Mining Communities between Decline and Sustainability. Case Study: Nucet (Bihor County, România)

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Abstract: One of the major challenges in territorial planning, in general, and in post-communist Romania, in particular, is reconversion towards a balanced development of the mono-industrial areas whose decline brings a complex and progressive deterioration of the affected area, in several ways (economic, social, environment quality). These sectorial mutations result into an overall reduction of life quality and the change of the respective area from vulnerable to repellent, communities being, thus, dissolved. Among these, the mining areas in which the exploitation activity has been reduced or even totally stopped, represent some of the most vulnerable areas where inhabitants are deeply affected, and the territorial communities need support in their effort to find alternatives of sustainable territorial development. The actual state of these communities is the result of the failure of centralized planning which aimed at the achievement of short and medium term purposes, by strainedly supporting the explosive development of these areas for the period in which the soil resources had been intensively exploited, without a prospective thinking and without a strategic planning which, after the exhaustion of the respective resources, should have at least ensured the continuity of those communities. Thus, their balanced and sustainable development remains an almost impossible achievement. We consider that their need of support in the process of economic reconversion and reconstruction of a new identity for a balanced territorial development is the moral duty of the authorities as the decisions which had led to this decline were taken by an authority outside the respective community. Without any external intervention to reconvert and straighten the economy, the result is the progressive dissolution of the settlements, their viability and even their future existence is uncertain.

Key-Words: Declining mining communities, economical reconversion, local development, sustainability

1 Introduction

The town of Nucet is one of the 186 Romanian mining communities (HG.1005/2000). Declared town in 1956, Nucet is situated on BăiŃei valley, south of Beiuşului Land, at the foot of Bihor Mountains, at approximately 90 km from Oradea, on the regional road which connects the Crişului Negru Couloir to Moţilor Land and Arieşului valley, over the Vârtop pass (DN 75). The town built from scratch in four years as a dormitory town and a social-cultural center for miners has two localities administratively dependent, where the actual exploitation was concentrated: BăiŃa and BăiŃa Plai. The remnant urban structure from communist era, sign of a policy of mandatory urbanization, at present not having an actual urban functionality, the town of Nucet belongs to the category of very small towns with a population of 1700 inhabitants, whereas the component localities, BăiŃa şi BăiŃa Plai have 598 and, respectively, 99 inhabitants. The establishment and the subsequent evolution of these localities have always been dependent on the exploitation of the mineral resources in this area, especially uranium which was considered a strategic national concern. All decisions of exploitation and closing of exploitation were made at a national level, without the involvement of the local territorial communities. Miners communities, from generation to generation, i.e. these three localities go through a period of profound decline as a result of losing their identity due to the closing of mining activity, the secular occupational constancy of a community which does not have too many other options because of the restrictive environment.

2 Methodology

This study intends to analyze the mining community in Nucet, Bihor county, from a past perspective and chances of a future becoming. The work plan comprises three parts: one referring to mineral resources, mining tradition of this area and the evolution of the community until the fall of communism, another part referring to the analysis of actual situation, result of the social-economic mutations subsequent to the fall of communism (an
aging population, poor infrastructure, falling economy, unemployment) and a third part, prospective which tries to predict the future of this community.

The working method is mainly the diagnosis analysis, which uses economic, demographic, social and infrastructure indicators. Proposals of development are based on the concepts of sustainable development, endogenous development and industrial culture.

3 Soil resources and mining tradition in the Southern Beiuş area

The economic component of a community planned by the Centre (the case of communist Romania) is one of the most powerful when it comes to changes of space, by determining forced mutations in the social-professional structure and the traditional lifestyle of the inhabitants and un-balancing the territory, sometimes with bad consequences on the quality of the environment. In most cases, the major features of the economic component are determined by the soil resources which constitute one of the most important factors of influence on the economic evolution of every area. The presence of mineral resources in the administrative territory, especially uranium, meant, consecutively, the chance for an explosive evolution and, subsequently, the decline and then total collapse of these communities. For the population in the area Nucet-Băița, the early discovery of mineral resources in Băița triggered the establishment of mining as the main occupation of the inhabitants for ages. Băița and Vașcău were among the eight centers where gold was extracted in the Apuseni Mountains in the Dacian-Roman era (Giurescu, 1974, by Țucra, 2000). From exploitation of gold and silver in the Dacian-Roman the mining activities have came to bismuth and molybdenum exploitation during the World War II and in the ’50s. The origin of mineral resources is closely linked to the geological past of this area. The most important ones are those in the area of Băița, represented by metallic mineralizations. The area of Băița is considered by Stoici, S.D. (1982) a real natural mineralogical museum. Official papers mention in Băița, Bihor, between 1700 and 1750, exploitation of copperish ore, gold, silver, copper, lead and iron, mines being the main source of income for the inhabitants from the neighboring villages. Starting with the World War I, the extraction of bismuth and molybdenum, used to obtain special steel, intensified. After the war the mine was closed to be re-open in 1935, functioning at low activity until the nationalization process in 1949 when it was taken over by the Iron Office.

The process of mandatory industrialization, an exponent of communist policies of development, represented for Romania an overall brutal intervention from outside which triggered irreversible changes by the discovery of uranium at Băița. The uranium resources found in Băița were discovered by German specialists at the end of the World War II, but because of war turn, the maps ended up in the hands of the Soviets (Simedre, 2003). Apparently, in Băița they found the biggest uranium resources at surface in the world (www.cnu.ro). In 1949, USSR (Russian Union) prospected the area and immediately opened the mine in 1950. The actual exploitation began in 1952 through a joint Romanian-Sovietic company called Sovrom-Kvarțit. In 1952 were discovered the resources in Avram Iancu mine whose exploitation began in 1962. The ore was sorted based on uranium component and shipped to Ștei by train on the narrow railroad or by lorries on Băița-Ștei road, subsequently being shipped to USSR, at a rate of two...
or three trains a day. The ore with the highest component of uranium was immediately shipped to USSR by plane, for this particular reason an airport was built on Dumbrava hill, between Ștei and Seghiște. The Russians' interest for the uranium mine turned it between 1957-1958 into one of the heaviest exploitation in the world (Simedre, 2003).

The changes triggered by exploitation of uranium in the area of Beiuș were numerous and fast. The most important one was the manpower which was established in the newly built towns Dr. Petru Groza (nowadays called Ștei) and Nucet (dormitory town for miners, built from scratch). For the surveillance of uranium, soldiers and Soviet specialists were brought for whom a neighbourhood was built. Beside them, there were 17,000 Romanian workers. For example, the population of Nucet increased between 1948-1956 from 772 to 9879 inhabitants, in 1966 (after the Russians had left) there were left only 2768, and in Ștei from 545 inhabitants in 1948 to 5874 inhabitants in 1956. The Archives of Mining Exploitation Bihor confirm a number of 15000 employees in 1957, a number which diminished as the exploitation diminished: in 1958 to 7100, in 1959 to 3550, and in 1960 to 2100. In 1980 there worked 2900 employees, in 1990, 2800 and in 2000 only 480.

Furthermore, the presence of uranium triggered massive investments in the two towns and the modernization of infrastructure, especially the one necessary to shipment of ore (asphalt work of Băița-Ștei road, building of a narrow railroad etc.). The uranium ore was almost entirely exploited until 1960, although the shipment to USSR continued until 1965. Subsequently, there were highlighted other areas with important mineralizations, not yet exploited. Intense geological prospects triggered the opening of new pits and galleries, the mine being extremely effective between 1970-1990.

4.2 Actual social-economic perspective, consequence of mutations after the fall of communism.

4.1 Economy
The events of 1989 found the area of southern Bihor economically revolting towards Ștei and Nucet, exponent towns of forced industrialization oriented to heavy industry, towards which commuted thousands of workers from the neighboring villages. After the fall of communism and the shift to market economy, the communist overdeveloped industrial structures, dependent on one another and with low production, faced difficulties to adjust. Most of the economic units diminished their activity, social consequences being severe. Thus, the former Mining Enterprise, from 5500 employees in 1990 decreased to 1900 in 1995 and only 450 in 2000, the numbers diminishing even more over the following years. Even under these circumstances, mining is still the main activity of the inhabitants, although the number of employees in this field is very low. At present in Nucet there are only three mining enterprises: SC Uranium National Company, SC BAITA SA and SC BAITA BIHOR SA.

As a consequence of gradual exhaustion of existing uranium resources and reduction of funds for geological prospection, in 2007 at Avram Iancu Mine there were only 130 employees, the company being on the verge of exhausting the uranium resources and starting the procedure of closing, conservation and environment cleaning (www.cnu.ro). In fact, at present, there is a sector of exploitation and one which started the procedure of closing, conservation and environment cleaning.

S.C. Băița S.A., the molybdenum and complex ore mine, keeps functioning with 265 employees, over the last years the management invested in re-technologization in order to make it profitable and avoid closing if after the State had stopped investing in it and after Romania had joined the EU. Immediately after 2000, S.C. Băița S.A. continues to extract molybdenum, bismuth and other ore, obtaining molybdenum bisulphure, molybdenum trioxide, iron molydbide, calcium molybdate and wollastonite concentrate. Over the last years, there were conflicts between miners and the Swedish company Mineral Mining because the latter did not pay the salaries. At present, the mine was purchased by an Australian investor EIDore Mining Corporation for 15 billion Euro and the exploitation will restart.

SC BAITA BIHOR SA, with 80 employees, became in 2004 private company. On the company website one can read about the importance of mining in the lives of the inhabitants, the ones from S.C. Băița S.A. "considering themselves the followers over the decades of mining in the upper basin of Crisul Negru river, by not letting the light of the miners' lamps to go out, the actual management of the unit wishes through its activity to integrate in the market economy and successfully meet European standards and directions" (www.bbhrocks.ro).

At present, the company produces grained limestone, construction stone, grinded limestone, micronized limestone, raw dolomite, grinded dolomite and grained dolomite.

After the fall of communism, local economy diversifed due to the first private companies. Unfortunately, 82% of these have a commercial profile, only 15% provide services and 3% industrial activity. The figures show 48 units in 2000, and only 32 in 2007 (Strategic plan of sustainable development of Nucet, 2007). Therefore, it
is obvious that twenty years after the fall of communism, local economy did not manage to diversify its profile and outrun the difficulties of monospecialization, Nucet and the two other villages remaining mining communities which lost their identity without constructing a new one. Yet, there are private initiatives towards lumbering and tourism, this field being supported in the territorial planning documents at local and county level by the feasibility studies on the placement of the future ” Vârtop Holiday village”.

4.2 Demographic and social elements

To highlight the demographic features of a mining community in the analyzed area there were used indicators of demographic evolution and of population structure. The demographic structure rendered by the total population is a keen indicator of the economic past of this area, showing its evolution from explosive development to its decline.

One can note the slow demographic evolution of the village of Bâița until the beginning of uranium exploitation, the boom in peak economic prosperity and its progressive demographic decline together with the restriction of mining activities. One needs to observe that Nucet and Bâița Plai were built from scratch in approximately four years, at the same time with the beginning of massive uranium exploitation when tens of thousands of miners needed accommodation. Between 1948-1956, migration to this area reached high rates due to the number of miners from other areas. Thus, population increased by 1179%. After the Russians had left and uranium exploitation had been restricted, because of poor infrastructure and a life quality under the urban standards, at the same time with the competition of the towns of Ștei and Beiuș, Nucet faced a massive loss of population, being left with only 2500 inhabitants, part of the employed in the mining activities commuting from villages in Beiuș area. Nowadays, the total population of the town is only 1700, Bâița with 598, and Bâița Plai 99. The ratio between main age categories (young, adult, old) between 1992-2002, show reduced variations of adult population percentage of the total population (from 61,09% in 1992 to 62% in 2002), but the mutations are found at the level of young and old age groups. The young population evolved regressively evolved from 31,47% in 1992, to 24,80% in 2002. The old population grew up from 7,43% in 1992, to 12,55% in 2002. The percentage of old population of the total population clearly shows the process of demographic ageing of this area. They highlight a decrease of the pressure of young population, as a result of reduced birth rate and of progressive growth of the pressure of old population, due to demographic ageing.

By analyzing these indicators, we can estimate that the demographic potential of Nucet was reduced starting with the restriction of the mining activity, at present the demographic ageing and the migration of working population becoming an unsettling phenomenon.

Structure by gender shows the decline of the mining activity, the male workers being dominant in 1996 in economic boom, the situation being balanced in 1992 and 2002.

According to the census, the activity rate (percentage of active population of the total) was 36,67% in 1992, decreasing by almost 10% until 2002 when it was 27,84%. Of the active population, 93% were employed and 7% were jobless in 1992, in comparison with 86,08% employed, 6,29% jobless and 7,63% were looking for their first job in 2002. The occupational structure of the population highlights the overwhelming percentage of the employed population in the secondary sector (extractive industry) which was 62,22% in 1992 and its decline to 38,74% in 2002. The high percentage of the employed in the tertiary sector in 2002 is due to the population employed in public services (town hall, schools and the Psychiatric hospital with a high percentage of employees, as opposed to the decrease of employed population in other sectors).

One should note the extremely reduced percentage of population employed in the primary sector, the natural framework being favorable to agricultural activities and, hence, diminishing the possibilities to diversify the local economy. A local feature, which today is unfortunately more of a drawback than an advantage, is the manpower specialized in mining activities. There should be programs of reconversion of the miners left without the chance to find a new job in the field and even how-to-become-an-entrepreneur classes.

So, the alarming economical situation of this area had dramatic consequences on the population as the localities started losing manpower and the pressure of old persons became stronger and stronger. Therefore there is a high need to ensure specific social measures for this particular group in the future.

4.3 Environment and life quality

Built as a necessity to accommodate a growing number of miners, Nucet never had the infrastructure of a real urban settlement. Over the years, especially after the fall of communism and the decline of the mining activity, the existing infrastructure degraded (particularly the roads), at present being totally sub-standard and the life quality leaves much to be desired. An actual burning issue is the road to Bâița Plai (DN 286), in an advanced state of degradation. Although there are initiatives in this area, this aspect being on the priority list of the development strategy of the town, at present the
infrastructure is not adequate to the development of
tourism, the community's hope to relaunch the
economy. The water supply network is not sufficient,
Băița and Băița Plai do not have centralized water
supply. The central heating network which served the
collective dwellings in the central area of the town is not
functional because of the high costs, population having
individual heating systems based on fire wood.
Nowadays, in Nucet one can find a nursery, daycare,
junior highschool (I-Ⅷ), and in the villages of Băița
and Băița Plai there is a daycare and an elementary
school (I-Ⅳ). Medical assistance is ensured by a small
medical center and three pharmacies. Also, in the town
there is a Medical-Social Center with 178 beds, built in
2003. In 2010, in Băița was built a Home for the Elderly
in Rural Area under the administration of the General
Department of Social Care and Child Protection Bihor.
The Psychiatric Hospital in Nucet was built in the '50s to
ensure medical assistance to the population who worked
in mines in Băița and had internal diseases, surgery and
maternity wards. After the massive migration of the
population from the area, at the same time with reduced
mining activities, the hospital turned into a sanatorium
with two wards for alienated patients, a ward for patients
with tuberculosis and neurosis. Today the hospital has
226 beds.

Another painful matter for Nucet's mining community is
linked to the environment quality, being well-known that
the radioactive pollution has long term effects, hence the
community being stigmatized. Although the
environment reports of the Agency of Environment
Protection Bihor do not show this area as being polluted,
there are mining areas which have not been cleaned. The
biggest issue in this respect is the change-over of the
inactive galleries in the former uranium mines into a
Nuclear Waste Spoil Dump. By law 320/2003, was
founded ANDRAD (National Agency for Radioactive
Waste) which established the Low and Medium Active
Waste Spoil Dump in Băița (www.andrad.ro). The
existence of this spoil dump has brought a negative
perception on the community and chases away any
possible investor, diminishing the chances of developing
a long-term tourism other than the weekend tourism in
Vărtop. Since, according to Regulation 407/2005,
"authorities in charge with the construction works with
nuclear specific are released from the authority of
National Comission of Control of Nuclear Activities",
the local community was not asked for advice on the
matter and does not have the chance of getting any
financial compensation. In 2006, ANDRAD received
European funds to modernize the National radioactive
waste spoil dump in Băița. The spoil dump in Băița
Bihor is the only dump for radioactive waste in Romania,
the quantity which can be stored being 5,000 m³ of radioactive waste in 21,000 containers of 220 l. In
comparison, Cernavoda Nuclear Plant produces 11,500
tons of used fuel, 7,000 m³ of radioactive waste from the
process and 16,000 m³ waste from deallocation
(www.financiarul.com).

In conclusion, life quality, environment and access to
services and infrastructure are, onemore, a painful
reality for this community by diminishing its already
limited chances to economic reconversion.

5 Outlook on development

Evidently, the adjustment of heavy industry in Nucet
and the neighboring area to market economy rigours was
extremely difficult, the success being very little. The
monospecialization of this area in southern Beiuș Land
is a long-term challenge for the policies of balanced
territorial development. As a result of this matter which
brought social issues related to unemployment, in 1998
was established the under-privileged area of Ștei-Nucet
(Emergency Regulation no. 24/1998, modified by Law
no.20/1999), by including the towns of Ștei, Nucet and
Drăganestî commune, which were to benefit from a
series of facilities to attract potential investors.

The status of under-privileged area was valid until 2009,
but it had no positive impact on the local economy.
Although the community in Nucet had an extremely
difficult social-economic path after the fall of
communism and the reduction of mineral resources,
especially after joining the European Union efforts were
made towards the creation of necessary opportunities in
order to help these communities in the process of
economic reconversion. The so little visible results of
these financing programs are probably still tributary to
the specific of the mining communities. The civic spirit
and the involvement in the life of the local community
are hard to learn from one day to another and the local
administration is mostly unable to sustainably manage
the future of the community. Yet, there are some
attempts from the local administration to get the
community involved and to reconstruct the lost local
identity. The most meritorious one is, undoubtedly,
the working-out of the Strategic Plan of Sustainable
Development of Nucet in 2008, with the involvement of
the local community. By adopting this plan, we consider
that, one of the most important steps towards the re-
balance of the community has been taken in hope that
there will be found financial resources necessary to its
implementation.

From our point of view, there are two ways of
reconversion of this area, both based on the concepts of
endogenous development and strategic planning. The
former refers to the building-up of a new identity of this
area, starting from the main actual natural resource: the
forest. Its sustainable exploitation allows a variety of
products (logs, lumber, furniture, carved furniture,
traditional furniture and traditional home appliances, wooden houses, handicrafts made from wood etc.). It would be possible even the extension of the forested land through reforestation, afforestation. Other extra activities would be hunting, picking medicinal plants, berries, mushrooms, planting of valuable trees (blueberry, hazel, nut tree etc.), their traditional preparation. Family business or small enterprises, non-competitive, functioning based on the principle of complementarity, can work together to create and promote a new local brand, possibly supported in this process by structures specially created for the sustainable development of these mining areas. All these should be an effort to reconstruct the community identity and to create a local brand to be subsequently promoted. Obviously, this is just a way to diversify the local economy alongside other possibilities (tourism). Another possibility is the creation of a new local identity by capitalizing the old one, based on the fascination for uranium. Part of the deallocated buildings could be rehabilitated to set up a museum of communism or even uranium, in the spirit of old industrial culture which is heavily promoted at global level.

6 Conclusion

Through their specific, the mining communities are probably the most affected by the profound mutations in Romania. Between periods of glory and economic boom, high above-the-average income and mass unemployment, at young age, without the possibilities to find jobs according to their skills, these people lost their identity. The environment issues specific to many of these areas make the process of economical reconversion even more difficult. With all the efforts to support and help these communities in the process of economic revival, the initiatives which should have a significant impact on the community are few. As regards Nucet, we consider that its future perspectives of evolution are very difficult, the community being stigmatized, especially after the placement of the National Radioactive Waste Spoil Dump in the former galleries of the uranium mine. The chance to revive tourism, supported by local and county authorities by construction of the ski slope and the "Holiday Village Vârtop", is much diminished by the existence of this dump. In this respect, financial incentives would be a good idea.

Probably, the efforts to support these communities in the process of economic revival should be more focused on the citizen. The miners should benefit from programs and campaigns of information and community initiative, classes of professional reconversion and how-to-become-an-entrepreneur, and even exchange programs with communities that had faced same issues, the up-to-now experience clearly shows that all the previous programs for the support of this area were a failure. In our point of view, the only chance is to turn the mining communities from supported communities into active communities, capable of designing their own future, the involvement of local authorities and the process of strategic planning being mandatory. In case of failure, once the mines closed, the future of this community seems uncertain. The loss of young population and the high demographic ageing rate can gradually lead to the disappearance of these settlements.

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