Violeta FLORIAN, Monica Mihaela TUDOR

Institute of Agricultural Economics, Romanian Academy, Bucharest
florian_violeta@yahoo.com

SOCIO-ECONOMIC ASSESSMENT OF THE SUPPORT CAPACITY FOR RURAL PARTICIPATORY PROCESSES – A CASE STUDY IN BRAILA COUNTY –

ABSTRACT

The improvement of the irrigation system performance depends on the intensity and size of public interventions, on the ability of local communities to respond to the stimuli induced by the policies specific to this area and on the management of participation to agriculture modernization in the territory.

The study conducted in the rural areas of Braila county focused on the local conditions, on the difficulties of local communities to get involved and participate in the decision making process for the efficient use of the irrigation water, on the analysis of factors with crucial impact on the behaviours of irrigation water users.

The participatory support complexity derives from the availability of local communities to coordinate the multitude of economic and social behaviours, from the involvement of rural players, in a permanent process of assuming and management of their own problems.

Key words: demo-educational trends, rural area, rural development.

JEL Classification: J24, J11, R11, Q10.

1. INTRODUCTION

The analytical approach of the present paper derives from the general objective of the GEOFARM project: *"to establish new and innovative COPERNICUS service capacities for the irrigation water management system user community from Romania with the vision of connecting and integrating the sustainable food production with an equitable economic competitiveness under smart water governance scenarios to prevent conflicts in water deficit areas".*

Subsummed to this general objetive, the analysis presented below had in view the assessment of the pilot area capacity of the project (Brăila county) to support the sustainable implementation of the COPERNICUS project, from the social and economic point of view.

2. MATERIAL AND METHOD

The analytical approach is a descriptive one, based on secondary statistical data, and had in view two aspects:

– the assessment of demo-social processes and phenomena, on one hand, as social support for a participatory process in the pilot area;

– the assessment of the stage and economic trends, with a special focus on agriculture, as support for the development of small local business networks supplying services in the context of the sustainable development of local economy in the pilot area.

3. RESULTS AND DISCUSSIONS

3.1. DEMOGRAPHIC AND SOCIAL ANALYSIS OF BRAILA COUNTY

Braila county's population totals 308,023 inhabitants at present, out of which 38.0% is the share of inhabitants from rural areas (1.01.2015).

Specific demographic phenomena and processes. The demographic analysis revealed the following characteristics:

a) A steady diminution process for most human communities: in the period 2000–2015, the total population was down by 2,219 inhabitants (annual average), while the rural population decreased by 596 inhabitants (on the average, each year). The numerical diminution is a defining process for the county's population, regardless of the investigated periods, of the stages to which the quantitative analyses are related. For example, the demographic analyses utilized by the development strategies, reveal that: "*The demographic volume of Braila county was down by 19,517 persons from 2004 to 2012. In the reference period, the stable population of the county peaked in the year 2004 (373,560 persons), to continuously decrease afterwards until the present moment (354,043 persons in the year 2012). Compared to the stable population in the year 2010, a decrease by 1.4% can be noticed. The average annual evolution of the population in the nine years of the analysis, i.e. 2004–2012, was the following: –5.2% at county level, –5.9% in the urban area and –4.0% in the rural area*." (The development strategy of Braila county 2014–2020, p. 12)

The rural area of Braila county consists of 40 communes (140 villages), the middle-sized communes prevailing (Table 1).

The rural population is characterized by balanced gender shares (50.3% was the share of male population in total rural population on 1.10.2015), by structural dysfunctionalities generated by the age categories. "A*s regards the population's density, it can be noticed that at county level about 74 persons are living per square kilometer."* (The development strategy of Braila county 2014–2020, p. 19)

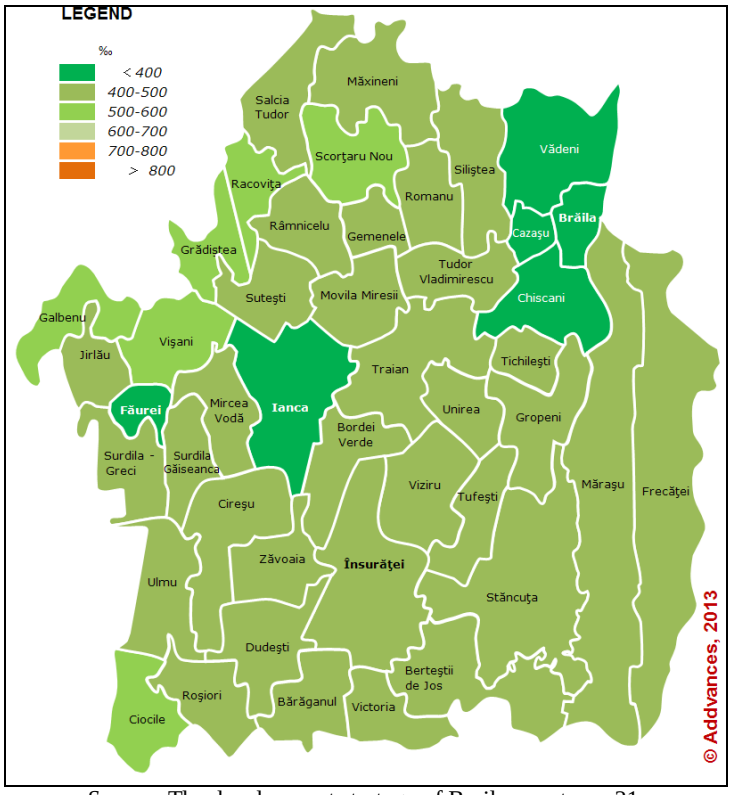
Table 1

Distribution of rural communities in Braila county

	Rural communities with over 5,000 inhabitants *	Rural communities with 3,001–5,000 inhabitants	Rural communities with 2,001–3,000 inhabitants	Rural communities with maximum 2.000 inhabitants**
No. of rural communities	3	20	10	7

* communes: Viziru, Tufești, Chiscani
** the commune Racoviță is the smallest, with 1,309 inhabitants
Source: The development strategy of Braila county, 2014–2020, p. 119

b) A strong demographic ageing pocess, as a consequence of the significant diminution of the young population and intensification of migration flows (Fig. 1).



Source: The development strategy of Braila county, p. 21.

Figure 1. Demographic dependency ratio in Braila county (2012)

In the north-western area of Braila county, we can find the localities with the highest demographic dependency value, i.e. 500‰–600‰: Galbenu, Vișani, Grădiștea, Racoviță and Scorțaru Nou.

The analysis of the ageing process revealed the steadiness of this process and the permanentization of its consequences, both at demographic and social level; the replacement of demographic generations and the possibility of occupational change, the increase of options for the economic and social innovation are more and more postponed (Table 2).

Table 2

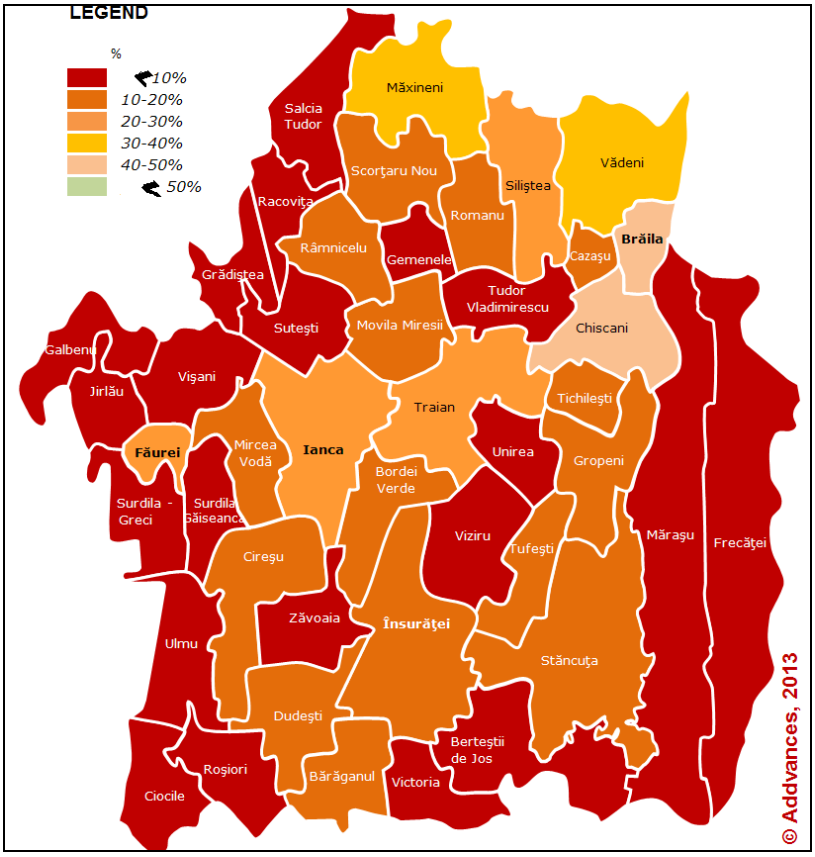
Evolution of rural population's demographic ageing, Braila county

	Share of young population in total rural population * %	Dependency ratio – total age ** ‰	Dependency ratio – young people *** ‰	Dependency ratio – elderly people **** ‰
2000	25.0	707.8	342.1	364.4
2015	22.5	637.4	263.0	374.5

* share of population aged 0–19 years in total population; **0–14 years+65 and over /15–64 years; ***0–14 years/15–64years; ****65 years and over /15–65years.
Source: own calculations – NIS data, Tempo on-line

Analysis of the specific social processes. The defining socio-ocupational pattern is based on agriculture. The excessive contraction of job supply is supportive to this pattern, which became specific for the rural area of the county. The excessively high shares of the population working in agriculture reveal the excessive economic and social dependence on this activity, also indicating the maximum risk degree that the respective rural communities are facing. The preponderantly mono-occupational structure favours the increase of vulnerability to any type of natural, social and economic risk. The unemployment phenomenon affects the employed population, with men being the most vulnerable group. *"The distribution of the unemployment rate in the territory shows the existence of higher unemployment rates in the Western part of the county, the values registered in most localities being over 12%. On the other side, in most localities from the eastern and north-eastern part of the county, the unemployment rate ranges from 3% to 6%. Furthermore, in 4 communes from Braila county the unemployment rate ranges from 1% to 3%: the communes Salcia Tudor, Scorţaru Nou, Gemenele and Sălişte a."* (The development strategy of Braila county 2014–2020, p. 28)

The employment contracts, a significant aspect of the work relations modernization, have modern values. *"The only area in the county where the share of salaried employees in total population of working age ranges from 40% to 50% is that in the town Braila, the county seat, and its sorroundings. The graphic representation of the share of salaried workers in the population of working age (Fig. 2) reveals the critical situation at county level from this point of view, in most localities the share of salaried workers being lower than 20%."* (The development strategy of Braila county, p. 29)

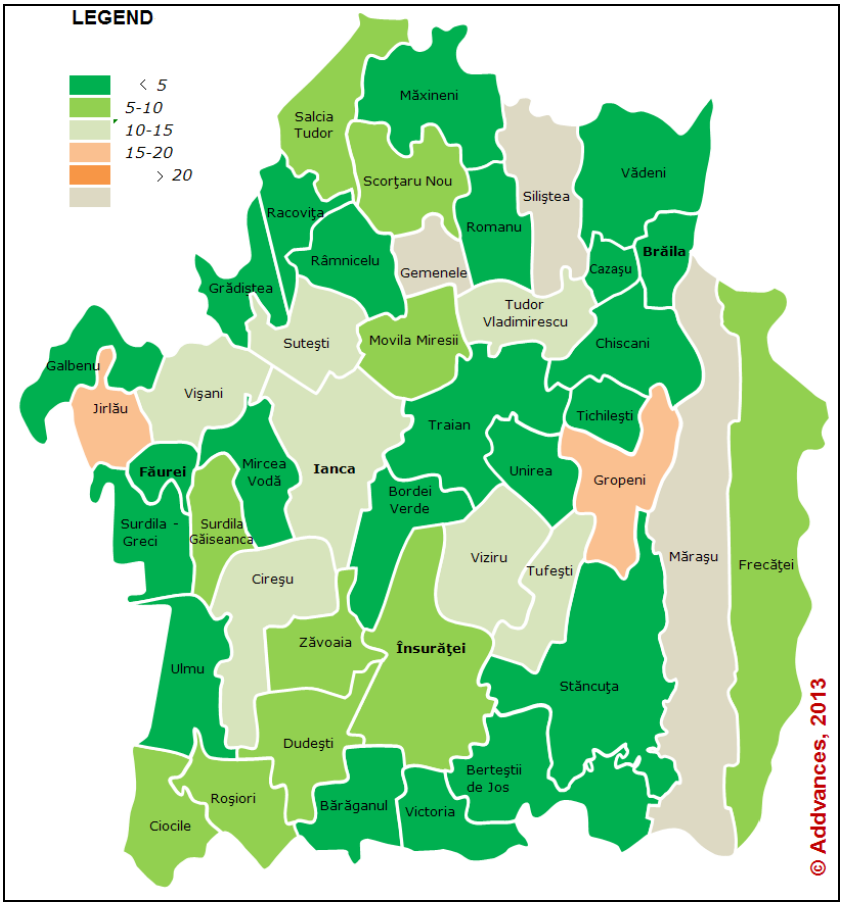


Source: The development strategy of Braila county 2014–2020, p. 29.

Figure 2. Share of employees in the working-age population in Braila county (2012)

The life quality in the rural area depends on the social infrastructure situation. Its main quantitative, objective dimensions describe the social vulnerability, specific to the rural areas. The objective values registered by the educational infrastructure (12 pupils from the pre-university cycle/teacher, in about half of the localities from the county one class-room is used by less than 15 pupil) reveal a favourable situation for the development of the educationl process.

The rural localities where one PC is utilized by a great number of pupils are Jirlău, Gropeni and Mărețu (15–20 pupils on the average) (Fig. 3). *"As regards the number of kindergarten children per one kindergarten educator, the highest number is found in the communes Vădeni, Chiscani, Traian and Berteștii de Jos, with over 23 pre-school children per educator. On the other hand, there are localities in which the load of children per educator is not so high, with less than 15 pre-school children per educator: the communes Scorţaru Nou, Bordei Verde and Cireșu".* (The development strategy of Braila county 2014–2020, p. 90)



Source: The development strategy of Braila county 2014–2020, p. 94.

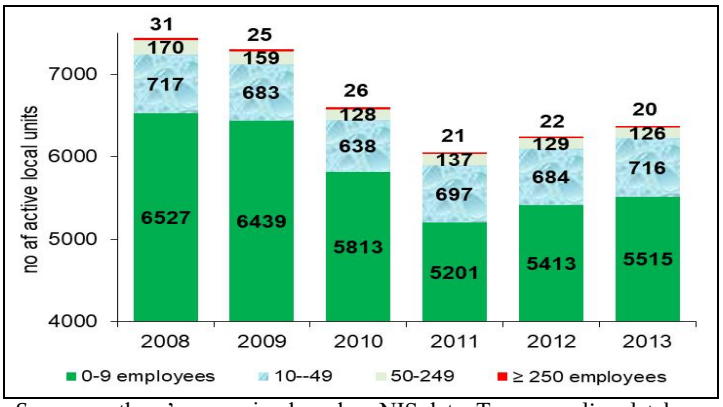
Figure 3. Number of students per one PC (primary and secondary education) in Braila county (2012)

The healthcare infrastructure has significant variations, but, as a general characteristic, it is improper for supplying modern healthcare services; the variation interval ranges from 4,200 inhabitants/physician in Vădeni, Movila Miresii, Dudești and Stăncuța to communes with less than 1,000 inhabitants/ physician, in Cazasu, Siliștea, Scorțaru Nou, Romanu, Racoviță and Surdila Greci.

From the social assistance perspective, the rural communities need support to monoparental families. There were 222 beneficiaries of monoparental support allowance, having the father as single parent in Braila county, in the year 2012; 78.8% of fathers had only one child (73.1% had their domicile in the rural area and 26.9% in the urban area), 18.5% had 2 children (70.7% were living in the rural area), 2.3% of fathers had 3 children (80.0% had their domicile in the rural area), and 0.5% had 4 children to look after and the domicile in the rural area.

3.2. STRUCTURE OF BRAILA COUNTY ECONOMY

In Braila county, the size structure of active enterprises is favorable to support the sustainable community development, because the larger-sized enterprises (economically stronger and able to provide a greater job supply on the local labour market) are well represented in the primary and secondary sector. Thus, although the investigated economy of the county is dominated by micro-enterprises (86.48%), this value is lower than the EU-27 average, where the share of micro-enterprises was 92.0%, according to EUROSTAT data (2011). If we also add the fact that at EU-27 level the middle-sized enterprises accounted for only 1.1% of total active enterprises, while in the investigated area this index was 1.98%, we have a justification for our previous statement.



Source: authors' processing based on NIS data, Tempo on-line database

Figure 4. Evolution of the business environment in Braila county, by number and size of local active units, 2008–2013

The analysis of statistical data on the number of local active units reveals that Braila county's economy was quite a lot affected by the recent economic crisis, with the number of local active units down by 18.7% in 2011, compared to the year when the economic crisis began (2008). The economic crisis has mainly affected the secondary and tertiary sector of the economy. Thus, while in the year 2008, 31 large-sized enterprises were operating in Braila county, with over 250 employees, in the peak year of the economic crisis their number decreased to 21. Similarly, the number of the medium-sized enterprises and that of the micro-enterprises decreased by 20% in the period 2008–2011. This generated a contraction of jobs, resulting in unemployment. The economic relaunching started in 2012, but the recovery rate of losses in the business sector size is still slow.

The structure of the business environment, by sectors of economic activity in Braila county, is dominated by the active enterprises in the field of *services* rendered both to the population and to enterprises (wholesale trade and retail trade, transport and storage, professional, scientific and technical activities) (Table 3).

Table 3

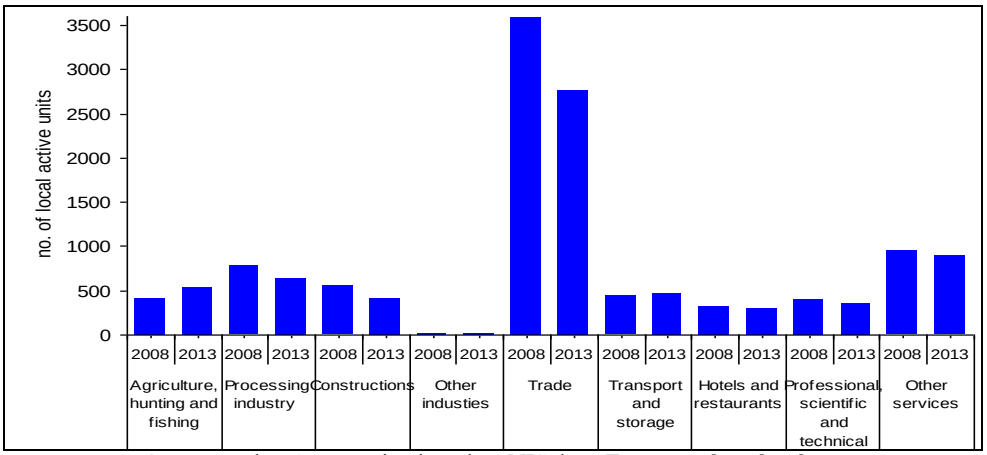
Structure of active enterprises by activity sectors and number of employees in Braila county (2013)

%

Economic sectors	**TOTAL active enterpr. out of which:**	**Micro-enterprises** (<9 employees)	**Small enterprises** (9–49 employees)	**Medium-sized enterprises** (50–250 employees)	**Large-sized enterprises** (>250 employees)
TOTAL	**100.00**	**86.48**	**11.23**	**1.98**	**0.31**
Agriculture,forestry and fisheries	8.47	6.74	1.58	0.13	0.02
Processing industry	9.91	6.90	1.93	0.91	0.17
Constructions	6.48	5.25	0.99	0.22	0.02
Other industrial activities	0.28	0.17	0.05	0.05	0.02
Trade	43.42	39.38	3.83	0.20	0.02
Transport and storage	7.23	6.51	0.60	0.08	0.05
Hotels and restaurants	4.69	4.19	0.47	0.03	0.00
Professional, scientific and technical activities	5.47	5.08	0.38	0.02	0.00
Other services	14.05	12.26	1.41	0.34	0.03

Source: authors' processing based on NIS data, Tempo on-line database

Two-thirds of the total number of local active units in the trade section have the retail trade as activity object. Most of them are micro-enterprises and, in fact, we speak here about small commercial centers which supply the population with necessity goods. Throughout the economic crisis period, the segment of enterprises with activities in the retail trade field had to suffer most, and their number was down by 29% in 2013 compared to the year 2008, as we can see in the Fig. 5.



Source: authors' processing based on NIS data, Tempo on-line data base

Figure 5. Number of local active enterprises in Braila county, at the level of NACE section, in 2008 and 2013

The active enterprises in the transport and storage sector represent the second important class of services developed in Braila county, with a special importance in facilitating the trade with raw materials and processed products. The crucial importance of this segment in the county's economy, mainly for the storage and transport of raw agricultural products, made the number of active enterprises in transport and warehousing grow in the year 2013 compared to 2008, in spite of the economic crisis.

The professional, scientific and technical activities represent the activity object of 5.47% of total enterprises from Braila county, one third of these economic operators being involved in "architecture, engineering and technical consultancy services related to these", followed by other ¼ in "management consultancy activities". These services are an important support for the development of the county business environment, providing specialized consultancy to enterprises in the design and management of the development projects.

In the year 2013, *the secondary sector* of the economy in the investigated area represented 16.67% of total businesses (9.91% was the share of local active units in the processing industry and other 6.48% activated in the construction sector), below the national average of 19.3% (NIS – TEMPO on-line data base). One quarter of the local active units in the processing industry sector were operating in the food industry in the year 2013, with the cereal processing being the prevailing activity. Thus, half of the local active units in the food industry had as activity object "the manufacturing of the milling, bakery and flour products" (NIS). Moreover, the enterprises processing the agricultural raw products proved to be among the most resilient enteroprises in the face of the recent economic crisis, with their number unsignificantly down, which proves the ability of this segment of Braila county's economy to provide economic stability. The second position in the structure of the active enterprises in the processing industry is held by "manufacturing clothing items", with 14.4% of the total number of active enterprises in the processing industry, followed by the "metal construction and metal products industry, excluding machinery, equipment and installations", accounting for 11%.

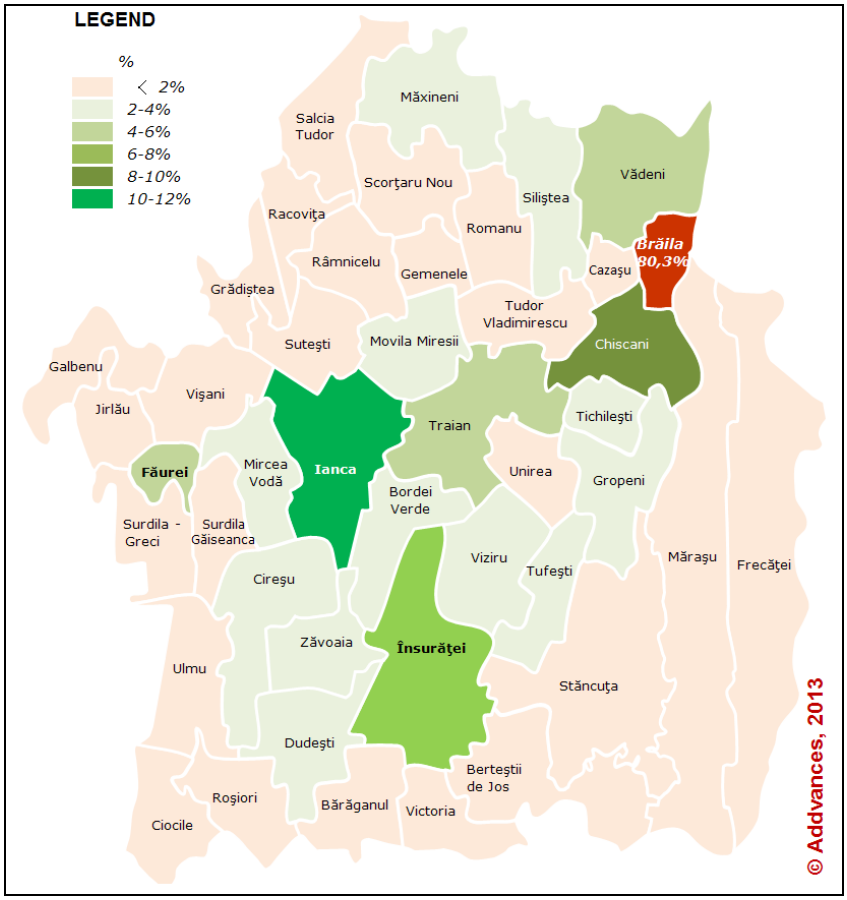
On the basis of these data concerning the economy diversification in Braila county, we consider that the economy of the investigated area exceeded the low development stage and began to follow an ascending trajectory, with an increased focus on the capital factor (adopting technologies which could add value to the primary products through processing, storage, technological transfer, etc.).

The analysis of territorial distribution of the local active units reveals significant disparities in the development of business environment in the territorial-administrative units of Braila county. Thus, we can notice a strong concentration of the active economic operators in Braila municipality, where 80.3% of the active companies were based in the year 2012.

The territorial distribution of the remaining 19.7% of active companies in the county is presented in the Fig. 6, which reveals that the urban localities (Ianca, Însurăței and Făurei) represent, in their turn, economic development poles

concentrating the county business environment. These economic development poles have the effect of irradiating the economic development on neighbouring rural communities.

Thus, in the communes with poor transport connections and/or at great distances from the urban centers, we can find less than 2% of the economic operators registered in the county; the smaller the distance to the urban center, the higher the number of companies based in the communes under discussion. Furthermore, the two communes located on the axis Brăila – Ianca (the communes Chiscani and Traian) have more developed business sectors than the other communes of the county, which can be explained by the location between these two urban economic development poles, which represented catalysts for the rural economy.



Source: The development strategy of Braila county 2014–2020, p. 64.

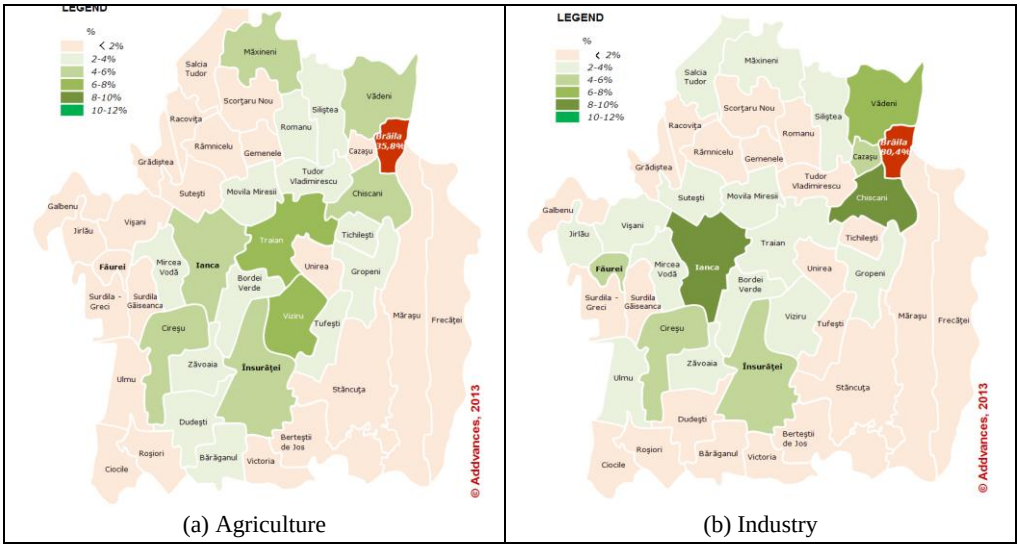
Figure 6. Distribution of active companies in the territory of Braila county, in the year 2012 (except for Brăila municipality)

The (mainly urban) economic growth poles stimulate the economic development and diversification in the neighbouring areas. The analysis of the distribution of companies in the primary and secondary sector in Braila county reveals this irradiation effect of the economic growth.

Similarly to the overall situation, Braila municipality concentrates the largest part of companies whose activity object is agriculture (35.8%) and 80.4% of those active in industry. The inititiatives to develop business in the primary sector have been put into practice, mainly in the localities with a general higher economic dynamics.

As a result, the economic growth poles stimulate business development not only in the non-agricultural sector, but also in the agricultural sector. Business development in agriculture in a growing and diversified economic environment is stimulated by the improvement of vertical integration opportunities of the primary sector with the secondary and tertiary sectors; this integration facilitates the introduction of the agricultural raw products into the commercial circuit. As we have also previously presented, the greatest part of the economic operators in the industrial sector in Braila county have food industry as activity object, that is the processing of agricultural raw products.

Braila county has two urban industrial poles (Brăila municipality and the town Ianca), the rural localities around them benefiting from the economic irradiation effect materialized into the development of industrial business (Fig. 7).



(a) Agriculture (b) Industry

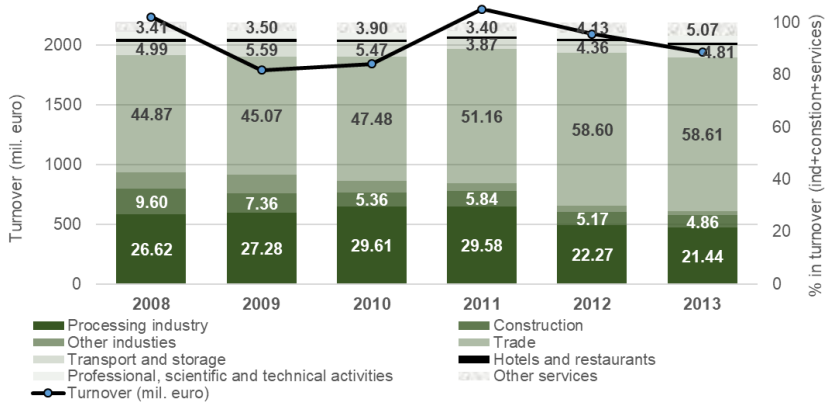
Source: The development strategy of Braila county 2014–2020, p. 66–7.

Figura 7. Distribution of active companies in agriculture (a) and in industry (b), in Braila county, in the year 2012 (except for Brăila municipality)

The peripheral rural communities, located at great distances from the growth poles, have weakly developed local economies, with low diversification, which might have negative effects upon the local population's welfare.

3.3. ECONOMIC RESULTS OF THE ACTIVE ENTERPRISES

The turnover rate of the active enterprises, both in time and as structure of the contribution of different economic sectors to its formation, represents an important indicator of the direction into which the regional economy evolves, as well as of the integration level of the different economic sectors (Fig. 8).



Source: authors' processing based on NIS data, Tempo on-line data base

Figure 8. Evolution of turnover rate of the local active enterprises in Braila county in the secondary and tertiary sectors and of turnover structure by economic sectors

In the year 2013, the total turnover value obtained by the active units in the secondary and tertiary sectors of Braila county amounted to 1,938 million euro, by 13% lower than in the year when the economic crisis began (2008). After the economic contraction in the crisis years (2009 and 2010), the economy of Braila county significantly recovered in the year 2011, when the turnover in industry, construction and services reached 2,298 million euro. Starting with the year 2012, the county's economy entered a new decline period, the turnover rate decreasing by 9% in 2012 comparatively to 2010, to continue at the same rate in the year 2013.

While the processing industry and trade had a significant contribution to the recovery of the turnover rate in the year 2011, after 2011 until 2013, the economy of Braila county faced a diminution by almost 40% of the turnover rate value in the processing industry, which became the main cause of the overall decrease of the economic results of the county.

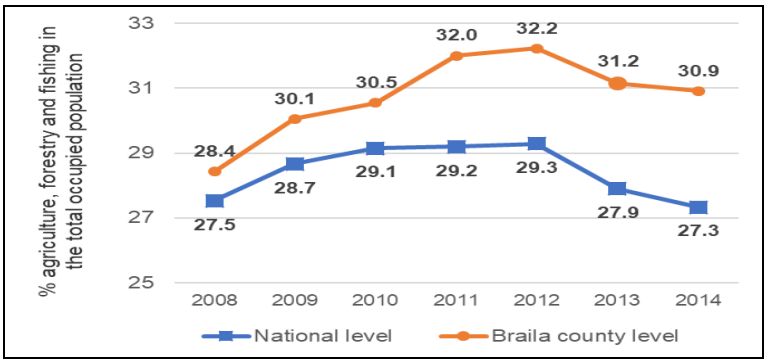
The enterprises in the trade sector had the greatest contribution to turnover rate formation at county level, which generated 58.61% of the county's turnover

rate in the year 2013. The importance of the active economic units in the trade sector in the structure of total value of goods and services transacted by Braila county's economy has permanently grown since 2008 until the present moment.

The processing industry ranks second, with 415.5 million euro turnover rate in the year 2013. The contribution of the processing industry to total turnover rate formation significantly oscillated throughout the investigated period: it increased under the background of the economic crisis due to the capacity of the enterprises in this sector to preserve their economic viability in critical periods, to decrease after 2011 due to the contraction of the sales of active enterprises in this sector.

In the top three sectors of the county's economy, with high turnover rates, we can also mention the construction sector; in the year 2013, the economic units in this sector cumulated a turnover rate of 94 million euro (4.86%). The contribution of these enterprises to total turnover formation was down by half in the 2013 as against the year 2008, the main cause being the demand contraction for the constructions activities as a result of the economic crisis.

Agriculture is an important sector, both from the economic and social point of view, 30.9% of the occupied population in the county being involved in economic activities specific to the primary sector in Braila county, in the year 2014 (Fig. 9).



Source: authors' processing based on NIS data, Tempo on-line database

Figure 9. Importance of primary sector in labour force employment at national level and in Braila county, 2008–2014

Agriculture, forestry and fisheries represented the economic sector that absorbed part of the laid off workers from the active enterprises in industry, constructions and services throughout the recent economic crisis period, the number of employed persons working in the primary sector increasing from 37.6 thousand persons in 2008 to 39.9 thousand persons in 2012. Although in the period 2012–2014 the population employed in the primary sector decreased to 37 thousand persons, their share in the total employed population remains much over the national average, under the background of a low job supply in the enterprises from industry and services.

The economic recovery rate of the secondary and tertiary sectors in Braila county is slower than nationwide, which is also revealed by the turnover rate evolution in these economic sectors presented above. As a consequence, in the labour force structure by activity sectors, the primary sector exceeded 30%, while the gap between the county value and the national value of the indicator level continues to grow larger.

Braila county has important land resources suitable for agriculture, 81.3% of its area being covered by agricultural land, out of which 73.6% arable land (Table 4). Located in the Baragan Plain, Braila county benefits from areas suitable for field crops due to the high quality soils, to the flat structure of land and availability of irrigation water from the national system.

Table 4

Land structure in Braila county, 2013

– % –

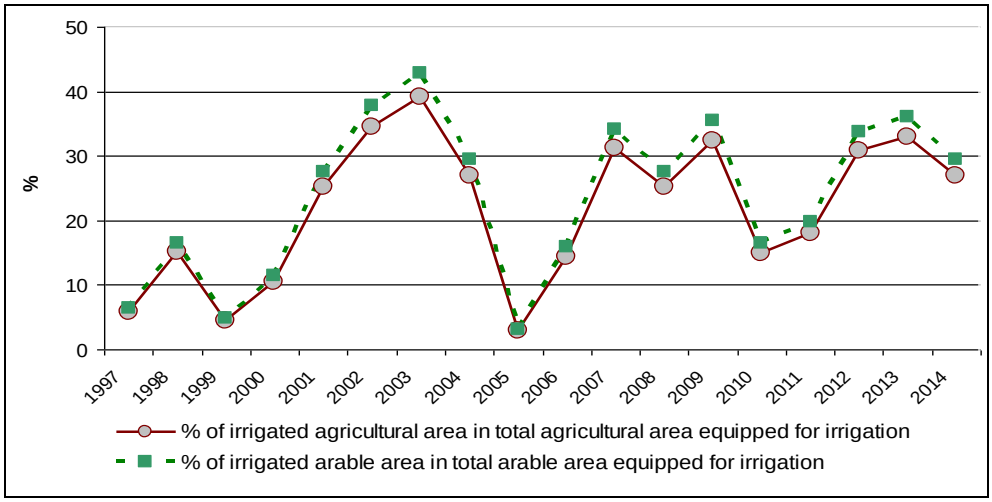
Agricultural land, out of which:	**81.3**	**Non-agricultural land, out of which:**	**18.7**
– arable	73.6	– waters and ponds	6.4
– pastures and hayfields	6.6	– forests	6.0
– vineyards and orchards	1.1	– constructions	2.8
		– communication and rail ways	1.8
		– degraded and non-productive land areas	1.7

Source: authors' processing based on NIS data, Tempo on-line data base

With 6.6% pastures and hayfields in total land areas, the investigated county also benefits from favourable conditions for livestock raising (cattle, sheep, goats) under open system, which could represent a strength for the valorization of by-products of agricultural crop production.

The irrigation system utilization in Braila county. More than 90% of the agricultural and arable area of Braila county (92% and 92.8% respectively) is equipped with irrigation facilities, according to NIS data for the year 2014, a relatively stationary situation even since the socialist period, when the irrigation system was built. According to MARD data, Brăila is the county where irrigations are by far an important component in the agricultural activity, the county having the largest area on which Irrigation Water User Organizations (IWUO) were established (200028 ha) (MARD, 2011), the largest irrigated area (66.2% of the effectively irrigated area at national level in the agricultural year 2012 – 2013) (NIS, 2014).

From the secondary statistical information available at the National Institute for Statistics for the period 1997–2014, it results that there are significant variations of the effectively irrigated agricultural areas in Braila county from year to year. These fluctuations are partially explained by the weather conditions, but, at the same time, they are also conditioned, as farmers themselves confirmed, by granting and access to irrigation subsidies (Fig. 10).



Source: authors' processing based on NIS data, Tempo on-line database

Figure 10. Evolution of the effective utilization of areas equipped with irrigation facilities in Braila county

Thus, the Irrigation Water User Associations (IWUA) (starting with the year 1999), established as farmers' associations with access to the irrigation facilities, have enabled:

i) the trasfer of ownership on the tertiary irrigation structure from the association's territory to IWUA; thus farmers became responsible for the maintenance and repair of the irrigation infrastructure belonging to IWUA whose members they are;

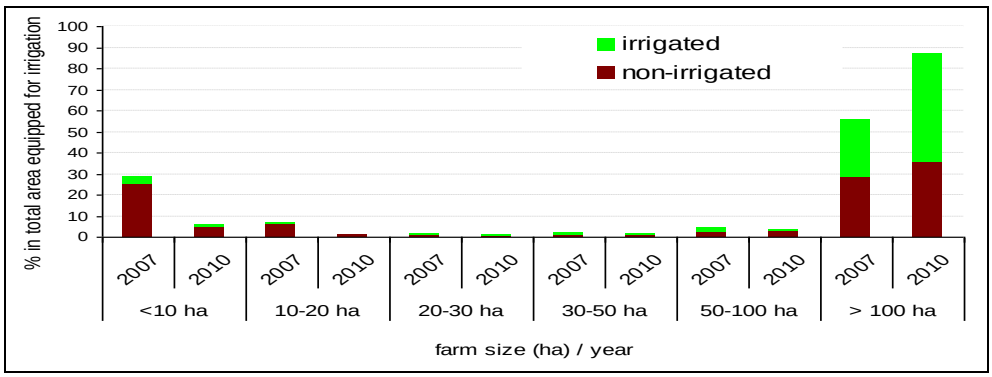
ii) the access to electricity subsidies, necessary for the irrigation system operation (this expenditure is the largest part of the price paid for the access to the irrigation system in Brăila). This new institutional construction, on private bases, has empowered the farmers, slowing down the irrigation system infrastructure degradation, while the subsidies granted from the state budget have increased the access to irrigation water (the effectively irrigated agricultural areas exponentially increased after 1999, being nine times larger in the year 2003 as compared to the first year of the irrigation system reorganization).

2004–2005, an excessively rainy year, according to the information from the National Weather Administration (Sandu, 2009), resulted in the low farmers' demand for irrigations, and when the weather situation reversed, the need for irrigations in the agricultural sector increased the farmers' appetence for water utilization from alternative sources. The year 2010 proved the still reversed link between water utilization from the irrigation system and the subsidies received from the state for this purpose. In the context of drought in the year 2010, the areas of effectively irrigated arable and agricultural land were practically down by half compared to the previous year; the interviewed farmers motivated the weak

appetence for irrigations by the high costs of irrigation with the removal of irrigation subsidies.

Starting with the year 2011, farmers tried to find adaptation strategies to the new conditions on the irrigation market, the utilization of the irrigation facilities in Braila county began to slightly increase, and in the next years the utilization degree of the irrigation system exceeded 30%.

The farms that can afford access to the irrigation system under the new conditions are rather large-sized farms, with financial resources (this conclusion was confirmed by the data on the utilization of the irrigation facilities by farm size) (Fig. 11).



Source: NIS (2008) – Farm Structure Survey 2007; NIS (2012) – General Agricultural Census, 2009–2010, electronic edition.

Figure 11. Utilization of irrigation facilities by farm size in Braila county, 2007& 2010

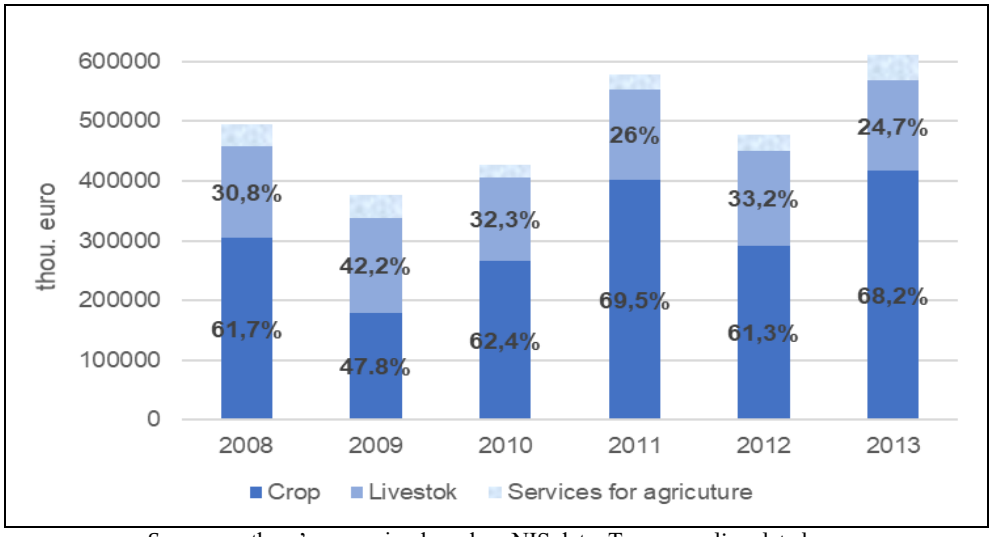
In the period 2007–2010, under the background of the removal of irrigation subsidies, in Braila county, there was an accelerated concentration process of land areas equipped with irrigation facilities into the operation of better capitalized large-sized farms. Thus, in the year 2010, the small farms (under 10 ha) operated only 5.7% of the area equipped with irrigation facilities in Braila county, i.e. 5 times less than in the year 2007. At the same time, the very large-sized farms, with over 100 ha, operated most areas equipped for irrigation (86.8%) in the year 2010, up by 31% as against 2007.

The access to and utilization of water from the irrigation system are conditioned by the financial power of farms. While before the removal of subsidies (in the year 2007), the small-sized farms (under 50 ha) managed to apply irrigation water at least once on 5.6% of the land area equipped with irrigation facilities, in the year 2010 the capacity of these farms to utilize water for irrigation was reduced to 2% of the equipped area of the county. At the same time, the larger-sized farms (over 100 ha), not only concentrated the largest areas equipped with irrigation facilities into their operation, but they are the only ones to bear the costs of access to the irrigation system. Thus, in the year 2010, these farms applied irrigation water

at least once on 51.2% of the area equipped with irrigation facilities in Braila county, a higher share compared to the year 2007 (27.6%).

Agricultural production structure by sectors. The agricultural production value in Braila county significantly fluctuated from year to year, its variations being mainly generated by the crop production value fluctuations, which depend on the weather conditions. Thus, while in the period 2008–2013, the livestock production value ranged from minimum 138 million euro (2010) to maximum 159 million euro (2009), the fluctuation range of the crop production value is much higher, from minimum 180 million euro (2009) to maximum 417 million euro (2013) (Fig. 12).

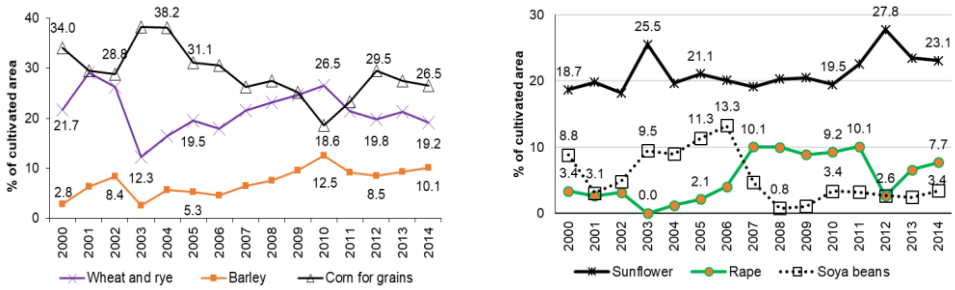
Thus, in the favorable agricultural years from the weather point of view, the crop production value significantly grows, and its share in the agricultural production structure of Braila county increases significantly. An important role in the stabilization of the crop production value can be played by the utilization of the irrigation system in order to counteract the negative effects of drought, and by this, to attenuate the variations of yields in crops.



Source: authors' processing based on NIS data, Tempo on-line data base

Figure 12. Evolution of the agricultural production value in Braila county, by sectors (2008–2013)

The crop structure in Braila county. The cultivated area at the level of Braila county had a general ascending trend, up by 10% from 2000 to 2014 (from 315587 ha in the year 2000, up to 346750 hectares in the year 2014). In the investigated period (2000–2014), more than 90% of the cultivated areas in the county were occupied by two great categories of crops: grain cereals, cultivated on about 60% of the area and oilseeds, which cover a little over 30% (Fig. 13).



(a) the main grain cereals (b) the main oilseed plants

Source: authors' processing based on NIS data, Tempo on-line data base

Figure 13. The importance of grain cereals (a) and of oilseed crops (b), in the cultivated area of Braila county, in the period 2000–2014

Among the grain cereals, the largest areas are cultivated with three crops: grain maize, wheat and rye; barley and two row barley, with their shares in the cultivated area presented in the graph below. The analysis of the evolution of the structure of cultivated areas with the main grain cereals in time shows that there is a reverse relation between the areas under wheat and maize, in the sense that the increase of areas under maize is associated with a decrease of areas under wheat, the reciprocal being valid.

The main oilseed crops cultivated in Braila county are the following: sunflower, rapeseed and soybean. The statistical data show that, with the adoption of the regulations on the genetically modified soybean, the areas under this crop decreased four times, the farmers getting oriented to another crop destined for industrialization, namely rapeseed.

4. CONCLUSIONS

The demo-economic characteristics of the rural area in the county indicate a low support to the local participatory process in the irrigation water management.

It is quite difficult to imagine that under the parameters imposed by the current situation of the rural area, an opportunity can be found for a public-private partnership for the efficient management of irrigation water utilization. The rural processes are defined by: population's constant diminution, strong demographic ageing caused by the significant diminution of young population and dynamization of migration flows; contraction of the non-agricultural labour supply and excessive labour force utilization in agriculture.

A strong concentration of the active economic operators in the urban centers can be noticed, as poles concentrating the county business sector. These economic development poles have an irradiation effect on the neighbouring rural communities. The peripheral rural communities, placed at great distances from the growth poles,

have weakly developed local economies, with low diversification, which can have negative effects on the local population's welfare and on the capacity to develop some local small business networks in order to ensure the sustainability of COPERNICUS initiatives at the level of the entire Braila county.

The contraction tendency of the secondary sector of the economy in Braila county results in the diminution of the vertical integration opportunities of local economies from the pilot area and in its turn represents a significant hindrance to building up sustainable local business networks. The contraction tendency of the livestock sector in the county's agriculture has similar consequences, as this sector can contribute to the higher valorization of local raw crop products into animal feed.

The decrease of crop and livestock production integration at the level of local business networks has negative consequences on the gross value added of local economies and adversely impacts the sustainable development opportunities. This aspect even more relevant as agriculture is an important sector, both from the economic and social point of view, in Braila county (around one third of the county's employed population being involved in specific activities of the primary sector).

5. ACKNOWLEDGEMENT

This article benefited from financial support under the project: "Core COPERNICUS infrastructure for a national geospatial advisory system for irrigated perimeters" (GEOFARM), contract no. 171/2014, project funded under PN II by UEFISCDI.

REFERENCES

1. Sandu, I., (2009), *Evoluția regimului climatic în România*. http://www.mmediu.ro/.
2. EUROSTAT, (2011), *Key figures on European business with a special feature on SMEs*, http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-ET-11-001/EN/KS-ET-11-001-EN.PDF.
3. National Institute of Statistics (NIS), Tempo on-line, database.
4. NIS (2012), *General Agricultural Census, 2009–2010,* electronic edition.
5. NIS (2008), *Farm Structure Survey 2007*.
6. NIS (2014), *Farm Structure Survey 2013,* electronic edition MADR (2011), *Strategia investițiilor în sectorul irigațiilor,* p. 24, www.madr.ro.
7. The development strategy of Brăila county 2014–2020, http://www.portal-braila.ro/Portal/Braila/CJBraila/portal.nsf/AllByUNID/0002A9CA?OpenDocument.