

**NEED OF LEGAL SOLUTION
FOR PROTECTION OF MINERAL DEPOSITS
AND RANKING OF MINERAL DEPOSIT VALUE
FOR FUTURE SUSTAINABLE DEVELOPMENT**

Mineral deposits are the part of natural environment and the source of mineral commodities indispensable for everyday life. The possibility of their exploitation should be secured for sustainable development of recent and future generations. Therefore mineral resources need to be protected through:

- Protection of the area of their occurrence, against such land utilization which may preclude their accessibility,
- Maximum possible recovery of mineral commodities during their exploitation,
- Reasonable utilization of mineral commodities,
- Recycling of mineral commodities and substitution by other raw materials if possible.
-

The land accessibility is the main concern, as restrained by residential or other industrial utilization, farming, environment protection exigencies and “not in my back yard” (NIMBY) syndrome. Mitigation of arising controversies may be achieved by legal solutions. The SWOT analysis allows us to identify major problems in formulating legal rules of mineral deposits protection. To achieve the satisfactory solutions the proper understanding of environmental impact of mining (also positive, through creation of new value of environment) and reasonable and full information on mineral resources and their importance as a source of mineral commodities are essential. The proper presentation of these problems in school teaching is of primary importance.

In Poland protection of mineral deposits is declared in Environment Protection Law and in the case of exploited deposits realized according to the rules presented in Geological and Mining Law. Protection of undeveloped mineral deposits, considered as a protection of land of deposit occurrence against its possible utilization which make preclude future exploitation of deposit, should be realized through the proper land use planning. Practical examples demonstrate however, that clear mineral deposit protection rules and appropriate procedures are not formulated in satisfactory manner. Proposed such rules are based on the Law of Agricultural and Forest Land Protection Act.

It is proposed:

- valorization of mineral deposits (according to demonstrated or inferred resources and quality of mineral commodity), and categorization protection exigencies respectively,
- limitation of land use on the area of deposit occurrence, against activities which make impossible future mining,

- preparation of „deposit development plans and utilization of post mining area” as a special document attached to the obligatory prepared „Study of conditions for land use planning”,
- special compensation fee if the area of deposit occurrence is designed for the use which exclude mining activity or if deposit protection rules are not observed.

Ranking of mineral deposits according to their value is the first step for selection those which protection should be priority. Based on review of different methods of evaluation of mineral deposits the simple method of their value ranking was proposed. It consists of separate deposit valuation in four domains:

- resources and quality of mineral commodity,
- mining conditions (geologic mining conditions and deposit accessibility),
- environmental restraints of possible mining,
- land use planning restraints.

The resource and mineral commodity criteria are separately designed for each kind of mineral deposits. Mining conditions are defined as degree of difficulties of deposit exploitation (overburden thickness, stripping ratio, amount of water inflow, variation of deposit structure and continuity), and possibility of exploited commodity delivery to customers (distance and quality of road connections). Environmental restraints are defined by protection exigencies of nature, landscape, underground water, fertile soils and forests. Land use restraints are defined by degree of settlement or industrial coverage of the area of deposit occurrence. Within each of four valuation domains 3 categories of deposit value are defined: the highest (N), high (W), and low (Z). It allows to describe each deposit value by symbol, that consist of four letters designing in following order: resources and rock quality, mining conditions, environmental restraints, land use restraints, e.g. NNWN, WNWZ etc. They can be visualized on mineral commodity maps and allow a quick comparison of different deposits, and select those of highest value.