SOCIO-ECONOMIC RESTRUCTURING OF THE MINING AREAS OF GORJ COUNTY*

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Gorj County is lying on a surface of 5, 602 km² (about 2, 5% of the Romanian territory), on the banks of Jiu river (the middle reaches of the Jiu river), in the South-West region of Romania country and the North-West of the Oltenia land. Gorj County was founded in 1998 and is included in Oltenia South-West Restructuring Region, alongside of other four counties (Dolj, Vâlcea, Olt, Mehedinți), one of the eight regions under restructuring process at the national level and which, from the territorial point of view, correspond to some territorial units, the so-called NUTS-II (The Nomenclature of Territorial Units for Statistics), according to EUROSTAT (European Distributors of Statistical Software) classification. Taking into account the relatively unstable structure and dimension, of the geographical space affected by the most significant human intervention into the national territory, the impact of diminished economic activities is extremely important. It is being noticed at regional and local levels, but also national one.

Keywords: Restructuring, Rural change, Territorial identity

Introduction

Gorj County with a surface of 5, 602 km² (about 2, 5% of the Romanian territory), is situated on the banks of Jiu river (the middle reaches of the Jiu river), in the South-West region of Romania and the North-West of the Oltenia land. Gorj County was founded in 1998 and is part of Oltenia South-West Restructuring Region, alongside of other four counties (Dolj, Vâlcea, Olt, Mehedinți), one of the eight regions undergoing the restructuring process at the national level and which, from the territorial point of view, corresponds to some territorial units, the so-called NUTS-II (The Nomenclature of Territorial Units for Statistics), according to EUROSTAT (European Distributors of Statistical Software) classification.

Within the county territory, there are important natural resources, meaning the industrial reserves (deposits) of lignite (brown coal) which represent 71% of the inferior (mineral) coal reserves in Romania. The majority of coal deposits are being easily exploited in quarries (with an average thickness of industrial waste layer is about 3-4 m and the coal layers' are not over 5-10°). The exploitable coal deposits were estimated, in 2007, at 2.8 thousand million tons of lignite and one thousand million of mineral coal and the probable reserves provide a continuity of 80-100 years.

If maintaining the existing output level, the lignite industrial deposits within this region can satisfy the internal demand for the next 50 years.

Distribution of lignite deposits is governed by Roşia (319 087 thousand tons), Pinoasa (209 872 thousand tons), Jilţ Nord (121 757 thousand tons) mines and Roşiuţa (124 925 thousand tons) from Motru basin. The geographical location of lignite deposits indicates a decrease in the reserves quantity from north to south, both at the surface and underground mines levels.

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The quality of industrial deposits for the overall mining system leads into resulting of an inferior caloric power of 1 600 and 2 000 Kcal/kg, utmost anhydrous ash of 40% and a total maximum moisture content of 46%.

Coal-Mining within Gorj County, Development and Distribution

The lignite open quarry mining has begun for the first time in our country since 1955 in the Rovinari basin, where there was opened the experimental mine of Balta Unchiaşului. The encouraging results, as well as the exploitable reserves in Rovinari, which, in 1965, at that level of knowledge, were about 512 millions of tons in Gârla, Cicani, Beterega, Tismana, Roşia, Rovinari Est and Beterega Sud fields, led to some new perspectives

for lignite output development within this basin on open quarry basis. At the same time with the activity carried on in Rovinari basin, the development activity of lignite mining in Oltenia continued in Motru basin, the second great basin in our country, situated in the west part of the region. The geological prospecting led to the discovery new lignite deposits in this area, therefore, since 1976 the mining extraction activity developed both in Motru and Jilt basins.

Over time, there were opened and ran new mines and quarries, presently over 95% of the industrial reserves surface being exploited. At the same time, some outputs were closed, as a result of reserves exhaustion, the affected surfaces being totally cleared by own technological tasks. Mining activity is developed in three main coal basins (coalfields): Motru, Jilţ and Rovinari (Fig.1).



Fig.1. Mines and open pits in Gorj County

Motru Basin

This unit manages the lignite deposits within the Motru coal basin, where the most outputs are coalmine. Motru Basin is located on the left bank of River Motru and overlaying the hilly relief of this river valley up to the peaks which separate Motru valley from Jilţ valley. Administratively, most part of this basin is situated in Gorj County, with a rest of it in Mehedinţi. The basin's area is limited by an imaginary line which crosses the following locations: Iormăneşti, Valea Perilor, Zegujani and Floreşti by west, Floreşti, Broşteni, Samarineşti bz south, Samarineşti, Miculeşti, Ştiucani by east and Vârtopu, Iormăneşti by north.

The following mines are situated in Motru basin: *Horăşti* (the first unit in coal-mining in Motru basin and the first mine in Oltenia region, opened in 1960), *Leurda* (the mine was opened in 1961 and proper activity started in 1964), *Ploştina* (1962 with a capacity of 250 thousand tons per year), *Lupoaica* (1966, with a capacity of 1200 thousand tons per year), *Roşiuţa II* (1979) and *Motru Vest* and the pits: *Lupoaica* (1972, an output of over 4000 thousand tons per year), *Roşiuţa* (1969 through Roşiuţa I for 1000 thousand tons per year) and more micro-pits. When basin was opened the output concentration and the main serial functions in one single point were taken into consideration, which led to these activities diminishing at every singe unit level.

Jilț Basin

This basin is located on the left bank of River Motru, south-east of Târgu – Jiu municipality. In this area there are the following mines: Jilţ Sud and Jilţ Nord (the mining began in 1979 by one pit opening which proved to be the unit with the highest output within entire basin). Also *Mătăsari* – *Dragoteşti* mines are here (the workings started in 1976), *Tehomir* (starts its activity in 1978) and *Cojmăneşti* (in 1979).

Rovinari Coal-Basin

It's located on the right bank of River Jiu, southeast of Târgu-Jiu city – Gorj municipality. The following pits are found here: *Gârla* (one of the old objectives of Rovinari basin in 1964), *Tismana I* and II (which were opened in 1969 and in 1979), *Rovinari Est* (in 1979), *Roşia de Jiu, Peşteana Nord* and Sud, Urdari (1982) and Pinoasa (in 1983), as well as underground coal-mining Urdari (where the mining works have started in 1977) and *Fărcăşeşti*..

As for the coal mined in the three above mentioned coal-basins, its final destination in terms of consumption follows two directions. The first one is the most important: industrial consumers extracted lignite represented by *Rovinari* – four millions of tons, *Turceni* – three millions of tons, *Işalniţa* – 1, 7 millions of tons, *Craiova II* – 2, 5 millions of tons, *Rogojelu, Romag Turnu Severin* thermo(-electric) power stations, some in the west country: Oradea I and II, Arad, Timişoara and in the east: Iaşi and Suceava.

The second one, less important, represented by trade towards domestic consumption, with small quantities, and main flows directed to Bucureşti and Tulcea (over 13 000 tons per year).

The high weight of the coal and the small distance of transport to the main consumers led to the units' economic efficiency, the cost price of one ton of lignite is about 8 and 12 \$, an inferior value to the one registered on the international market. Within the economic region development a very important role is played by CET Rogojelu and Turceni which are the main users of the lignite from Rovinari and Jilţ basins, and are also employing over 4 000 people.

The Mining Industry Restructuring after 1990

The economic crisis after 1990 coupled with an inefficient management of the human and financial resources, alongside with the energy demand on the internal market have had as a result the constant diminishing of the extracted coal quantity within the coal basins, from 37.013.000 tons in 1989 to 19.000.000 tons in 1998, subsequently reaching 29.000.000 tons in 2007.

This fluctuation can be explained by the restructuring process this industry went through, with the main objective being that the coal demand supply by the mines and pits functioning in improving conditions of qualitative competitiveness, production costs and thus the gradual diminution of the subventions per delivered product unit until its complete exclusion. The following are taken into account:

- Sole functioning at the existing capacities which allow improvement of the performances. It has been established a reevaluation of the output capacities for the units in use, determining factors being wellknown and examined, for example: depth mine (working), layers' thickness, existing intercalations industrial waste and their location on the front height;
- Ensuring the qualitative competitiveness and supply prices, knowing that the latter ones have a great importance for the

development of power production. Taking into consideration the overall mining expenses and maintenance one can expect a diminution of the lignite consumption, because a series of energy systems will reach a standardized mining duration and will be taken out of use;

Strengthen of environmental security measures.

The priorities of the output capacities and the improvement of the performances resided in: industrial reserves division into zones on the economic criteria and output concentration basis in the areas that provide economic efficiency factors; focusing investments for viable reserves' mining from the economic point of view and stopping investments for the objectives with exhausted reserves; output activity limitation in some areas where high output costs have been registered through total restriction of productive activities; technique equipment facilities by external financing and the appropriate mining methods; examination on vertical organization of the activity by creating fuel and energy systems; reorientation and structuring of labour as a result reducing the activity and re-technological process.

Mining activity of the area has developed into two stages: in the 60's when the majority of the mines were opened and the 80'- 90' when the open mines have been developed and new ones were opened. These stages needed additional manpower then the regional and local potential, generating a labour inflow of all over the country.

While in the 60' labour was traditionally considered to be only the mining activity, the second stage needed all types of labour, focusing on less developed economic areas abundant in available labour. People came from Moldova (Botoşani, Suceava, and Vaslui). At that particular moment in time, recruitment of mining personnel was heavily situational (with people undertaking the job under various reasons such as exemption from military service, house granting), significantly raised proportion of unqualified workers or qualified for other industrial activity resulting in cases with social problems of adjusting and adapting.

Territorial Impact and Mining Restructuring

Given the fact that the lignite output within Gorj County represents 35% of the annual electrical power and 80% of the coal production, one can notice the national importance of the area, even subsequent to restructuring.

Local importance is given, primarily, by the mining units, which are situated near some rural and urban places. Restructuring also meant the preservation of some mines, including their closing down, having a negative aspect for those places. This direct influence will reverberate on the income levels of the local population, who were specialized in mining and on the possibilities of usage of the local labour surplus. The limited capacity of the agricultural and new SMAs units to use local labour in perspective led to new modalities of sustaining the social and economic development for the places within this area.

Reduced mining activities had a great impact on villages with local economies based on this function, as in both cases of Motru and Rovinari the majority of population came from other places, usually from a great distance. As farming hasn't been an option for the people (difficult land crisis) the only possibility to find employment had been the service sectors or productive SMAs. Retraining programs need be correlated and linked to definite ways of raising interest to the new personnel categories in precise activities.

Regionally speaking the impact is similarly powerful, because, directly or indirectly, all the places in that area of 3 000 of mining km are affected and the adjacent areas which providing labour for these activities and where there were important thermo-electric power stations. Some cities are relevant examples for this case: Turceni, Craiova, Rovinari, Govora, Halânga, where the thermo-electric power stations work under the installed capacity, because of the important diminution of the electric power consumption at the national level and the functioning of the atomic electric power station in Cernavodă, which has become an important competitor.

Labour, Commuting and the Massive Redundancy of Personnel and its Impact

The immediate result of mining restructuring was the redundancy of over 20 000 people, according to decrees no. 22/1997 and 9/1.998.

The labour within industrial units was, in 1991, of over 40 000 people, meaning 62% of total number of employees of all the regional industrial units. The economic restructuring after 1989 resulted into decreased number of employees' by 22 000 people at the regional level and over 16 000 inside the whle industry. The economic changes after 1991 determined important changes in the total number of employees; at the regional level there is a diminution of 18%, but at the rural level a diminution of 32%, while in the urban level there is a diminution of 3%. This great diminution at the rural level is caused almost entirely by the loss of the employees from the agriculture sector as a result of agricultural co-operative farms disappearance and mechanic process units.

For the redundant personnel some compensations were offered (according to Decrees no. 9 and 22 in 1997) of 274.3 thousand million RON (about 34.2 millions USD), and 18.3 thousand million RON (2.3 millions USD) from the company funds. The company does not have internal programmes of professional re-conversion, the personnel having professions and specializations only according to the company` profile. As far as the redundant personnel re-conversion goes this is a problem to be solved by other institutions and specialized units.

As far as the changes in the extractive industry employees' level, they represented 73% of the industrial sector employees, the highest percentages being registered in: Mătăsari, Fărcăşeşti, Drăgoteşti and Bâlteni. The existance of the two thermoelectric power stations, Turceni and Rovinari, translates into high percentage of the population occupied in the electric and thermo energy industry: 91% and respectively 31%.

Thus the progression of the number of employees from the extractive industry between 1991 and 2005, one can observe that it has undertaken a diminution for the entire region for all the sites in the mining areas. If in 1991 the number of workers was about 39 083 people, in 1998 it was 23 889 and in 2005 17 151 people. Analyzing the most affected areas there are high diminutions in the following locations: Motru, Cătunele, Fărcășești, Drăgotești and Urdari, with a diminution of over 50% (in the last two places this diminution is about 90%). This decrease of the number of employees from the extractive industry can be explained by the restructuring process which affected this industry after 1990 which meant that the activity will be made more profitable for the majority of the mines and pits, some of them being closed (Fig. 2).



Fig. 2. The average number wages evolution in the extractive industry

All these changes at the workers level in the extractive industry are related to the unemployment rate at the county level.

The unemployment rate in Gorj County was, in 2007, 5, 7%, a little higher than the one at the South-East Region level, meaning of 5, 5%, and the national average of 5, 1%. In 2005-2007 the unemployment rate decreased by 6%, closed to the national average, but with significant differences at the urban (4, 4%) and rural levels, where that value was about 7, 4%.

Territorial distribution at the county level shows some important differences at the rural areas level in the south and east areas of the county and the central-north region and the proximity of Târgu-Jiu municipality. The highest values are registered in Padeş and the proximity of Motru-Rovinari coalbasins. Also the unemployment rate registers high values, above the regional and national level among young and female population.

There are two important stages in the evolution of the unemployment comparative to the national tendency for 1990-2007 period of time in Gorj County: the first one is before 1997, when the rate was under the national average (it oscillated between 2-4%), and the second one is after 1997, when unemployment rate overpasses the national average (aspect related to mining industry restructuring), this situation being registered also nowadays (Fig. 3).



Fig. 3. Unemployment rate

Compared to the total surface of the region, of over 1 392 km², the farmland covers almost 42%. The main malfunction is given by the high percentage of inefficient land and the areas affected by the mining activities and the fact that it has not has been used in the agricultural circuit after technological tasks release. These areas are permanently in hauling time according to lignite mining development, but if these areas are not reintegrated in the agricultural circuit (Law 18/1991, art. 80-82), there is a risk of permanent diminution of agricultural use.

There are two types of farming activities in the region, a primary one, represented by the vegetable and animal production, and the second one of industrial processing of one part related to the primary activity. Mining development in the region led to the fact, that many areas were destroyed, but at the same time, mining activity diminution rendered these areas to agricultural use. In time, those surfaces were proved to be inefficient, with a low productivity, because of the unproductive soil and are also degraded and affected by erosion process. There are small financial possibilities of the households too, especially in the rural areas which cannot permit the mechanic process and the low fertilization level, all these elements contributing to a subsistent agriculture practice.

The extension of the economic activity, its type, forms together a correlating factor to the degree of territorial population. If, in time, the main activities corresponded to an ecological potential, in the last four decades some extremely violent mutations were discovered, being caused especially by the mining workings.

Due to this branch development (in 1969 mining workings aggravated, initially in Rovinari region) ¹/₄ of the surface is affected directly and indirectly about 80% by it. In the maps concerning the mining areas, some years groups are reflected (since it has appeared), being very obvious the fact that the pressure exerted by these mining workings was made from west to north towards south and the inter-large rivers between them. Starting with the first mining workings until the year 2006, the coal basin Motru-Jilt-Rovinari, surfaces, for different specific activities, of 12.499 ha, of which 10.457 ha were agricultural surfaces and 199 ha forestry surfaces, were taken out of use (Fig. 4).

The identity loss of rural areas may be estimated also through the private households which were expropriated as a result of afferent husing and hydro technical workings. Therefore, for Rovinari basin, 2 224 households were disposed, for Jilţ basin 752 and for Motru basin 752 households. These types of interferences and the sacred value of the cemeteries (17) and the spiritual and cultural value of the churches (15) which were destroyed have a great importance or a real proportion on unselective pressure in front of some temporary benefices.



Fig. 4. Engaged areas by mining activity

Conclusions

Given the fact that relatively unstable structure and dimension of the geographical space affected by the most significant human interference in the national territory, the impact of reduced economic activities is extremely important. This is noticeable at regional and local levels, and also national one. The most interesting aspect is the massive number redundant people which created social tensions and emphasized the poverty level of an area with low agricultural valences. The negative dynamics of the employers, especially after 1997, has created great difficulties to local communities, which are obliged to reintegrate a specialized labour in traditional activities, less performing.

Gentrification of the economic activities from within the analyzed area, an important role was held by studies elaborated concerning the viability of creating some small and medium enterprises, specialized in related or complementary mining services (workings). These could focus on specific activities of environment reconstruction or the materialized recovery of some local resources. Therefore, among possible directions to develop the small and medium enterprises the following can be identified:

- Reconstruction and reintegration of the lands out of the mining circuit in the productive one, as a result of lignite resources exhausting;
- The use of the waters from sanitation processes of some mining perimeters, in local networks of irrigation, washing stations and even water supplying;
- Land fertilization by powder coal use;
- Quartz sands use located in lignite layers of Huşnicioara pits;
- Coal outlet for population, first sorted, put into containers or rapped up;
- Initiating some industrial or crafty activities within some mining enclosures where there is not any working activity (different activities can be organized, as those for obtaining safety equipment or construction materials, using raw materials from housing activities, obtaining some materials for the mining working in that area – ventilation tubes, wire nets, cross pieces, materials recover – metals, used strip (strap), mushrooms cultures management in some underground galleries; organizing activities for polluting factors limitation (dust, gas emanation, noise, residual waters and so on).

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