

# REHABILITATION EXPERIENCE OF THE JIU VALLEY – ROMANIA MINING ZONE

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**Abstract:** *The coal basin of the Jiu Valley (JV), placed in the south-western part of Romania, represents a strong town-planning zone, which is, almost exclusively, related to the activity of pit coal output and dressing. The reorganization of this zone become difficult to be accomplished because of coal output decreased below 50% in comparison to 1989 and also because of the mono-industrialization of the zone. Even if the process of rehabilitation of the Jiu Valley started late and develops hard, it is a necessary one. This process has to be accepted and developed in time by following some successive steps that are able to avoid, as much as possible, the start of some major social conflicts.*

*In the present paper are shown, as much is allowed by the restricted space reserved for it, the stages of the zone reorganization process, the economic and social effects of this process and also a strategic zone development program, integrated in a larger one – a regional one.*

## *I. Introduction*

The mining zone called Jiu Valley (JV), also known as Petrosani Intra-mountain Depression, is placed in the south-western part of Romania and represents a complex surface as an asymmetric triangular shaped synclinal which has a 46.5 km length, 9.6 km width in the East and 2 km width in the West and a total area of 137.6 km<sup>2</sup>. It is surrounded by South Carpathians. The absolute altitudes of the relief vary between 535m and 1034.5m. The climate is rough, cool and humid with annual average temperature of 7.5°C and about 716mm multi-annual rainfalls. The hydrographical network is dominated by the two branches – headwaters of Jiu: East Jiu (Transylvanian) and West Jiu (Wallachian) that confluence near to Petrosani town.

The population of the Jiu Valley, initially composed by rural communities of small dimensions, counts today around 165,000 inhabitants that are grouped in urban communities concentrated in 6 towns from which the largest and which is considered a municipal one is Petrosani that has 50,000 inhabitants. Here, there is, for almost 50 years, a University that has the biggest Mining Faculty from Romania.

The subsoil of the Jiu Valley contains the largest pit coal deposit from Romania, with minable reserves estimated at around 1 billions of tons and supposed to be enough for the next 80-110 years if the present extraction rhythm is kept.

The Jiu Valley coal basin has 21 coal beds, but economic importance (with thickness bigger than 1m, larger and more uniform occurrence area) have only 13 beds, but the third one represents around 48% from the pit coal reserves volume of the whole coal basin.

In time, the whole deposit was extracted through more mining fields, thus in the 80's were 15. Today remained only 10 because during 90's 5 of the mines were closed. Today, in the whole basin, Only 6 beds are not extracted.

The geological-mining conditions of the deposit are difficult: complex tectonic, extracting depths between 300m and 900m, high concentration of ash (35-40%), presence of the methane both in coal beds and in surrounding rocks (more than 15m<sup>3</sup>/day), make these mines being fiery ones and the coal having a pronounced tendency of self-ignition.

At the beginning of 1990, the Jiu Valley could be characterized as a strong urbanized zone, almost exclusively related to the activity of coal output and dressing (more than 60,000 from the inhabitants work directly or indirectly in mining field).

## *II. The reorganization necessity of the mining from the Jiu valley*

Mining industry from Romania strongly developed after The Second World War as a result of the decision of political factors of those times.

In Romania, 1989 was the year of the highest mining production existing in that period, 278 functional mines, where were working 10% from the total of active population.

In the mining basin of the Jiu Valley 12 million tone of energetic pit coal for coke were annually extracted and the employees number of the Jiu Valley Integrated Coal Work (CMVJ – as it was called at that time the administrative structure of the whole mining activity from the area) was of 60,679.

The system planned by state, a closed and inflexible one, inside of which was functioning national economy before 1989, couldn't allow and may be it wasn't wanted a real evaluation of this economy.

Afterwards there were created the condition for a market economy it was observed that not only from the quality point of view but also from the economic point of view the Romanian industry, generally speaking, and extractive industry, in particular, was uncompetitive.

And so, the mining activity from the Jiu Valley could not be an exception.

Thus, the prime costs per whole basin were 13-20 USD/Gcal or 50-77 USD/t while on world market these were somewhere around 9 USD/Gcal, respectively 37-42 USD/t.

Besides, the competition and the non-profitability of many electrical energy-consuming companies severely diminished the demand of pit coal on internal market. Because of the reasons mentioned above the access on the international market was impossible, so the board of the CMVJ,

in order to keep “alive” the extraction industry, had to choose between one of the following decisions:

- to produce the quantity of pit coal demanded by the internal market using the existing personnel, but this option implies an unacceptable increase of prime cost per tone of pit coal that could determine the lost even of the internal market;
- to produce the market demanded quantity of pit coal on the competitive prices, but this option implied an inevitable reduction of personnel.

It was obvious that the second option was the best. But, how can it be done if:

- there was a strong pressure from the trade union, which wanted an increase of the salaries and no employee to become unemployed;
- the investments were almost totally missing ;
- the geological-mining conditions were harder and harder ;
- the technologies and especially the work technique were old;
- the opened and prepared reserves of pit coal, in some mining perimeters, were in course of working-out, existing no financial possibilities to develop them in a superior category;
- it was inherited the shortest weekly working schedule in the world (30 hours/week);
- the higher and higher prime costs (these exceed the selling prices of the pit coal over four times) couldn't be state aided from the budget;
- there was a state control of the coal selling prices (and not only of the coal) because it was believed that in this way, the inflation rate could be slowed down;
- there were auxiliary and connective activities that determine a complex and expensive personnel structure, which was also hard to be administrated.

Furthermore, it was the problem of engaging the miners, especially those from the Jiu Valley, into political games that generated so called “mineriade” (violent miners’ revolts) that brought the opprobrium of a part of country population and even of some politicians at those times. All these, placed in the context of an erroneous economic politic based on populism and incoherence of central decisions, affected the image of Romania, which in these days, is considered among the last countries from Europe regarding the mining reorganization.

### *III. Romanian legislation regarding mining reorganization*

World economic recession, after 1990, strongly affected Romania, which has, as almost all the other countries from the former communist camp, a particular situation: it was passing from a planned economy to a market one. Of course, this had effect upon mining activity.

Romanian needed to solve a problem, which unfortunately wasn't entirely solved even during 2002: to disappear or to be restructured with a view to be efficient. There were many governors that preferred the first choice and they even acted consequently, as it can be observed in legislation until 1997. Fortunately, the trade unions pressure – positive from this point of view – and the impossibility of the state budget to cover the expenses necessary to buy the mineral raw materials from outside the country, changed the state attitude regarding this branch of Romanian economy.

Studying the Romanian legislation regarding economy reorganization and in particular that regarding mining, it can be made the following observations.

Until 1997, the laws, resolutions and government orders wanted to obtain only a “cosmetic” change of mining: the old structures were changed to autonomous administrations and then into national companies that can be managed buy-out; the detachment of auxiliary and appendant activities from these structures and their transformation into state capital concerns; closing/reorganization of some less importance divisions from Pit Coal Autonomous Administration – Jiu Valley.

The effect of these decisions was: an insignificant decrease of employees (it was not a real one – retirement and employees transfer to those concerns); economic ratios (extract net production, output per man-shift, prime cost and production costs) decreased; in conclusion the effect was not the wanted one.

After 1997 the legislation focused, especially, on the reorganization through dismissing the employees from all economy fields, but there were issued orders regarding only the mining branch and that of geological exploitation. In that period appeared the conception of “mass dismissing” with compensatory payments for the dismissed personnel. These dismissing were made in more stages, with different stipulations, that caused inequities and a significant decrease of employees' professional quality. Thus, during the first stage, the dismissed employees from all the branches of Romanian economy got 6, 9 or even 12 economy minimum wages, depending on their length of service, after that it was issued an order, just for the mining branch, which stipulated the fact that the dismissed employees from this branch will get 12, 15 or 20 economy minimum wages that could be given at one instalment. After that a new order made some correction to the previous one but not with positive effects.

However, it is mentioned that the legislation applied after 1997 contained “active measures against unemployment” (professional orientation, setting up consultant and business development centres, enterprising and professional training, financial support to create new jobs, etc.) as well as “reorganisation programmes” (ensemble of organisational, technological, management and financial measures meant to decrease and stop the losses and the back payments through state).

To offer facilities for the investors with a view to create alternative jobs, it was issued an order according to which Jiu Valley was declared “under-privileged zone”. The main support offered to the investors in these underprivileged zones the financial facilities: profits tax relief, relief/refund of customs duties, value-added tax relief (VAT) and so on for a certain period of time.

A deed normative, which preceded the reorganisation program, at that moment, but in time it proved to be disastrous, stipulated the retirement conditions for age limit and length of service of the mining employees to 45 years old for all those who have 20 years length of service in underground conditions.

#### *IV. The effects of legislation upon mining activity from Jiu valley*

Even if the mining legislation has shortcomings, ambiguities and inconsequence, generated also by the fact that we all Romanians, implicit the decision agents, were submitted to some unprecedented provocations for this generation, the effects of the decisions upon the the Jiu Valley mining basin determined and will determine continuity conditions for pit coal extractive activity because there is a real internal market to sell the mining products of the Company; there are still important reserves of coal pit; there were allocated funds for reorganization of existing infrastructures that was materialized in technological lines for pit coal output and dressing; there was elaborated a strategy with a view to decrease the state-aided and the budgetary allocations.

There was a continuous decrease of the employed personnel of the Company, attaining today a number of employees three times lower than in 1989.

There were changes also in the structure of the employed personnel. Thus, if during 1990, from the total number of employees, 88.9% were workers, 3.1% were deputies, 8.0% administration and services personnel, and today this structure has the following composition: 91.9% workers, 3.0% deputies and 5.1% administration and services personnel. A significant change is the percent of the pitmen and that of the above-ground personnel. In 1990, 49.7% from the employees worked underground and 50.3% above-ground. Today, this proportion is: 67.7% underground and 32.3% above-ground.

With the view to concentrate the production and to have a better management of the subunits activity the reorganization was concentrated upon the number of mining grounds, which was reduced with 33.3%, that of the extraction zone was reduced with 41.6%, the number of the productive departments decrease with 20% that of the investment departments with 27.5% and finally, the auxiliary departments was reduced with 33.2%.

The large number of personnel dismissals between 1996 and 1998 caused big activity problems inside the Company, due to the impossibility the appropriate placement of the employees to the coal faces. The immediate negative effect was the abrupt decline of production. To solve this

problem the employees had to work in gangs, from which two of them were productive ones and the other one is used for technical revision and repairs. Also, some categories of auxiliary personnel were directed to coal faces with “on line” training.

In time these measures proved to be viable because the base economic ratios improved.

If the measures taken for mining industry from Jiu Valley proved to be useful, in being obtained some stability and even efficiency increase, for the rest of the population from this mono-industrialized zone these mining reorganizations had strong negative effects. The companies from the Jiu Valley that focused their activity on repairs and designs of mining equipments, had to reorient also to other products, and the two mining research and design institutes had to reduce their activity. Even the University of Petrosani and especially its Mining Faculty, which has before 1989 over 2500 students at mining specializations, has today only 300.

The other state corporations from this zone (buildings, transports, public foods, services) had suffered also because of the abrupt decrease of the mining activity from this zone.

Analysing the evolution of the incomes obtained by the unemployed and the way that the compensatory payments were used, it results that de incomes are somewhere among 20 and 60 USD/month, lesser than average wage of 120-150USD/month got by an employee, and that money were banked by around 39% from the unemployed, around 34% of these spent them to long time commodities and only 6% from the unemployed started their own business, proves that the idea of these compensatory payments (even in one block) was not a realistic one. All these happened because, on the one hand, there were no alternatives in the area and, on the other hand, because the people didn't have the appropriate education to start their own business. A statistic shows that 68% from the unemployed did not find a place to work, around 6% work occasionally, 6% work on their own account and only 20% have a full time job.

These are the reasons why the rate of unemployment in the Jiu Valley was, at one moment, around four times higher than the medium on the country.

Because in the Jiu Valley a family has medium 4.8 persons and almost 80% from the unemployed were the only persons in the family that had an income, it can be observed a drastic decrease of living standard of the population from this zone.

Unemployment and lower living standard determine other negative effects: zone depopulation, population ageing, increase of the criminality and the number of social conflicts, increase the number of welfare recipients, amplification of corruption, increase the number of children that give up school and illiteracy, worsen live conditions and so on.

But, it has to be mentioned the positive effects derived from the legislative measures.

Besides, there were created premises needed to perpetuate the main activity from this zone – mining – by increasing the technical-economic ratios, as it is presented above, it can be established

another successes: decrease the number of individual and collective work accidents, decrease the number of occupational diseases, modification of the employee mentality regarding their working efficiency, development of the contractor spirit in this zone and of some utilities, increase the educational level by taking part of professional re-qualification programs and so on.

#### *V. The strategy of the future reorganization of the Jiu valley mining zone*

It appears, from what we mentioned above, that it was necessary a new approach for economic and social reorganization of the Jiu Valley, being unjustified the measures taken till now, which, generally, were adopted from other regions.

The future strategy for socio-economic development of the mining basin of the Jiu Valley resulted after there were consulted and asked to participate all the interested agents from the zone, outside of it and even from outside the country (European Community and World Bank).

There were identified, in the first time, the main problems of Jiu Valley: dependence upon coal mining, absence of important extra-mining activities, inadequate state of the infrastructure, environment pollution.

The main objective on which was founded the development strategy of the JV is represented by the ***reorganization of the JV economy, replacing its dependence upon the mining industry, as a result to the new variety of fields, businesses and qualifications that were created.***

Starting to this objective, it was elaborated from JV a 10 years-forecast, which, shortly, included the following:

- a rate of unemployment at least equally to the average for this zone;
- a strong touring branch;
- a cleanest environment;
- a local base of small and medium sized firms from manufacturing, trading and services industry;
- appropriate houses;
- an enterprising community more ambitious.

To achieve this purpose it will be necessary new substantial resources, appropriate programmes and incorporated actions and also a high quality implementation of them.

In the following, without detailing the means used to attain these development strategic objectives of JV (because of space restriction), the most significant of them, without commenting them will be enumerated:

- to transform the towns from JV mining basin into zones favourable to development of private sector;

- to set up a touring branch capable to stimulate the economic increase and a decrease of unemployment;
- to improve the living standards by increase the living fund and that of local public utilities services;
- to increase the quality of environment and infrastructures by public utilities programmes;
- professional training of manpower corresponding to economic demands that are in transition;
- to exploit local resources from the agricultural, forest and piscicultural branches;
- offer to young generation viable alternatives that are able to determine them to continue to live and work in JV;
- to promote a positive image of this zone, to attract investments and to improve the community trust;
- to re-launch the mining activities from JV by: closing the unprofitable mines, modernizing and improving the technology of mines and dressing firms that are still working, continuously improving the technical-economic ratios.

To achieve all these objectives, obviously, considerable financial sources. should exist. Besides those obtained from Romanian state for JV as credits, unsettled loans, subventions for jobs, an important funds source will be that supported by International Financial Institutions. Thus, some of the funds allocated for Romania by the European Community will be used in JV by the following programmes:

1. Programme of economic and social cohesion
2. RICOP Programme (Firms Reorganization and Manpower Conversion)
3. ISPA Programme (Instrument for Structural Politics of Pre-Adherence)
4. SAPARD Programme (Supporting Program of Agriculture and Rural Development)
5. Programmes of financial support focused on small and medium size firms.

As a result of measures implementation contained by the long-term development strategy of JV, it is estimated to be create a total number of extra-mining jobs (on long and short term) between 18,000 and 28,000. Of course, these changes also will determine other significant effects.

The following aspects can be anticipated very precisely, as a perspective for year 2010:

- ❖ The Jiu Valley will still be highly depended, upon mining activity for a significant period of time;
- ❖ The process of mining activity reorganization will be carried on at the same time with the development of some private branches that will be capable to takeover, by transfer, a part of the unemployed from the mining activity.



## VI. Conclusions

The mining resources from this zone and also the geographic conditions had a strong effect upon the socio-economic development of JV, turning it in a mono-industrial zone with mining specific.

The reorganization of mining activity, beginning especially after 1997 and till now, influenced significantly the social and economic development of this zone, the impact being observed both at social level and at level of connected economic activities from the area.

The alternatives offered to the unemployed personnel, respectively to the other categories of unemployed people and graduates, were reduced and caused an abrupt decrease of living standards in this zone.

All these determined, as being necessary, a new approach of economic and social rehabilitation specific for JV, being insufficient to borrow the solutions adopted by other regions.

Thus, a strategic development programme is necessary because without such a programme it is impossible to engage financial resources that are so needed to obtain an economic increase. The main objective that it has to be in mind during the elaboration of new development strategy for Jiu Valley is the ***reorganization of JV economy, replacing its dependence upon the mining industry, as a result to the new variety of fields, businesses and qualifications that were created.***

The specific proposals for social and economic rehabilitation of JV are considered as being means of achieving the strategic objectives that offers the general background for development strategy of JV. These proposals were presented in this paper.

Short-term measures of the action plan, necessary to achieve the strategic objectives, will consist in finding solutions for urgent social and economic necessities of the people affected by the mining closing, offering short-term jobs, creating new business and opportunities for professional training. These will be connected with the regeneration actions made by the local community.

On longer-term, the results of these actions will be new long-term jobs, a consolidated and growing economy, improving the quality of environment and infrastructures, all these being enjoyed by the local community, business and tourists of the Jiu Valley area.

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