs determine which annihilates, in some degree of financial constraints of farmers; involving a significantly higher labor costs on each part of the technological chain, which refers to a labor supply; resulting lower production compared with conventional quantitative but qualitative best; friendly local ecological factors and natural resources (water, air, sool) and local biodiversity

In essence, organic farming, is holding the external inputs are minimal, applying environmental technologies useful, except in completely pesticides, fertilizers and synthetic chemical compounds.

The objectives relate to: identify the level of respect the concept of scientific research, history and occurrence of organic bases; stages of development of organic agriculture, research, forecasts on the development and promotion of organic products, distribution, promotion and consumption of organic products, analysis of natural factors, economic and social hilly area of the county of Bacau, development of a diagnostic study on agriculture Bacau County in order to identify potential production and performance, conducting a case study on an organic farm.

The third issue concerns the material studied and research methodology. The peculiarity is that agricultural work is performed on large geographical areas, and the factors that contribute to agricultural production are numerous, and sometimes variable nature unpredictable action.

The sheer volume and variety of their information, required to call, usually reliable

sources of information, which refers to data from the literature for the theoretical foundations of the topic.

Another source of information represented a county official statistical data and EU data and IFOAM, FiBL, MADR.

Data collected were analyzed using different processing ways to capture the evolution of the phenomenon and to draw accurate conclusions. Using economic indicators have shown progress in increasing production and economic efficiency, that made the relationship between effort and results.

Research in the basis used economic and technical analysis methods for determining the level of development of organic farming methods for studying the structure elements of the phenomenon, methods of identification of relations between economic phenomena, methods of measuring and quantifying the influence of factors of resource mobilization effect.

Chapter IV is as content: The natural, economic and social Bacau county.

Bacău County, located in eastern Romania, has an area of 6620.52 km2, in this regard is between the middle counties, occupying 2.8% (# 14) of the country. Bacau County has a total of 93 administrative units, of which 85 shared by 491 villages, three cities and five towns. The county's population was in 2005, of 723,518 inhabitants with a density of 109.3 inhab/km2. Of the total population, 389.438 inhabitants live in rural areas, 53,8%.

Bacau County crossed the river Siret, Bistrita Trotus and includes in its territory: the eastern slope of the Eastern Carpathians (the west) and Tutovei Hills (in the east). The county's geographical position presents a great variety of landforms, including both the lower surface (95 m in the meadow Siret) and mountains with heights over 1600 m. The landscape is developing in the form of steps, starting with floodplains and terraces Siret and Bistrita (120-210 m alt.) continued with erosive structural hills and hills of Central Moldavian Tutovei (213-564 m) and hills of the pidmont Zabrauti and Răcăciuni platforms (350-611m).

The main steps of relief and they hold shares of the total county area is as follows: 34% mountainous region, 28% Sub Eastern Plateau Moldova 11%, 27% Siret Valley. A thrid of county is a mountainous area characterized by vast forest and natural grasslands, therapeutic spa-rich resources, communication channels and permanent human settlements are very rare. Another third of the county area is composed of low, low terraces of river floodplains, showing that the main feature as large expanses of ground water level is relatively high, giving rise to areaas with excess moisture.

Intermediate stage consists of areas of the Carpathian and high river terraces, are territories that have developed most of the cities, which offer favorable conditions (geotechnical conditions without flooding or excess moisture).

The area is hilly county of Bacau 252,906 ha, representing 38.2% of the total area of the county and the area is interhill 88,224 ha, representing 13.3%. Of the 93 administrative units in the county of Bacau, hilly and hilly valleys are found in 76 administrative units.

Based on studies prepared soil in Bacau County, have been separated a total of 20 soil types. The most common soil types are: preluvisols (brown clay soil) 24.3%; luvisols (luvic brown soils and Luvisols) 16.1% 13.1% regosols; alluvisols (gleyic strongly gleyed soils, alluvial soils) 12 7%; eutric cambisols (eumezobazice brown soil) 11.0%.

Currently, in each administrative territory quality grades are determined and the total agricultural use (arable land, pastures, meadows, vineyards and orchards). Of the 186,117 ha of arable land it holds Bacau County, only about 21% is good and very good quality. Most are middle-class arable land (39.3%), followed closely by a larger area (34.2%) of arable land of low fertility class. The county total arable area of evaluation is the average score of 44 (fertility class III).

Bacau county's agricultural area is affected by a number of limiting factors of production, such as landslides, flooding, soil pseudogleizat land, land with gleyed soils, land surface soil eroded or clogged, the affected land deep erosion, land polluted soils.

The current state of the reaction shows a slight increase in soil pH, a situation due to the fact that in the last 10 years have not applied lime to correct acidity amendments. The state of supply phosphorus, nitrogen and potassium recorded significant decreases in recent years (especially phosphorus supply device), this situation is explained by very small quantities of chemical and organic fertilizers that were applied. Annual fertilization with chemical fertilizer does not exceed 25-30 thousand ha.

The climate of Bacau County, is an example of a gradual transition from continental climate in the east issued at the moderate to the west. By high relief, fragmentation, and exposure introduced many local nuances that make the county Bacau present climate differences from one region to another, more areas can be distinguished climate mountain climate, the climate is sub-Carpathian area, climate and climate Tutova hilss Siret Valley.

Recorded annual average air temperature between 9^0C (in the eastern half of the county) and 2-3^0 C (west end). Bacau feature is the distribution of temperatures island. The warmest month averages (July) have values between 12^0 C and 20^0C in the west to the east. Averages coldest month (January) have values ranging from-40C in eastern and central county areas reaching 7 ^{0} C to-mont ane.

Atmospheric precipitation ranges between 550 mm (eastern boundary of the county) and 1,000 mm on mountain peaks. Annual average quantities of July are between 60-100 mm (west), reaching the east 20 to 30 mm. January average annual amounts are between 30-60 mm.

The western (and Carpathian mountain area) has a temperate continental climate, with cooler character. Mean air temperature ranges from 0^0 C on the high peaks, the mountains of

medium 2^0C, 5^0C depression areas in Subcarpathians 6-8^0C. Average yearly rainfall varies between 1,400 mm on the highest peaks; 1200 mm in the small and medium-sized mountains and about 800-1000 mm and sub-Carpathian depression areas.

The eastern part (the plateau) is highly continental, marked by high thermal amplitudes, monthly and annual. Thermal regime recorded annual averages ranging from 8^0C in areas of high plateau, the plain 9^0C. Have a slightly uneven rainfall distribution and small amounts of 600 mm annually in hilly areas and plateau about 400-500 mm annually in the plains and depressions.

Bacau County has a diverse and potentially significant mineral resources (brown coal, oil, rock salt, mineral water, potassium salts, gypsum, sandstone, etc.).

Share of turnover of the economic sectors of the county is not discordant note with the situation at national level: trade has the largest share (33.7%), followed by services (18%) and construction (17.6%) in while the smallest share is held by agriculture (1%) and light industry (1.88%).

Agricultural Land Fund is an important natural resource of Bacău County, whose area is 323,811 ha (48.3% of the total area of the county). 57.5% is arable land, pasture 27.9%, 12.5% meadows, vineyards 1,6% and orchards 0,5%.

Cereal grain production during 2001-2009, has an approximately constant value, and herds of cattle dropped by 25%, pig and poultry by about 50%.

The rural population represents 54.7% of the total county population and the share of population employed in agriculture and forestry, in 2007, representing approximately 27%.

Agriculture, food and forestry are of paramount importance for the rural economy, the presence of non-agricultural activities related to the primary sector, especially natural resources exploitation and processing, are present, but not significant in social terms.

In Chapter V, presents the world of organic farming in Europe, in Romania, Bacau.

Konwledge, research, improvement and rural development activities are vital for a country, both rural dimension and the share of population employed in agricultural activities. Organic farming is a major contributor to sustainable development, increased economic activities with a significant added value and increase interest in rural areas.

According to data provided by Research Institute of Organic Agriculture (FiBL) and the International Federation of Organic Agriculture Movements (IFOAM), organic agriculture is developing rapidly.

In 2001, world agricultural land for organic production was 15.8 million hectares, distributed as follows: 48.50% Oceania, Europe 23.60% 20.00% Latin America, North America 7.50%, 0.33% Asian, 0.14 Africa %.

In 2004, the area occupied by organic farming was 23 million hectares, 30.5 million hectares in 2005 to 633,891 farms in 2007, 32.2 million ha of 1,219,526 farms in 2008 reaching about 35 milion hectares.

Areas managed organically in 2007 were 12.1 million ha in Oceania, 7.8 million hectares in Europe, 6.4 million hectares in Latin America, 2.9 million hectares in Asia, 2.2 million hectares in America North Africa and 0.9 million hectares in areas grew organically grown significantly in Asia, from 3.7% in 2004 to 7% in 2007, Africa in 2004 from 1.3% to 3% in 2007, North America from 5.9% to 7%. And number farmes increased from 633,891 in 2006 to 1,219,387 in 2007, with the largest number in Africa, followed by Asia and Latin America.

Number of countries practicing organic farming increased from 86 in 2000 to 141 in 2007 to 154 in 2008.

In addition to the 35 million hectares in 2008 used green, were used and 0.4 million hectares for organic aquaculture, 31.1 million hectares of organic wild collection, 0.3 million hectares of non-agricultural land. More than a third of the land used in 2008 were organic in Oceania (35%) followed by Europe and Latin America, each with 23% of total organic area. Countries with large green areas are: Argentina (4.1 million hectares), China (1.9 million ha), Brazil (1.8 million ha), USA (1.82 million ha), Spain (1.13 million ha), India (1.02 million ha), Italy (1.0 million ha), Uruguay (0.93 million ha).

In 2008, the number of organic producers has reached about 1.4 million, the highest rate in Africa (34%), Asia (29%) and Europe (19%).

Most significant increases of land managed organically from 2007 to 2008 were Asia, where areas have increased from 2,9 million hectares in Europe from 7,6 millon hectares to 8,2 million acres in Latin America from 6.4 to 8,100,000 hectares in North America from 2.2 to 2,500,000 hectares. In Oceania and Africa between 2007 and 2008 environmental surfaces were kept about the same level.

In 2008 the total green area of about 4.5 million hectares of crops have been used 2 million hectares of arable and permanent crops.

Worldwide in 2009, organic farming has generated sales of 53 billion euros, equivalent to 1-2% of total food consumption.

In Europe, organic area in 1985 was about 110,000 hectares, reaching: 500,000 ha in 1992, 1.8 million ha in 1995, 2.3 million hectares in 1997, 4.44 million ha in 2000, 6.4 million hectares in 2004, 7.9 million hectares in 2007 and 8.2 million organic hectares in 2008.

In 2008 the largest place of organically grown agricultural area was 1,129,844 ha Spain followed by Italy with 1,002,414 ha, Germany - 907,786 ha, United Kingdom - 737 631 ha, France - 580 956 ha, Austria - 382,949 ha . Most organic farms were in the same year in Italy (44,371), Grece (24,057), Spain (21,291), Austria (19,961).

In Europe there are three main types of land use and environmental namely arable crops (mainly cereals, vegetables, green fodder and industrial crops), permanent crops (fruit trees, vineyards, olive groves) and pastures. In most Member States for permanent crops is an insignificant part of total organic area (less than 5%). Standing crops in 2008 were between 10% and 20% in Bulgaria, Denmark, Greece, Poland and Portugal, while Spain and Italy were above 20%. Cyprus and Malta are at the forefront of countries with permanent surface by 41% and 80% of total organic organic food market in Europe has an increasing trend. She rose from 12.808 billion euros in 2005 to 18 billion Euro in 2008. Countries with the largest market for organic products in 2008 was Germany with 5.850 million, followed by Britain with 2.639 million euros and France with 2.591 million Euro.

Consumption of organic products in Europe, although the European market has 54% of the global market for organic products, there is currently too high a percentage of total food. Highest total consumption of organic food products in 2008 amounted Germany (6%), followed by England (3%) and Austria (1%).

In Romania, the potential of organic agriculture is to obtain 15-20% of the country's agricultural area. Area for organic agriculture in Romania increased from 17,434 ha in 2000 to 240.000 ha in 2009.

Organic grain crop area grew from 4,000 hectares in 2000 to 56,337 hectares in 2008, representing an increase of 15 times, the surface of vegetables increased from 38 ha in 2000 to 320 ha in 2009, increased the area of orchards from 50 ha in 2002 to 920 ha in 2009.

And animal husbandry have made progress, even if growth rates were not as high as for crop production. In organic cattle herds have increased to 2100 head in 2000-5600 and in 2009 heads of sheep and goat herds have experienced a significant increase from 1700 heads in 2000 to 132,650 heads in 2009.

Bacau County, the agricultural potential by climatic conditions, number of farms, not least by way of agricultural land (fertilizer and chemical treatments for diseases and pests on small areas), provides opportunities for organic farming.

Certified organic area in 2000 was 0.50 hectares and 339.56 hectares in 2008 and converting the area in 2008, being 96.64 hectares. In 2008 there were 360 cattle raised organically, of which 227 head of milk cows, a total of 89 farmers. Number of operators in the organic beekeeping in 2008 was still 71 with a total of 5121 bee colonies, of which 3841 families certfied organic.

Traditional goal of maximizing agricultural production is counteracted by a broad concern for the environment and rural and that limited resources must be better managed.

Organic farming is not yet fit for each farmer, it requires a commitment to make the system work often risky where there is sufficient information.

Converting a conventional farms to organic farm brings a degree of risk and uncertainty on the financial viability of the farm and this risk is exacerbated by lack of information.

The whole unit parcel of farm or ranch, including livestock, should be transformed in accordance with national and international standards on conventional farms convert to organic production.

In the last chapter are farming technologies (rotation schemes, cycle nutrients in the soil, organic methods of plant protection).

Chapter VI presents a case study on organization and efficiency of organic farm Ronel About SRL. It operates in the 88.88 hectares of organic land and 39 milk cows. Also has organic milk processing plant, the two retail outlets distributing its products and an eco-rural locations. Corp production on the farm was used for feeding dairy cows.

One of the most important forms of economic efficiency measure is profitability. The economic effects of a firm is reflected ultimately in the yield. Broadly speaking, the profitability of farm income is obtained by comparing the yields resulting from the recovery achieved with the costs of obtaining these products.

Gross margin is the difference between revenue and variable costs. Profit is an absolute indicator for assessing the profitability of the farm. If a firm's total revenues are greater than total costs, then the firm is profitable. Farmer likes his work so, if the farm survives in its entirety.

Gross margin refers to a production unit (1 ha of arable land, an animal head animal production). If you know which is the gross margin for each production activity, the profit can be calculated at farm level as the difference between the amount of the gross margin and fixed costs of farm activities.

Gross margin calculated for organic crops in SC Ronel Ltd. was positive, the share of gross product gross margin ranging from 55% in alfalfa hay crop, up from 97% to pasture green mass. Also the degree of profitability expressed as the mass of profit ranged from 465 lei / ha green pasture mass and 7355 lei / ha for fodder beet.

The level of negative gross margin on the product indicates that the activity causes loss and that it should reject it. At farm level some activities may have gross margins some positive, but the overall total gross margin to be positive.

You can keep the negative gross margin activities only if these activities are absolutely necessary for carryng out who achieve positive gross margins.

Operation of a farm is, of course, a certain purpose. Each head of farm, business or farm manager wants the achievements, and thus of its business from its management to be as good as a reward the efforts of human, material and managerial deposited in a production cycle or during a period of time, such as a crop year.

If we consider the specifics of agricultural production, with special reference to the plant, which takes place in the open, often disturbances that occur in the system, beyond the reach of human, material or knowledge (the emergence of new diseases) who manages the farm , which makes adjustment difficult or impossible. In such situations, the system can lead to disintegration, its function is no longer assured and the objectives are not met.

In Chapter VII, conclusions and proposals are set out studies performed.

The progress of all countries is closely linked to the achievements in agriculture. Most developed countries are economically successful countries develop their agriculture directly influencing the development of other branches of national economy.

The main objective of organic farming is to protect the biosphere and the planet's natural resources, excluding the use of chemical fertilizers, pesticides and synthetic herbicides, methods of prevention playing a key role in the fight against pests, diseases and weeds.

Expanding the last decades of organic farming system is the effect of the favorable factors including: awareness of society about the need to develop sustainable agriculture, the emergence of a consumer willing healthier food.

Organically cultivated area in the world is growing. In 2001, green area was 15.8 million hectares reaching in 2009 about 35 million hectares.

Ecological areas used in Romania increased from 17,438 hectares in 2000 to 240,000 hectares in 2009, what represents about 2% of the total agricultural area.

Although in the hilly district of Bacau has very favorable conditions for organic farming, it is poorly represented. The surface was exploited in ecological conditions in 2010 of 187.66 ha, of which 52 hectares in conversion first year, 3.74 ha and 5.46 ha conversion conversion II year III year, down from 2008 when the area was 339.56 organically grown ha and 96.64 ha conversion.

In the context of EU agricultural policy orientation towards sustainable agriculture, the concept of ecological agriculture (organic, biological) has a well-defined, is necessary to intensify efforts to promote environmentally friendly agricultural practices and to inform farmers on the importance and role their green technology and not least the economic, as well as improving the environment.

Technology cost structure is different from conventional agriculture, mainly due to the absence of chemical fertilizers and pesticides. Instead, we noticed a large proportion of indirect costs incurred in maintaining crop organically.

Ecological necessity, fashion and technology system, organic farming is primarily a business in full swing.

The commercial success of organic farms, that profitability is determined largely by the downstream segments of food production chain greener, processing, marketing and last but not least the final consumer.

An economic analysis of organic foods chain, it certainly brings out superior economic efficiency of downstream segments of the manufacturer.

Supporting organic farming is important because it is in early stages of development and also need guidance for processing organic agricultural production at farm level to increase the export of agricultural products, because the Romanian market for organic products is insignificant.