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Social and Economic Effects of Mining Industry Restructuring in Romania - Case Studies

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***Abstract*—**As in other countries from Central and Eastern Europe, the economic restructuring occurred in the last decade of the twentieth century affected the mining industry in Romania, an oversize and heavily subsidized sector before 1989. After more than a decade since the beginning of mining restructuring, an evaluation of current social implications of the process it is required, together with an efficiency analysis of the adaptation mechanisms developed at governmental level. This article aims to provide an insight into these issues through case studies conducted in the most important coal basin of Romania, Petroşani Depression.

***Keywords*—**case studies, government programs, mining restructuring, social effects.

I. Introduction

EXTRACTIVE industry development strategy promoted in Romania before 1989 was based on the concept of auto-sustaining the economy with mineral resources, in order to reduce imports. The result was an oversized mining sector, in which more than 1 million people were directly and indirectly employed [12].

Since 1990, an effort was necessary for the country's budget to support mining sector subsidies, its low productivity and economic efficiency. The coal mines and nonferrous ores mines, the most numerous, were becoming more vulnerable in terms of economic efficiency. Financial losses occurred between 1990-1996 were found to have underlying structural causes, and mining and processing techniques have made minimal the chances to revitalize the mining industry. In this context, it became obvious the need for restructuring the mining sector, inefficient and oversized as labor force and production capacity.

The restructuring of the extractive industry began in 1997 and resulted in reducing subsidies and personnel, changes in the evolution of production and productivity, privatization of mining companies, but also in the institutional reorganization of the extractive sector.

Among these directions, the most serious social effects have been associated with the reduction of the number of employees in the mining sector. In total, during the years 1997-1999, approximately 97,000 people were made redundant, with significant differences among the mining companies and mining sub-branches. Thus, in 1996-1999, the number of employees decreased by 52% in coal extraction and preparation, with 48% in mining and non-ferrous ores, while staff reductions in hydrocarbons extraction and related services were only 16%. Downsizing of mining continued after 2000 (Fig. 1).

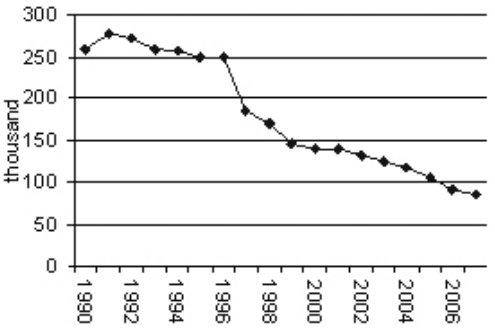


Fig. 1 Evolution of the number of employees in the mining industry (1990-2006) [16]

Although the number of people redundant in the extractive industry was much smaller than in manufacturing (i.e. 131,000 persons, compared to 1.8 million people made redundant in manufacturing in the last decade of the 20th century), the social and economic impact of mining restructuring was significant for several reasons, including:

- Concentration of a massive loss of employment in a limited time such as: over 71,000 employees were fired in just three months, August-October 1997;
- Prevalence of passive social protection measures, which have not stimulated the redeployment of redundant workers and their actions for finding new jobs;
- Lack of consistency between programs of redeployment and the job offer;
- Absence of coherent development strategies aimed to generate new economic alternatives and to mitigate the social impact.

The social and economic implications of mining restructuring were exacerbated by other causes, such as: mono-professional specialization and low educational level of labor force (even after the first stages of restructuring, in

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2004, the employees who had only secondary education owned shares of 30% - 70% in the mining companies); mentality of "the state must protect us", the result of privileged status that the mine workers had before the beginning of mine closure; the dependency of local economies on mining sector; deficiencies of the local infrastructure development.

In some cases, these factors were added to the lack of economic alternatives, lack of attractiveness of the local business environment and natural potential deficit, which provided limited opportunities for the economic revitalization of the mining regions. Under these conditions, human communities in mining regions have been deeply affected by the restructuring of mining industry and their ability to develop mechanisms response and adaptation was minimal.

II. Social And Economic Effects Of Mining Restructuring In Romania

The main social effects of restructuring the mining industry were:

- A sudden increase in unemployment and vacancy rate - in 1998-1999, after the beginning of the process of mine closures, unemployment in the affected regions generally exceeded 20-30%, e.g.: Jiu Valley - 27%, Albeni - 37%, Altân-Tepe - 46%, Rusca Montană - 53%, Borşa-Vişeu - 58%. Thereafter, the values fell, approaching the national average, as a result of investments, of the tax reduction incentives, the creation of temporary jobs (e.g. in infrastructure works), but especially due to the elimination of unemployed people in official statistics, with the passage of time;
- The reduction of income level, quality of life degradation and chronic poverty;
- An increasing social and family instability - sociological studies have shown that restructuring of mining industry, particularly the onset of this process, were characterized by high values of crime rate and of divorce rate, by an increase in the number of labor disputes and even the increased incidence of extreme actions such as suicide [4], [6].

The social implications of the process proved to be extremely difficult to attenuate in a context characterized by:

- Decline of the associated economic activities from the tertiary sector, and an increased specialization in mining [8];
- Difficulties in development of entrepreneurial incentives, due to "inertia mentality" and lack of financial resources [5];
- Lack of alternatives for development – activities such as agriculture, tourism and wood processing, often mentioned as alternative economic activities for the mining regions affected by restructuring, had limited development conditions and could not induce growth in the local economic environment.

The response mechanisms developed to mitigate the social and economic impacts of mining restructuring had limited effectiveness and viability, whether it was the reaction of the population (e.g. return migration, migration for work abroad, a return to traditional activities - agriculture, wood processing) or programs of the country's authorities.

Among government programs, the highest of expectations were related to the *Disadvantaged areas policy*, applied in the mining regions severely affected by social and economic imbalances. Thus, 26 disadvantaged mining areas were designated between 1998 and 2004, based on specific criteria stipulated in the legislation: unemployment rate of the area was at least three times higher than the national average and local infrastructure was not well developed (Fig. 2). The disadvantaged areas extended on 15,643.5 km^2 (6.5% of Romania's surface) and they had a population of 1,088,703 inhabitants (5.02% of total country population).

Although tax reduction incentives (generally provided for a period of 10 years) and the special programs implemented in disadvantaged areas (business development, investment support and development of agricultural activities in rural areas) were likely to stimulate investment and facilitate the creation of new jobs, their effects have been reduced because of the bureaucratic obstacles, inefficient consultancy services, the difficulties of communication between authorities and investors, corruption, frequent legislative changes and legal contradictions.



Fig. 2 Disadvantaged mining areas designated in 1998-2004

Beyond these general characteristics, during the 14 years since the onset of restructuring the mining industry, the mining regions have evolved in different manners, according to their natural potential, to the demographic characteristics and availability of economic alternatives. One of the most important regions that faced economic restructuring was the Petroşani Depression (also known as the Jiu Valley mining basin). The scale of social consequences of mine closure led us to choose the Petroşani Depression to conduct case studies on the social effects of mining restructuring on the one hand, and the effectiveness of government policies for economic revitalization on the other hand.

III. Case studies in Petroşani Depression

The Petroşani Depression is located in southwestern Romania (in Southern Carpathians), carried on the upper basin of the river Jiu. The regions includes the territory of 7 localities with a population of over 147,000 inhabitants

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(99.1% of whom live in urban areas) and a total area of 1032 km^2, which belongs administratively to Hunedoara County. The immigrants own a large share in the total population (approx. 40%), because of the intensive inter-regional migration of labor force, encouraged by the communist regime. Across region, the share of employment in the mining industry is of 40.8%, highlighting the high dependence of labor force to this economic sector.

The presence of coal resources has been reported in the 18th century and their exploitation began in the mid-nineteenth century; after that, the mining activities became more intense, as an effect of the development of transport infrastructure. During the communist period, due to the opening of new mines and quarries, the coal production increased (more than 9 million tons in the 80s of the 20th century), as well as the number of people employed in mining (more than 34,000 employees). There were also developed various economic activities, associated with mining, and economic sectors aimed to absorb the female workforce, for example, textiles.

The economic policy of the communist regime (which claimed significant investments in mining industry), and the forced urbanization of the Petroşani Depression, suddenly increased the industrial potential of the region, which was over-dimensioned in relation to resources, to the local labor force and to the available infrastructure. Thus, the pastoral economy was replaced with dominant industrial functions. The development of mining, together with the unsustainable urbanization of the region generated the gradual decline of the rural settlements and of traditional activities (agro-pastoral economy and forestry).

In the last decade of the 20th century, due to the high production costs and a drop in domestic consumption of hard coal, the National Hard Coal Company (NHCC, the main employer in the region) has been included in the national restructuring program. The number of employees in the mining sector decreased by approx. 33% between 1996 and 2005, when there were 12,995 employees. The most significant decline was registered in 1997, when 15,899 people were made redundant (40% of employees in 1996) and also in 1998. According to the *National Strategy for Mining Industry for the period 2004-2010*, by the end of 2010 the number of employees of CNH will be reduced to 10,444 and the staff will be fired in January 2011, if those units will not be privatized or they will not be able to operate without subsidies and without financial loss. This statement does not appear in the draft strategy for 2007-2020, in which the estimated number of employees in the coal sector for the years 2011-2012 is of 8500-9000 people.

IV. Social Effects Of Mining Restructuring In The Petroşani Depression

The main consequence of the mines' closure in the area was the change of the structure of active population, by increasing the number of unemployed people. In the Petroşani Depression the number of registered unemployed people increased continuously between the years 1994-1999, reaching a maximum of 16,981 persons as a result of successive waves of layoffs in the period 1997-1999. Subsequently, there has been a steady reduction in the number of unemployed people, something which actually hide the long-term unemployment and the elimination from the official statistics of the people that remain unemployed more than 18 months.

It is useful to compare the number of unemployed people mentioned in the statistics of the County Agency for Employment in 2002 (6,835 persons) with the number of unemployed people registered in the census of that year (11,675 persons), the last value including the unemployed people that were no longer receiving financial support, due to the long lasting unemployment. This is why the unemployment rate (calculated as a share of the unemployed people in the total population aged 18-62 years) decreased in the region from 15.9% in 1997 to approx. 7% currently.

The actual scale of the phenomenon can be emphasized by analyzing data on both paid and unpaid unemployed people (i.e. the unemployed that are no longer receiving the state allowances), which, taken together, represent 21.7% of the active population of the region. In that context, the economic restructuring caused the increase of economic dependency rate in all settlements, with values ranging from 2.09 to over 3-5 inactive and unemployed/employed persons.

Another consequence has been the increase of the poverty rate, especially extreme poverty rate. According to a World Bank study [9] in the Petroşani Depression approx. 28,000 people live below the poverty line, but the average poverty rate (19.43%) is similar to the national average for urban environment (17.63%). The dramatic dimensions of the poverty in the regions are emphasized by the food poverty rate and the rate of severe poverty, with values of 2.35, respectively 1.93 times higher than the national average for all cities. Thus, 6.31% of residents are living on the edge of survival, with revenues that are barely covering their food needs (food poverty); the severe poverty rate (the share of people who can cover their food needs but not the non-food ones) is 10.38%.

The consequences of the mining restructuring were also felt at the level of the social networks and of family interaction. Thus, the beginning of dismissals in the mining sector was associated with a surge in the crime rate (2300 crimes/100000 inhabitants in the last quarter of 1997) and the values of the indicator remained high and after 2000, suggesting a high potential for social instability.

At the national level, the region is perceived as having a high potential for the occurrence of the social conflicts, which are mainly characterizing the relations between people (i.e. employees in mining) and authorities (labor disputes). From this perspective, one can speak of a long history of labor disputes in the Petroşani Depression, most notably those of 1929 and 1977; in the latter, even the former dictator Nicolae Ceauşescu was engaged in resolving of claims. Those precedents have increased the political influence of the

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miners, with outstanding negative implications after 1990. Among these, the social movements known as *mineriade* (i.e. the six miners' violent marches to the capital city – Bucharest, occurred in January, February and June 1990, September 1991, January and February 1999) resulted not only in social unrest but also in political instability (Government Petre Roman's resignation in September 1991 and the suspension of the negotiations on joining the European Union) and they had severely affected the Romania's image abroad. As a consequence of the miners' movement from June 1990, 462 people were injured and 5 deaths occurred; the miners' manifestations in September 1991 also injured hundreds (455), and 4 people lost their lives. Given the magnitude of these events, their violence and their impact on the civilian population, the miners were perceived at national level as brutes and the Petroşani Depression was labeled as a region with high conflict potential (and hence, less attractive to investors).



Fig. 3 Petroşani Depression's main social problems as perceived by residents

A more detailed perspective on the social effects of mining restructuring in the region was obtained using a field survey, conducted in four towns of Petroşani Depression [3]. Findings revealed that a significant percentage of local population (42%) considers unemployment as the main social problem, followed by poverty (27%) and, with much lower weights, criminality, the migration of young people, alcoholism, and corruption (Fig. 3).

According to respondents in the study, the socio-economic changes have been felt at the level of social relations, respondents indicating that the persons affected by layoffs have experienced difficulties within the family and the deterioration of relations with colleagues or friends (90% and 80% of subjects). The effects of redundancies were felt also in the family, the respondents mentioning conflicts between family members, frequent accusation of the fired workers for the difficult situation of their families, increased domestic violence, alcoholism, etc.

V. Economic Rehabilitation And Efficiency Of Government Policy Implemented In The Petroşani Depression

In order to attract investors through a series of tax incentives and to create prerequisites for revitalizing the local economy, the six towns of the Petroşani Depression have been included in the Jiu Valley disadvantaged area in 1998, for a period of 10 years.

The statistical data on economic activity in disadvantaged areas, provided by the Romanian Government, and the results of a field surveys in which managers of local firms have been involved [2] showed that actual effects of the disadvantaged areas policy were much lower than originally estimated for the Jiu Valley.

Although in the Jiu Valley the number of registered investors was one of the highest from the disadvantaged areas, the entrepreneurial initiatives maintained at an average level (2.71 registered investors/1000 inhabitants, while the average for disadvantaged areas was of 2.64 registered investors/1000 inhabitants). The average value of investments (0.03 millions of Euro/economic agent) and the firms' turnover (0.31 millions of Euro/economic agent) were below the disadvantaged zones averages (0.18, respectively 0.46 millions of Euro/economic agent).

The dynamics of entrepreneurial initiatives in the Jiu Valley show a decline within the period 1999-2002, emphasized by a decrease in the number of the new certified investors and of the new working places; the period is also characterized by the decrease of the total value of private investments in the local economy and of the new firms' turnover.

According to the local office of ANDIPRZM (The National Agency for the Development and Implementation of Reconstruction Programs in the Mining Regions), beginning with 2003, the new regulations on facilities in disadvantaged areas have made this statute virtually meaningless for most of the local investors. After January 2007, the EU policy on competition has not allowed the Romanian Government to grant tax incentives for investors in disadvantaged areas.

The predominance of companies with a subscribed capital of up to 10 millions RON (70% of total) is one of the factors that caused their limited effects on local economic environment. On the other hand, the number of employees in the new companies (71% of them had less than 10 employees and 25% were between 10 and 49 employees) did not allow the disadvantaged areas policy to alleviate the imbalances in the labor market by the creation of new jobs.

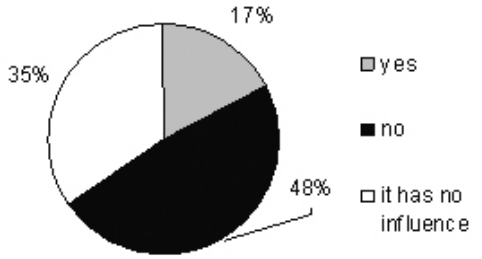


Fig. 4 Responses of the firms' managers to the question: *Is the disadvantaged area status beneficial for your business activity?*

A field survey in which respondents were managers of local firms showed that 48% of them believed that the

disadvantaged area status (as of 2005) had no beneficial effect on their firm's activity (Fig. 4), due to the inability to access the facilities and to the region's increasingly negative image. Also, 40% of them estimated that the designation of the Jiu Valley as a disadvantaged area will not have beneficial effects on the medium to long term, one of the most important reasons being lack of real involvement of the investors.

Besides the fact that the disadvantaged areas policy did not had a positive impact on local economy, some subjects felt that the official declaration of the region as a deprived area was inappropriate, stressing the negative image created by miners.

The low income level (which affects the purchasing power of inhabitants in the region), the lack of jobs and lack of involvement of authorities in the economic revitalization programs were mentioned as being the main problems of local economic environment.

VI. Conclusions

Case studies carried out have made a contribution to the understanding of the complex social implications of mining restructuring in Romania, that have persisted in the studied region, despite the national and international programs implemented over the past 14 years. Meanwhile, the analysis of the most important coal basin of Romania highlighted the significant role of a real involvement of decision makers in the economic rehabilitation of regions affected by restructuring.

So far, the authorities' intervention had a more formal and declarative nature and the success of the proposed action was jeopardized both by ignoring the local context and by the frequent legislative changes.

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