

## SOME PROBLEMATIC POINTS RELATING TO MINERAL RESOURCES ASSESSMENT

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### *Abstract*

*Value is a fundamental economic concept for which there is no unequivocal definition accepted. The emergence and existence of value is determined by multiple factors. In the Republic of Moldova, as in many other states, mineral resources (including land, basements with deposits of minerals and forests) perform an important role in creating new consumption values and ensuring ecological balance. It may be confirmed by artificial separation of lands from other mineral resources with their reflection in a synthetic homonym account, as well as by highlighting purchase operations of mineral resources as a priority for their entries in the business's heritage. Therefore the assessment of mineral resources requires a complex revision that should be based primarily on the inherent properties of these goods and on the legislation in force.*

*Key words:* consumption, mineral resources, value

### INTRODUCTION

One of the essential problems of accounting is objective assessment of assets, which may have a major impact on the profit of the company. The emergence and existence of value is determined by multiple factors. In terms of contribution to gross domestic product lands are the most significant and the most vulnerable type of mineral resources [6]. Of their total area of 3.4 Mil. ha 59.5% (or about 2 Mil. ha) [9] are agricultural lands, forests occupy about 400,000 ha [3] and the number of operated quarries and mines equals to 153 [10]. But, despite their undoubted significance for the national economy and society, methodological aspects of mineral resources evidence are not developed enough and focus mostly on some wrong reasoning. It may be confirmed by artificial separation of lands from other mineral resources with their reflection in a synthetic homonym account [4], as well as by highlighting purchase operations of mineral resources as a priority for their entries in the business's heritage [8]. Therefore the assessment of mineral resources requires a complex revision that should be based primarily on the inherent properties of these goods and the legislation in force.

### MATERIALS AND METHODS

As a methodological guide specific to the research there were the fundamental conventions and principles of accounting, all the rules, procedures, methods exposed in N. A. S "Tangible and intangible assets" [7]. The investigations on the topic focused in particular on the provisions of the law on mineral resources [5], the European professional standards for assessing real estate [11] and Plan of accounts [4]. There were also taken into account the specific properties of mineral resources (natural origin, controversial utility, long-term recovery, etc.), legal regulations and experience in the field of accounting for these goods in over 20 enterprises from the Northern region. When generalizing the facts and drawing conclusions preference was given to monographic method (descriptive) with selective application of processes for mass observation and comparison.

### RESULTS AND DISCUSSIONS

Local mineral resources (public property) belong to administrative-territorial units. Private mineral resources belong to private or

legal individuals with the right of possession, use and disposition under the law. The right of private ownership of mineral resources is limited. It prohibits sublease, redemption or mortgaging mineral resources (public property) leased or given in concession.

The investigations related to the recognition and evaluation of mineral resources in the Republic of Moldova allow us to examine purchasing the right to extract mineral resources:

1. without recording them;
2. non-systematic recording of mineral resources (elucidation of economic operations, without being reflected in the composition of property items);
3. with their systematic registration (elucidation of economic operations with their reflection in the composition of property items);

Variant I. When buying the right to mineral resources extraction in the license of the legal person the volume is not indicated. It's natural, economic and legal that the company will not recognize mineral resources. It will only reflect intangible asset (the right to extract mineral resources). Mineral resources are not reflected in any off-balance sheet account and in any balance sheet.

Variant II. For example, the company "X" buys the right to withdraw a volume of 2 Mil. m<sup>3</sup> of rock, without indicating the cost of this volume, the value of the license being Lei 2,500 lei. In this case, the enterprise shall recognize the right to mineral resources extraction as intangible asset with value of Lei 2,500 because it is identifiable, it is controlled by the company, it is the result of economic fact - action - sale - purchase of that right.

It is impossible to treat like that worthless mineral resources. The more, these resources are not paid to the State.

The evaluation of mineral resources does not occur at the enterprise under the created conditions because they do not become an element of its heritage. The mineral resources in the amount of 2 Mil. m<sup>3</sup>, according to their economic nature are a share determined by the State and can be recognized as assets not belonging to the company. From these considerations they will be reflected in an

account of an off-balance sheet, for example 919 "The share of mineral resources established by the State."

The situation elucidated in variant II is similar to the existing situation in the Republic of Moldova. That is, when the mineral resources belong to the State, the company, that intends to extract them, according to the license of carrying out basic work, buys the right to exploit them and not the mineral resources. Therefore, the economic unit cannot recognize these resources (cannot record in the composition of its assets anything that does not belong to it). They will be recognized by the State, representing elements of its heritage. Therefore the economic entity should recognize legally the right to extract mineral resources in the composition of intangible assets, without registering these resources into the composition of patrimonial elements.

Variant III. Let us assume that a natural or legal person purchases from the state the license (right to extract mineral resources) and mineral resources in the volume of 2 Mil. m<sup>3</sup>, at the amount of Lei 30 million. In this case it is obvious that the company will recognize: a) the right to extract as an intangible asset;

b) mineral resources - as a heritage element.

Thus, in the third variant the requirements for the criteria of recognizing assets are realized for mineral resources too:

- a) the value is reliably determined;
- b) they are controlled by the company,
- c) they are identified;
- d) they are the result of the past economic fact - sale - purchase;
- e) they will contribute to economic benefits.

Article 29 (2) of the Tax Code [12] provides that the costs of exploration of mineral resources deposits, incurred before exploitation, as well as the relevant interest payments (loan expenses) should be reflected in the value increase of mineral resources. Thus, in our opinion, two alternatives will be possible:

1) the determination of mineral resources value estimated by specialists at the size of consumptions for land uncovering recognizing these resources in the composition of long-term tangible assets and

the rights to extraction as intangible assets;  
2) the recognition of the right to extraction of mineral resources in the composition of intangible assets without recording these resources, consumptions of land uncovering being reflected as prepaid expenses. Thus, mineral resources will be assessed due to their recognition as assets.

The first option is not justified legally because the economic unit cannot record in the composition of its assets the asset which it does not possess; it results from the Tax Code. The second variant corresponds to the economic content of the transaction. Consumptions for land uncovering will not be the value of mineral resources as the right to their exploitation will be recognized as intangible asset.

For example, if the consumptions of land uncovering for the exploitation of rough stone is 6 million lei and the amount of stone resources - 850,000 m<sup>3</sup>, the license value - Lei 2,500 with extraction term - 5 years, these consumptions will be evaluated as long-term prepaid expenses and not as part of mineral resources value.

The suggestion outlined in the Tax Code can be viewed skeptically, because it contradicts to the Moldovan Constitution and the Civil Code, and namely:

1. Mineral resources are not transmitted to the enterprise by the State (according to the Civil Code and the Constitution of the Republic of Moldova). In this case the enterprise procures the right to extracting the mineral resource. Therefore, the costs of exploration and exploitation will be included in the extracted production cost and not in the actual value of mineral resources. For example: uncovering a sector of land, from which the rough stone will be extracted, can last 4 years. After this period the extraction of the mineral resource will begin. Let us assume that in the first month there were extracted 14 167 m<sup>3</sup> of rock, costs for land uncovering for stone exploration are Lei 99,990 [(6,000,000: 850,000) x 14,167]. As a result these costs will not be passed to the increase of the unrecognizable mineral resource, but to the cost of the product obtained from the extraction of this resource. Thus, mineral

resources will be reflected neither in the accounting reports nor in the financial reports and consequently their value won't be reflected too.

2. If we specify the volume of mineral resources as a share for extraction, the costs of land uncovering for the exploration of mineral resources will be included in the value of the product obtained from the extraction of these resources. Therefore the amount of resources will not be affected.

But the problem in question, in our opinion, can have two solutions:

a) the attachment of costs of land uncovering directly to the increase of the entry value of the procured mineral resources;

b) the attachment of costs of land uncovering to the cost of mineral resources in progress (under the preparation period for use according to their destination). From technical point of view the first variant is acceptable. But it creates contradictory situation of national and international accounting standards and it will increase the value of the assets which could occur only in cases of reassessment, capitalization of expenditures, capital repair, modernization, reconstruction, etc. In our version there is none of these cases. Therefore, the first solution cannot be accepted because it is economically groundless.

We consider the second variant to be more successful. Since the value of the asset on initial recognition cannot be increased by costs of land uncovering we propose the following solution of the matter. Mineral resources procured and legally recorded by the respective documents are to be recognized as mineral resources in progress (under the preparation period for extraction). This is a new category (term) in accounting language. It corresponds to the economic nature expressing its role and functions in the production process - before uncovering works are not finished, mineral resources cannot be considered in operation; - if we admit the recognition of purchased inputs in the composition of the operational ones, the need for depletion calculation arises. But the object, to which the exhaustion amount should be attached, is missing as the process of

extraction has not started yet; - scraping works usually last for a long time (they may exceed 3 years), that's why it is reasonable to include the preparation for the extraction of mineral resources in the composition of long-term tangible assets, the same way as it is done with the equipment that requires assembly.

After uncovering process expires, it is rational to transfer the mineral resources in preparation for extraction to the category of mineral resources in exploitation. We specify this moment as the moment of recognition of mineral resources for exploitation.

It is obvious that in the case of purchasing the rights to extract mineral resources from the state and simultaneously mineral resources themselves, mineral resources are recognized as long-term assets.

The capitalization of resources is not an inherent result of their existence; it depends on the mineral conditions (climate, relief, hydrography, etc.). They are defined in the literature as constituting elements of the environment that, at the current level of the development of work tools, are absolutely necessary for the development of the society, but do not serve as basic raw material for economic development.

So, as we have mentioned above, according to the regeneration ability in a reasonable period of time from the economic point of view, mineral resources are divided into renewable resources and non-renewable resources. As non-renewable resources are extracted, their quantity decreases each year and creates problems for future generations, because they cannot restore. Therefore, extracting those resources should be strictly monitored while improving their efficiency and gradually replacing them with alternative materials that are cheaper and more ecological.

The issue of the composition of mineral resources is approached tangentially by Buzu, and Matcovici [2]. For authentic records of the transactions relating to mineral resources it is still important to respect several provisions of the law, as follows:

- national resources are in state public ownership;
- local resources are public property of the

administrative-territorial units;

- the resources that constitute public property can only be given in use (rent, lease) for a fee. Their sale, redemption or perfecting as a pledge is prohibited;

- private ownership of mineral resources is not excluded, but it has a limited nature and is permitted in some concrete circumstances provided by the corresponding laws with a more limited field of application.

We can conclude the following:

- mineral resources are a totality of goods and organisms whose appearance and evolution is not linked to human activity. Therefore in their original state they have no cost and no input value;

- in the Republic of Moldova the main and most valuable mineral resources are land (soil, terrains) which constitutes the basic work for agricultural enterprises and indispensable source of existence for the rural population;

- each of the other types of mineral resources (water, forests, underground, etc.) also plays an important role for the national economy and for the maintenance of ecological balance; they cannot be replaced by another one, they are exclusively in public ownership and can be given to beneficial owners only in use;

- the level of readiness for use of mineral resources varies depending on their type, location, technical equipment of beneficiaries etc. Some mineral resources (e.g. land and surface water) can be used in their original condition without undertaking preparatory work and without incurring consumptions of one-time nature. Other mineral resources, on the contrary, cannot be used in original condition (for example, deposits of minerals). In this case businesses are forced to carry out certain beforehand works (geological research, building access roads, uncovering, removal and storage of fertile topsoil, etc.) and bear significant consumptions respectively;

- durable objects created by labor are not considered mineral resources, i.e. objects created during the economic activity of businesses or citizens (e.g., ponds, botanical gardens, forest lines to protect fields, forests established on own land, etc.). These objects have authentic cost (input value) and are

usually classified as fixed assets.

The made conclusions allow us to assess how far the current accounting treatment of mineral resources corresponds to their economic essence, what shortcomings are committed and how they can be removed.

In specialty literature some experts in the field like Bulearca [1] often indicate that mineral resources are the natural part of tangible assets which have a specific natural form as reserves of oil, gas, stone, wood etc., extracted (explored) over a long period. But in our opinion, that definition is not successful, which can be easily proved by the following reasons:

a) terrains were absolutely illegally excluded from the composition of mineral resources, i.e. their most important and valuable part for the Republic of Moldova. The separation of the terrains and the real estate, terrains being stated as a particular type, with their reflection in a distinct synthetic account (it is account 122 "Terrains") is artificial; it is completely unrealistic and it is not based on professional judgments. In addition, neither the definition of land in this normative act is complete, because the normative act does not indicate (intentionally or unintentionally) that they (as all other natural resources) have a natural origin, i.e. do not originate from work;

b) the enumeration of concrete forms (existence) of mineral resources is not appropriate either because, first of all, this procedure is missing in many other adjacent definitions (e.g. the definition of fixed assets, long-term material assets), secondly, some of the brought examples are not typical (characteristic) for our country (e.g. oil and gas), and thirdly, the attribution of the wood to the category of reserves through which forests manifest in physical appearance is incorrect and neglects the fact that in reality (and according to the forest Code) native forests are a community predominantly of trees and shrubs that are destined exclusively to environmental protection, and not to mass (industrial) production of wood for work or fire (as it occurs, for example, in the Russian Federation, Brazil, Canada and other countries with vast forest areas). The phrase "over a long period" that ends the definition of

mineral resources is not necessary. Only the initial part of this definition clearly stipulates that the resources in question are some long-term tangible assets, and the last ones have a useful lifetime of more than one year;

c) the word "extracted", which goes before the definition of the examples reserves, shows that those reserves can be categorized as mineral resources only when they are in the process of extraction (recovery). But in practice (and according to the law on mineral resources) there are also mineral resources that were identified and evaluated quantitatively and qualitatively by geological researchers, but for various reasons have not yet been included in the economic cycle. As we know, in the forest management wood is not extracted but is harvested by regeneration cuttings, conservation cuttings, trees care, hygiene etc. Therefore, the word "extracted" from the definition of mineral resources should be substituted with another word (e.g. "recovered") with a broader meaning able to correlate with all the addressed nouns, or it should be supplemented by an alternative verb to refer to the noun "timber".

## CONCLUSIONS

As a result of the made researches we can report the following conclusions:

1. Exploration and exploitation costs of mineral resources incurred before exploitation as well as interest payments (loan expenses) should be reflected at the increase of the value of mineral resources. There will be two possible alternatives:

- to determine the amount of mineral resources estimated by specialists in the size of consumptions of land uncovering recognizing these resources in the composition of long-term tangible assets and the right to extraction in the composition of the intangible assets;
- to recognize the right to mineral resources extraction in the composition of intangible assets without recording these resources, consumption of land uncovering being reflected as prepaid expenses.

2. Forest areas established on private terrains and water bodies established by oneself or

under contract are not to be qualified as mineral resources but as assets as they represent the goods derived from labour.

3. Since the land in the Republic of Moldova is the most important and valuable mineral resource, the decision to reflect them in a synthetic account is not successful. They are to be registered in some distinct sub-account opened in the assets account 125 "Mineral resources".

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