

**THE ECONOMIC, SOCIAL, DEMOGRAPHIC AND
ENVIRONMENTAL EFFECTS OF THE ECONOMIC
REORGANIZATION WITHIN PETROSANI DEPRESSION**

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Abstract. The paper synthesizes the multiple consequences induced by the restructuring process of mining industry within Petroșani Depression. The analysed area is an underdeveloped one because of its mono-industrial character resulting from the importance of the mining sector for the economy of the area. After 1990, coal exploitation was unprofitable and it was necessary to apply the industrial restructuring process that has left its marks not only on the economic sector (low income level, some mines were closed), but also socially (unemployment, family abandonment), environmentally (land degradation, land use change, floods, and pollution), demographically (decrease of birth rate, regression of evolution number of the population, decrease of active population rate, regressive migration). Even nowadays there is a dependence of the labour force on the mining industry (40 percent of the active population work in mining industry). Although it was necessary, the process has not been applied properly, causing the economic decline of the Jiu Valley. The environmental impact can only be diminished by ecological reconstruction and by implementing new production technologies. In this new stage of development, so called postindustrial, when the importance of industrial activity is decreasing, the settlements within Petroșani Depression must be considered beyond their industrial dimension, as cultural centres which have varied tourist resources that can attract many types of visitors.

Key words: economic restructuring, underdeveloped area, unemployment, economic structure of population, active population, population by age group and sex, social, economic, demographical and environmental impact.

Economically, Petroșani Depression is crossing a difficult period of transition being an underdeveloped area because of the negative effects induced by policy irrationally promoted by the communist regime before 1989. The decline of mining industry in the Jiu Valley hard coal basin started in the past half decade and has deepened since the later part of 1990. The economic restructuring process occurs through all our country and the most affected areas are those where industrial activities prevail. This process was due to a faulty management policy at the microeconomic level, high production costs, diminishing resources and a low level of productivity. These causes have generated consequences not only on the economic sector (unfair competition and lack of technical assistance for starting a businesses or the implementation of development projects, the low income level which influences the population's purchasing power), but also socially

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(unemployment), environmentally (the industrial landscape: mines, waste rock dumps) or in terms of demographics (decrease of birth rate). Industrial activity within Petrosani coal basin, as well as in Hunedoara County, still represents the main economic branch in the local and regional economy; however, compared with the previous period, the level of the industrial production and the number of employees in the mining sector have decreased considerably because it was taken the decision of restructuring nearly 16,000 miners since 1997. In the industrial sector, the highest share of employees is still working in quarries (40 percent in 2001), with a low level comparatively with 1998 (49 percent).

Inadequate capitalization of coal resources in the communist period (by full capitalization of all identified mining perimeters, based on the concept of internal support in the provision of mineral resources, in order to reduce imports materialized of achieving a high national coal production of 100,000,000 tons/year) led in time to an unprofitable coal exploitation. In the last 30 years, there have not been made investments in new coal extraction technology, so that the moral fraying of equipment also puts an imprint on the low productivity. The coal exploitation is done at very high costs also because of the complex geological conditions (the great depth of the 23 coal layers).

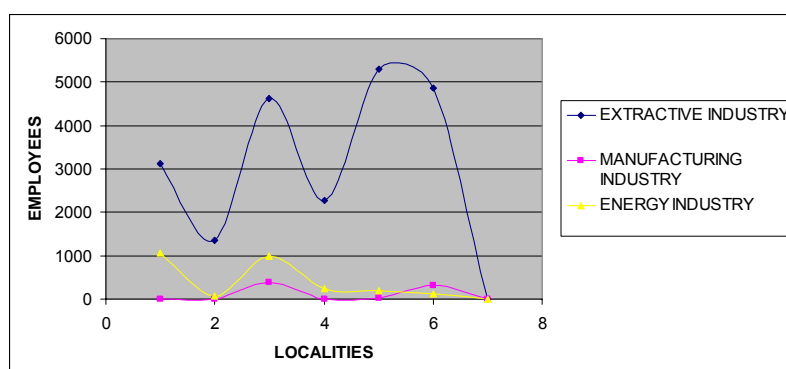


Fig. no 1. Number of employees in industry sector

The main social problem in the Jiu Valley is the increase of the unemployment rate. Most of the dismissed persons are skilled and unskilled workers from the mining sector.

Social effects gain a greater dimension if we think that the dismissed people took care of at least 2-3 other persons. Other categories of dismissed people, like those who have a higher or medium level of education, were less affected by the restructuring process.

Neither the local nor the national authorities has implemented an alternative development strategy to absorb the large number of unemployed from the mining industry.

Although the number of the unemployed decreased in 2002, it remains higher than the national average. That decision had a strong impact on local population who still considers mining as the main source of income. Payments in

advance were not the best solution because the dismissed persons did not have entrepreneurial knowledge to enable them to capitalize money in private initiatives. National authorities were provided for the capitalization of money obtained as a support of small business, but there have not been designated qualified people that could instruct them how to invest their money.²

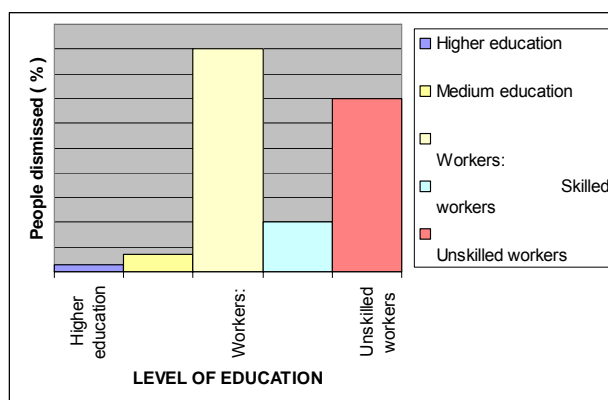


Fig. no. 2. Staff dismissed by educational level and profession

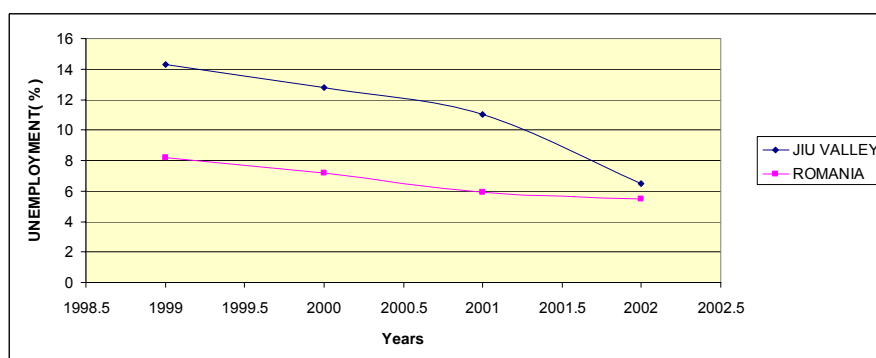


Fig. no. 3. Unemployment rate within Petroșani Depression

A very small percentage of the dismissed miners made investments in the commercial domain, but most of them spent their money irrationally. In this period, there is a trend of investments in the construction of small dimension tourist infrastructure (guesthouses), especially made by the people who leave the towns and villages of the depression to work abroad.

Other social effects are: the increased number of cases of domestic violence, of divorces, of crime against the person. We also mention that the cases of family abandonment have doubled in the last years.

The economic situation of Petroșani Depression generated an important

² Braghină, C. *Destructurarea industrială în Depresiunea Petroșani și efectele sale*, Comunicări de Geografie, volumul 8; București; p.5;

consequence in terms of demographics that was reflected by a change in the values of the main demographic indicators.

The evolution of the population's number has registered a regression due to the action of several factors: a part of allochthonous dismissed population returned to their areas of origin (regressive migration) or another segment of the population affected by mining preferred to work abroad in order to earn a higher salary.

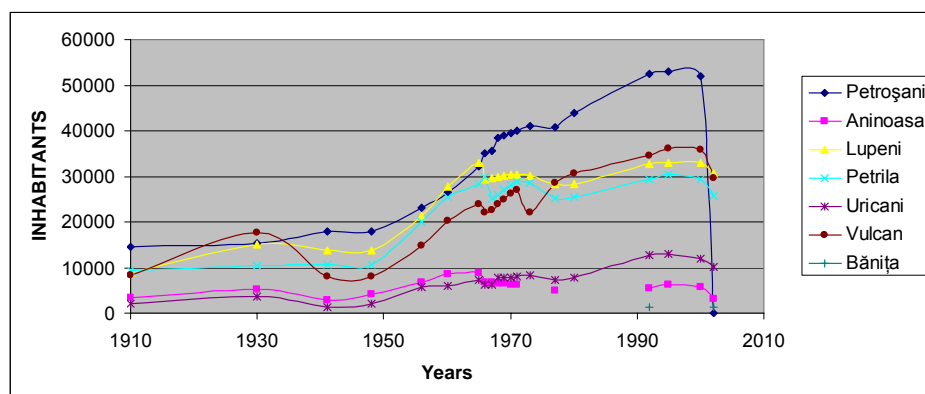


Fig. no. 4. Evolution of population in Petroșani Depression

As it can be seen from chart no. 4, the population's growth in the Jiu Valley was much higher than the national average between 1977 and 1992; there was a significant increase after 1977, determined by the measures meant to increase the mining personnel during the communist period (by requiring certain categories of people to become miners), and on the other hand the labor force was attracted by mining in terms of remuneration. The Jiu Valley became an important destination of migratory flows from all historical provinces of our country. After 1992, the population's number decreased, more slowly than nationally, because a few years after 1990 the miners' wages remained high. Nowadays, it can be observed a reverse phenomenon: a part of the population leave the depression because of the difficulty of finding a job (5 percent of the allochthonous population goes to the areas of origin, the share of people who are migrating abroad for working is higher and also very difficult to quantify).

Another cause of population decrease is due to psychological factor: the unfavorable perception of economic situation makes the population prefer family sizes smaller. At the same time, women's high level of education of causes birth of the first child to be postponed for the median age.

In these circumstances, it can be seen an important reduction of the general density and for each settlement between 1 inh./sq. km (Aninoasa) and over 50 inh./sq. km (Vulcan). These lower values are correlated with the evolution of the population and the negative flow migration and also with the economic factors (the closure of the Aninoasa mine in 2006 may be an explanation for the very low density of the city population – Fig. no. 5).

With the average density of population in 2002 (151 inh./sq. km), Petroșani

Depression exceeds the national average (91 inh./sq. km), even if during the period 1992-2002 the area has lost an average of 11 inh./sq. km, as the effect of new economic policies. Large variations of the density values from one city to another can be also explained by much larger administrative areas at which population is reported.³

The highest density values in the depression are registered in Petrosani, which registered a lower decline of density values because it exerts a strong attraction for the population being the most important economic and cultural city of the Jiu Valley. Other high values of population density are in the towns of Lupeni and Vulcan.

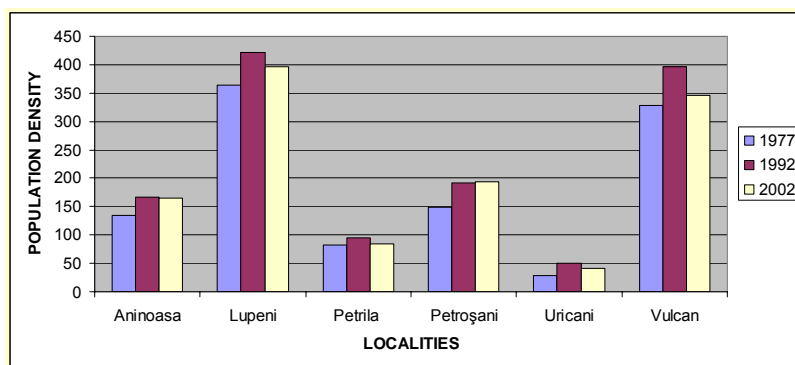


Fig. no. 5. Population density in Petroșani Depression

Extractive industry in Petroșani Depression drew an important segment of the male population who answered to the offer of employment in mining, the share of men being higher than that of the female population by 1 percent and slightly different from the national average. Nowadays, it is easily distinguished: in 1992 when, in all towns, the male population still predominated, in 2002 the share of the male population decrease: Aninoasa (48.6 percent) and Uricani (49.6 percent), excluding the town of Vulcan (increases from 50.9 percent in 1992 to 55 percent in 2002). Lower values are directly related to the unemployment of an important number of miners and to the fact that a part of male labor force left for work abroad.

Another important consequence of the reorganization of the economy in the Jiu Valley is the structure of the large age groups of population, an important demographic indicator that can reflect the level of active population.

Analyzing the age pyramids, there are certain imbalances in the development of the population in some categories of age. All pyramids have a narrow base, which means that the potential replacement of the population by birth is significantly reduced and the dependency rate will increase. The generations, which have fewer children, will have to support the mature trader population that is more numerous.

It can also be seen that 2 generations have an important quota: the age group of 30-34 years (as a result of “pro-birth policy” promoted by the communist

³ M. Căndea, Simon Tamara, Simion, G., *Zone defavorizate în România: concepte, caracteristici, studii de caz, premise de dezvoltare*, p. 140-141)

period) and the age group of 10-14 years (the period immediately following the events of 1989, which were a relative welfare for miners), share of population up to 35 years representing over 80 percent. There is the problem of raising the possibility of finding a job by this segment of young population.

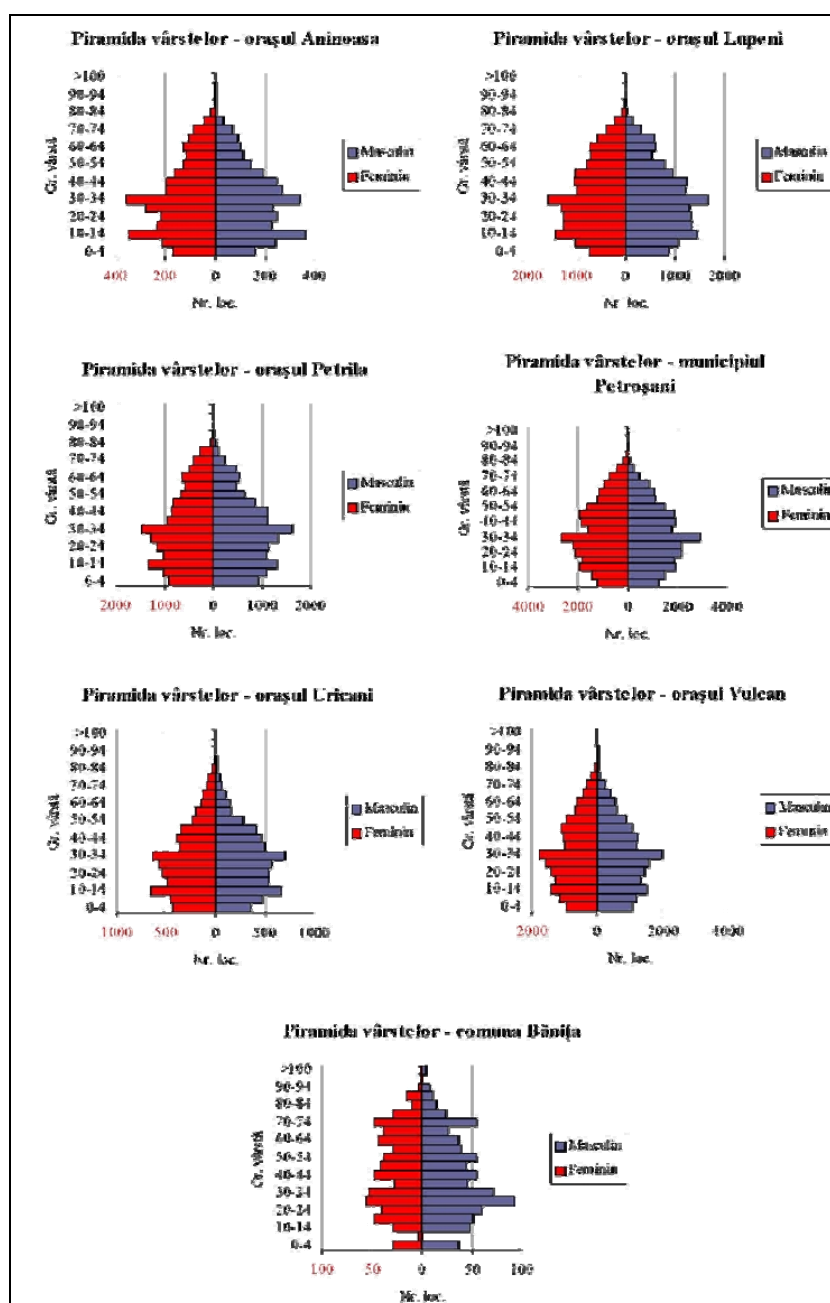


Fig. no 6. The age pyramids

Comparing the two age structures (the young and adult) it is primarily observed a dramatic decline of the population between 0 and 4 years old and a slight increase of the aged population (11.4 percent) in the last period of analysis. This leads to a considerable reduction of active people and the dependency rate became higher.

A particular case is Bănița settlement, which presents a rural demographics type characterized by an unbalanced distribution of the population by age group, with an important population over 65 years old and a less share of the female population. This situation is correlated with the departure of important young population to urban centers, attracted by the working or cultural activities (Petrosani town is an university center, which has enriched in the last years the curricular field adding to the mining profile other new fields of study: economic sciences, social sciences). Another very important demographic indicator for local economy is the rate of active population, which is about 90,000 persons. At the same time, the rate of employment is low as a result of the critical economic situation, which has not been breached.

After 1992, the share of people who work in the tertiary sector has significantly increased reflecting an upsetting situation from the previous period. It is expected that this share will grow in the next period as a result of opening up economic activities mainly belonging to the tertiary sector. This trend reflects a natural stage in the case of developed countries where industry was a traditional branch and its development generated the industrial revolution. In the last period, the so called postindustrial, in these countries, industry no longer represents the main economic branch due to the reduction of mineral resources or to the need of eliminating environmental problems generated by industry. They opted for branches of the tertiary sector because it represents the best solution from the economic and ecological points of view. Beside socio-economic and demographical changes, the studied region is facing a set of environmental changes such as: land degradation, land use change, floods and pollution. In the Jiu Valley, the main causes of land degradation are the present-day geomorphologic processes (mass movements, sheet erosion and gully erosion) and the human activities, which induced changes of the relief forms (e.g. waste dumps, embankments, cuttings, wells, dams, canals, lakes in between dumps and marshy areas).⁴

Deforestation, overgrazing, increase of built up areas and development of mining activities are the main causes of land use change in the Jiu Valley. Their effects were felt especially after 1850, when the mining activities began. At present, more than a half (55 percent) from the studied area is covered by forests, while 38.4 percent is covered by pastures and hayfields. Urbanized areas (4 percent) are clustered along the main valleys, but the urban use is restricted by the large extension of unsafe sites, generated by underground mining.

⁴Costache Andra, Tanisvan D., Murătoareanu G., Hodorogia Anamaria, Micu Dana, *Human Vulnerability to Environmental Change in the Mining Communities of Romanian Carpathians. Case study: Jiu Valley*, p.3-7;



Fig no. 7. Industrial landscape – Lonea waste dump

Mining activities affected in one way or another about 5 percent of the Petrosani Depression (Fodor and Baican 2001), through induced subsidence, waste dumps or production sites. One of the most important consequences resulted from the development of mining industry in the Jiu Valley was the pollution of the water bodies. The main sources of pollution were coal extraction and coal processing activities, as well as the local water administration company (RAAVJ). Presently, the Jiu Valley is less polluted because of the reduction of mining activity.

The perspective of the development strategy planning of the Petroșani Depression prefigures the opening to the tertiary sector justified by the need of a capitalization of other economic domains, such as tourism, in the near future. Implementation of tourism facilities in the Jiu Valley will contribute to the development of other economic branches that will sustain progress of tourist activity.

Although the association of tourism across the Jiu Valley at first sight seems unthinkable, because of its perception as an area of hard coal exploitation that could not present a tourist importance, it has various tourist resources, which justify actions of tourism arrangement. Analyzing the tourist resources from a historical perspective, it may be associated with tourist attractions dating from various periods of time: Dacian period (Bănița fortress), medieval (tower defense from Crivadia), communist period (Mining Museum); the present period allowed highlighting new tourist targets of a great importance for the culture and ethnography of the area, which are the result of the desire of local people who wanted to make Petroșani Depression known for its beautiful and interesting characteristics; in this way, it can be removed the only bad perception as underdeveloped area.

The cultural objectives from the present period are: mini ethnographic museum located in the Cultural Student House (Petroșani), a collection of ethnographic objects and old clothes belonging to local population (called *momârlani*) in the village Iscroni-Aninoasa, Ethnographic Museum from Uricani and two ethnographic museums, both in the course of approval by the Ministry of Tourism, decorated in traditional households of two villages of the depression: Slătinoara and Jieț.

CONCLUSIONS

The process of mining restructuring in the Jiu Valley was the consequences of unprofitable coal exploitation during the communist regime. The restructuring process has affected directly the material and social status of the unemployed people and of their family. The mining industry in the Jiu Valley has also exerted a high pressure on the landscape of the depression, inducing environmental changes (land degradation and land use change).

Eight years after Petrosani Depression was declared a disadvantaged area, there were applied no economic measures meant to attract investments in the area because of the local and national authorities lack of interest to improve the economic development of the analysed area.

Eradicating or reducing the mining industry has to be followed by the development strategy of this space, which has many elements to offer not only hard coal resources.

Given the trends recorded in the evolution of towns, their role in the growth of regions, diversification of their functions and of their functional zones, environmental impact, it becomes ever more necessary to control their development. There can also be added the relationships that exist in the social and economic life of the people who do not enroll mostly in a logic scheme, but which significantly contribute to the modification of the urban area, the development of the town, often having unfavorable consequences on the environment and also on the quality of life.

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