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Regulations pertaining to the management of rock mass mineral resources

Introduction

To address the issue of protecting orogen (rock mass) resources en masse, it is necessary to identify the planned measures foreseen in the National Raw Materials Policy (PSP 2050; NRMP 2022), as well as the existing measures foreseen in Geological and Mining Law (GML 2011) and in other regulations of this area. Mineral resources that may have social and economic value occur in natura, regardless of what knowledge we have of where they occur and what is their potential future usefulness, and how the use of these resources is regulated by legal acts.

The direct aim of protecting orogen resources must be to meet the current needs of our economy; it should also be aimed at meeting its future needs, *i.e.* to create stocks and raw-material reserves for the future. The country's raw materials security may, in certain conditions, be connected with its military security and other, non-military security aspects,

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such as energy security, food security or ecological security (Szamałek and Galos 2011). Attempts at defining the current needs of the economy and projecting its future needs are data presented in Appendix No. 1 to the National Raw Materials Policy.

Legal regulations in force and the new regulations that are currently emerging, which should be reviewed and whose mutual complementarity should be recommended, are contingent not only upon the need to ensure an integrated spatial management in the use of national raw materials resources but also upon the European Union regulations. Regulations that are relevant include those pertaining to circular economy (CE package), critical raw materials strategy, and documents introducing extended producer responsibility (EPR). In fact, the first regulations in these areas were already introduced in May 2018 when, following inter-institutional agreements, a package of directives (EU Directives 2018)¹ was finally adopted by the EU Commission and the EU Parliament.

Poland is one of the last European Union countries that has not implemented integrated management of development, including the spatial development of the country. Basic legislative acts and regulations concerning the long-term and mid-term National Development Strategy and spatial development (land-use management) are currently being amended once again. The National Spatial Development Concept 2030 (KPZK 2030; NSDC2030 2011), binding for many years, has become outdated. In the concept presented in a document entitled Poland's Development Management System (*Polish: System Zarządzania Rozwojem Polski – „SZRP”*) (PDMS 2018), assumptions have been adopted for a new act that is projected, which would regulate development and planning. The new act was to cover integrated planning of development and spatial development (land-use) of the national space. This, however, has never materialized.

Given the numerous legislative deficits in this area, there arises a need to introduce broader, comprehensive regulations for a rational, sustainable raw materials policy. The problem is to protect areas above mineral deposits from being developed in a manner that would prevent mining activities (Kot-Niewiadomska 2012). An opportunity to improve this situation, in terms of both economic rationality and environmental protection, is – in addition to planning the management of raw material resources, their sources, and mineral deposits – to, *inter alia*, identify (location and production) and protect anthropogenic deposits and the so-called deposits in excavation voids.

A secondary raw materials database exists and is being developed. There is no integrated policy that would govern conservation, documentation and use of waste materials from mining, metallurgy, and energy (heaps) industries that have been accumulated earlier and that

¹ A number of directives, *inter alia*, Directive (EU) 2018/851 of the European Parliament and of the Council of 30 May 2018 amending Directive 2008/98/EC on waste; Directive (EU) 2018/852 of the European Parliament and of the Council of 30 May 2018 amending Directive 94/62/EC on packaging and packaging waste; Directive (EU) 2018/850 of the European Parliament and of the Council of 30 May 2018 amending Directive 1999/31/EC on the landfill of waste; Directive (EU) 2018/849 of the European Parliament and of the Council of 30 May 2018 amending Directives 2000/53/EC on end-of-life vehicles, 2006/66/EC on batteries and accumulators and waste batteries and accumulators, and 2012/19/EC on waste electrical and electronic equipment.

have the potential for anthropogenic deposits. In result, the use of orogen resources is not rational, and there is no guarantee of raw material security for future generations – understood as access to mineral raw materials (including rare earth elements) that have remained unextracted in deposits or heaps, or are contained in waste, and are now wrongly treated *a priori en masse* as unsuitable for economic use, also in the future.

The existing and currently proposed separate regulations pertaining to the management of mineral resources, and theoretically intended to ensure compatible, feasible and effective protection thereof, constitute a peculiar manifestation of legislative inflation. The approach of the safeguarding of recognized mineral deposits is only an example of irrationality and violation of sustainable economy resources principles. It (the PSP, the author's note) would not give grounds for authoritarian actions of state agencies, e.g. actions aimed at protecting mineral deposits, even those of strategic importance for the economy. The statutory obligation to protect mineral deposits, which has existed for almost forty years, is not being fulfilled, resulting in the irreversible loss of some deposits (Lipiński 2019). Due to their fragmentation, disintegration, and inconsistencies – even if only terminological – these regulations impair the possibility of effective space management and pose a real threat to the management of both orogen resources and anthropogenic resources.

A way of unifying regulations pertaining to individual components of the orogen, orogen space and providing a real possibility to ensure the protection of the sources of mineral resources would be to introduce a single, complementary, and comprehensive legal regulation, with the Code status. Its implementation could help to extinguish the legislative chaos that prevails and would be beneficial for the rational and sustainable management of the primary sources of mineral resources – orogen resources.

1. The EU strategy and regulations

It seems appropriate to present at the outset the EU's action plans and draft regulations aimed at securing raw materials for the EU economy, as these plans and drafts should be a point of reference for the NRMP 2022, which should be compatible with the EU strategy.

The European Union's industrial strategy proposes that new industrial alliances should be created, and that the dimension of raw materials should be an integral part of such alliances and of the corresponding industrial ecosystems (this has been preliminarily set out in the Staff Working Document accompanying the Recovery Plan) (SWD (2020) 98 final).

The EU has already launched actions such as:

- ◆ the mapping of the potential supply of secondary critical raw materials from the EU stocks and waste, and identification of viable recovery projects, by 2022 (the Commission, EIT Raw Materials);
- ◆ the identification of mining and processing projects and investment needs, and related funding opportunities for critical raw materials in the EU that can be launched

by 2025, prioritizing coal-mining regions (the Commission, Member States, regions, stakeholders);

- ◆ the deployment of Earth-observation programs and remote sensing for resource exploration, operations and post-closure environmental management (the Commission, industry);
- ◆ the development of Horizon Europe R&I projects on processes for the exploitation and processing of critical raw materials to reduce environmental impacts, starting in 2021 (the Commission, Research and Innovation Environment);
- ◆ the adaptation of the intellectual property legal system to the digital age and ecological transformation, and supporting competitiveness of the EU businesses – the Commission is to propose an intellectual property strategy aimed at ensuring that intellectual property remains the main factor enabling the development of a circular economy and the development of new business models (COM (2020) 474 final).

European companies are at the forefront of innovation in a circular economy. The European Regional Development Fund, through smart specialization and the LIFE and Horizon Europe programs, is intended to complement private funding of innovation, and it will support it in the introduction of new solutions to the market.

The Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions (COM (2020) 98 final) also highlights relevant priorities and identifies priority areas where the EU should take action to strengthen its strategic approach to improve the resilience of the raw-materials value chains.

2. Mineral raw-materials security

Mineral raw-materials security, irrespective of the necessity to meet the current needs of the economy and maintain stocks to ensure the continuity of production, also means securing a national resource base of sources of raw materials in the long term, *i.e.* prospection for exploration and documentation of mineral deposits to be exploited in the long time perspective, taking into account various contingencies, including extraordinary events resulting from both geopolitics and the climate change.

The National Raw Materials Policy (NRMP 2022), according to its successive authors, was supposed to contain ‘key actions’, the implementation of which was supposed to help achieve the main goal – raw-materials security – and the detailed goals. However, most of the ‘actions’ remained mere postulates. The role of the National Raw Materials Policy, as stated therein, is only to supplement the existing methods for planning the work of the National Geological Survey until 2050, by defining the ‘key’ tasks in a ‘government document’, and ‘ensuring access’ to mineral deposits, however, being limited mostly to documented deposits, particularly those that meet the criteria of strategic deposits. As K. Galos aptly points out, “so far, an initial attempt has been made to clarify which raw materials are of greatest

importance for the national economy, proposing in the current draft the definition of crucial, strategic and critical raw materials, as well as preliminary lists of such raw materials” (Galos 2019). This is a kind of misunderstanding, considering the nature and the still unchanged key objective of the NRMP 2022, which is raw-materials security both today and in the future.

The adoption of the Strategy for Responsible Development (*Polish: Strategia na rzecz Odpowiedzialnego Rozwoju* – SOR) (SRD 2017), in February 2017, was aimed at starting the process of overcoming the silo mentality and shifting from the sectoral approach to the management of the development policy in Poland. Several solutions have been introduced to enhance the strategic coordination of the economic governance process (such as setting up the Economic Committee of the Council of Ministers², the Innovation Council³, and the Polish Development Fund⁴). However, the recent events and actions taken reveal a significant, emerging gap in the coherence of these strategies with raw materials policy. As indicated in the Position Paper⁵ of the Committee for Sustainable Mineral Resources Management of the Polish Academy of Sciences, “It (the PSP, the author’s note) must be a coherent strategy for the management of mineral resources (documented deposits as well as prognostic areas and prospective deposits).”

Bearing in mind that the implementation of the new development management system (in the form integrated with the spatial management of the country and its orogen management) was a part of actions envisaged in the SRD 2017. It is necessary to identify and analyse the key assumptions and direction of the PDMS 2018 in relation to the SRD 2017 in order to assess if they were taken into account in the NRMP 2022.

In the PDMS 2018, it has aptly been indicated that socio-economic and spatial planning have not been really integrated so far. The adopted development strategies and operational and implementation documents have omitted the spatial aspect or presented it in a fragmented way. Spatial planning still remains detached from socio-economic planning and does not fulfil its role in identifying the resources of minerals, Earth heat or water.

It is important that the following shortcomings, *inter alia*, have been highlighted in the PDMS 2018:

- ◆ a leaky layout of strategic documents (documents that do not fit into the system, with formal deficiencies);
- ◆ insufficient coherence and complementarity between strategies at the level of territorial self-government units (*Polish: jednostki samorządu terytorialnego* – JST) and those at the national level;

² Ordinance No. 357 of the Prime Minister of 30 December 2021 on the Economic Committee of the Council of Ministers (Polish Official Gazette Monitor Polski [M.P.] of 2021, item 1203).

³ Ordinance No. 4 of the Prime Minister of 18 January 2016 on the Establishment of the Innovation Council (Polish Official Gazette Monitor Polski [M.P.] 2016, item 63).

⁴ Act of 4 July 2019 on the Development System (Journal of Laws of the Republic of Poland [Dz.U.] of 2022, item 760).

⁵ Position Paper of the Committee for Sustainable Mineral Resources Management of the Polish Academy of Sciences of 10 October 2019 on postulated changes in conducting geological and mining activities in Poland.

- ◆ a lack of a system for the monitoring of changes in spatial management (land use planning), including a lack of data from the municipal level – there is a need to build a national spatial monitoring system that would be supplied, *inter alia*, with data from remote sensing sources for the purposes of strategic decisions.

Shortcomings related to the CE and EPR packages are also relevant here to allow us to locate anthropogenic deposits and to develop excavation voids. This is a serious deficiency in the light of recent EU documents implementing, *inter alia*, the Roadmap for Circular Economy⁶. The above applies to the so-called ‘deposits’ of secondary raw materials that lose their waste status in excavation voids (secondary anthropogenic deposits). This should be a part of the strategy, and it should be accounted for in spatial management, and should be one of the actions under the NRMP 2022.

In the course of successive amendments to the proposed PDMS 2018, the role of the National Raw Materials Policy has been ultimately lost, as is the case with the planning of exploration and exploitation activities, as well as integrated spatial management tools which were to ensure the protection of prognostic and perspective mineral areas. Additionally, the occurrence of scarce mineral resources, needed in the economy for production, has been overlooked, and functional areas have not been designated.

This has already increased the legislative (regulatory) risk for the geological and mining industry as well as for the energy sector (more broadly, for raw materials), in key areas of their interest (*inter alia*, functional areas, strategic resources, public purpose investments, and bases and modes of addressing said issues in the planning documents at various levels as an element of the system of integrated spatial management of the country and its development management).

With the ongoing development of the country, the implementation of investments of various kinds, developing infrastructure, and urban spatial expansion, it has become increasingly common to permanently lose access to orogen resources or even the possibility of prospection for or exploration of mineral deposits. Starting from the change of Geological and Mining Law, enacted in 2014 until its most recent amendment of August 2023, the chaos in mineral deposits management has been growing, which may lead to conflicts of laws and hinder the exploration of and making mineral deposits available for exploitation, at least to the extent envisaged in the NSDC2030 and in the Council of Ministers Action Plan (Stefanowicz 2014). This reduces the future raw-materials security of the country.

Securing the access to orogen resources calls for a responsible, holistic approach to spaces of the earth and those of the orogen as well as to land properties and sites identified from the point of view of their economic use and those areas of land that are already protected (nature, agricultural land, forests, industrial sites, urban development).

We must also think about raw-materials security for future generations, about the future economy, like some EU countries who have already begun to act and regulate this area. After all, raw materials will still be needed in a longer-time horizon, of fifty or eighty years,

⁶ COM (2020) 98 final.

and their sources should be accessible. The further perspective depends on the global situation, the state of the earth and the path of development in the case of a climate catastrophe, *i.e.* orogen resources which at present are, or in the near future will become, difficult to access or uneconomic to exploit. Moreover, we are not able today and we will not be able in the near future to predict which raw materials will be necessary for the economy in such long-term perspectives.

It may not be economically viable at present, given the costs, to exploit or fully explore some of the existing mineral resources, yet we cannot prejudge today what technologies will be available in the future, and what will happen if we face a shortage of key raw materials, either globally or locally, with no possibility of substitution. Thus, even those resources that are already identified and preliminarily documented that will not be used soon should be protected (somehow) to ensure that the access to them is not lost in the long term. To ensure raw materials security of the country in the long term, it is necessary to develop a new national raw materials policy that would account for, *inter alia*, the condition and size of the national resource base and would introduce elements of its active protection (Szamałek and Galos 2011).

The lack of comprehensive risk mapping as a standard for projects (at the stage of pre-feasibility study, conception or planning of geological works), and the postponement of such mapping until the future, until the stage when deposit-management projects are drafted or the application for the mining license is made, or even until the time of launching the mining plant investment, makes it impossible to detect such risks early. It should be a priority to avoid potential collisions and competition conflicts in the space of orogen as well as in future mining sites. Protecting only the mining area of a documented deposit will, by definition, be too conservative. This is due to not accounting for the conditions and resources of the entire orogen, of resources other than the mineral originally, initially identified. The potential of mineral deposits that could be exploited (including abandoned deposits and those of historical significance) should be assessed in terms of deposit size and the quality of minerals, as well as in the context of spatial and environmental conditions (Galos and Nieć 2015). Therefore, when talking about orogen resources, we should, for their protection purposes, view them spatially, broadly and three-dimensionally.

Deciding where future works, exploitation activities or other actions will be located in the “space” of the orogen, or what will be the rationale for and the extent of licensing or property rights restrictions, must be based on the nature and the object of such works, activities, actions and restrictions. Spaces to be considered when pondering over future exploitation projects include not only the hypothetical space in the orogen formation to be prospected, but the entire space of the surface property, starting from the orogen formation which is not accessible today, but in which minerals may be found and be accessible in the future.

3. Integration of spatial planning and management

Integration of national development planning, spatial management, and infrastructure investment was initially being introduced already in 2008–2010, through amendments to regulations pertaining, *inter alia*, to development policies and spatial planning.

Currently, the concepts of new regulations have only emerged in the draft PDMS 2018. It is thus necessary to present these concepts and the foreseen basic institutions and planning documents.

In the PDMS 2018, it is stated that socio-economic and spatial planning have not been truly integrated. The adopted development strategies and operational and implementation documents have omitted the spatial aspect or presented it in a fragmented way. Spatial planning remains detached from socio-economic planning and does not fulfil its role in identifying unfavorable phenomena and resolving spatial conflicts at an early stage. Building an effective, integrated spatial planning system, which would have a real impact on socio-economic development in Poland, takes place under conditions that do not account for any coordination tools in relation to the spatial issues nor the fundamental role of regions in the process of strategic-task implementation.

It is important that in the PDMS 2018, a lack of instruments has been noted that would ensure the operationalization of main development strategies. The PDMS 2018 identifies obstacles, such as the persisting (despite the introduction of statutory provisions) separateness of social, economic and spatial dimensions in the system of strategic documents, the insufficient involvement and cooperation on the part of public administration in the implementation of horizontal or territorial measures and projects resulting from the development strategy, and the lack of a system for monitoring changes in spatial development. As a starting point for a new development management system, the PDMS 2018 points to the directives (guidelines) formulated in the SRD 2017, and pertaining, *inter alia*, to the implementation of a project approach in public administration, and working out and agreeing on a development management model at the regional and local level, coherent with the national system.

It should be noted that it is not only Poland that is now subject to change in many areas, but the whole of Europe, and the world in general. This is due to the dynamics of change in material and technical culture, the advances in knowledge and capitalizing on its effects and also to the turbulent political and social changes as well as climate change. This is compounded by competition for energy sources and raw materials, especially those used in low-carbon energy production and high-tech, *i.e.* new technologies for knowledge-based development.

In other words, the world is speeding up, we are living in a stream of constant, permanent change. We must succumb to this phenomenon and incorporate this state of affairs to the areas of management, both of public tasks and of resources that the country has at its disposal on its territory (Kamiński and Stefanowicz 2011).

4. National Spatial Planning Concept 2030

To illustrate the lack of progress in the development of raw materials policy, or even a kind of regression in this area – also with regard to legal regulations – one should start the discussion with the NSDC2030 2011. This document was intended as an element of a new, coordinated national development management system (ADMSP 2009), the foundations of which were laid down by the Act of 6 December 2006 on the Principles of Conducting Development Policy, amended on 21 May 2021 (APCDP 2021).

The objectives formulated in the NSDC2030 2011 were interrelated, and they were complemented by a typology of functional areas, identical to the problem areas within the meaning of the amended Act on Planning and Spatial Development, which were introduced to bring order to the national development planning system.

The set of functional areas was to be an open one – the number and geographical extent of such areas was to depend on the purpose that a particular delimitation was to serve. To achieve the NSDC2030 2011 objectives, the functional areas were to be delimited at various levels of governance (national, regional, functional). The NSDC2030 2011 introduced the concept of ‘strategic deposits’ that should be protected through creating appropriate functional areas in voivodeship land-use plans, protected from permanent development and linear facilities. The areas of such selected deposits would be covered by the so-called planning reserve at the voivodeship level (Galos and Nieć 2015).

Pursuant to Article 48 (which has been applicable until recently) of the Act on Spatial Planning and Development (ASPD 2003), in implementing the NSDC2030 2011, ministers and central government administration authorities, within the scope of their material competence, should have drawn up program outlining government tasks that would serve the implementation of public purpose investments of national importance.

In Section 2.5 of the NSDC2030 2011, entitled “Technological Conditions,” the development of energy-saving technologies is foreseen, *inter alia*. Growing energy prices in the long-term perspective (due, *inter alia*, to shrinking resources) were already highlighted a decade ago, along with the fast growing Asian economies, economic instability in the countries producing oil and gas, and the EU energy policy, which will force countries to use energy-saving technologies, limiting the development possibilities for energy-intensive industries.

In Section 2.7. of the KZPK 2030 entitled “Natural Environment Conditions,” it is indicated, *inter alia*, that the spatial development policy, aiming to ensure Poland’s development with the least amount of ecological conflict, must take into account nature’s resistance related to various functions, and thus, according to the authors, it must recognize the need to protect, explore and develop the existing natural resources, including flora and fauna, landscape and mineral deposits, and to recover the lost resources.

In Chapter IV of NSDC2030 2011 entitled “National Spatial Development Policy – Principles and Objectives,” basic principles have been defined, *inter alia*, and the most important principle was to be the systemic sustainable development principle – meaning such

socio-economic development where political, economic and social measures are integrated, and where the natural environment balance is maintained to ensure that the needs of citizens are met, both now and in the future. From the sustainable development principle, further public planning principles were directly inferred by reference to economic, environmental and social capital, including:

- ◆ brownfield before greenfield development principle – meaning intensification in developed areas to minimize urban sprawl;
- ◆ Ecological prudence principle – which means that occurring problems should be solved in due time.

Based on their types, examples of areas that have been established in the NSDC2030 2011 can be given, *inter alia*: functional areas with a dominant spatial phenomenon on the macro-regional scale, areas for which the development potential is subject to modelling, including, for example, areas of protected and modelled water resources, and areas of special interest, i.e. functional areas of strategic mineral deposits.

Although in Section 6.4.4, entitled “Areas of Protection of Strategic Mineral Deposits”, it is stipulated that in order to preserve the usability of mineral deposits of strategic significance for the economy of the state, including for the energy security until 2030 and beyond, it is necessary to demarcate areas where strategic deposits of minerals are present and undertake measures to protect them against permanent building development and linear projects, and to introduce restrictions pertaining to the manner of management in those areas. This task was already adopted in 2011. It is worthwhile at this point to present a fragment of the Position Paper of the Committee for Sustainable Mineral Resources Management of the Polish Academy of Sciences⁷, which states that “new regulations should be proposed for the licensing of geological and mining activities, ensuring the use of appropriate tools and forms, which would be flexible and could be applied to the economic use of the rock mass”. To this day, none of the above have been implemented, and in the NRMP 2022 this issue is not addressed.

5. National Raw Materials Policy

The National Raw Materials Policy (NRMP 2022) was adopted on 1 March 2022. According to its authors, the document contains the “key measures”, the implementation of which would foster the achievement of both the main objective and the specific objectives. It is a pity that most of the foreseen measures are merely theoretical postulates, as evident from the time schedule presented in the document. The National Raw Material Policy 2022 was intended to additionally complement the existing methods of planning the work of

⁷ Position Paper of the Committee for Sustainable Mineral Resources Management of the Polish Academy of Sciences of 29 October 2020 on the need to establish national systematics of crucial, critical and strategic mineral deposits and prognostic areas for these minerals, and to include them in new development policy regulations.

the Polish Geological Survey by defining, in an unspecified government document, the key tasks to be implemented in the perspective until 2050.

The authors of the NRMP 2022 have indicated that the basis for developing strategies, *inter alia*, for mineral resource management, is the new medium-term national development strategy, adopted by the Council of Ministers in 2017 – the Strategy for Responsible Development for the period up to 2020 (including the perspective up to 2030) – SRD 2017. It is in the SRD 2017, in the “Environment” area, that the need to develop a National Raw Materials Policy is again indicated. The SRD 2017 well defines the NRMP 2022 as a document pertaining to the development of an efficient and effective system of management for all types of minerals and mineral raw materials in the whole value chain and of their resources owned by Poland, as well as the relevant resultant legal and institutional changes. In line with the SRD 2017 assumptions, the NRMP 2022 should also support the transition to a circular economy (which, however, is not currently ensured).

The first and fundamental problem regarding the object of the National Raw Materials Policy is the very nature of this document. In terms of its contents, the adopted NRMP 2022 cannot be considered as a draft of national raw materials policy having the character of an executive act (within APCDP 2021). The second general observation that must also be made at the outset is that the document lacks both the key policy arrangements and the stages of measures to be taken; the document is rather a program or a plan for developing such a policy in the long term. Thus, it must be concluded that the goals and objectives stated in the document are mostly postulates, and such a formulation of the authors’ mere intentions and expectations in a government document – intended as a policy – is insufficient.

Attention should also be drawn to some conceptual confusion. *Inter alia*, terms should be used correctly throughout the NRMP 2022, distinguishing between the concepts of *raw materials*, *minerals* and *mineral deposits* (to ensure that it is clear what is meant: primary raw material, secondary raw material or mineral, or its deposit). The document should also use the term *mineral resource base* correctly. Moreover, this term should be correctly defined to include not only documented deposits but also prospective and prognostic areas (deposits).

The term *mineral resource base* as used in the NRMP 2022, demonstrates the inconsistency and the lack of understanding of how the term should be understood. *Inter alia*, both in this and in other parts of the NRMP 2022, the exploration of prognostic and prospective areas is overlooked, whereas the heat of the earth and geothermal systems are in practice reduced to thermal waters and neglect the need to explore and exploit other forms of the heat of the Earth.

Most of the objectives focus on mineral deposits already documented (and only on those classified as strategic deposits) and their exploitation rather than on identifying/exploring and securing the resource base and planning for its rational development. First and foremost, it would be appropriate to focus on the effective and comprehensive protection of all the documented mineral deposits in the perspective and prognostic areas and on the direct participation of the national geological survey in developing new technologies for prospecting

for the exploration, documentation and exploitation of minerals. This remains only a general postulate in the NRMP 2022 as regards prospecting and exploration.

The measures envisaged for implementation in the NRMP 2022 under the specific objective *Providing favourable legal conditions for current and future investors and the development and modernisation of the geological and mining industry* consist only in defining deposits and anthropogenic raw materials (mineral anthropogenic resources) and the normative capture thereof, as well as in making the inventory of existing mining and processing waste dumps with a view to identify, in an unspecified way, the possibility of using waste accumulated there. However, no measures or tasks are foreseen for and after such an inventory and regulation.

According to its authors, the role of the NRMP 2022 is, rightly, to ensure access not only to fossil-fuel deposits, but to all deposits; however, only the documented deposits and, in particular, those which meet the criteria for strategic deposits. This approach is too conservative.

Significantly, the preliminarily identified deposits or prognostic areas are not covered by the NRMP 2022, and secondly, it is assumed, inconsistently with the proposed definitions, that only strategic deposits are to be protected. At this point, it can be highlighted that it is impossible to say *a priori* which mineral will in the future predetermine the designation of a deposit as strategic.

The key issue enabling the effective implementation of the assumptions specified in the NRMP 2022 (as stated in the *Institutional Framework* subsection) is to be the proper organization of the administrative bodies responsible for geological issues and issues related to minerals used for the production of raw materials. This intention is legitimate; however, it is still only a postulate. The authors of the NRMP 2022 propose to take measures to strengthen the position of the Chief National Geologist, acting as the Government Plenipotentiary for the National Raw Materials Policy, by making him/her the central body of geological administration. This is the only vague indication of the future role that the Chief National Geologist would play, while the issue of a necessary “inter-ministerial team” is completely ignored. Contrary to the above declarations, in the tasks foreseen no tasks of geological administration are mentioned, neither at the central level, nor at the voivodeship or poviát level (voivodeship geologist).

As regards raw materials policy, the authors of the NRMP 2022 discussed only geological conditions. In a document such as the NRMP 2022, all the conditions should have been presented, including real-estate management, building development, infrastructure, environment and nature protection conditions as well as legal and institutional conditions. Geological conditions are obviously important – they are the basic assumption for designing the tasks under the NRMP 2022. Nevertheless, it should be noted that in the light of the extent of the NRMP 2022, such conditions include, for example, the implementation of a circular economy as well as the management of locating and exploration of anthropogenic deposits, as well as spatial competition of public investments in the access to the orogen.

The demand for resources can be estimated only when a new concept or a new strategy for national development and economic development is adopted and such a concept or strategy is verified, and it is reflected upon whether the estimated demand for resources can in fact be based only on the mineral deposits which today are covered by the mining ownership.

The proposed modest amendment to the legal regulations listed in the NRMP 2022 raises concern. The said amendment is to introduce the special and real protection of deposits that may be of most importance for the Polish economy in the future. The overriding objective should be a much broader amendment to ensure the protection of all the deposits and prognostic areas of possible economic utility and, more broadly, of the orogen resources.

Several other postulates pertaining to the planning and management of implementation demonstrate a lack of knowledge about both the process and permanent change management in the implementation of public tasks.

To summarize the above, the NRMP 2022, in terms of its scope and coverage, as well as the way of presentation of measures, fails to meet the required policy standard. The planned and already regulated institutions, tools and legal and economic instruments have been completely lost, and nothing has been proposed in their place. Examples include functional areas for the prospecting for and the exploration of mineral deposits, proposals of Raw Materials Code regulations, and tasks for administration and geological supervision. There is also no attempt to adapt the new institutions or instruments to the new environment, for example, securing areas for public purpose investments. Moreover, it is difficult to understand why both prognostic and prospective areas (deposits) should not be protected, including the already preliminary identified, prospective deposits of minerals, for which exploitation could be economically viable in the future.

The specific measures foreseen under the NRMP 2022 objectives set out in the schedule are so vague that in fact it is difficult to say how the authors imagine that it would be possible to achieve the intended objectives. This, as well as the lack of understanding of what it means to ensure rational, sustainable management of the orogen mineral resources, is clearly demonstrated by the NRMP 2022 schedule. For example, for the objective *Access to raw materials from mineral deposits*, the envisaged measure *Determining the national demand of the economy for mineral raw materials*, it was assumed that the first estimation of national demand would be prepared in 2025, and the next estimation in 2032, after a gap of seven years. Also, strategic and critical raw materials would be defined within such a timeframe. Analyzing raw material potential of the areas of prospective occurrence of mineral deposits is planned for 2022 and then for 2026. This shows that neither the SRD 2017 guidelines nor the assumptions for the reform of national development policies have been observed, according to which, such matters are to be **managed on an on-going basis, with the management of change and of updates as an ongoing task.**

6. Raw Materials Code – a concept for amending the Geological and Mining Law

6.1. Proposed scope of the postulated regulation

A postulate put forward (*inter alia*, by the Advisory Group on Geology and Mining to the Minister of the Environment in 2020) was to develop a new Act of the Code status that would cover all the activity in the earth's interior (earth's interior management), as well as the management of the earth's interior resources (the entire material and spatial resource of the orogen), the status and location of objects in the orogen and structures of various types (reservoirs, caverns, storage facilities, tourist facilities and waste disposal sites, etc.). As regards raw materials, such regulation should also cover all of both the waters and heat of the earth (Szamałek et al. 2020).

Obviously, such regulation, having the code status, cannot be burdened with excessive casuistry and detailed provisions which are likely to be found in executive and specific laws and regulations. Such regulations should contain basic solutions determining the standard and quality of orogen resource management, these include: geological and mining qualifications; geological administration bodies; geological surveying; planning the management of orogen resources, the forms of resources and orogen space protection until they are fully explored; the protection of orogen resources under exploration and those that have been fully explored. The general part of this regulation should contain general clauses and basic standards pertaining to the protection and management of orogen space and resources; additionally, it should contain prerequisites for the interference with, as well as for, the protection and use of resources. The overall aim of legislative work pertaining to the management of orogen resources should be the deregulation and liberalization (de-formalization) of both the Geological and Mining Law and the Water Law, as well as the Law on Spatial Management, with the simultaneous introduction of additional regulations in areas not yet regulated at all.

Currently, the management of orogen resources and mineral resources, is vested by law in five Ministries, and even in its basic scope, in three. The Minister of Climate and Environment is in charge of the environment⁸, the Minister of State Assets is responsible for the management of mineral deposits⁹, and the Minister of Development and Technology oversees the management¹⁰. In addition, the Minister of Infrastructure is responsible for

⁸ Ordinance of the Prime Minister of 27 October 2021 on the detailed scope of activities of the Minister of Climate and Environment (Dz.U. of 2021, item 1949).

⁹ Ordinance of the Prime Minister of 3 July 2023 on the detailed scope of activities of the Minister of State Assets (Dz.U. of 2023, item 1263).

¹⁰ Ordinance of the Prime Minister of 15 April 2022 on the detailed scope of activities of the Minister of Development and Technology (Dz.U. of 2022, item 838).

water management¹¹ and the Minister of Funds and Regional Policy – for land use planning and spatial development”¹². In view of the above, it is reasonable to consider the maximum concentration of public tasks in the management of orogen resources and mineral resources by creating a central office (the regulator), which would optimally be under the control of the Prime Minister or Deputy Prime Minister for the Economy.

It is necessary and urgent to effectively protect orogen resources by introducing new institutions on the one hand, and redefining the existing ones on the other, including:

- ◆ the reinstatement of the planned comprehensive prospecting for and exploration of orogen resources, in particular of minerals used in the production of critical and strategic raw materials;
- ◆ the reprocessing, making an inventory of, and updating of the available geological information, including geological documentation, cores and samples, as well as introducing the principle that it is the responsibility of the geological survey, and a public task to monitor and integrate information on the existing orogen resources;
- ◆ covering by planning the exploration of orogen resources, also by private entrepreneurs, including resources that will be a part of land property and will be covered by voivodship development and spatial management (land use) plans;
- ◆ defining and adopting the institution of “prognostic” (*or some other term*) areas, which would be determined based on the exploration of the orogen within the framework of public tasks assigned to the Polish Geological Survey, and on the existing geological information. These areas would be protected together with pre-documented prospective deposits and documented mineral deposits in the C2/C1 category (*according to the existing classifications*).

Limiting the detail of code regulations applicable to individual documentations or projects as well as to concession applications should be considered and the code should provide for broader and more flexible authorizations for relevant ministers to issue implementing acts, either by way of ordinances or methodologies.

In this respect, consideration should first be given to dividing the regulatory scope into that which must be included in general law, either at the level of an act or an implementing regulation with the ordinance status, and that which could be introduced by adopting methodologies (a model and procedure making use of the methodology for preparing various kinds of geological documentation or projects of works, geological works, and deposit management; the above also applies to various types of concession applications and applications for permits)¹³.

¹¹ Ordinance of the Prime Minister of 18 November 2019 on the detailed scope of activities of the Minister of Infrastructure (Dz.U. of 2021, item 937).

¹² Ordinance of the Prime Minister of 27 October 2021 on the detailed scope of activities of the Minister of Funds and Regional Policy (Dz.U. of 2021, item 1948).

¹³ Proposals for a solution are presented in a paper by M. Nieć and B. Radwanek-Bąk. 2011. Kraków – Proposal for statutory protection of undeveloped mineral deposits in: Materials for discussion. Polish Academy of Sciences, Committee for Sustainable Mineral Resources Management – p. 46.

Above all, it must be borne in mind that the resource (asset) that we have at our disposal is the whole space of the country, understood holistically – its surface, land, and the orogen with their resources. These spaces, which are still treated as different/separate, and their resources cannot be separately managed and independently regulated. Therefore, the need is justified for a single, basic regulation, stipulating the principles and prerequisites for using the resource that we have in the space of the country and protecting this resource, both complementarily and in its entirety.

Among the overarching concepts of the new regulation, one should point out the principle that no use may be made of the right to prospect for, explore or exploit the orogen resources in a way contrary to the standards of rational and sustainable management of the orogen resources, groundwater, and the heat of the earth. Such an action or omission by the right holder would not be considered as exercising the right and would not be covered by protection.

In the proceedings in the matters resulting from the relations regulated by the code, the concession authorities, geological administration and geological survey, as well as the parties and participants, should be obliged to comply with the principles of rational, sustainable management of the orogen resources when acting in proceedings leading to the acquisition or protection of rights derived from these relations, and in this respect, provide explanations and evidence.

The protection of the orogen and its sustainable use should form the basis for environmental protection. If the code was to make exercising the right contingent upon satisfying the environmental protection requirements, this would be understood to include, first and foremost, the protection of the orogen, the groundwater, and the heat of the earth.

Information on the structure (condition) of the orogen and its resources, including the groundwater and the heat of the Earth, should also provide the basis for the integration and complementarity of spatial information.

6.2. New regulations

Future regulations should include basic solutions which would be decisive in terms of standard and quality in the management of space and orogen resources, *i.e.* general clauses and standards as well as basic definitions and institutions.

As a matter of principle, the orogen resources may be exploited to such an extent and in such a manner that accounts for both their non-renewable and renewable nature as well as for the need to ensure the access to them for future generations. The natural values of the orogen, which is to be the subject of relations regulated by the code, are an argument for regulating by the code all the relations concerning the orogen (§2 of the Ordinance on the Principles of Legislative Techniques)¹⁴. In the act, the same terms should be used as in

¹⁴ Ordinance of the Prime Minister of 29 February 2016 on the Principles of Legislative Techniques. (Journal of Laws of the Republic of Poland [Dz.U.] of 2016, item 283).

the basic act that governs a given area, in particular, in the act referred to as the “Code” or “Law” (§9 of the Ordinance on the Principles of Legislative Techniques) – the primacy of legal definitions of the code (Wronkowska and Zieliński 2012).

The material scope, which, if incompletely or inconsistently defined, may create conflicts or gaps, should be regulated by introducing, for example, the following clauses:

- ◆ Definitions and provisions of the code shall, in the case of doubt, apply to the integrated spatial information in data processing and sharing systems, unless specific provisions indicate otherwise.
- ◆ Regulations governing waste management shall apply to the anthropogenic accumulations of extractive or industrial waste located on a landed property, unless the code provides otherwise (with clear criteria specified in the code in this respect).
- ◆ The provisions of the code shall apply to groundwater intakes located underneath real estate, to installations enabling access to or exploitation of the heat of the earth, to geothermal water intakes, and to underground storage facilities.

Above all, there is a need for a grid of statutory definitions tailored to the current needs and future conditions of the orogen management, which should be understood as: removing redundant definitions, clarifying or correcting some of the existing definitions, and introducing new statutory definitions.

Such definitions, as well as most of the above proposals, were developed by the Geology and Mining Advisory Team to the Minister of the Environment in 2020 (in office at the time) (Szamałek et al. 2020). The team had an opportunity to present its regulatory concepts – most of which were welcomed by the community.

Conclusions

In view of the above remarks of a substantive and legislative nature, in the scope discussed herein, it is important to take into account the fact that Poland has some of the largest mineral resources in Europe, and not only coal or hydrocarbons but among others, polymetallic ores and chemical minerals, which are available and may be available in the long term perspective, and whose prospective areas should be protected in such a perspective, as is the case in some other countries. We cannot and should not exploit this resource today unless we are able to do so efficiently, in an economically viable manner, and safely for the environment. After all, even beyond the target date of the national long-term development strategy, future generations may need to use these raw material sources in a more rational, efficient, safe and sound manner.

An essential function of any organizational system, including the state, is to learn from mistakes, to analyse weaknesses in functioning and to rectify them. In this way, the process of improving organizational structures becomes a reality. Planning at the central level should address the management of change in the implementation of the core functions of the state. This requires the continuous elaboration and development of long-term concepts,

and thus, as far as possible, it requires continuation and improvement by successors, which also applies to the work of the predecessors. To carry out such tasks, governments must have a genuine expert base (Kamiński and Stefanowicz 2011).

Currently, it is most urgent to introduce into the existing regulations and to promptly put into practice the appropriate tools, namely instruments necessary for the real protection of the orogen resources, including mineral raw materials sources, underground water and heat of the earth, and for the locating of deposits of anthropogenic minerals as well as for defining and documenting such deposits. Not waiting for comprehensive amendments of the existing regulations to be made nor for two key acts of generally binding law to be devised, namely the Act on the Principles of Conducting National Development Policy and on Strategies for Implementation of Public Tasks, and the code covering all of the management of the orogen resources and the national space, we should, as soon as possible, introduce the key provisions (outlined in this paper) aimed to protect the resources and space for the acts that are currently amended, namely the Act on the Principles of Conducting the Development Policy, the Geological and Mining Law, and the Act on Planning and Spatial Development.

At present, it seems necessary to first make the NRMP 2022 a “decisive” document, in which future objectives and the paths to achieve them will be unambiguously selected, new legal instruments will be proposed, and a real integration will be ensured between regulations and the management of orogen resources within the space of the country, also including the surface of the earth, and intensive, real measures will be proposed for continued implementation of such an adopted policy.

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REGULATIONS PERTAINING TO THE MANAGEMENT OF ROCK MASS MINERAL RESOURCES**Key words**

orogen, resources protection, mineral deposits, management of raw material, prognostic areas

Abstract

This article discusses regulations on the management of rock mass resources more broadly than previous literature in this area. Significant changes in the directions of globalization development as well as the transformations and disruptions of existing raw-material supply chains and changes in their structure call for verification of and changes in regulations on raw-material management in individual countries, not only in the UE. The article examines the current EU regulations and their amendments in Poland.

The article presents problems that have arisen during works on the necessary regulatory reform of the following policies: development, spatial (land-use), raw material, geology and mining, environmental protection, and waste and water management. The article shows that strategies, policies, and regulations prepared simultaneously, which were to be correlated with the horizontally integrated National Development Concept, are not. This should effectively enhance the country's raw-material security. Deficiencies have been highlighted both in assumptions and procedures adopted in developing said documents.

The author also emphasizes the need to balance competing values and make necessary choices when specific solutions affect at least two competitive areas, e.g. mineral deposits vs. water, farmlands or woodlands, critical infrastructure, housing, investment in the defense sector. The need is highlighted to rationally and sustainably manage resources and country space, to protect and explore them, and plan their management.

The author justifies the need for a new Act of the Code status –that comprehensively and consistently regulates both the management of rock mass resources and land and water resources, and the country space management.

REGULACJE W ZAKRESIE GOSPODAROWANIA ZASOBAMI MINERALNYMI GÓROTWORU**Słowa kluczowe**

górotwór, ochrona zasobów, złoża kopalin, gospodarka zasobami, obszary prognostyczne

Streszczenie

Artykuł obejmuje ocenę regulacji gospodarowania zasobami górotworu w szerszym zakresie niż do tej pory w literaturze przedmiotu miało miejsce. Istotne zmiany w kierunkach globalizacji i przekształcanie oraz zrywanie się dotychczasowych łańcuchów dostaw surowców, zmiany ich struk-

tury, wymagają weryfikacji, zmian regulacji gospodarki surowcowej w poszczególnych krajach, nie tylko w Unii Europejskiej. W artykule zajęto się aktualnymi regulacjami w UE oraz ich zmianami w Polsce.

W artykule przedstawiono problemy pojawiające się w toku prac nad konieczną reformą regulacji dotyczących m.in. polityki rozwoju, zagospodarowania przestrzennego, polityki surowcowej, geologii i górnictwa, ochrony środowiska oraz gospodarki odpadami i wodami. Wykazano, że równolegle przygotowywane nowe strategie, polityki i regulacje, powinny być skorelowane z nową, horyzontalnie zintegrowaną Koncepcją Rozwoju Kraju, czego brak. Powinno to wpływać na skuteczne zabezpieczanie bezpieczeństwa surowcowego kraju. Przedstawiono błędy, zarówno w założeniach, jak i procedurach przyjmowania tych dokumentów.

Autor porusza także istotny problem konieczności wyważania konkurencyjnych wartości i dokonywania koniecznych wyborów w sytuacji konieczności jednoczesnego zastosowania danej regulacji do dwu konkurujących celów, np. złoża kopalin vs. wody, grunty rolne czy leśne, infrastruktura krytyczna, domy mieszkalne, inwestycje w sektor obronny. Autor wykazuje niezbędność zachowania racjonalnej, zrównoważonej gospodarki zasobami, przestrzenią kraju, ich ochrony, rozpoznawania oraz planowania gospodarowania nimi.

Autor uzasadnia potrzebę przygotowania zupełnie nowej ustawy o randze kodeksu, kompleksowo i spójnie regulującej gospodarowanie zasobami górotworu, gruntami i wodami, ale też przestrzenią.