

THE ROLE OF COAL MINING IN THE SOCIO-ECONOMIC EVOLUTION OF JIU VALLEY

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Abstract:

The paper, starting from the conviction and belief that local, regional and national decision-makers will not abandon this wonderful mountain area and will have the wisdom to maintain the country's energy security and the use of solid fossil fuels to produce electricity and thermal engineering, proposed to carry out a detailed analysis of the contribution/role that mining in the Jiu Valley might have in developing the sustainable future of this region.

Key words: mining, viable, mining role, socio-economic development, mining

1. Introduction

Jiu Valley is the only mining basin in Romania where a coal deposit is currently exploited and has important balance sheets that can meet the requirements of the beneficiaries (CET Paroseni and CET Mintia) over a period of several decades. In the 170 years of exploitation of the coal, the Jiu Valley experienced an upward trend until 1990, when the structural changes in the Romanian economy generated collective redundancies / redundancies, reorganizations/restrictions of activity, within the units mining and the closure of mines without viability prospects. All of these have led to a sharp economic downturn in the region, becoming a highly publicized issue both locally and regionally.

At present, the mining zone of the Jiu Valley has a preparation plant and four mines, considered viable, but also with an uncertain future. The coal production delivered by these mines barely reaches 1.3 million tons per year. The number of employees at the Mining Division Branch (SDM) within the Hunedoara Energy Complex is under 5,000, and the total population of Jiu Valley after the 2011 census is 120,734 inhabitants.

2. The evolution of mining in Jiu Valley before 1989

Though known from ancient times as the burning black stone, the coal here will have the most important role in the rapid development of the region after 1848 when the first underground activities for coal exploitation start at Vulcan and then at Petroșani West and Petrila. In 1873, the mining operations of Lonea II and Lonea III took place, in 1890 the exploitation of the town of Aninoasa was opened, and in 1897 the separation from the Dâlja mine was built. Until the First World War, the degree of mechanization in the mines in the Jiu Valley was almost inexistent.

Noteworthy would be the introduction of pneumatic drills when digging wells (1908) and gasoline safety lamps (1909).

The evolution of coal extraction in this area has made possible a similar development from an urban point of view. Thus, the small hamlets and communes (Uricani, Aninoasa, Petrila, Vulcan, Lupeni, Uricani, Petrosani) became towns and later, some of them having municipal facilities that allow a decent living for the inhabitants.

Prior to the First World War mines and localities were at a level that allowed the attraction of a number of specialists in different fields and with different levels of training in many European countries, as well as in Romania's mining basins.

In the interwar period, the first anti-gritting machines are introduced in the mines of the Jiu Valley and the largest in Europe and the second largest preparation in the world (1927), with a capacity of 270 t/h, is built a briquettes factory (1932). And for the first time applied the method of metallic support fronts (1936) and found the resources and solutions to overcome the difficulties caused by the Great World Economic Crisis in 1929-1933, even if measures were sometimes taken with a painful social impact, such as the closure of the Vulcan and Dâlja mines.

After the Second World War the development strategy of the mining industry was based on the concept of self-sustaining the national economy in providing domestic mineral resources for the purpose of reducing exports. As a result, in Romania, a mining sector has developed more than the potential of the economically viable, economically viable mineral resources available to the country.

With the transition to the state socialist economy for another half a century, the sustained growth of coal production has become a priority objective, when major investment funds were foreseen for mine development but not for urban development. During this period, the development and development of the Jiu Valley mining basin

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were of an extensive character, the economic component of the use of the investment and production funds being secondary. The ease with which some investment funds were granted has made the acquisition of the opportunity to be useless sometimes (Uricani preparation, Demag mechanized complex at Uricani mine, mechanized Polish complex KM-1 at Petrila mine, etc.).

Mining in the Jiu Valley enrolling in the national strategy has seen a continuous development during the period 1945 -1989, which will not be encountered in any other historical period of its existence. During this time, the production of coal is increased by more than four times, the number of employees in the mining sector is increasing, the number of mining perimeters is almost double, and from the technical and technological point of view, the mines in the Jiu Valley know the greatest progress.

3. Mining situation in Jiu Valley after 1989

After 1989, when the situation created forced the state to support the mining sector with a great budget effort, the decline of mining in the Jiu Valley began.

Several key points can be highlighted in the regression, mainly caused by the so-called restructuring programs (especially those between 1997 and 2000): massive layoffs; High spending on severance payments for redundant staff; Dramatic increase in production costs; The drastic decrease of investments by approx. 20 times the value of those before 1989. All this led to a drop in output (by 41%), the number of employees (by 60%), the fluctuation of production costs and, in particular, the total neglect of Upgrading and upgrading of all technological processes in the underground and the surface of a mine.

Table 1 Evolution of the main technical and economic indicators of the mines in the Jiu Valley /6/

Year	The extracted production, th. tone	Personale, environment people	Productivity labor		Production costs, lei/t	The value of investments, mil		The amount of subsidies, mil. USD
			t/post	t/om.an		Budgetary allocations	Own resources	
1989	10722	-	-	-	-	-	-	-
1990	5238,7	43791	0,829	142,2	-	-	-	195,9
1991	4854	46355	0,791	136,0	-	-	-	162,4
1992	4920,8	42255	0,791	134,9	10445,4	195,9	-	92,29
1993	5055,3	41463	0,783	133,4	30382,6	162,4	-	121,41
1994	5457,9	41862	0,816	142,4	97510,9	92,29	-	116,58
1995	5367,7	41862	0,865	164,7	122765,8	121,41	-	100,91
1996	5971,6	40536	0,938	191,9	159187,5	116,58	3,51	106,48
1997	4927,1	34286	0,981	172,9	314567,01	100,91	2	41,68
1998	3961,8	21538	1,242	221,2	633010	106,48	2,55	35,7
1999	3512	18677	1,366	201,4	505529	41,68	1,9	32,6
2000	3701,1	17921	1,398	217,6	1034646	35,7	3,0	28,3
2001	4032,8	17752	1,473	236,6	1197301	32,6	2,4	27,8
2002	3976,7	17150	1,499	244,0	1379841	28,3	0,9	29,7
2003	3308,5	16356	1,282	211,6	1923724	27,8	2,7	41,6
2004	3016,3	14676	1,255	214,0	2204795	29,7	3,7	67,36
2005	2981,7	13244	1,356	232,1	210,29	41,6	3,7	67,7
2006	2587,4	11978	1,292	223,1	236,53	67,36	3,2	101,1
2007	2637,4	11740	1,338	230,6	242,53	67,7	9,9	153,7
2008	2801,6	11533	1,479	242,9	266,67	101,1	11,3	134,6
2009	2168,3	10742	1,237	201,9	355,23	153,7	7,0	89,5
2010	2203,2	9200	1,407	239,5	310,16	134,6	8,3	75,7
2011	2121,5	8459	1,494	250,8	294,11	89,5	3,3	0
2012	1876	7433	1,498	252,4	339,37	75,7	4,3	0
2013	2366,6	6950	1,533	254,0	-	0	-	0
2014	1618,3	4495	1,502	246,0	-	0	-	0
2015	1292	4251	1,293	212,0	-	0	-	0

Thus, after a century of efficiency and half a century of investment that has materialized in an extensive development that has led to the formation of a first-class mining basin, we are witnessing, after less than three decades, a sad conclusion of a mining characterized by inefficiency, shrinking production, risks and uncertainties for those who are operating underground.

After 1990, it is difficult to talk about investments in the Jiu Valley mining in the conditions of lack of a future energy strategy, indiscipline of work and management of Hard Coal Company, along with more general causes such as the emission reduction strategy of carbon dioxide, the lower economic efficiency of coal-based energy, the development of less polluting unconventional energy sources, and the degradation of the social bomb represented by nearly 60,000 employees concentrated in a relatively small area such as the Jiu Valley.

A synthesis of the evolution of the main technical and economic indicators achieved at the mines in the Jiu Valley after 1989 is presented in table no. 1.

4. The role of mining in the social-economic development of Jiu Valley

The role played by mining in the socio-economic evolution of the Jiu Valley can be summarized as follows:

- ❖ The large number of employees (about 60,000) employed in the mining sector (mines and production plants) and in the ones they used (mining equipment repair shop, mining security research station, qualification schools and others), Which at the peak represented more than one third of the population of Jiu Valley (167,456) and of course about. 55% of the active population (108,800) of this area;
- ❖ Social or public tasks that were paid to the mines: the patronage of high schools, general schools, kindergartens and even of the Petrosani Institute of Mines; Participation in the development of irrigation systems; Building a micro-hydro power plant; Construction of household and public works;
- ❖ Solid fuel assurance of the two thermal power plants of CET Paroseni and CET Mintia-Deva to the maximum of their operating capacities, of the thermal power stations of the residential districts of the Jiu Valley localities, of the population working in the mining sector;
- ❖ The contributions of the mining entities to the own revenues of the budgets of the localities.

The contribution to the local budget implementation has been established taking into account the three categories of revenue from which a local budget is constituted, namely: direct taxes and taxes, income tax deductions and state budget levies, as well as donations and sponsorships.

The first two categories represent the revenues of each administrative-territorial unit.

Based on the data obtained from the local councils of the cities and municipalities of Jiu Valley, the contributions of the mining entities belonging to these localities were established as follows: Petrila - 7,13%, Petroșani - 0,81%, Aninoasa - 0%, Vulcan - 3.50%, Lupeni - 1.92%, Urziceni - 2.33%. The average Jiu Valley is 3.06% (table no. 2).

An estimate of this after the closure of the unviable mines (2018) allowed the mining contribution to be determined in the local budgets of the Jiu Valley communities at 1.71%.

The evaluation of these contributions is difficult to achieve, with no statistically significant data, but an approximate calculation, compared to the current situation, can be estimated.

It should also be mentioned that in order to compare the socio-economic situation in the Jiu Valley in the two moments of mining in this area (apogeu-1990 and current-2018) it was considered that the local budget structure is the same, although during the period Communist (and even immediately after 1989) it was made on other criteria.

- *Taxes and assessments*: if from the 10 mining entities (7 mines) taken into account at the level of 2015 they represented on average approx. 2% of the local budgets, then the 21 mining entities (14 mines, 5 preparations, a mining plant), these taxes could be estimated at approx. 4.2% of the entire budget of the Jiu Valley;

- *Receipts from broken quotas*: at the level of 2015 there was an average of approx. 7% of the local budgets from the salary tax receipts of the 5648 employees (4 viable mines and 3 non-viable mines, then from the approximately 60,000 employees in the mining sector (43,791) and related (16,209) these receipts represented approx. 74% of local budgets;

- *The total mining contribution* of the 1990s to the budgets of the Jiu Valley (Table no. 2), considering the tax ratio: breakdowns: total budget = 1:18:25 (as shown in the above data) will represent approx. 76%, an incomparable value (25 times and 44 times) respectively that of 2015 and 2018, respectively.

Table 2. Contribution of mining to the local budget of the Jiu Valley /4/

Value, lei Localities	Period 2013÷2015, cumulate		Contribution of mining entities during years 2013÷2015, %	Contribution of mining entities in 2018 Estimate, %
	Contribution of mining entities , lei	Local budget, lei		
Petrila	9.108.047	127.776.347	7,13	1,93
Vulcan	2.962.703	84.644.461	3,50	2,19
Uricani	1.346.486	57.634.829	2,33	0,00
Petroșani	1.516.923	187.741.500	0,81	0,81
Lupeni	1.582.023	82.482.469	1,92	1,92
Aninoasa	0	x	0,00	0,00
Total	16.516.182	540.279.606	3,06	1,71

Table 3 Synthesis of main indicators of the Jiu Valley mining /3/

No.	Indicator	U.M.	Period	
			1990	2018
1.	Populația Văii Jiului	loc.	167.456	120.734
2.	Salariați în sectorul minier	nr.	43.791	4659
3.	Perimetre miniere în exploatare	nr.	17	4
4.	Uzine de preparare active	nr.	5	1
5.	Strate exploatare	nr.	12	3
6.	Producția minieră realizată	mil.t	10,5	1,3
7.	Investiții de stat în sectorul minier	mil.lei	128,59	-
8.	Populație sub pragul sărăciei	%	-	10,25
9.	Rata șomajului	%	-	1,26
10.	Contribuția la bugetul local	%	76	1,71

5. Conclusions

From a real fortress of Romanian mining, with mining and high-performance mining enterprises, with mining machinery and machines, large construction sites, many cultural institutions and a reputable mining higher education institute, sports teams The first rank and especially the people of souls (ID Sarbu), the Jiu Valley today, but maybe tomorrow, is a sad place in which life will not disappear, but there will surely disappear a way of life /1/.

Of course, in his history, the mining in these lands had ups and downs (he went somewhat sinuous), but he had the power to get up every time. Now he is back in the descent, if not, he is approaching fast to the bottom of the abyss. Will he have the force to stand up? At least in the near future and in the medium term, the author believes that he will not revive, because today the context in which the importance of solid fossil fuels for the energy sector and not only for it is altogether different than, for example during the Great Economic Crisis from 1929 to 1933.

If coal did not have substitutes, today, non-penetrating energy sources put great pressure on it to remove it, although in critical times it has not proven safe and irreplaceable. Then, what will be the role of coal, in general, of coal, in particular, in the future of a mono-industrial region that relies almost exclusively on this natural source?

For the Jiu Valley, the role of mining in its future, as it happens, will be less and less insignificant.

In this context, a question arises: *what will be the future of the Jiu Valley?* This was, I am, and I will have to answer. Conclude the paper with the hope that local, regional and national decision-makers will not abandon this wonderful mountain area and will have the wisdom to maintain the country's energy security and the use of solid fossil fuels to produce electric and thermal energy.

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