

GEODEMOGRAPHIC AND ECONOMIC DISPARITIES IN DRĂGOIASA-TULGHEȘ DEPRESSIONARY ALIGNMENT

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Abstract: The organisation process of the human communities that populated and nowadays inhabit Drăgoiasa-Tulgheș alignment and the adjacent mountain areas was strongly and intimately connected with nature and its habitation potential. The physical environment acted as a premise, at times favourable and at times unfavourable, influencing human life depending on the social imperatives. Once the first human settlements appeared, we may speak of an intensification of the systematic and organized capitalization of natural resources, with positive effects on demographic growth, like the case of Borsec, where, in the second half of the 19th century, Germans and Czech were brought, as qualified workforce in glassmaking and mining. The natural setting, the geographic position were favourable for the development of an activity that consisted of animal husbandry and forestry, with highs and lows caused by social and historical factors that influenced the population of this area. This territory functioned for a long time as an almost closed social-economic system, the material and human factors rarely exceeding the surrounding mountains.

Key words: rural population, demographic erosion, subsistence agriculture, negative tropism areas

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INTRODUCTION

Drăgoiasa-Tulgheș alignment developed as a mountainous mental space due to the capitalization of the economic and strategic opportunities of the mountain-depression morphological contact, the matrix of this space being defined by the mountain civilization through characteristic economic activities, customs and mythological aspects. All of these define the system's functionality, which started as agricultural-pastoral and forestry-pastoral, and eventually led to activity diversification, imposed by the discovery of new change inducing resources (hydromineral resources).

The disparities that characterize the settlements of this area can be easily spotted, as they manifest within the sphere of habitat and geodemographic processes, as well as at all levels of the economy. The economic development of these localities is primarily determined by infrastructure, especially roads, which explain the faster and more prominent development of the city of Borsec and of Tulgheș and Corbu communes as opposed to those with poorer infrastructure (Bilbor, Glodu, Drăgoiasa). The discrepancies in terms of economic development (among others) led to

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some *positive tropism areas*, which are the commune centres and Borsec, that have the capacity to revitalize the territorial flows as cohesion synapses, while the *negative tropism areas* are those spaces with a high degree of isolation, massive depopulation, aging population, poor infrastructure (Păltiniș, Drăgoiasa, Catrinari, Glodu, Răchitiș, Secu, Capu Corbului, Recea, Hagota, Pantic) (Tofan, 2014).

Therefore, all these specificity elements in terms of geographic space organisation and capitalization, once emphasized, create a system with more weaknesses than strengths due to geographic isolation, poor technical infrastructure, lack of rail transport and work force.

As about the state of the art in the field, in Romania the problems regarding the *territorial disparities* were realized yet since the communist regime, soon after reaching a certain level of development, when the deciders tried to implement a policy of balanced development among all the areas of the country, ideologically subsumed in the concept of „*social homogenization*” (Benedek, 2004).

After 1989, the new situation imposed an even more intense preoccupation, on the background of acceleration of the profound restructuration processes in the economic and social realities, national wide. Without proceeding to a detailed description, we mention a series of pilot studies made in order to prepare the configuration of the development regions, which had as main objective to identify the regional disparities in Romania (Ianoș, 1996; Pascariu, 1996; Sandu, 1996, 2011, 2013); they were followed by a series of studies which suggested some scientific indicators of the regional development, for the administrative-territorial units and geographic regions, transposed in geographic informational systems (Lefter & Constantin, 2009; Peptenatu et al., 2009; Benedek & Kurkó, 2010). Also, there was prepared a methodology of determining the territorial disparities (Benedek, 2004), on several dimensions (economical dimension, social and cultural dimension, functional dimension, hierarchic dimension etc).

Determining the existing differences, both in demographic and economic processes, was approached in the geographic research (Surd, 1997; Popescu & Săgeată, 2003; Ancuța, 2008; Kurkó, 2010; Cimpoieru, 2009; Tofan, 2013, 2014).

GEODEMOGRAPHIC DISPARITIES

Among geodemographic disparities, there is strong emphasis on aspects regarding population, natural and migrating increment, territorial distribution of population, sex and gender population structure, professional structure, as well as a series of human risks (poverty, alcoholism, unemployment, and economic criminality).

By analysing the population evolution from the northern sector of Drăgoiasa-Tulgheș alignment, during 1850-2011, one can clearly see two distinct periods: *the 1850-1966 interval*, characterised by a demographic growth, with relatively short periods when the population stagnated or slowly dropped, as a result of objective factors (the two world wars); and *the 1977-2011 interval*, defined by a continuous decrease in population.

During this last interval, a series of political and economic laws were promulgated, which later proved to be extremely damaging, with effects that are felt even today on many levels.

Through the so called „*forced industrialization period*”, the surrounding towns, such as Vatra Dornei, Toplița, Borsec and Gheorgheni attracted a large number of young people from rural areas, as these areas had little to offer in terms of employment. This led to „*demographic aging*”, which in turn negatively reflected on the population’s natural movement. After the events of 1989, the population in the Drăgoiasa-Tulgheș area felt dramatically, due to ever lower birth rates and migrations abroad.

What followed was a series of radical social changes, determined by the following factors (*industrial plant closing, poor birth rate, intensification of the aging process, unemployment, poverty, increase in morbidity, decrease in average life expectancy*), which led to a decrease in population, primarily due to lower birth rates (7.1‰ in 2008) and high mortality rates (15.2‰, in 1996), in turn leading to a catastrophic growth rate (-6.5‰, in 2008), as well as the departure of a

large part of the population abroad. At administrative level, the largest population losses, with negative values, took place in 1990 (Bilbor 19.2%, Borsec 16.6%, Tulgheș 12.1% and Corbu 10%).

Starting from 2009, we may speak of an *urban exodus*, when a part of the laid off industrial work force returned to the rural areas of origin. Almost all localities have a positive migrating value (Bilbor 5.5%, Borsec 5.4%, Corbu 1.9%, with the exception of Tulgheș -1.2%);

Within the space at hand, there is an asymmetry concerning *the population structure per types of habitat*, as this area has been, until 1956, a rural one. In 1956, Borsec was declared a town due to its complex touristic functions, as well as Secu, a component of the town of Toplița.

Consequently, given the rural way of life of the entire area, in terms of social behaviour, it is impossible to clearly separate the two aspects - urban and rural. Most people of Borsec embrace, in one way or the other, the rural way of life, as they own large tracts of land and as only a small fraction can be considered truly urban.

An interesting fact is that *the percentage of male population* is slightly higher (50.6%) than the percentage of females, which is different from the national values, due to the economic orientation of the territory (predominance of men in some primary activities like logging and animal husbandry), the only exception being Borsec where the female population is predominant since the main function is tourism, which attracted a large female work force.

From the point of view of the working age group (15-64 years), in 2011, the best situation could be found in Tulgheș (19.3% of the total working population), followed by Borsec with 17.1%.

The age group pyramid of this territory follows the same tendency as the one found at national level that is *the regressive model*, with a relatively low contingent of young people, with a narrow base due to low birth rate after abortion legalisation, mentality changes, as well as precarious living conditions. One can also point out several other causes such as the migration of men, changing both the age group structure (by „aging” and „rejuvenating” it), as well as the sex structure (by *increasing the female percentage*, like in the case of Borsec). Also characteristic for this space is the lack of certain age groups (especially young people), in Păltiniș, Catrinari and Secu, which raises questions regarding the viability of these settlements in the next decades.

Therefore, we consider that many phenomena that take place in Drăgoiasa-Tulgheș system can be considered *geodemographic risks*. *The demographic dependency rate* emphasizes the old and young people's great dependence on the adult group due to the high percentage of the two (87.2%). *The population aging rate* also emphasizes the populations high degree of aging, in such a way that there is no settlement below the threshold value of 0.42. According to the analysis of indicators regarding the *pressure of young people* and the *elderly*, in 2002, there was a slight increase in pressure from the young (24.8%) in comparison to the old (21.7%).

The social-economic structure of the population per habitat environments is different across the entire territorial complex. During this time, the population working in the secondary sector dominated urban areas (54.3%), followed by the tertiary sector (30.8%), while the primary sector registered 14.9%. The reason why is that, in Borsec, most inhabitants work in the mineral water bottling plant. In rural areas, most people work in the primary sector, in animal husbandry and logging. Here, primary sector population reaches 61.5%, followed by tertiary population 25.5% and secondary population with only 13%.

Among the human risks that affect Drăgoiasa-Tulgheș area, we would like to mention: *poverty*, where population polarisation according to income follows the national trend. A small part of the population fits in the substantial income category (1-3%), while more than half of the population cannot afford basic necessities. Most of the income of the latter is used for food and upkeep, with no possibility to cover other necessities (cultural, recreational, etc). 20-30% of the population fits in the category with a steady job and average income, while roughly 10% are below the critical level.

Alcoholism is also a risk that has worsened in the last period due to economic distress. It is highly disconcerting the spread of alcoholism among younger people and among the females.

In 2011, the unemployment rate for the four administrative units (Bilbor, Borsec, Corbu and Tulgheş) was 16.5%, with the highest rates in Corbu (24.9%) and Bilbor (19.6%).

The last two decades saw a rise in *economic criminality*, the causes for this phenomenon being connected to logging, where most delinquents are young, unemployed or come from broken families.

Table 1. Disparities at population and work force level in Bilbor, Borsec, Corbu and Tulgheş, in 2011
(Data source: 2011 Census)

No.	Indicator	Bilbor	Borsec	Corbu	Tulgheş	Total
1	Population (no. people)	2649	2573	1502	3276	10001
2	Urban population (%)	-	25.7	-	-	25.7
3	Rural population (%)	100.0	-	100.0	100.0	74.2
4	Male population (%)	53.6	48.3	50	51.1	50.8
5	Female population (%)	46.4	51.7	50	48.9	49.2
6	Population per age groups (%)	100.0	100.0	100.0	100.0	100.0
	- under 14	15.0	15.7	17.8	16.0	16.0
	- 15-64 years	69.0	72.5	65.2	64.4	67.7
	- over 65 years	16.0	11.8	17.0	18.6	16.3
7	Average number of employees (no. of people)	114	1475	92	316	1997
8	Population density (inhabitants/squarekm)	11.6	27.0	10.7	14.6	14.5
9	Unemployment rate (%)	19.6	12.0	24.9	14.2	16.5

ECONOMIC DISPARITIES

Due to less favourable geographic-physical conditions, the economic development potential is fairly limited. The natural premises that influence this area's agricultural activity are: *the relief's morphometric aspects* (altitude, slope, slope exposure, fragmentation degree), *unfavourable weather conditions*, as well as shallow *soils*, with a high degree of debasification and a moderately strong acid reaction, which prevented the extension and productivity of agricultural lands, introducing a mixed economic profile, in which animal husbandry, logging and mineral water bottling predominate.

Other causes that still contribute to the low economic performance of the region are: *lack of clear strategies* and short, medium and long term *development programs*, at settlement and regional level, thoroughly grounded in scientific data and with a high degree of feasibility, as well as *poor collaboration* between the local administration when it comes to common projects, *lack of clear and viable strategies* for solving the forest areas issues in the microregion, the chaotic deforestations and the fraudulent capitalization of wood, *poor road infrastructure*, which reduces the microregions attractiveness, and *the conservative mentality*, tradition oriented, and distrust in the rapid economic and social changes happening in our country.

The type of agriculture found in Drăgoiasa-Tulgheş depression alignment is one of *subsistence*, far from being the most productive. The natural conditions, especially weather, are not suitable for agriculture, which leads to a poor diversification in agricultural production, a situation further exacerbated by poor equipment and low percentage of arable land (0.7%).

The only marketed agricultural products are dairy and livestock (sheep and cattle), as well as a small quantity of mushrooms and forest fruit, sold in Romania and also abroad (Italy, Spain, Austria, Belgium).

The pedoclimatic and relief conditions, characteristic of mountainous depressions and the surrounding area, had a major role in developing the agricultural profile of these settlements, represented mainly by animal husbandry due to large tracts of land that are covered by pastures and hayfields, not suitable for many crops.

The structure of vegetal production is strongly influenced by pedoclimatic conditions, the number of crop species suitable for the area being extremely low. *The potato* is the main crop,

followed by *corn*, found only in the households of the inhabitants of Bistricioara mid stream (Corbu and Tulgheș). Even though the yields per hectare are modest, the people with large tracts of arable land still grow it as animal fodder.

Animal husbandry is an activity with a long tradition, favoured by the existence of extensive pastures and hayfields, acting as a favourable condition for the growth of this sector (cattle and sheep). Due to its large percentage, this economic activity is extremely important for the area and compensates for the lack of crops in the agricultural-nutrition balance.

The dysfunctions that creep in herding activities are: lack of homologation for dairy products made in sheepdens, as these are commodities created according to an over 100 year old traditional recipe, as well as capitalization aspects, with prices 25-35% lower than on the free market, which means that the years with a poor production are unprofitable for the producers.

I would like to point out the fact that during the last two decades, as many forests and logging areas have been retroceded, forest upkeep has been poor or nonexistent. Joint possessions frequently complain about insufficient staff or work force, while most people aim only a quick profit from logging.

The current industry of Drăgoiasa-Tulgheș alignment developed based on exploiting the natural riches of this space. Its characteristic is that the production process is solely based on resource exploitation and in some rare cases on a modest processing.

The riches of this area, embedded in the economic circuit, are sparkling mineral waters, travertine, limestone, lignite and wood. Before the economic crisis (2008), the number of wood processing stations was very high, an activity that led to massive deforestations. This period was followed by a sudden decrease, due to lack of contracts and orders. In the last 20 years, as the logging sector became more and more disorganized, wood trade exploded, most transactions being made on the black and grey markets, without any real benefits for local authorities and local communities.

The tertiary sector is also dysfunctional as some commercial units do not exist in several settlements, while many shops raised their prices by roughly 15% in comparison to settlements found outside the depressions.

Transport flows are made difficult by the state of many roads, especially county and communal roads. The most important road is DN 15, which connects Moldova and Transilvania.

The length of the road in this area, Borsec-Corbu and Tulgheș, is 32 km. The future development of the area will be influenced by the A4 highway project (Târgu Mureș-Iași-Ungheni), whose 2nd segment- Ditrău-Tulgheș-Poiana Largului-Târgu Neamț, will cross the south-eastern part of Tulgheș, and can be considered a starting point for a better capitalization of the natural and man-made touristic potential.

The lack of railway transport and the large distance between the two railway stations (Toplița and Vatra Dornei), leads to the isolation of this microregion.

Although the area at hand has a high hydrological potential, some households lack running water as they are not connected to the main water pipe system and will not be connected anytime soon as distances are quite large and the terrain does not allow it. The total length of the water system is 31.4 km, from which 19.6 km can be found in Borsec. Rural areas are supplied with water through individual fountains and wells. In terms of conventional households with running water, their number is estimated at 2837 (61.7%).

The total length of the sewage network is 43 km, but only in Borsec (19.6 km), Corbu (7.6 km) and Tulgheș (15.7 km), the conventional households with a sewage installation is roughly 2642 (57.5%), while 2329 have a bathroom (50.7%).

None of the analysed settlements have proper, compliant, septic tanks, according to the Romanian legislation, waste water being dumped in streams or on the ground.

Electricity is supplied by the national electricity system, based on the Stejaru hydroelectric plant, electricity being transported to the consumers through 110-220 kV high voltage lines, while the villages are supplied by low voltage lines. The total number of conventional households that had electricity in 2011 is estimated at 4308 (93.7%). In Borsec, as the central heating system is

obsolete and leads to losses paid by the contributors, the number of households with individual heating systems has steadily increased (422 households). The possibility to use small individual heating stations for households depends on the wood resources of the area and their usage.

Agritourism development has advantages, like contributing to population stability by anchoring the work force, creating new jobs, promoting and developing services and sustaining traditional culture, infrastructure rehabilitation, improving female participation and inclusion in the work force, attracting new investments, but also disadvantages, such as: pressure on the environment, limited accommodation possibilities, planning issues, local control, reluctance from the locals (Tofan, 2012).

During the last decade, the educational network of the area has struggled with several major problems, such as a decrease in the number of pupils, especially in small settlements, which had until recently kindergartens and elementary schools, that were closed or merged with other units (ex. Secu, Drăgoiasa, Glodu, Capu Corbului); the endowment degree of most educational units that is far from minimal standards, with the exception of schools from Borsec and communal centres, as well as the high school of Corbu; the decrease in pupils and units was accompanied by a decrease in the number of teachers, a phenomenon which will have a significant effect on the long term educational level.

Most rural settlements have primary healthcare, with the exception of villages from Suceava County (Drăgoiasa, Păltiniș, Glodu and Catrinari) and Secu, where such centres do not function.

For special services, the inhabitants must travel to medical units in the adjacent towns (The Hospital of Toplița and the Hospital of Vatra Dornei).

The cultural life of the area is extremely rich, with many community and religious events, acting as community support, but also as elements that can be touristically capitalized.

The spiritual and material heritage of past centuries is felt even today, through many museums, libraries, cultural centres and, last but not least, through traditions and customs. The most intense cultural life can be found in Borsec, Tulgheș and Bilbor.

CONCLUSIONS

The industrial space of Drăgoiasa-Tulgheș depression alignment is dominated by small firms, large production units are almost nonexistent, with the exception of the two mineral water bottling plants in Borsec and Bilbor. I believe that the development of a large industry in the area is difficult due to a reduction in forests, mining industry decay, lack of work force, caused by a massive migration of youth towards urban centres and abroad.

The alternative: the creation of small units working towards a superior capitalization of wood resources, as well as the reopening of mines in Borsec and Tulgheș, and also in Bilbor (brown coal), in the near future, through an infusion of private capital.

Alongside sustainable forestry, fruit like raspberries, cranberries, blackberries and blueberries can be gathered and processed in an efficient manner by creating natural juice plants, with the addition of mineral waters present in the area; also natural resin, mushrooms could be capitalized, not to mention beekeeping. There are also possibilities for increasing game, by creating reserves.

The technical endowment of Drăgoiasa-Tulgheș alignment, characterized by poor infrastructure, especially in rural areas, emphasizes a lack of territorial development and modernisation, which is why the development of strategies that can bring the basic infrastructure (transport, water, sewage, waste disposal, energy and so on) to European standards is crucial; Furthermore, the increase in economic competitiveness on the long run by encouraging the entrepreneurial class, by emboldening the creation of new enterprises, the promotion of tourism are also goals that need to be taken into account.

All these can be achieved through the development and efficient usage of human capital, which in turn will improve and streamline the governing process at central and local levels,

starting with policy development, planning, implementing and managing public services and administration, in order to create an efficient support for economic activities.

The rehabilitation of Borsec is the main priority, involving the creation of a sound touristic infrastructure, as well as the adoption of a series of measures and policies which will insure its competitiveness at national and international levels.

Although the rural space offers a wide array of leisure time activities, it is poorly equipped for a proper capitalization of its resources, indifferent of their nature.

Many natural sights are inaccessible to tourists. Thus the need for more commitment and effort to solve the issues, starting with ensuring an easy access to these sights, the improvement of mineral water springs, the rehabilitation and conservation of heritage sites, creating partnerships, etc, that must be devised as part of the sustainable development of tourism in this part of the country.

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