

# IMPLICATIONS OF SUSTAINABLE DEVELOPMENT ON THE MANAGEMENT OF FARMS IN IASI COUNTY

## IMPLICAȚIILE DEZVOLTĂRII DURABILE ASUPRA MANAGEMENTULUI EXPLOATAȚIEI AGRICOLE DIN JUDEȚUL IAȘI

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**Abstract.** *Sustainable development has become a political objective of the European Union, through its inclusion in the Maastricht Treaty. The objective of Romania's Sustainable Development for 2007-2013 is the expansion of the sustainable agriculture farms and meets the priorities set by our country in the present rural development policy guidance in accordance with the Community Strategic Guidelines. The sustainable agriculture is one that can be profitable, economically speaking, but also compatible with constraints such as the environmental ones. Closely intimate knowledge of the mechanisms of sustainable agriculture, perfectly integrated into the overall harmony of nature can be an asset, not at all negligible, in the fight for food security of the population. The paper refers to farm work, (which is characterized by sharing labour and material resources), the types of agricultural exploitations, how they are organized and their functions. In Iasi county there are 1101 farms which predominantly cultivate wheat. The agriculture of Iasi is still in a state of decline due to excessive fragmentation of ownership (subsistence farms predominating), with weak machinery, the precarious situation of rural infrastructure, reduced use of chemical or natural fertilizers and pesticides, reduce of irrigated areas, soil degradation and chronic shortages of financial resources and credit.*

**Key words:** sustainable development, management, farms, agricultural areas

**Rezumat.** *Dezvoltarea durabilă a devenit un obiectiv politic al Uniunii Europene, prin includerea sa în Tratatul de la Maastricht. Obiectiv al Strategiei României de Dezvoltare Durabilă pentru 2007-2013 este extinderea agriculturii durabile la nivelul fermelor agricole răspunde priorităților formulate de țara noastră în actuala orientare a politicii de dezvoltare rurală în conformitate cu Liniile Directoare Strategice Comunitare. Agricultură durabilă este cea care poate funcționa profitabil din punct de vedere economic, dar compatibil cu constrângerile de natură ecologică. Cunoașterea mai îndeaproape a mecanismelor intime ale agriculturii durabile, perfect integrate în armonia generală a naturii, poate constitui un atu de loc neglijabil în lupta pentru asigurarea securității alimentare a populației. Lucrarea face referire și la activitatea exploatațiilor agricole, (care se caracterizează prin utilizarea în comun a forței de muncă și a mijloacelor materiale), la tipurile de exploatații agricole, modul lor de organizare și funcțiunile acestora. În județul Iași funcționează 1101 exploatații agricole din care preponderente sunt cele cerealiere. Agricultură Iașului se află încă într-o situație de declin determinată de fragmentarea excesivă a proprietății (gospodăriile de subzistență fiind predominante), dotarea slabă cu mașini și utilaje, situația precară a infrastructurii rurale, folosirea redusă a îngrășămintelor chimice sau naturale și a pesticidelor, reducerea a suprafețelor irigate, degradarea solului și deficitul cronic de resurse de finanțare și creditare.*

**Cuvinte cheie:** dezvoltare durabilă, management, exploatații agricole, suprafețe agricole

## **INTRODUCTION**

Within the concept of sustainable development there can be included that of sustainable agriculture, elaborated by scientific research and developed and validated by the practice of developed countries, which essentially refers to the harmonization of agricultural development with the preservation of ecological balance.

Sustainable development has become a political objective of European Union, through its inclusion in the Maastricht Treaty. In 2001, the European Council at Gothenburg adopted the Sustainable Development Strategy of the European Union, to which it was added an external dimension in Barcelona in 2002.

In 2005, the European Commission launched a review of the Strategy, published in February, a critical assessment of progress since 2001, which scored a number of lines of action to take next. The document also pointed to some unsustainable trends, with negative environmental impacts that could affect the future development of the European Union, namely climate change, threats to public health, poverty, and social exclusion, depletion of natural resources and biodiversity erosion. As a consequence of the identification of these problems, in June 2005, the presidents of states and governments of EU countries adopted a statement on guidelines for sustainable development, incorporating the Lisbon Agenda, revised economic growth and creating jobs as an essential component of the overarching objective of sustainable development. After wide consultation, the European Commission presented on 13 December 2005 a proposal for revision of the Gothenburg strategy of 2001.

## **MATERIAL AND METHOD**

To present the results obtained by the agricultural farms in the county of Iasi were used DARD statistical data records, from the North East RDA and the European Union's official documents and for processing and interpretation there were used diagnostic method, investigation and correlation.

## **RESULTS AND DISCUSSIONS**

The main objective of the Sustainable Development Strategy for Romania for 2007-2013 is to extend sustainable agriculture within farms in order to meet the priorities set out by our country in the current orientation of rural development policy in accordance with the Community Strategic Guidelines. Given that the rural areas represent 89% of Romanian territory and there are a high number of villages (over 12,000) and a population in such an overwhelming proportion of rural (46.6%), it turned out we need a new rural development policy reflecting the orientations of the European restructuring of agriculture, regional/local development and environment integration.

The proportion of population employed in agriculture, in 2006, in North-Eastern region is very high 40.74% (29.69% higher than the national one). Of the

total population employed in agriculture at the national level, 20.19% comes from North-Eastern Region.

Although North-Eastern Region has a large area of agricultural land (14.54% in 2006) of the total land area of the country, this resource can not be effectively used, productivity is low in all cultures, because of the influence the following factors: the quality of the land, with a pronounced diversification, alternating groups of soil and their fragmentation, in comparison with other units of similar area in the country, aging workforce (more than 28% of rural population is over 60 years) and the youth migrate to urban centres, poverty rate of non-owners who have difficulty in achieving crops and livestock, lack of capital for restructuring and modernization of agriculture, soil instability and erosion, numerous landslides (Brezuleanu S., 2008).

Table 1 shows the distribution of agricultural and forest areas during 2006-2008.

Iași County has some features in terms of agricultural activities due to general and specific factors that influence it (Anuarul Statistic).

Table 1

**Distribution of agricultural and forested areas**

| <b>Territorial unit</b> | <b>Total area</b> | <b>Agricultural area, 2006</b> | <b>Agricultural area, 2007</b> | <b>Agricultural area, 2008</b> | <b>% 2008/2006</b> |
|-------------------------|-------------------|--------------------------------|--------------------------------|--------------------------------|--------------------|
| România                 | 23.839.071        | 14.711.552                     | 14.741.214                     | 14.730.956                     | 100,1              |
| North-east region       | 3.684.983         | 2.130.876                      | 2.130.767                      | 2.142.507                      | 100,54             |
| Bacău                   | 662.052           | 320.589                        | 320.601                        | 320.552                        | 99,9               |
| Botoșani                | 498.569           | 393.472                        | 393.468                        | 393.193                        | 99,9               |
| <b>Iași</b>             | <b>547.558</b>    | <b>381.445</b>                 | <b>381.396</b>                 | <b>394.404</b>                 | <b>103,4</b>       |
| Neamț                   | 589.614           | 284.051                        | 284.033                        | 284.030                        | 99,9               |
| Suceava                 | 855.350           | 349.810                        | 349.762                        | 349.310                        | 99,8               |
| Vaslui                  | 531.840           | 401.509                        | 401.507                        | 401.018                        | 99,8               |

The counties in the region with the largest areas of farmland are Vaslui, Botosani and Iasi.

The data in table 1 show that in Iasi County the agricultural area in 2008 increased slightly by 3.4% in comparison with 2006.

There are 1101 farms, of which 240 are cereal farms, 14 viticulture and mixed farms, 26 fruit growing farms and 210 in bee keeping, 3 in vegetable growing and 708 are in animal husbandry.

As for the livestock production capacity, 98% of livestock belong to the private sector.

The utilised agricultural area that has returned on average in 2007, on an agricultural farm has increased from 3.5 hectares in comparison with 3.3 hectares in 2005 and with 3.1 hectares in 2002. On the categories of farms, the agricultural area used was an average of 2.3 hectares on a single farm, compared to 2.2 ha in 2005 and 1.7 ha in 2002. According to INS, the number of small individual farms, which used agricultural area of up to one hectare, decreased in 2007 compared to 2005 with about 166,000 farms (9%), they still holding a significant share (about 44% of individual farms).

Even if the profitability by selling grain is much smaller than at other crops, farmers from Iasi preferred to cultivate over half the county's agricultural land

with cereals. Of the approximately 242,905,000 hectares of farmland, over 152,620,000 were planted with cereals. The maize still remains the most cultivated plant, being present this year on almost 40% of farmland (tab.2).

Table 2

**Areas planted with major crops in exploiting profile**

|                            | 2004   | 2005   | 2006     | 2007     | 2008     | 2009     |
|----------------------------|--------|--------|----------|----------|----------|----------|
| Iași county                |        |        |          |          |          |          |
| Cultivated area - total    | 253493 | 248840 | 236783   | 238669   | 223182   | 242905   |
| Grain cereals              | 172816 | 154583 | 172473   | 160055   | 144482   | 152620   |
| Wheat and rye              | 46409  | 25466  | 39461    | 39129    | 33298    | 42194    |
| Two-row and six-row barley | 7477   | 1640   | 2266     | 4685     | 3365     | 5380     |
| Maize                      | 113454 | 122350 | 127262   | 111294   | 102599   | 99382    |
| Oily plants                | 23137  | 34614  | 31406    | 37837    | 30548    | 45207    |
| Sun-flower                 | 19036  | 26995  | 25067    | 29210    | 20916    | 28243    |
| Sugar beet                 | 3303   | 3333   | 1111     | 1661     | 4299     | 2910     |
| Potatoes                   | 9551   | 9633   | 8993     | 9031     | 9484     | 9980     |
| Vegetables                 | 13494  | 13582  | 11651 1) | 11773 1) | 12940 1) | 12253 1) |

The area of Iasi county is occupied primarily with cereal grains, which in the period 2004 - 2009 showed different values, the highest being in 2004 with an area of 172,816 ha, followed by 2006, the smallest area planted with grain cereals being in 2008, as farmers begin to focus on more profitable crops.

Based on statistical research on plant production of main crops, the National Institute of Statistics, in 2008, compared with 2007, the vegetal agricultural production recorded growth in most vegetable crops and decreases in soybean and potato. According to INSEE, production increases in 2008 compared to the previous year were recorded, among others, at barley, two-row barley, maize, cucumber, carrots, watermelons, melons, onions (Anuarul Statistic).

One of the calculation methods of the economic efficiency indicators of Iasi County agricultural societies is based on the calculation of the average production per hectare for the main crops in table 3.

In Iasi County as for the situation of the cultivated areas with cereal crops by 167,279 hectares, the average production achieved last year was 2260 kg/ha for wheat and rye and 2890 kg / ha of maize grains.

The area of 9773 hectares planted with vineyards gave a total production of 51,987 tonnes of grapes, from an average of 5341 kg/ha. Table 4 presents the total grape production in tonnes.

Thus, after detailed studies of the economic indicators that characterize the production of fruit, five areas were defined (Ciurea, Țibănești, Răducăneni, Holboca and Hîrlău) and two fruit centres (Țirgu Frumos and Pașcani), which concentrates 90.6% of fruit-growing heritage of Iași County (Brezuleanu S., 2008).

Table 3

## Average yield obtained at the main crops (kg / ha)

| Iasi County                | 2006  |                                   | 2007  |                                   | 2008  |                                   |
|----------------------------|-------|-----------------------------------|-------|-----------------------------------|-------|-----------------------------------|
|                            | Total | Of which: mostly private property | Total | Of which: mostly private property | Total | Of which: mostly private property |
| Wheat and rye              | 3081  | 3081                              | 2694  | 2689                              | 1286  | 1286                              |
| Two-row and six-row barley | 2110  | 2108                              | 2181  | 2181                              | 917   | 917                               |
| Maize                      | 3261  | 3263                              | 3322  | 3321                              | 738   | 737                               |
| Peas                       | 1793  | 1809                              | 2037  | 2037                              | 1057  | 1057                              |
| Beans                      | 1089  | 1097                              | 1191  | 1191                              | 676   | 676                               |
| Sun-flower                 | 1359  | 1361                              | 1737  | 1744                              | 621   | 613                               |
| Soy                        | 1925  | 1943                              | 2075  | 2061                              | 427   | 421                               |
| Sugar beet                 | 24088 | 24088                             | 31087 | 31089                             | 22313 | 22313                             |
| Winter potatoes            | 12109 | 12195                             | 14560 | 14561                             | 4890  | 4889                              |
| Tomatoes                   | 18023 | 18419                             | 14364 | 14355                             | 13855 | 13856                             |
| Dry onion                  | 13488 | 13581                             | 10037 | 10041                             | 7189  | 7192                              |
| Cabbage                    | 22372 | 22497                             | 30103 | 30128                             | 17618 | 17618                             |

Table 4

## Total production of grapes (tonnes)

| Iasi County             | 2006  |                                   | 2007  |                                   | 2008  |                                   |
|-------------------------|-------|-----------------------------------|-------|-----------------------------------|-------|-----------------------------------|
|                         | Total | Of which: mostly private property | Total | Of which: mostly private property | Total | Of which: mostly private property |
| Vines on fruit – total  | 40893 | 40561                             | 51021 | 49069                             | 26740 | 24984                             |
| Grafts and native vines | 23763 | 23431                             | 31102 | 29174                             | 25145 | 23390                             |
| Hybrid vines            | 15551 | 15551                             | 18825 | 18804                             | 1595  | 1594                              |

The fact that after 1989 the fruit growing in Iasi county underwent a series of negative phenomena (abandonment of plantations and deforestation, low yields, giving up some fruit quality treatment plant and depreciation, etc.) justifies the initiation measures to revive the production of fruit, a new approach based on the structure of the species, the apple, pear, cherry and sour cherry should have a higher weight, by reducing apricot plum, apricot and peach, for whom the climatic conditions are less favourable, and in terms of economic efficiency are usually unprofitable (Brezuleanu S. and col., 2008).

In table 5 is presented the total fruit production in Iasi in the years 2007-2009.

Table 5

## Total fruit production in the years 2007-2009 on Iasi (tone)

| Iasi County                | 2007  |                                   | 2008  |                                   | 2009  |                                   |
|----------------------------|-------|-----------------------------------|-------|-----------------------------------|-------|-----------------------------------|
|                            | Total | Of which: mostly private property | Total | Of which: mostly private property | Total | Of which: mostly private property |
| Fruits - Total             | 85972 | 50103                             | 56764 | 48993                             | 26912 | 26828                             |
| Plums                      | 22404 | 12728                             | 13186 | 12984                             | 3492  | 3484                              |
| Apples                     | 36696 | 18131                             | 24770 | 18331                             | 11920 | 11847                             |
| Pears                      | 5988  | 3521                              | 2645  | 2639                              | 1760  | 1760                              |
| Peaches                    | 81    | 14                                | 88    | 67                                | 2     | 2                                 |
| Cherries and sour cherries | 14635 | 12658                             | 12922 | 11822                             | 7136  | 7133                              |
| Apricots                   | 2002  | 1138                              | 836   | 833                               | 1114  | 1114                              |
| Nuts                       | 2555  | 1594                              | 1568  | 1568                              | 992   | 992                               |
| Strawberries               | 70    | 70                                | 137   | 137                               | 107   | 107                               |
| Other fruits               | 1541  | 1541                              | 612   | 612                               | 382   | 382                               |

## CONCLUSIONS

1. From the foregoing it follows that the implications of sustainable development on farm management in Iasi county depend on many factors such as development funds, farm managers, agricultural production of agricultural goods and services, regional development policy of Iasi county, strategy of the European Union for sustainable development.

2. Iasi County is able to cover, for the most part, the need for agricultural products from its own plant production (self-consumption and sales to the market), but with a significant decrease in the technical plant.

3. The excessive fragmentation of ownership has led to a decrease in the degree of mechanization and equipment, lower agricultural productivity and ultimately led to the practice of agricultural subsistence. Therefore they must use agricultural associations, the vast agricultural areas, building ownership and ensuring the predominance of market mechanisms.

4. Stimulating and convincing the owners to lease land to farmers in the county as agricultural farms as large agricultural areas, resulting in a higher profit but also to create new jobs is one way to revitalize the agriculture of Iași County.

5. One of the most important levers of development which Iasi County can count on is exploiting the potential of the agricultural sector, for vegetable, fruit, viticulture and animal husbandry.

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