Daniela NANCU, Bianca MITRICĂ*, Mihaela PERSU, Irena MOCANU

Institute of Geography, Romanian Academy, Bucharest, Romania
biancadumitrescu78@yahoo.com

POPULATION DYNAMICS IN THE ROMANIAN DANUBE VALLEY. GEOGRAPHICAL ASPECTS OF THE YOUNG POPULATION – LABOUR RELATIONS

ABSTRACT

The Danube Valley population has experienced a thoroughly negative dynamics in the last two decades. The factors generating this situation were of social-economic nature, given the context of the post-1989 deep political changes in Romania. The population, the rural population in particular, had to cope with problems such as ageing, depleted birth rate and fertility, external migration and even the depopulation of settlements, all these completing the picture of the demographic decline in the region. The negative population dynamics in the period 1992-2011 indicates the onset of a deep crisis in the Danube Valley, just like in many other regions of Romania, the demographic aspects going hand in hand with the economic situation and the political drawbacks. According to the last Population Census (2011), the activity rate and the employment rate in the Danube Valley were lower than the national rates. The territorial distribution of the values characteristic for the labour substitution index suggests the incapacity of almost the entire Danube Valley area to maintain its demographic and productive force.

Key words*:* young population, labor, dynamics, Danube Valley.

JEL Classification: A12.

1. INTRODUCTION

At present, the Danube Basin is largely a European Union (EU) space and, in this perspective, the socio-economic development, competitiveness, environment management and efficient growth of resources should be improved, and the security and transport corridors modernized. The *EU Strategy for the Danube Region* (EUSDR) provides a sustainable framework for policy integration and coherent development of the territory covered; it sets out priority actions to make it an EU region for the 21st century (http://www.danube-region.eu) (Figure 1).

The Romanian Danube Valley, a territory that has aroused the interest of geography researchers, is the subject of *Geografia Văii Dunării Româneşti* (1969),

* Corresponding author.

the most important work on this area, a complex study which also deals with the geographical problems of the population, settlements and labour (employment, employment structures, commuting, etc.).

Figure 1. The Danube Basin (www.danube-region.eu).

The studies on the "geographical complex of the Romanian Danube Valley" (*Geografia Văii Dunării Româneşti, 1969, p. 9*) have increased in number over time, also widening the range of approached problems, e.g. the Danubian towns (Ştefănescu, Alexandrescu, 1978), rural settlements from various Danube Valley geographical subregions and functional types of settlements (Baranovsky, 1969, Herbst, Băcănaru, Caranfil, 1969, Ianoş, Popescu, 1990), the geography of transport (Tălângă, 1994), landscape changes (Iordan, Iacob, Ianoş, 1984), geo-demographic landmarks (Ianoş, Popescu, Tălângă, 1989), etc.

In the Romanian geography literature published before 1989, one can find studies on the labour force and related quantitative and structural aspects (Tufescu, Ştefănescu, Rusenescu, 1958, Ştefănescu, 1959, Ştefănescu, Baranovsky, 1967, Ştefănescu, 1968, etc.); however, given the political-ideological context of that time, nothing is said about the complex supply and demand relations. A comprehensive analysis of the intra-regional development disparities in the Romanian Danube Valley (based on economic, demographic, infrastructure and living standard indicators) reveals the low development level of settlements in this area compared to the average national values of the indicators (Ianoş, 2000).

2. POPULATION DYNAMICS

Since immemorial times, the Danube Valley has been a good place for human settlements, beneficial to the economic activities. Thus, the Danube Valley area has a large number of rural settlements, and also towns of appreciable age, human and economic potential.

In the last 20 years, the Danube Valley territory, like the entire country, was deeply affected by various economic, legislative and social experiences, which, unfortunately, had a negative impact.

The population lives in a subsistence economy without any improvement prospects. Therefore most people chose to migrate to town, elsewhere in the countryside where development opportunities are better, or to other European countries perceived as a true economic "haven" (Nancu, 2003; Nancu, D., Dobre, S., Bugă, D. 2001). However, this Danube area can hope for local and regional recovery, because most of those who had left to work abroad use to send money back home, thereby contributing to improving the situation, which could hardly be expected from national resources alone.

In the investigated period a steep demographic decline was noticed in a large part of this area, yet certain places, proving attractive, represent possible revitalization cores. We have in view the areas in which suburbanization, counter urbanization, and other forms seldom found in the countryside, e.g. gentrification, begin to emerge. It is a proof that people, especially townsfolk, are increasingly more tempted to rediscover and put into value the resources and traditions of a space that has remained authentic in a world gradually losing its identity through globalization.

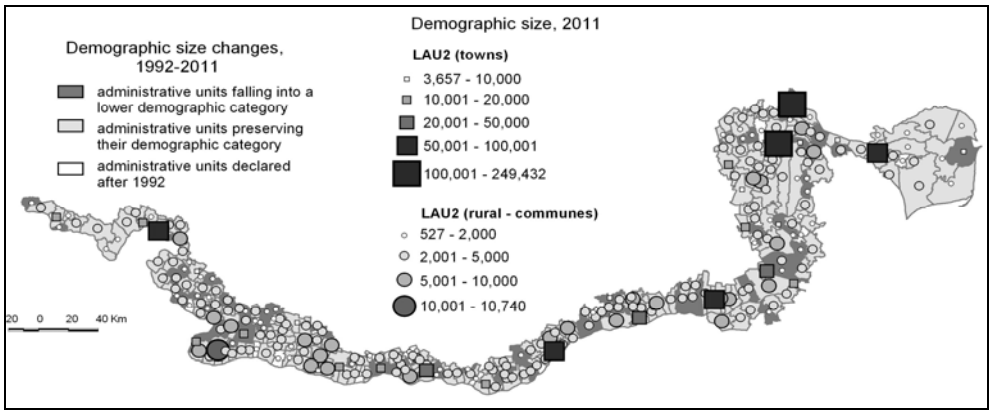


Figure 2. Demographic size changes (1992-2002).

At present, the 266 settlements of the Romanian Danube Valley, consisting of 238 communes and 28 municipalities and towns, are local administrative units level 2 (LAU2). The rural population falls into seven numerical categories: settlements

under 1,000 inhabitants in 7 communes; 1,000-5,000 in 205 communes; 5,000-10,000 in 25 communes; and over 10,000 at Poiana Mare; urban settlements: with over 20,000 inhabitants include 12 municipalities, the largest cities (Galați, Brăila and Drobeta-Turnu Severin) with over 100,000 each; the 16 small urban centers with under 20,000 inhabitants each (Figure 2).

2.1. THE EVOLUTION OF POPULATION (1992-2011).

As early as the beginning of the 20th century, the Romanian Danube Valley settlements totalled over one million inhabitants (1912 General Census). In that century, the population increased with a maximum value of 2,119,136 inhabitants in 1992 versus a minimum value of 1,330,560 in 1930. After the year 2000, the trend was dominantly negative (Figure 3).

The evolution of the population in this area in the last two decades experienced a steep decline in both rural and urban areas, mainly due to the socio-economic situation associated with deep political changes after 1989, which is a reference year for Romania. As a result, the transition to another demographic phase, distinctly different from the previous ones, brought about changes in the population's life styles which, coupled with the direct and indirect effects of accelerated migration, migration to foreign countries in particular, has produced significant demographic transformations as revealed by the indicators used (Gheț ău, 2001).

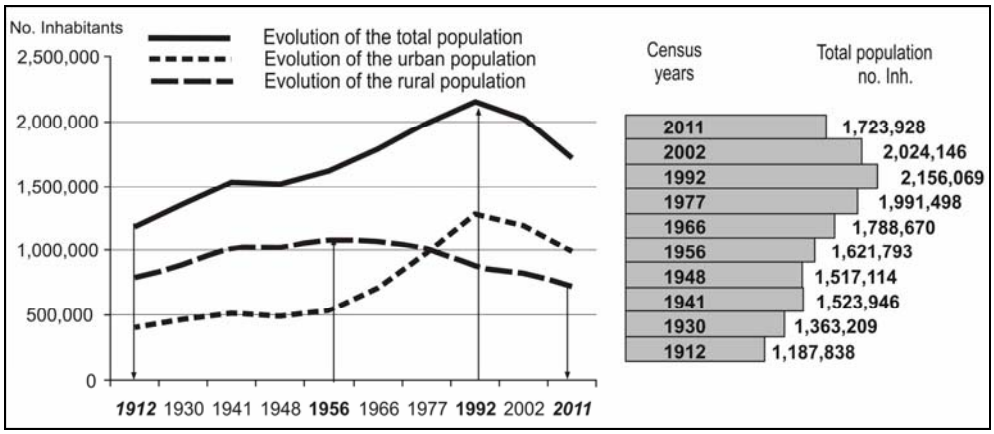


Figure 3. Evolutions in the Danube Valley population.

The population, the rural population in particular, had to cope with problems such as ageing, depleted natality and fertility, enhanced external migration and even the depopulation of certain settlements, the overall picture indicating the demographic decline in the region (Cucu, 2000).

The prevailing negative population dynamics in the period 1992-2011 outlines the onset of a deep-seated crisis in the Danube Valley, just like in many other regions of Romania, numerous demographic aspects being connected with economic and political deficiencies. The demographic decline hit 244 settlements (91% of total) and the numerical growth only in 22 settlements was really insignificant. An alarming phenomenon is represented by the significant population decline (-10% – -50%) in most Danubian settlements in a short period of time (20 years), 12 communes having the lowest record (over -50%). Compared to 1992, the figures in 2011 reveal the highest population losses at Vădastra (Olt county) (-63%), Vânători – Mehedinți county (-60%), Horatele – Giurgiu county, Suhaia – Teleorman county, and Tudor Vladimirescu – Brăila county (-59% each), followed by Giubega – Dolj county, Orlea – Olt county, Piscu Vechi – Dolj county, Lunca – Teleorman county, and Ghindăreşti – Constanța county by -54% and -53% (Figure 4).

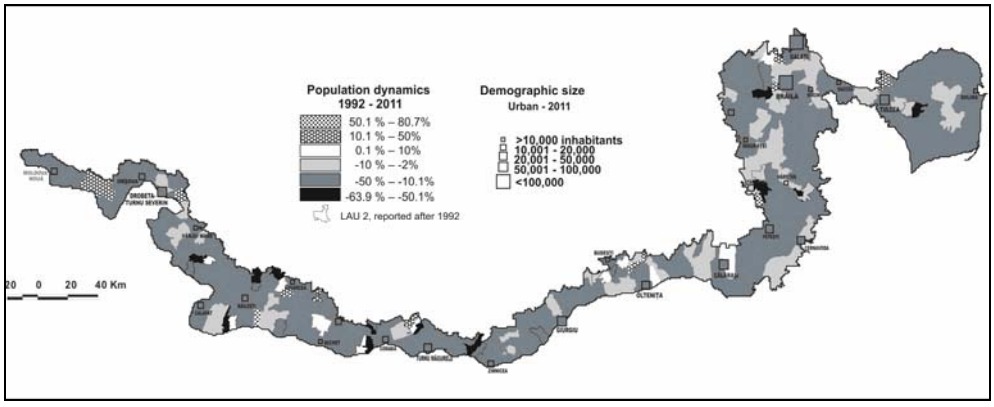


Figure 4. The Danube Valley population dynamics, 1992-2011.

The numerical evolution of the population is determined by the main components of population movement (natural movement, internal and external migration).

2.2. THE NATURAL MOVEMENT

In the year 1992, the average *birth rate* in the Danube Valley was 10.4‰, the highest percentages being found in the localities I.C. Brătianu, C.A. Rosetti – Tulcea county, Rasova (Constanța county), Țăndărei (Ialomița county), Topalu, Aliman (Constanța county), Negoi (Dolj county), Gemenele (Brăila county), Modelu (Călăraşi county), Cerat, Sadova (Dolj county), Rogova (Mehedinți county), with a maximum of 20.4‰ in the town Bechet (Dolj county). At the opposite pole we can find the localities Corlățel (Mehedinți county) – 5.3‰,

Siliştea Crucii (Dolj county) – 5.4‰ and Stăneşti (Giurgiu county) – 6.0‰. In the period 2002-2011, the average birth rate values constantly remained at 8.6‰. While in 1992 only 12 settlements had under 8.6‰, in 2011 the figure rose to 150. A maximum birth rate of 20‰ and over was noticed only in the commune Catane – Dolj county (24.0‰) and in the town Ţăndărei (Ialomiţa county) (26.0‰).

After 1992, the birth rate decrease in the Romanian Danube Valley area is the result of the removal of restriction concerning contraceptives and abortion. However, in the last few years, a mild increase and a certain stability in the number of newborns and of the birth rate represent quite a surprising evolution.

Death rate. This indicator, increasingly more relevant for the population's health condition, is often correlated with a low living standard, poor health assistance, environment pollution, food quality, alcohol and tobacco consumption as well as insufficient preventive health services. In the last decade, the highest death rate was noticed in the year 2006, due not only to health causes, but mainly to the population ageing trend. Nonetheless, the low life expectancy in the past ten years does reflect people's health condition.

After 1992, the ever higher death rate was the result of both greater mortality in certain age groups, caused by the general health condition and age structure changes (elevated ratio of elderly people aged over 60). The negative mortality trend of the last three censuses i.e. 1992, 2002 and 2011 was in the range of 11.6‰ to 12.9‰ and 14‰. In 1992, 65 administrative territorial units of the region had a below average value, while in the year 2011, only 21 were in that situation.

The natural balance, that is the difference between natality and mortality indicators, was negative until 2000-2011, the constantly negative trend being the consequence of sharp birthrate falls. However, despite natural balance values having had a distinctively different score in 2000-2011, the general trend was still a decreasing one.

Looking at the distribution of natural population increase in towns and in the countryside, it emerges that the former is in advantage due to the greater inflow of village population. The differences between the region's eastern and western parts are quite obvious, most eastern counties having permanently an elevated natural surplus, above the national average, whereas western counties have a very low score.

However, the effect of natural balance was doubled or blurred by migration. The settlements with an elevated natural balance and a positive migratory balance also have experienced an increase of their population. The settlements with a low natural surplus and a negative migratory balance have slowly increase rates to the detriment of population structure and distribution.

Since 1993, the population natural increase values in the region have kept falling gradually to under -1.8‰ in 1996 and 2002. The main factor incriminated in this situation was the steep natality decrease, from 10.4‰ in 1992 to nearly 8.7‰ in 2000-2002. The 2011 census indicated lowest natural increase values in the

communes Teleorman (Uda-Clocociov, Suhaia, Ciuperceni, Săelele, Segarcea-Vale) and Dolj counties (Dranic, Cioroiaşi), with a peak in the towns Ţăndărei, Hârşova and Bechet.

The Vitality Index (Pearl's Index) is the percentage ratio of the number of live newborns to the number of deceased people in a certain period of time. Depending on the number of newborns (higher, lower, or equal to the deceased), the vitality index is lower, higher or equal to 100. With index values near 100, or equal to 100, the population tends to become stationary, in the absence of migration its number remaining unchanged. When the index tops 100, there are more newborns than deaths, hence the population tends to increase.

In 1992, the vitality index averaged 98.3 in only one commune, Vlădeni (Ialomiţa county), having a 100 record, which suggests an equal number of newborns and deceased people. A number of 96 communes and towns in the Danube Valley area scored over 100. A vitality index over 200 was found in Moldova Nouă (Caraş-Severin), Lipniţa, Hârşova (Constanţa county), Măcin (Tulcea county), Năsturelu (Teleorman county), Gârliciu (Constaţa county), Ţăndărei (Ialomiţa county), Drobeta-Turnu Severin (Mehedinţi county), Modelu (Călăraşi county), Gârnic (Caraş-Severin county), Roseti (Călăraşi county) and Coronini (Caraş-Severin county); a minimum of under 40 vitality index was noticed in Gogoşari (Giurgiu county), Suhaia (Teleorman county), Stăneşti (Giurgiu county), Corlăţel (Mehedinţi county), Găujani (Giurgiu county), Frumoasa (Teleorman county) and Putineiu (Giurgiu county).

In 2011, the vitality index value of 52.87 indicated a decrease in number of the Danube Valley population, because the simple reproduction had not been attained. A detailed analysis of this index by counties shows values above 100 in Călăraşi (6 settlements), Constanţa and Mehedinţi (4 settlements each), Brăila and Ialomiţa (3 settlements each), Dolj (2 settlements), Galaţi, Tulcea and Caraş-Severin (one settlement each). Localities in Olt, Teleorman and Giurgiu counties failed to reach the 100 index value, which suggests that the deceased were in excess of newborns.

The highest vitality index value (about 246) was registered in the town Ţăndărei (Ialomiţa County), that is 337 newborns to 137 deaths.

Values above 120 were found in the town Hârşova (123.2) and in the commune Ion Corvin (133.3), both located in Constanţa county, as well as in the communes C.A. Rosetti (126.1) and Modelu (145.4) and Călăraşi Municipality (125.6), all three in Călăraşi county.

The low vitality index score in most settlements means a decrease in the number of inhabitants on the basis of the population's negative natural balance and migration.

2.3. THE MIGRATORY MOVEMENT

In the year 1992, the migratory balance (averaging 0.17‰) displayed wide variations, from -34.8‰ in the commune Saraiu to 16.1‰ in the town Cernavodă (both in Constanța county), with lowest values in the communes of the same county (Gârliciu, Ion Corvin, Lipnița, Oltina, Topalu, Rasova) and a high score in the towns Ianca, Calafat and the communes Braniştea, Maliuc, Călăraşi and Dichiseni. The 2011 census returns showed an average migratory surplus of 0.0‰, extreme values being found in the communes Negoi (-17.9‰, Dolj county) and Horia (46.6‰, Constanța county).

Noteworthy, most Danube Valley settlements in the investigated period lost pretty much population. We refer here to the rural settlements with a precarious economic development. The economic difficulties dramatically increased in the transition period, without significant improvement being noticed in the years 2004-2008, when the Romanian economy showed signs of recovery (Erdeli, 1999; Cucu, 2000; Ianoş, 1999). The situation was distinctively different in the two extremities of the region: the east (Brăila, Galați, Ialomița and Călăraşi counties) and the west (Caraş-Severin, Mehedinți and Dolj). The central part of the region (Olt, Teleorman and Giurgiu counties) appeared to be somehow less affected. This could suggest a milder loss of population, or that the respective settlements had a certain attractiveness degree, yet fairly weak. In reality, it was only 22% of the rural area that proved to be attractive, particularly those rural areas lying in the neighbourhood of towns.

2.4. THE AGE GROUP STRUCTURE OF THE POPULATION

In 2011, the young population in the Danube Valley area accounted for 14%, while the adults and elderly people amounted to 60.5% and 25.5% respectively, a situation which confirms the high share of the last age group (25.5%) and a severe ageing process expected to gain momentum in the next decade (Figure 5).

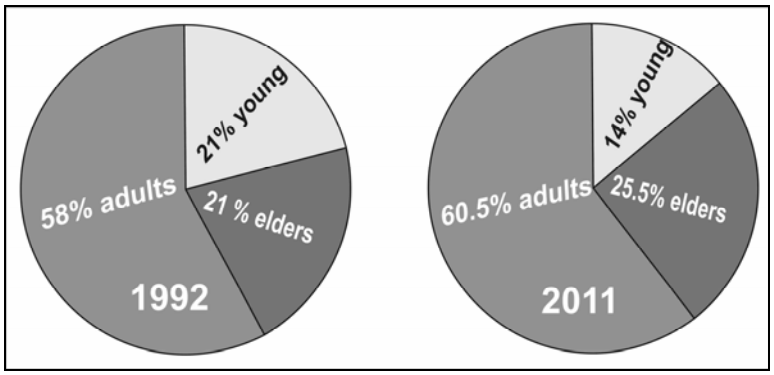


Figure 5. The population structure by age groups, 1992-2011.

We are justified in forecasting this evolution by taking a comparative look at the past (1992), when there was a kind of balance between young and elderly people (22%), the adults representing 58 %. The impact of the post-1989 economic and political changes in the Danube Valley region was also reflected in the demographic traits of the population. The socio-economic decline enhanced the depopulation of villages, disturbing the age and gender structure in the countryside, lowering the human potential and the quality of life (Bugă, 1999).

Looking at the number of young and elderly people/1,000 adult persons in the period 1992-2011, the decrease appears obvious, from 723‰ to 654‰, mainly due to the sharp decrease in number of the young people (-41%), the increase in number of the elderly group (by 5.7%) and the decrease of the adult population (-32,986 persons, i.e. -9%). The territorial distribution (2011) of the ageing index had the highest values (>3) in 49 settlements, most of them in the counties Teleorman (13), Dolj (10) and Mehedinți (11).

Analyzing the demographic data yielded by the last census returns (1992-2002-2011), the demographic behaviour looks as follows: a lower share of young population (0-14 years of age); a higher proportion of elderly people (60 years and over); a low value and percentage fluctuations among adults (15-59 years old) and an elevated dependency ratio and ratio of the young to the elderly age groups.

The demographic ageing level of the Danube Valley population (1338.8‰) indicates 104,468 elderly (60 years and over) to 1,000 young (0-14 years). The demographic ageing in the urban area tops the national values (1,196.0‰) (Figure 6).

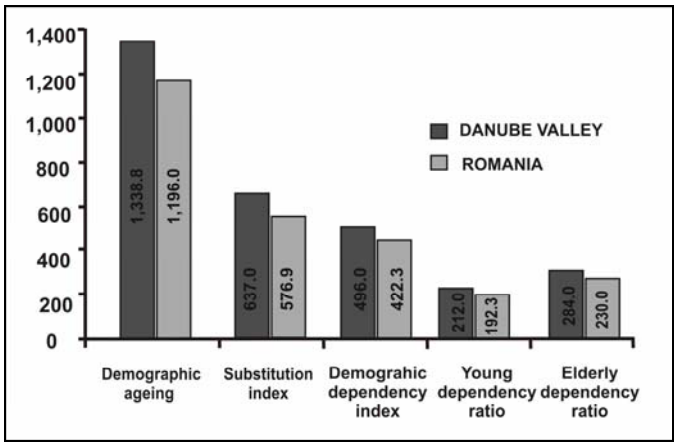


Figure 6. The main age group structure statistical indicators.

The demographic dependency index (the ratio of the overall young and elderly population to the overall adult population) throughout the investigated region is 496‰, which means that an average of 496 working age adults sustain 1,000 inactive persons (the urban value of this indicator exceeds the national one) (Figure 6).

The young dependency ratio (212‰) exceeds the ratio at national level (192.3‰), that is 212 young people to 1,000 adults. A similar calculation of this ratio is also valid for the elderly dependency ratio, the findings revealing a number of 284 elderly to 1,000 adults, versus the national value of 230.0‰ (Figure 6).

To sum up, we could say that the ageing level of the population in the Danube Valley region is higher than that at national level.

3. MAPPING THE MAIN LABOUR FORCE CHARACTERISTICS

The evolution trend of the main labourforce indicators in Romania had not been positive either in the period of transition, in the post-transition period, or in the period of accession to the EU. [30]

3.1. LABOUR FORCE ACTIVITY RATE AND THE ECONOMICALLY ACTIVE POPULATION

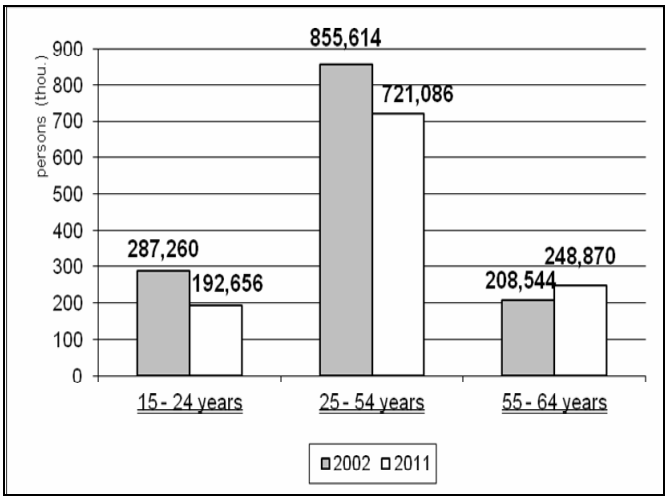
The general activity rate, which measures the population's working and economic potential, was calculated as percentage ratio of the active to total population (Mihăescu, 2000). According to the last population census (2011), the activity rate in the Danube Valley area (44.3%) was lower than the national one (67.8%) and much lower than the EU value. The highest activity rate was found in the localities from the Danube Delta and Balta Brăilei, as well as in the valley sectors of the Olt, Călăraşi and Teleorman counties, with a low score in the valley sectors of Dolj and Constanța counties. As a rule, the activity rate in the countryside was lower because of the marked ageing of the rural population. Since the low territorial values of this rate correlated with the distribution of the over 60 age group and of the ageing index, it follows that the lower concentration of lower activity rates in the rural area exceeds, as effects on the labour force, the overemployment rate in agriculture.

3.2. THE LABOURFORCE STRUCTURE BY AGE GROUPS

In 2011, the Danube Valley population aged 15-64 years totalled 1.16 million people. The labourforce structure by age groups in the period between the last two population censuses indicates an obvious change, i.e. the number of people in the young and adult groups (15-24 and 25-54 year olds, respectively) decreased, simultaneously with the more numerous mature labourforce group (55-64 year olds) (Figure 7).

In about half of the local administrative units in the Danube Valley area, the share of the young labourforce is below the national value (18%), a situation which

is mainly found in the valley sectors of Mehedinți, partly Dolj, Olt, and Giurgiu counties, Balta Brăilei and the Danube Delta. Higher populations of young labourforce than the national average were found in the areas with a high birth rate record in the early 1990s; this is the case of some valley sectors in Dolj, Teleorman, Călăraşi counties and in the Danube Delta (Figure 8).



Source: Population and Housing Census 2011, processed data.

Figure 7. Labourforce structure by age groups and dynamics.

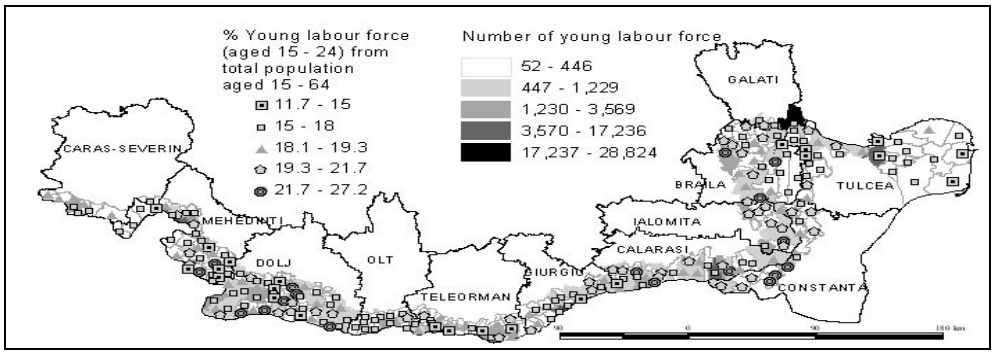


Figure 8. Percentage of young labourforce (aged 15-24) in total population aged 15-64 and number of young labourforce.

3.3. LABOUR OCCUPANCY RATE

The labour occupancy rate, calculated as percentage ratio of the employed population to the working age population represents a synthetic illustration of the job-supply capacity of the national and regional economy. Having in view that the

unemployed population was on the rise, while the number of employees kept steadily decreasing, the occupancy rate in Romania fell from 65.8% at the beginning of the transition period to 62.8% in 2011. In the Danube Valley, the general occupancy rate in 2011 was significantly lower than that at national level (56% versus 62.8%) and even lower compared to the 27 European Union countries (68.6%).

However, this rate values were by far lower in the Danube Valley than at national level, a negative evolution reflected by minimum values, from 70% in 1992 to 40% ten years later, and 20% at the 2011 census. The occupancy rate in agriculture had maximum values of over 95%, throughout the investigated period, where incomes were lower and uncertain.

The number of settlements with higher general occupancy values decreased in the last two decades. Thus, in 1992, the category of high-value (over 87%) settlements was very well represented in the territory, and only two compact areas (the Danube Delta and Balta Ialomiței) had low value (70-86%) settlements. In 2002, the number of high-value settlements diminished and the low-value ones surged (more numerous and extended in the Balta Brăilei, and the valley sectors of Călăraşi, Dolj, Olt and Teleorman counties).

The 2011 census showed that settlements with a low-value occupancy rate gained ground in the Danube Valley, which is an alarming situation, as previously mentioned, because the low values got even lower.

The analysis for the year 2011 was completed with the territorial distribution of the occupancy rate in agriculture. The elevated values of this indicator correlated very well with the highest values of general occupancy rate in that year (easily noticeable in the settlements of Balta Brăilei and in some valley sectors of Giurgiu, Olt and Mehedinți counties). The direct influence of the general occupancy rate on the occupancy rate in agriculture holds in the case of the low-value indicators of settlements in the Danube Delta, the Iron Gate sector, in a few small areas of Dolj and Teleorman counties. As regards the labourforce employed in the main sectors of the national economy, the Danube Valley settlements are largely engaged in agriculture. As expected, the structure of the occupied urban population is diversified, the sector of services prevailing (Drobeta-Turnu Severin, Bechet, Corabia, Calafat, Giurgiu, Turnu Măgurele, Călăraşi and Sulina); however, the industrial activities hold a good share in the occupational profile of the local workforce (Galați, Tulcea and Brăila).

3.4. THE UNEMPLOYED LABOURFORCE

The unemployed Danube Valley population is mainly found in the urban centers of significant demographic size (Galați, Brăila, and Drobeta-Turnu Severin), mainly because countryside people are largely engaged in agriculture. In the investigated period, the rural settlements falling into the influence area of industrial

town centers were affected by the restructuring and privatization in the town industry; in 2011, the consequences of village-to-town commuting were no longer noticeable on the map of unemployed population distribution.

3.5. INACTIVITY RATE AND ECONOMIC DEPENDENCY RATIO

Great numbers of inactive people can be found in great county seats and in some large rural settlements. The rural population in the valley sectors of Dolj, Teleorman and Constanța counties has a high inactivity indicator score, mainly due to ageing, as main demographic trend.

As factor of production, the employed population contributes to the creation of incomes, goods and services needed for themselves and for the unpaid people, thereby sustaining directly, or indirectly (through redistribution), the entire population of the country. Thus, the economic dependency ratio expresses an employee's supporting another person who does not have a remunerating activity. This indicator is calculated as number of non-occupied persons (inactive or unemployed)/ 100 occupied persons (Simion, 2000).

In 2011, the economic dependency ratio in Romania was 136%, with frequent 100-194% values in the Danube Valley settlements, and even 283-504% in certain places (Dolj, Constanța and Teleorman counties).

4. GEOGRAPHICAL DISPARITIES IN THE YOUNG POPULATION – LABOUR RELATIONS

4.1. LABOUR SUBSTITUTION INDEX

This index is closely dependent on the age-structure of the labour force. It is calculated as ratio of the population aged 15-29 to the population aged 30-44, providing information on the labour renewal capacity based on the human capital in a certain area, thereby securing the perpetuation of creative and productive man-power and, implicitly, the development of the economy and society (Mihăescu, 2000).

The age structure dependency of the labour force has imposed to the substitution index an evolution almost similar to that of the 15-29 age group, the size of which correlated with the natality index of the last three decades. The values greater than one of the substitution index suggest that, despite the demographic ageing trend in the country's population, the labour has still resources to perpetuate its demographic stamina; the areas in which the substitution index is less than one have a labour potential incapable of maintaining its demographic and productive vigour. In 2002, only 56 of the Danube Valley administrative-territorial units, concentrated in the valley sectors of Olt, Teleorman and in some smaller areas of Mehedinți, Caraş-Severin and Călăraşi had a score less than one (Figure 9).

Ten years later, the situation changed, i.e. almost all the Danube Valley settlements (except for 7 administrative-territorial units) had substitution index values lower than one (Figure 10).

The prevailing index values less than one reveal the incapacity of almost the entire Danube Valley area to maintain its demographic and productive force due to the demographic ageing of the population and to external and internal migration (of both young and adult manpower). The depleted minimum value of the substitution index, from 0.75 in 2002 to only 0.40 in 2011 (Figure 10), is also noteworthy.

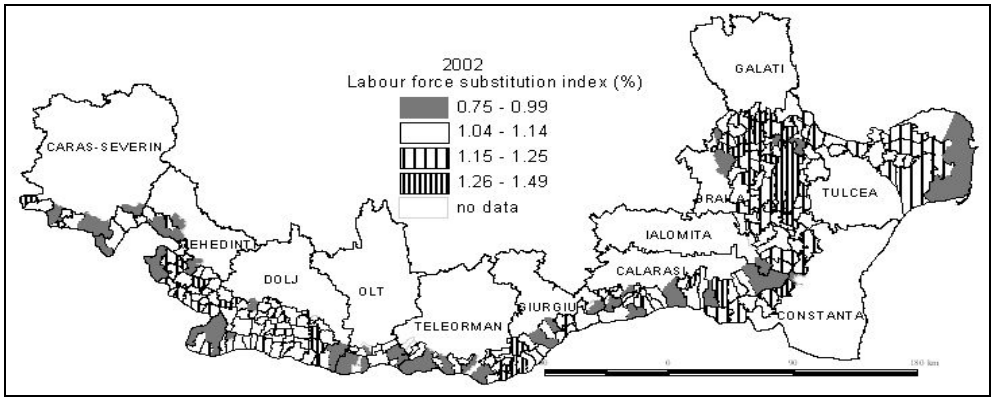


Figure 9. Labour substitution index, 2002.

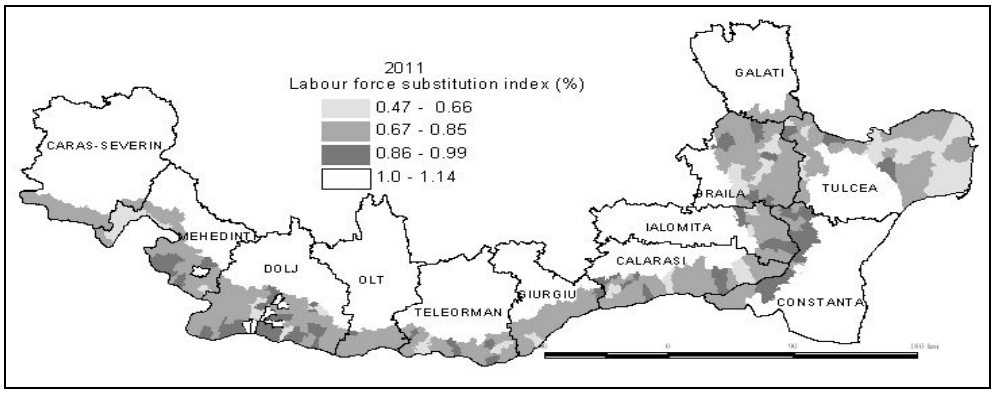


Figure 10. Labour substitution index, 2011.

5. INSTEAD OF CONCLUSIONS

This synthetic quantitative and structural characteristics of the labour force were described by a complex index built on the basis of the indicators previously analyzed in this study, the so-called “complex characterization labour index”,

calculated as Hull score, average 50, and standard deviation 14. The value variations ranging from 0 to 100 are important "in determining this index either by assessing the direct or inverse ratio of each partial (secondary) indicator through measuring development" (Ianoş, 1997).

Therefore, in the determination of this index, direct influence indicators were considered to be positive, while those with inverse influence were taken to be negative. The following indicators were used in calculating the complex labour characterization index: 1 – activity rate (RACTIV), 2 – youth (aged 15-24) per total working age population (%FMCT), 3 – occupancy rate (ROCUP), 4 – occupancy rate in agriculture (ROAGR), 5 – unemployment rate (RSOM), 6 – inactivity rate (RINACTIV), 7 – labourforce substitution index (ISUBSTIT), and 8 – economic dependency ratio (RDEPENDEC).

Having in view the above-mentioned indicators, the formula of complex labour characterization index is the following: ICMFC = 50+14*(RACTIV + ROCUP + ISUBSTIT + (%FMCT – RSOM – ROAGR – RINACTIV – RDEPENDEC)/8.

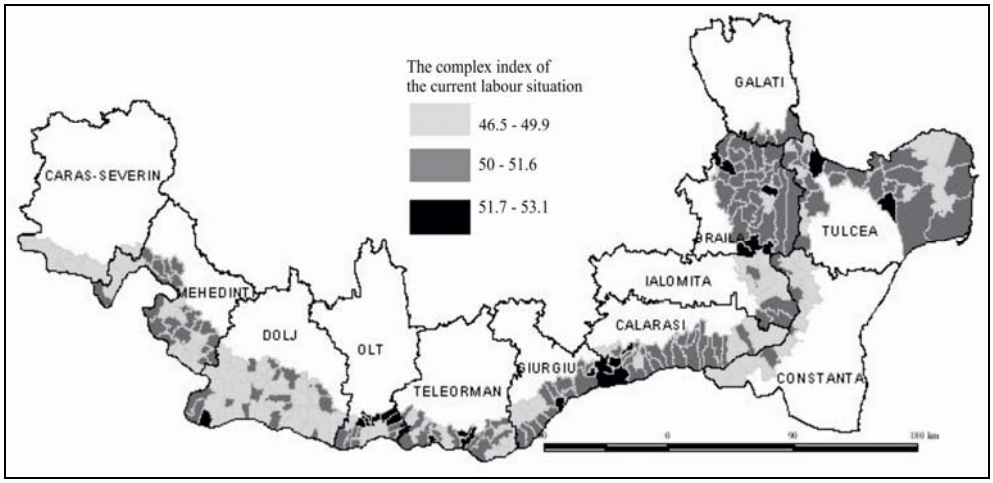


Figure 11. Complex labour characterization index in the Danube Valley, 2011.

In the light of these index values, the Danube Valley settlements fall into three classes (Figure 11):

– 46.5-49.9 = activity rate, occupancy rate, % youth/total labour force and labour force substitution index have low values in parallel with high unemployment values, occupancy rate in agriculture, economic dependency ratio and inactivity rate;

– 50.0-51.6 = all the 8 indicators are close to the average values of each of the Danube Valley indicator;

– 51.7-53.1 = the labour force of the settlements falling into this class is more active, more occupied, yet not in agriculture, and (still!) capable to renew its demographic and economic potential; unemployment rate and inactivity rate are lower than the Danube Valley average score.

6. ACKNOWLEDGEMENT

The research work for this paper was conducted under the Institute of Geography research plan (a priority research project of the Romanian Academy "The Geographical Study of the Romanian Danube Valley").

REFERENCES

1. Baranovsky, N. (1969), *Geografia aşezărilor din regiunea Bălţii Brăilei*, Comunicări de Geografie, vol. VIII, p. 223-230.
2. Bugă, D. (1999), *Schimbări în structura grupelor de vârstă ale populaţiei în ultimele trei decenii. Cauze şi consecinţe*, Revista Geografică T V- 1998, p. 3-7.
3. Cucu, V. (2000), *Geografia aşezărilor rurale*, Bucureşti: Domine.
4. Erdeli, G. (1999), *Starea actuală a satului românesc. Particularităţi geodemografice*, Comunicări de Geografie, vol. V.
5. Gheţău, V. (2001), *Populaţia României la sfârşit de secol şi mileniu. Ce perspective?*, Populaţie & Societate, nr. 1 (25) şi 2-3 (26-27).
6. Guran-Nica, Liliana, Rusu, Marioara (2004), *Probleme de geografie şi economie rurală*, Bucureşti:Ed. Fundaţiei „România de Mâine".
7. Herbst, C., Băcănaru, I., Caranfil, A., (1967), *Quelques aspects géographiques concernant les établissements humains de la rive roumaine du Defilé du Danube*, RRGGG, Géographie, 11, 2, p. 155-165.
8. Ianoş, I. (1999), *Restructurarea economică şi fenomenul migraţiei în România*, Revista Geografică T. V - 1998, p. 8-13.
9. Ianoş, I. (2000), *Sisteme teritoriale,* Bucureşti:Ed. Tehnică.
10. Ianoş, I., (1997), *Individualizarea şi analiza disparităţilor intraregionale. Aplicaţie la judeţul Alba*, Comunicări de Geografie, vol. I, Bucureşti:Ed. Universităţii.
11. Ianoş, I., Popescu, C. (1990), *Tipuri funcţionale de aşezări în Delta Dunării*, Lucr. Sem. geogr. „Dimitrie Cantemir", 9, Univ. Al.I. Cuza, Iaşi, p. 325-336.
12. Ianoş, I., Popescu, C., Tălângă, C. (1989), *Coordonate geodemografice actuale în Delta Dunării*, Terra, 3-4, p. 76-79.
13. Iordan, I., Iacob, Gh., Ianoş, I. (1984), *Modificări în peisajul geografic al Luncii Dunării*, Terra, p. 13-16.
14. Mihăescu, Constanţa (2000), *Populaţie şi ocupare. Trecut. Prezent. Viitor*, Bucureşti:Ed. Economică.
15. Nancu, D. (2003), *Evoluţia populaţiei României la nivel de comune, oraşe şi judeţe în perioada 1966-2002*, Revista geografică, IX.
16. Nancu, D., Dobre, S., Bugă, D. (2001), *Evoluţia şi repartiţia în teritoriu a populaţiei rurale din România în ultimul deceniu al secolului XX*, Revista geografică, VIII.
17. Rusenescu, C., Baranovsky, N. (1967), *Indicatori demografici în sistematizarea rurală cu exemplificări din Raionul Calafat*, Studia Univ. Babes-Bolyai, 2, p. 265-270.

18. Simion, M, (2000), *Potențialul uman al României. Repartiția teritorială şi perspective la începutul secolului XXI*, Institutul Național de Cercetări Economice, Bucureşti.
19. Ştefănescu, I. (1967), *Contribuții la studiul forței de muncă în Balta Brăilei şi zona înconjurătoare*, Probleme agricole, XIX, 3, p. 28-34.
20. Ştefănescu, I., Alexandrescu, V., (1978), *Populația oraşelor din RSR în anii 1948-1977*, Revista de Statistică, 8, p. 38-45.
21. Tălângă, C. (1994), *Tipologia porturilor după riscul degradării potențiale a mediului*, Conf. Reg. de geogr., Univ. de Vest, Timişoara, p. 296-300.
22. Tufescu, V., Ştefănescu, I., Rusenescu, C. (1958), *Densitatea populației active în RSR*, Probleme agricole, 10, p. 32-40.
23. *** (1969), *Geografia Văii Dunării Româneşti*, Bucureşti:Ed. Academiei RSR.
24. *** (1984), *Geografia Romaniei, II. Geografia umană şi economică*, Bucureşti: Ed. Academiei RSR.
25. *** (2010), *Analize demografice. Situația demografică a României*, CNS.
26. *** Census of Population and Housing, 1992, Vol. I, NIS, Bucharest.
27. *** Census of Population and Housing, 2002, Vol. I, NIS, Bucharest.
28. *** Census of Population and Housing, 2011, NIS, Bucharest.
29. *** Romania's Statistical Yearbooks, NIS, Bucharest.
30. *** Rezultatele analizei documentare. Sectorul ocuarea forței de muncă, 2013, http://www.fonduri-ue.ro/res/filepicker_cd25a597fd-62/2014-2020/Dezbateri%20parteneriale/Rezultatele%20analizei%20documentare/03.06.2013/5.Employment_22%20mai.pdf.
31. www.insse.ro, tempo-online.
32. http://www.danube-region.eu.