

## Topography Mining in Market Economy Terms

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**Abstract:** *After the second world war, the Romanian mining industry was characterised by a reduced production, lack of labour force, lack of necessary materials to achieve production and a poor technical equipment. From the experience of countries which have passed through these difficult periods (England, Germany, Poland etc.), it was found that mining is a sector that tends towards the limit of deficiency, a reason why this branch cannot be supported any longer but through a new technical and technological orientation.*

The Romanian mining sector is in a difficult period so I'm proposing to remind you some aspects regarding the evolution of this industry during the history of time starting with the period before the war until our days.

The mining situation during centralized economy was characterised by a development of the mining industry on two directions:

- the production capacity having the maximum extraction in the after war period
- the reopening of closed mines and identification of new areas with mining potential with rich and pure as possible natural reserves

The charcoal extraction had evolved as well as iron extraction, salt. Also a new industry took birth: the extraction of radioactive metals and exploitation of non-metal ore.

By opening and reopening those mines the work conditions got better regarding work and health protection and a population growth was visible. This activity had in purpose the satisfaction of economic needs just from internal production reason for which mistakes took place, mistakes like reopening non-profitable mines.

In 1948 – 1949 period hi-technical and medium-technical schools were evolved and for technical problems in industry were developed scientific research centres for technical products and objectives. All these will now a great evolution.

The first research actions for mining purposes took place in 1948 in Industrial Projection Institute in Bucharest and in 1950 the Mine Research and Projecting Institute takes birth in Bucharest and others will follow in the same technical field.

Until the end of the XX century the mining industry had a continuous evolution by introducing new technologies and methods of exploitation and by the reopening of old mines. After 1990 the mining industry starts to feel major transformations by entering in the economical transition towards market economy. But still the mining industry had the obligation to cover the needs of national economy with diverse needful minerals reason for which this type of industry must not be neglected.

After 1990 the Romanian mining was regrouped in Independent Regions and in National Companies and Private Companies which will function in different time periods. All the companies were divided by economical criteria, some mines entered the conservation or closing phase approved by the Romanian Government.

In 1992-1993 the re-evaluation of mining patrimony and the rehabilitation activity continued. Those documents of re-evaluation were made by the Research and Projection Centres.

Having in mind the efficiency of mining industry the **Mining Law** was born in 1998 which said that there were the natural reserves are done with or the exploitation costs are high those mines can be sold on the market to different investors and economic agents.

For this reason the Book of Mines is defined as a document that holds identification and registration and representation on topographic maps of all mining activities. In the Book of Mines the existence of natural resources and ore must be clearly visible in order to create the possibility of mining concessions. This document will have:

- identification, location and evaluation of the useful mineral ore
- the registration in analytic documents and topographic documents of technical, economical and juridical elements regarding the natural mineral resources
- realisation of topographic planes and maps in order to preserve the topographic data base
- surveying the exploitation evolution and marking of this evolution on topographic maps
- evidence of mining lands
- the land transfer situation in time
- the perimeter delimitation of the exploitation area
- ecological reconstruction of the land after the mine closes

In our days a the interest in mix companies rose by knowing that most of the mines are managed by the Romanian Government.

After 1990 most of the mines were put out for sale to private companies some were sold with national capital and some with foreign capital.

The foreign investment can have a positive effect on the mining exploitation industry if it's made were the State can no longer assure the jobs for the people in the region. If continuity of mining activities is provided and new, modern mining technologies are developed and if the evolution of the mining perimeters and the ecological reconstruction of the region is assured this will be a absolute positive effect.

Like university teacher doctor engineer Fodor Dumitru said: "...during time the mining industry has good and bad times but it never disappears".

Modernization of the topography mining in market economy terms is needed by the necessity of the mining industry to have a good and accurate data base. These modernisations will lead to efficient mining activities and this will show in shortening the time to the effective exploitation of the natural resources, good knowledge of surface influence and prevention of natural disasters like the ones from Ocenele Mari.

About going towards a market economy in witch the main economical sectors are put under private ownership in the purpose of rational and profitable exploitation the main modernisations must be as fallows:

- remaking the geodesic data base using GPS methods;
- laws that can make the mine concessionary matter more easily;
- establishing new measures and laws to protect and preserve old mines that are pour in mineral ore;
- establishing a organization and laws that are necessary to make logical and correct documentation that can prove the need for mine preservation;
- establishing a digital and interconnected data base for easy archiving and access to special topographic data;
- making of a complex and complete data base by creating a Global Information System with exact information about the land perimeter that are under mining exploitation;
- projecting a new system that can control the data base in order to optimize material and logistic equipment of mine fields that are exploiting on the surface and underground;

In the idea of solving the mining topography problem the fallowing rules:

- daily consultation of the graphic analytic documents regarding a certain exploitation perimeter;

- a daily control of the topographic and geodesic data in order to assure a written data of the lands that are entering in the mining exploitation and of those that are stopped from mining exploitations;
- a topographic evidence of the topographic planes and maps containing materialised perimeters by their limits and topographic points;
- introducing the buildings that exist in the field in the technical book of the land;
- the investigation of all the topographic jobs done until the present day with the buildings description and other building blocks that exist as well as all the exploitation jobs made by the mining unit, investigation witch will have situation planes and technical drawings that confirm the projection of the objective;
- data evidence referring to the mining unit, like the land and building address, the mine destination and land placement, the jobs that are done underground and on the surface, the area of the mine perimeter, different land usage situated on the surface and the safety areas, technical and judicial data regarding the constructions;
- centralizing the technical data regarding the constructions that can be found on topographic maps and files witch are made and kept up to data by the mining unit;
- signing a written agreement with the neighbours around the mine perimeter between the mining unit and the affected neighbours;
- assuring that there are enough topographic and geodesic points to assure the correct and complex surveing of the entire mine;
- gathering of planimetric details referring to the base geodesic system;
- new topographic measuring of the mine from witch to extract data about counter of the buildings (areas and areas with description of usage for each area separately);
- evidence of the main gas, electrical, water, sewer, thermal distribution;
- numbering the topographic sectors and the property lands and representations of the property perimeter by the usage of it;
- making topographic files of the mining unit;
- making topographic files of the properties;
- topographic data base of the mining units structured by the administrative territories;
- projecting a topographic Global Information System with evidence of the lands and the mineral potential and 3D digital planes regarding the exploitation jobs.

For the realization of the aspects there is a obvious need of data, files, judicial evidence, administrative and technical data regarding the exploitation perimeter:

- a. Data regarding the identification of the exploration perimeter:
  - perimeter name;
  - showing the perimeter in the administrative territory;
  - the specific topographic number of the mining exploitation;
  - type of mineral ore;
  - the owner name of the exploration licence;
  - owner's address;
  - coordinates inventory of the topographic points on the contour of the exploitation perimeter in Stereographic 1970 projection system;
  - the mining area;
  - depth limit;
  - evidence o land surfaces that will be used for mining exploitation.
- b. Judicial and administrative elements
  - the licence on witch the mine perimeter was concessioned regarding mining laws no. 61/1998
  - additional licence files
  - judicial evidence of exploitation lands

- judicial agreements upon solving the land recovery after the exploitation
- association files between partners that shows a proportional exploitation
- registration files for the licence owners at a judicial court
- rights and obligations transfer files assumed by the owner of the exploitation licence approved by the National Agency for Mineral Resources (N.A.M.R.)
- decisions of the court of law regarding the solutioning of situations between the licence owner and N.A.M.R.
- notifications made by N.A.M.R. towards the exploitation licence owner
- special notifications made by N.A.M.R. towards the exploitation licence owner
- the licence termination file addressed to the N.A.M.R.
- the N.A.M.R. decision of the ending of the concessionary terms
- written documents of taking over the concessionaires exploitation with all it's buildings after the licence expires
- fines and punishments applied regarding to the law of mines
- c. The technical data referring to the mining perimeter have informations about actual mining exploitations and jobs.
- d. The economical data referring to the mining perimeter have informations regarding value of the mining exploitations and jobs.

In conclusion all the stages of development end evolution can't be achieved without new technological orientation because the mining industry it's losing it's efficiency and this we know from foreign countries that passed this crisis.

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